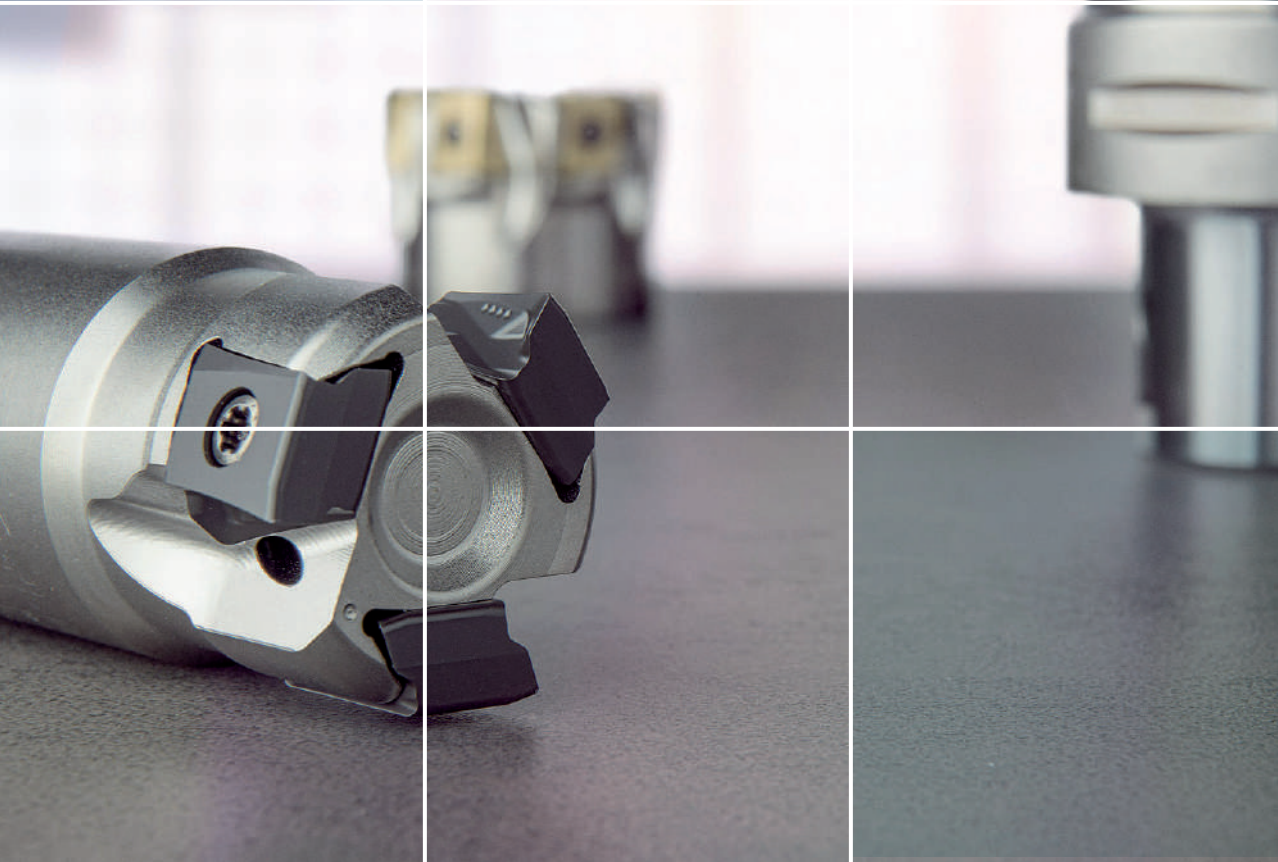


CATALOG &
TECHNICAL
GUIDE 2018



MILLING

SECO 



SOLUTIONS & SUPPORT

By choosing Seco, you get more than just a comprehensive portfolio of advanced metal-cutting solutions and expert services. You get a partnership based on trust, respect and communication and a team that is always ready to help you gain the competitive advantage.

Globally headquartered in Fagersta, Sweden and present in more than 50 countries, Seco develops cutting tools, processes and services for high productivity and profitability. Our team of over 4,000 dedicated employees maintains partnerships around the world to identify and overcome the challenges faced by today's manufacturers.

Our broad selection of milling, turning, holmaking and toolholding solutions include over 30,000 standard products, custom items for special applications and a team of metal-cutting experts who help customers identify and implement cost-effective solutions.

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Square shoulder and slot milling

Helical milling

Face milling

Disc milling

Plunge milling

Copy milling

High feed milling

Minimaster

Misc. milling

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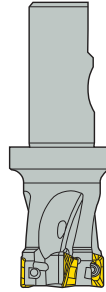
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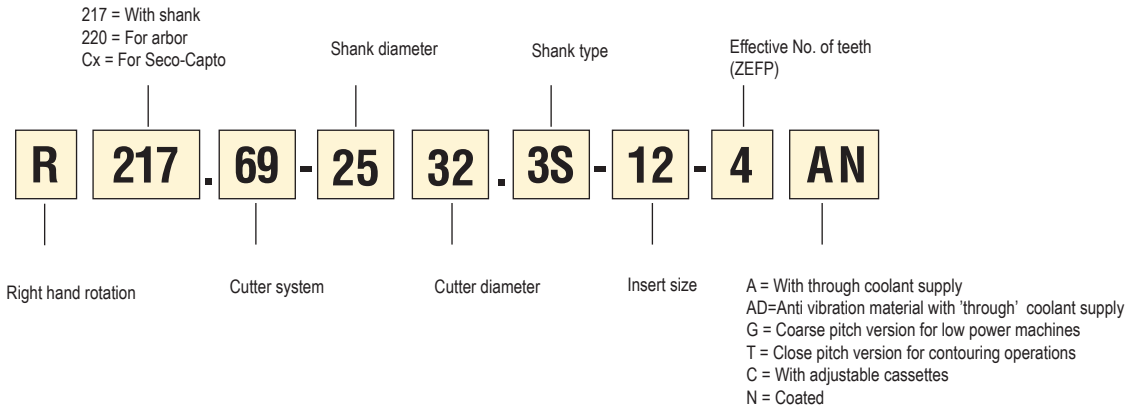
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Milling cutters

In milling Seco uses product specific designation systems, there is no ISO system available for cutters. See example below.



Code key for Turbo milling cutter 217/220.69



Type 0 – Cylindrical



Ex.: R217.69-2525.0-12-3AN

Type 3 – Weldon

Tool chucks acc. to ISO 5414 DIN 1835



Ex.: R217.69-2525.3-12-3AN

Type 3S – Seco/Weldon®

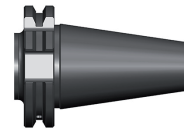
Tool chucks acc. to ISO 5414 DIN 1835



Ex.: R217.69-2532.3S-12-4AN

Type CV

ISO 7388 DIN 69871 Form A ANSI-B5.50 JIS B6339



Ex.: R215.59-CV50050072-12.3K

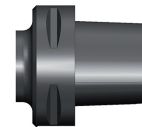
Type VDI 2814

Type ISO-297/DIN 2080



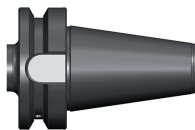
Ex.: R215.59-50.080.077-12.4

Type Seco-Capto™



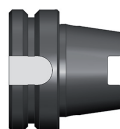
C6-217.69-066-12-6AN

Type MAS BT



Ex.: R215.59-BT50.050.059-12.4A

Type HSK



R217.69-HSK63A.32-044-12.3AN

Clamping by S - screw



The inserts are clamped by an inclined screw which holds the insert in position in its seat.

Clamping by a wedge



The inserts are held in position by a wedge and a screw which clamps the insert onto the seat.
(Example shows milling cutter with cassettes).

Centre lock clamping



The inserts are secured through a centre hole by means of a screw which clamps the insert firmly against the bottom and side of its seat.

Clamping by spring action



The inserts are retained by a clamping/spring action into a fixed insert seat

Minimaster clamping



The insert is clamped in position by means of a finger-shaped clamping screw which draws the insert into a cone

Minimaster Plus clamping



The insert is clamped in position by a thread and fastened by a fixed key or a torque wrench

Square T4



The inserts are secured through a centre hole by means of a screw which clamps the insert firmly against the bottom and side of its seat.

Inserts-Metric series, Extract from ISO 1832—1991

Dimensions refer to theoretical measurements.
Nominal dimensions and tolerances on Seco inserts may differ from the table below.

| | | | | | | | | | |
|----------|----------|----------|----------|-----------|-----------|-----------|----------|----------|---------------|
| S | E | M | X | 12 | 04 | AF | T | N | - ME12 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

1. Shape

| | | |
|-------|-------|-------|
| A | B | C |
| D | E | H |
| K | L | M |
| O | P | R |
| T | V | W |
| S | | |

2. Side clearance angle

| | | |
|-------|-------|-------|
| A | B | C |
| D | E | F |
| G | N | P |

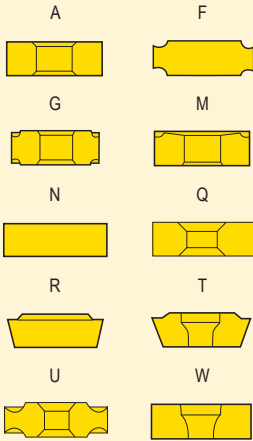
O = Special

3. Tolerances

| Tol.-class | Tolerance +/- mm | | | For d, dimension mm | | | | | | | | | |
|------------|------------------|-------|-------|---------------------|------|------|-------|------|--------|-------|------|-------|-------|
| | | | | 3,175* | 4,76 | 6,35 | 9,525 | 12,7 | 15,875 | 19,05 | 25,4 | 31,75 | 38,1* |
| | m | s | d | | | | | | | | | | |
| A | 0,005 | 0,025 | 0,025 | • | • | • | • | • | • | • | • | • | • |
| E | 0,025 | 0,025 | 0,025 | • | • | • | • | • | • | • | • | • | • |
| F | 0,005 | 0,025 | 0,013 | • | • | • | • | • | • | • | • | • | • |
| G | 0,025 | 0,13 | 0,025 | • | • | • | • | • | • | • | • | • | • |
| H | 0,013 | 0,025 | 0,013 | • | • | • | • | • | • | • | • | • | • |
| J | 0,005 | 0,025 | 0,05 | • | • | • | • | | | | | | |
| | 0,005 | 0,025 | 0,08 | | | | | • | | | | | |
| | 0,005 | 0,025 | 0,10 | | | | | | • | • | | | |
| | 0,005 | 0,025 | 0,13 | | | | | | | | • | | |
| K | 0,005 | 0,025 | 0,15 | | | | | | | | | • | • |
| | 0,013 | 0,025 | 0,05 | • | • | • | • | | | | | | |
| | 0,013 | 0,025 | 0,08 | | | | | • | | | | | |
| | 0,013 | 0,025 | 0,10 | | | | | | • | • | | | |
| M | 0,013 | 0,025 | 0,13 | | | | | | | | • | | |
| | 0,08 | 0,13 | 0,05 | • | • | • | • | | | | | | |
| | 0,13 | 0,13 | 0,08 | | | | | • | | | | | |
| | 0,15 | 0,13 | 0,10 | | | | | | • | • | | | |
| U | 0,18 | 0,13 | 0,13 | | | | | | | | • | | |
| | 0,20 | 0,13 | 0,15 | | | | | | | | | • | • |
| | 0,13 | 0,13 | 0,08 | • | • | • | • | | | | | | |
| | 0,20 | 0,13 | 0,13 | | | | | • | | • | | | |
| | 0,27 | 0,13 | 0,18 | | | | | | • | • | | | |
| | 0,38 | 0,13 | 0,25 | | | | | | | | • | • | • |

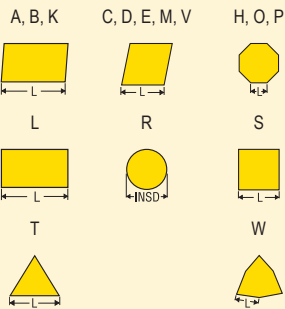
Inserts-Metric series, Extract from ISO 1832—1991

4 Type

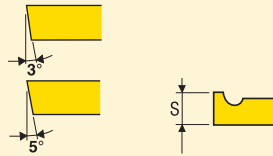


X=Special

5. Cutting edge length

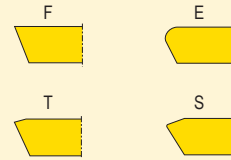


6. Thickness



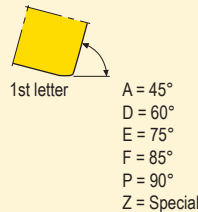
| | |
|--------------|--------------|
| 01 = 1,59 mm | 04 = 4,76 mm |
| T1 = 1,98 mm | 05 = 5,56 mm |
| 02 = 2,38 mm | 06 = 6,35 mm |
| 03 = 3,18 mm | 07 = 7,94 mm |
| T3 = 3,97 mm | 08 = 8,00 mm |
| | 09 = 9,52 mm |

8. Cutting edge designation



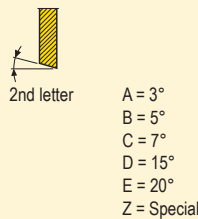
Not mandatory information

7. Insert with corner chamfer/nose radius



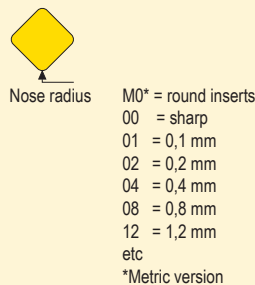
1st letter

| |
|-------------|
| A = 45° |
| D = 60° |
| E = 75° |
| F = 85° |
| P = 90° |
| Z = Special |



2nd letter

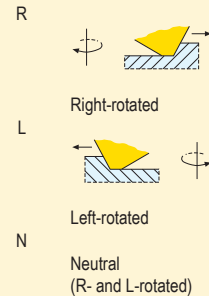
| | |
|-------------|---------|
| A = 3° | F = 25° |
| B = 5° | G = 30° |
| C = 7° | N = 0° |
| D = 15° | P = 11° |
| E = 20° | |
| Z = Special | |



Nose radius

| |
|---------------------|
| M0* = round inserts |
| 00 = sharp |
| 01 = 0,1 mm |
| 02 = 0,2 mm |
| 04 = 0,4 mm |
| 08 = 0,8 mm |
| 12 = 1,2 mm |
| etc |
| *Metric version |

9. Direction of cutting

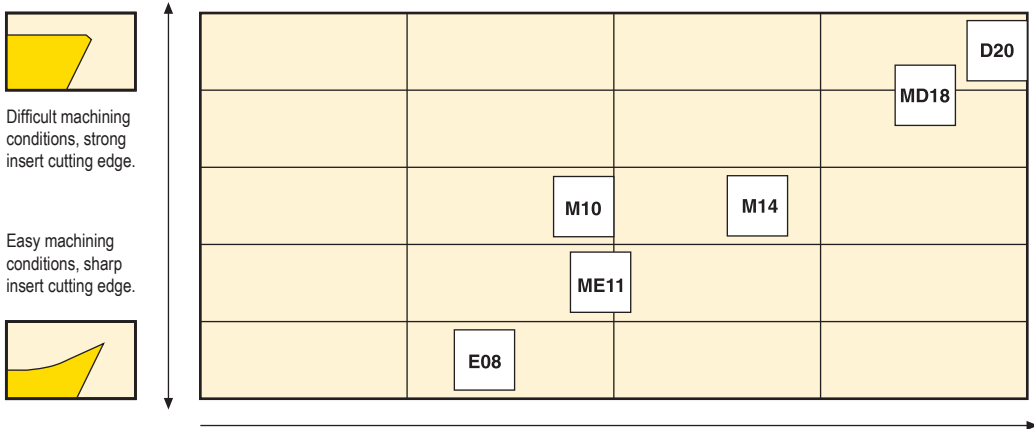


10. Internal designation

Machining conditions
 E = Easy
 M = Medium
 D = Difficult

Designation system

The Seco designation system for milling inserts has been developed to provide the user with better guidance concerning the fields of application for the various insert geometries



Examples of different insert geometries for a specific insert type

- 
..AFTN-D20 Negative and very protected cutting edge
- 
..AFTN-MD18 Negative and protected cutting edge
- 
..AFTN-M14 Positive and protected cutting edge
- 
..AFTN-ME11 Very positive and protected cutting edge
- 
..AFN-M10 Positive and sharp cutting edge
- 
..AFN-E08 Very positive and very sharp cutting edge

Cemented carbide is an alloy of tungsten carbide (WC) and cobalt (Co). Cubic carbides like tantalum carbide (TaC), titanium carbide (TiC) and niobium carbide (NbC) can also be added. Tungsten carbide is the main component and gives the hardness. Cobalt is the binder phase and gives the toughness. Cubic carbides are added in order to affect properties like hot hardness, deformation resistance and chemical wear resistance.

Most modern grades are coated with either CVD (Chemical Vapour Deposition) or PVD (Physical Vapour Deposition) technique. The coating improves the wear resistance of the grade.



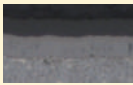

CVD-coated grades are suitable for wear resistance in demanding applications with high feed rates and intermediate to high cutting speed.

PVD-coated grades are recommended for applications with low feed rate where high edge toughness is required. PVD-coated grades are suitable for applications with low to intermediate cutting speed.

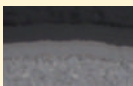
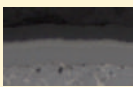

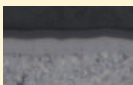
| | | P | | | | | M | | | | K | | | | N | | | S | | | H | | | | | | | | | |
|----------|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | | P01 | P10 | P20 | P30 | P40 | P50 | M01 | M10 | M20 | M30 | M40 | K01 | K10 | K20 | K30 | K40 | N01 | N10 | N20 | N30 | S01 | S10 | S20 | S30 | H01 | H10 | H20 | H30 | |
| CVD | MK1500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MP1500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MP2500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MM4500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MS2500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | T350M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PVD | T25M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MK2050 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MH1000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MP2050 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MP3000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MS2050 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | F15M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | F25M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | F30M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | F32M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F40M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cermets | T60M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CBN | MP1020 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | HX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | H15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CBN PVD | H25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CBN150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CBN200 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CBN300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PCD | CBN500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CBN160C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CBN300P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CBN400C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | PCD05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ceramics | PCD20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | PCD30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | PCD30M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CS100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CS300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CW100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

HX, H15 and H25 = uncoated
 CBN300P = PVD coating
 CS100/CS300/CW100 = ceramic


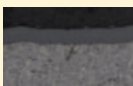
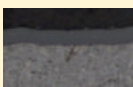
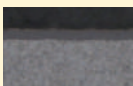

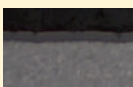
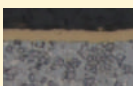
Basic grades

| | | |
|---|---------------|---|
|  | F40M | PVD-coated grade for fine to medium rough milling. First choice for milling with small feeds and/or low cutting speeds. Excellent for milling when there is a risk of vibrations and when coolant is used. Recommended for machining superalloys. (Ti, Al) N – TiN |
|  | MP2500 | CVD-coated grade based on Duratomic™ coating. Basic grade for milling steel and easy/medium difficult stainless steel, with or without coolant. Ti (C, N) – Al ₂ O ₃ |
|  | MK1500 | CVD-coated grade based on Duratomic™ coating. Basic grade for milling cast iron and nodular cast iron, with or without coolant. Ti (C, N) – Al ₂ O ₃ |
|  | MK2050 | PVD-coated grade for cast iron, Improved edge integrity. First choice in all cast iron materials. Excellent for milling with and without coolant. (Ti,Si)N/(Ti,Al)N |

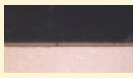

Complementary CVD coated grades

| | | |
|--|---------------|--|
|  | MP1500 | Grade for medium rough milling under stable conditions at high cutting speeds and for milling hardened steel. Excellent grade for roughing grey and nodular cast iron. Ti (C, N) – Al ₂ O ₃ |
|  | MS2500 | Optimization grade for superalloy materials, also suitable for rough milling in tool steel. Ti (C, N) – Al ₂ O ₃ |
|  | MM4500 | Extremely tough grade for duplex stainless steel. Can also be used for a wide range of materials when cutting conditions are unstable. |
|  | T350M | CVD-coated grade as basic choice for difficult stainless steel and an alternative in difficult operations in steel. Ti (C, N) – Al ₂ O ₃ |




Complementary PVD coated grades

| | | |
|---|---------------|--|
|  | MH1000 | Extremely hard grade for milling hard steel but also favourable in finishing operations in cast iron. (Ti,Al)N |
|  | MS2050 | PVD-coated grade first choice for machining titanium alloys. Can also be used as a complementary grade for milling stainless steels when increased toughness is needed. (Ti,Al) N – NbN |
|  | MP3000 | Highly wear resistant optimized grade for milling in steel. |
|  | F15M | Hard and wear resistant grade for milling in aluminium and non-ferrous alloys. Excellent grade, in combination with protected cutting edges, for high speed machining in hardened steel. (Ti, Al) N – TiN |
|  | F25M | Tough grade for rough milling in tool steel. (Ti, Al) N – TiN |
|  | F30M | Basic grade for Minimaster inserts and thread milling inserts. Also suitable for milling stainless steel, hardened steel and superalloys. (Ti, Al) N – TiN |
|  | T60M | Tough grade for Minimaster inserts. Suitable for milling in soft and medium hard steel. (Ti, Al) N – TiN |

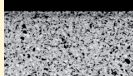
Complementary PVD coated grades

| | | |
|--|---------------|--|
|  | MP2050 | PVD-coated grade for tough machining conditions and high temperatures in martensitic and austenitic stainless steels, dry and wet machining possible. Alternative in super alloys in unstable conditions. (Ti,Si)N/(Ti,Al)N |
|  | F32M | Universal grade for R335.14 replaceable head offering an excellent combination of strength and toughness. The F32M shows an exceptionally broad application range and is applicable in all type of material with this type of tool. (Ti, Al) N – TiN |

Uncoated grades

| | | |
|--|------------|---|
|  | HX | Wear resistant grade for milling in cast iron and non-ferrous alloys. |
|  | H15 | Hard, wear resistant grade for milling in aluminium. |
|  | H25 | Tough micro-grain carbide grade for milling in superalloys and aluminium. |

Cermet

| | | |
|--|---------------|--|
|  | MP1020 | Cermet grade for fine to medium rough milling of steel at high cutting speeds and for finishing in austenitic stainless steel. First choice for high demand on surface finishes. |
|--|---------------|--|

| ISO attribute | Explanation |
|---------------|--|
| APMXE | Depth of cut maximum in feed direction end |
| APMXS | Depth of cut maximum in feed direction side |
| AZ | plunge depth maximum |
| BD | Body diameter |
| BHTA | Body half taper angle |
| BS | Wiper edge length |
| C | Keyway depth |
| CBTHN | Connection body thickness |
| CCER | Curved cutting edge radius |
| CDX | Cutting depth maximum |
| CF | Spot chamfer |
| CHW | Corner chamfer width |
| Cmax | Helical interpolation hole diameter maximum |
| Cmin | Helical interpolation hole diameter minimum |
| CPNDIA | Connection pin diameter |
| CTMS | Connection text machine side |
| CW | Cutting width |
| DC | Cutting diameter |
| DCB | Connection bore diameter |
| DCB1 | Connection bore diameter 1 |
| DCSFMS | Contact surface diameter machine side |
| DCSFWS | Contact surface diameter work piece side |
| DCX | Cutting diameter maximum |
| DMM | Shank diameter |
| FDESU | Feed direction suitability end |
| FDP | Feed direction primary |
| FDSSU | Feed direction suitability side |
| GAMF | Rake angle radial |
| GAMO | Rake angle orthogonal |
| GAMP | Rake angle axial |
| HC | Thread height actual |
| IC | Inscribed circle diameter |
| INSD | Insert diameter |
| INSL | Insert length |
| KAPRE | Tool cutting edge angle in feed direction end |
| KAPRS | Tool cutting edge angle in feed direction side |
| KCH | Corner chamfer angle |
| KWW | Keyway width |
| L | Cutting edge length |
| LB | Body length |
| LE | Cutting edge effective length |
| LF | Functional length |
| LS | Shank length |
| LUX | Usable length maximum |
| OAL | Overall length |
| PDX | Profile distance ex |
| PNA | Profile included angle |
| RE | Corner radius |
| RP | Programming radius |
| RMPX | Ramping angle maximum |
| RPMX | Rotational speed maximum |
| S | Insert thickness |
| S1 | Insert thickness alt 1 |
| UTCN | Uncut thickness |
| TDZ | Thread diameter size |
| THUB | Hub thickness |
| TTL | True tip length |
| W1 | Insert width |
| ZEFP | Peripheral effective cutting edge count |
| ZNP | Peripheral mounted insert count |
| SA | sphere angle |
| TACH | cutting half taper angle |
| DC1 | cutting diameter 1 |
| LPR | protruding length |
| FHA | flute helix angle |
| PL | Point length |
| SIG | point angle |
| BEC | back end chamfer angle |
| DN | neck diameter |
| RA | relief angle |

Square shoulder and slot milling cutters

| Cutter | Insert | Recommended a _p | | Material suitability | | | | | Corner radius (mm) | | | | | |
|---------------|------------|----------------------------|----|----------------------|---|---|---------------------|---|---|-----------|---|---|---|---|
| | | | | P | M | K | N | S | | | | | | |
| Turbo | XO..06 | 3 | | ■ | ■ | ■ | ■ | ■ | 0,2 / 0,4 / 0,8 / 1,6 | ■ | □ | ■ | ■ | ■ |
| | | 5 | | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ |
| | XO..10 | 5 | | ■ | ■ | ■ | ■ | ■ | 0,2/0,4 / 0,8 / 1,2 / 1,6 / 2,0 / 2,4 / 3,1 | ■ | ■ | ■ | ■ | ■ |
| | | 9 | | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ |
| | XO..12 | 6 | | ■ | ■ | ■ | ■ | ■ | 0,2/0,4 / 0,8 / 1,2 / 1,6 / 2,0 / 2,4 / 3,1 / 4,0 / 5,0 / 6,3 | ■ | ■ | ■ | ■ | ■ |
| 11 | | | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ |
| XO..18 | 9 | | ■ | ■ | ■ | ■ | ■ | 0,4 / 0,8 / 1,2 / 1,6 / 2,0 / 2,4 / 3,1 / 4,0 / 5,0 / 6,3 | □ | ■ | ■ | ■ | ■ | |
| | 17 | | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ |
| ABEX26 | 13 | | ■ | ■ | ■ | - | - | 1,6 | □ | ■ | ■ | □ | □ | |
| | 20 | | ■ | ■ | ■ | - | - | | 1,6 | □ | ■ | ■ | □ | □ |
| Square T4 | LO..08 | 3 | | ■ | ■ | ■ | □ | □ | 0,4 / 0,8 / 1,2 / 1,6 | ■ | ■ | ■ | - | □ |
| | | 7 | | ■ | ■ | ■ | □ | □ | | ■ | ■ | ■ | - | □ |
| | LO..12 | 6 | | ■ | ■ | ■ | ■ | ■ | 0,4 / 0,8 / 1,2 / 1,6 / 2,0 / 2,4 / 3,1 / 4,0 / 5,0 / 6,3 | ■ | ■ | ■ | - | □ |
| 10 | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | - | □ | |
| Square 6 | XN..04 | 2 | | ■ | ■ | ■ | - | □ | 0,4 / 0,8 | ■ | □ | ■ | - | ■ |
| | | 3 | | ■ | ■ | ■ | - | □ | | 0,4 / 0,8 | ■ | □ | ■ | - |
| | XN..08 | 4 | | ■ | ■ | ■ | - | □ | 0,4/0,8 / 1,2 / 1,6 | □ | ■ | □ | - | ■ |
| 7 | | ■ | ■ | ■ | - | □ | 0,4/0,8 / 1,2 / 1,6 | □ | | ■ | □ | - | ■ | |
| SONX | SONX09 | 4 | 6 | ■ | ■ | ■ | □ | - | 0,4/0,8 | ■ | ■ | □ | - | - |
| | SONX12 | 6 | 10 | ■ | ■ | ■ | □ | - | 0,8 | ■ | ■ | □ | - | - |

| | | | | | |
|--------------------|---|---|---|--------------------------------|--|
| 1st choice | ■ | High speed machine with low Power/ Torque | | Unstable condition suitability | |
| Alternative choice | ■ | Strong stable machine with rigid connection | | Ramping ability | |
| Possible choice | □ | Not recommended | - | Plunging ability | |

Square shoulder and slot milling cutters

| No. of cutting edges | Application | Cutter diameter available with effective number of teeth | | | | | | | | | | | | | | | | | | | | | | | | See page |
|----------------------|-------------|--|----|----|----|----|----|----|----|----|----|----|----|----------|----|----|----|----|-----|-----|-----|-----|-----|-----|--|----------|
| | | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 25 | 32 | 40 | 44 | 50 | 52 54 | 63 | 66 | 80 | 84 | 100 | 125 | 160 | 200 | 250 | 315 | | |
| 2 | | 2 | 2 | 3 | 3 | 4 | 4 | | | | | | | | | | | | | | | | | | | 19 |
| | | 2 | 3 | | 4 | | 5 | | 7 | 8 | 10 | | | | | | | | | | | | | | | |
| 2 | | | | | 2 | 2 | 2 | | 3 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 8 | 8 | | | | | | | | 24 |
| | | | | | | | 3 | | 4 | 5 | 6 | 6 | 7 | 7 | 8 | | 10 | | 12 | | | | | | | 25 |
| 2 | | | | | | | 2 | | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | 10 | 10 | 12 | 16 | | | 30 |
| | | | | | | | | | | 4 | 5 | | 7 | | 8 | | 10 | | 12 | 14 | | | | | | 31 |
| 2 | | | | | | | | | | 2 | 4 | | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 10 | 12 | 16 | | | 37 |
| | | | | | | | | | | 3 | 4 | | 5 | | 6 | | 8 | | 9 | 11 | 12 | | | | | 38 |
| 2 | | | | | | | | | | | | | | | 4 | | 5 | | 7 | | 8 | 10 | 12 | 14 | | 44 |
| | | | | | | | | | | | | | | | 6 | | 7 | | 8 | | | | | | | 45 |
| 4 | | | | | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | | | | | | | | | | | 48 |
| | | | | | | | 3 | | 4 | 5 | 6 | | 7 | | 9 | | | | | | | | | | | 49 |
| 4 | | | | | | | | | | 3 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | | 9 | 12 | | | | | | 48 |
| | | | | | | | | | | | 5 | 5 | 6 | 6 | 8 | | 10 | | 12 | 15 | | | | | | 49 |
| 6 | | | | | | | 2 | | 4 | 5 | 6 | | 6 | | 7 | | | | | | | | | | | 60 |
| | | | | | | | 3 | | 5 | 6 | 7 | 6 | 9 | 8 | 9 | 9 | | | | | | | | | | 61 |
| 6 | | | | | | | | | | | 3 | 3 | 4 | 5 | 6 | 6 | 7 | 7 | 8 | 11 | 12 | 8 | 10 | 12 | | 66 |
| | | | | | | | | | | | 4 | 4 | 5 | 5 | 7 | | 9 | | 11 | 14 | 16 | 10 | 12 | 20 | | 67 |
| 4 | | | | | | | | | | | 3 | 4 | 6 | 7 | | | | | | | | | | | | 66 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | 67 |
| 4 | | | | | | | | | | | | | 5 | | 6 | | 6 | | 8 | | | | | | | 66 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | 67 |

Fixed pocket (x indicates number of teeth)

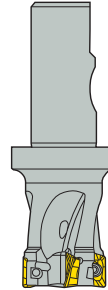
With cassette (x indicates number of teeth)

Slotting and contouring

Optimized for contouring

Milling cutters

In milling Seco uses product specific designation systems, there is no ISO system available for cutters. See example below.



Code key for square shoulder and slot milling cutter 217/220.69

217 = With shank
220 = For arbor
Cx = For Seco-Capto

| | | | | | | | | |
|---------------------|---------------|-----------------|----------------|------------|-------------|-------------------------------|----------|-----------|
| R | 217 | 69 | 25 | 32 | 3S | 12 | 4 | AN |
| Right hand rotation | Cutter system | Cutter diameter | Shank diameter | Shank type | Insert size | Effective No. of teeth (ZEFP) | | |

A = With through coolant supply
AD=Anti vibration material with through coolant supply
G = Coarse pitch version for low power machines
T = Close pitch version for contouring operations
C = With adjustable cassettes
N = Coated

Dimensions of mounting

| | Dimensions in mm | | | | | | Spindle-nose |
|--|------------------|-----|------|-----|-------|-------|--------------|
| | DCSFMS | DCB | KWW | C | DBC1 | DBC2 | |
| | 30-35 | 16 | 8,4 | 5,6 | - | - | - |
| | 42-47 | 22 | 10,4 | 6,3 | - | - | - |
| | 48-62 | 27 | 12,4 | 7 | - | - | - |
| | 60-90 | 32 | 14,4 | 8 | - | - | - |
| | 90-130 | 40 | 16,4 | 9 | 66,7 | - | (8xxx) |
| | 130-270 | 60 | 25,7 | 14 | 101,6 | 177,8 | (8xxx) |
| | | | | | | | |
| | | | | | | | |

For a more exact DCSFMS and DCB measurement, see each product table.

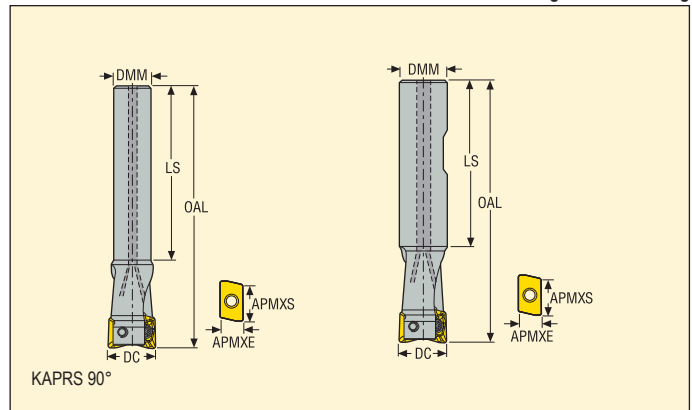
Square shoulder and slot milling cutters

Turbo 06 – R217.69-06

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 22-23
- For complete insert programme, see page(s) 682
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|-----------------------|------------------|------------------|-------|----|-----|-----|-----|-------|-------|-------|---|-----|-------|----------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | | | | |
| R217.69-0810.0-06-2N | Cylindrical | 3,0 | 5,0 | 10 | 8 | 100 | 82 | 10,0 | 14,48 | 19,25 | 2 | 0,1 | 60000 | XO.X06.. |
| R217.69-0810.0-06-2AN | Cylindrical | 3,0 | 5,0 | 10 | 8 | 100 | 82 | 10,0 | 14,48 | 19,25 | 2 | 0,1 | 60000 | XO.X06.. |
| R217.69-1010.0-06-2N | Cylindrical | 3,0 | 5,0 | 10 | 10 | 100 | 82 | 10,0 | 14,48 | 19,25 | 2 | 0,1 | 60000 | XO.X06.. |
| R217.69-1010.0-06-2AN | Cylindrical | 3,0 | 5,0 | 10 | 10 | 55 | 38 | 10,0 | 14,48 | 19,25 | 2 | 0,1 | 60000 | XO.X06.. |
| R217.69-1012.0-06-2N | Cylindrical | 3,0 | 5,0 | 12 | 10 | 120 | 102 | 6,5 | 18,48 | 23,25 | 2 | 0,1 | 54400 | XO.X06.. |
| R217.69-1012.0-06-2AN | Cylindrical | 3,0 | 5,0 | 12 | 10 | 120 | 102 | 6,5 | 18,48 | 23,25 | 2 | 0,1 | 54400 | XO.X06.. |
| R217.69-1212.0-06-2N | Cylindrical | 3,0 | 5,0 | 12 | 12 | 120 | 102 | 6,5 | 18,48 | 23,25 | 2 | 0,1 | 54400 | XO.X06.. |
| R217.69-1212.0-06-2AN | Cylindrical | 3,0 | 5,0 | 12 | 12 | 80 | 62 | 6,5 | 18,48 | 23,25 | 2 | 0,1 | 54400 | XO.X06.. |
| R217.69-1214.0-06-3AN | Cylindrical | 3,0 | 5,0 | 14 | 12 | 140 | 122 | 5,0 | 22,48 | 27,25 | 3 | 0,2 | 51200 | XO.X06.. |
| R217.69-1416.0-06-3AN | Cylindrical | 3,0 | 5,0 | 16 | 14 | 160 | 140 | 4,0 | 26,48 | 31,25 | 3 | 0,2 | 48000 | XO.X06.. |
| R217.69-1616.0-06-3AN | Cylindrical | 3,0 | 5,0 | 16 | 16 | 90 | 70 | 4,0 | 26,48 | 31,25 | 3 | 0,2 | 48000 | XO.X06.. |
| R217.69-1616.3-06-3AN | Cyl.-Weldon | 3,0 | 5,0 | 16 | 16 | 70 | 50 | 4,0 | 26,48 | 31,25 | 3 | 0,1 | 48000 | XO.X06.. |
| R217.69-1618.0-06-4AN | Cylindrical | 3,0 | 5,0 | 18 | 16 | 180 | 160 | 3,0 | 30,48 | 35,25 | 4 | 0,3 | 45600 | XO.X06.. |
| R217.69-1820.0-06-4AN | Cylindrical | 3,0 | 5,0 | 20 | 18 | 200 | 180 | 2,5 | 34,48 | 39,25 | 4 | 0,4 | 44000 | XO.X06.. |
| R217.69-2020.0-06-4AN | Cylindrical | 3,0 | 5,0 | 20 | 20 | 105 | 85 | 2,5 | 34,48 | 39,25 | 4 | 0,3 | 44000 | XO.X06.. |
| R217.69-2020.3-06-4AN | Cyl.-Weldon | 3,0 | 5,0 | 20 | 20 | 80 | 60 | 2,5 | 34,48 | 39,25 | 4 | 0,2 | 44000 | XO.X06.. |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Spare Parts

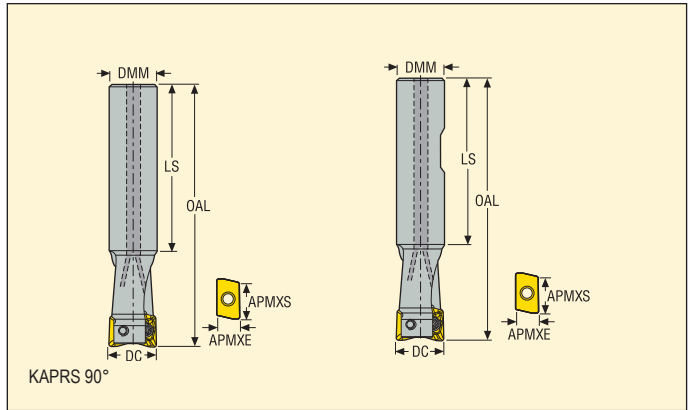
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.69-.. | DOUBLE-T | C01804-T06P | H4B-T06P | 0,5 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

Square shoulder and slot milling cutters

Turbo 06 – R217.69-06

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 22-23
- For complete insert programme, see page(s) 682
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|------------------------|------------------|------------------|-------|----|-----|-----|-----|-------|-------|-------|----|-----|-------|----------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | | | | |
| R217.69-1010.0-06-2AD | Cylindrical | 3,0 | 5,0 | 10 | 10 | 55 | 38 | 10,0 | 14,48 | 19,25 | 2 | 0,1 | 60000 | XO.X06.. |
| R217.69-1212.0-06-3AD | Cylindrical | 3,0 | 5,0 | 12 | 12 | 80 | 62 | 6,5 | 18,48 | 23,25 | 3 | 0,2 | 54400 | XO.X06.. |
| R217.69-1212.0-06-3AN | Cylindrical | 3,0 | 5,0 | 12 | 12 | 60 | 42 | 6,5 | 18,48 | 23,25 | 3 | 0,1 | 54400 | XO.X06.. |
| R217.69-1616.0-06-4AD | Cylindrical | 3,0 | 5,0 | 16 | 16 | 90 | 70 | 4,0 | 26,48 | 31,25 | 4 | 0,3 | 48000 | XO.X06.. |
| R217.69-1616.0-06-4AN | Cylindrical | 3,0 | 5,0 | 16 | 16 | 90 | 70 | 4,0 | 26,48 | 31,25 | 4 | 0,2 | 48000 | XO.X06.. |
| R217.69-1616.3-06-4AN | Cyl.-Weldon | 3,0 | 5,0 | 16 | 16 | 70 | 50 | 4,0 | 26,48 | 31,25 | 4 | 0,1 | 48000 | XO.X06.. |
| R217.69-2020.0-06-5AD | Cylindrical | 3,0 | 5,0 | 20 | 20 | 105 | 85 | 2,5 | 34,48 | 39,25 | 5 | 0,5 | 44000 | XO.X06.. |
| R217.69-2020.0-06-5AN | Cylindrical | 3,0 | 5,0 | 20 | 20 | 105 | 85 | 2,5 | 34,48 | 39,25 | 5 | 0,3 | 44000 | XO.X06.. |
| R217.69-2020.3-06-5AN | Cyl.-Weldon | 3,0 | 5,0 | 20 | 20 | 85 | 65 | 2,5 | 34,48 | 39,25 | 5 | 0,2 | 44000 | XO.X06.. |
| R217.69-2025.0-06-7AN | Cylindrical | 3,0 | 5,0 | 25 | 20 | 115 | 95 | 2,5 | 44,48 | 49,25 | 7 | 0,3 | 37600 | XO.X06.. |
| R217.69-2025.3-06-7AN | Cyl.-Weldon | 3,0 | 5,0 | 25 | 20 | 90 | 70 | 2,5 | 44,48 | 49,25 | 7 | 0,2 | 37600 | XO.X06.. |
| R217.69-2532.0-06-8AN | Cylindrical | 3,0 | 5,0 | 32 | 25 | 130 | 105 | 1,5 | 58,48 | 63,25 | 8 | 0,5 | 33600 | XO.X06.. |
| R217.69-3240.0-06-10AN | Cylindrical | 3,0 | 5,0 | 40 | 32 | 140 | 115 | 1,0 | 74,48 | 79,25 | 10 | 0,9 | 28000 | XO.X06.. |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.69-.. | DOUBLE-T | C01804-T06P | H4B-T06P | 0,5 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

Square shoulder and slot milling cutters

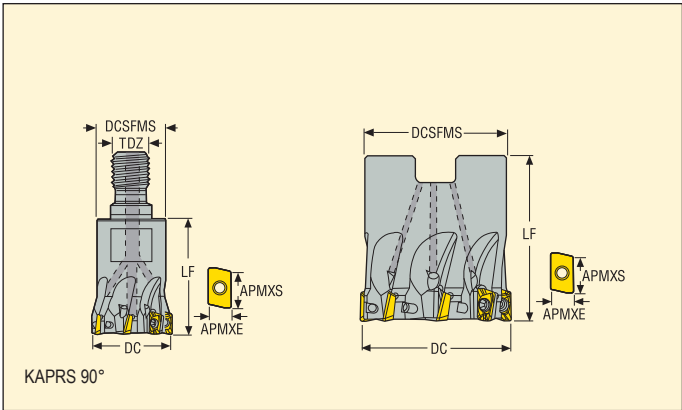


Turbo 06 – R217/220.69-06

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 22-23
- For complete insert programme, see page(s) 682
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | | | Insert |
|-------------------------|------------------|------------------|-------|------|--------|-----|-----|------|-------|-------|-------|----|-----|-------|----------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.69-0816.RE-06-4AN | Combimaster | 3,0 | 5,0 | 16,0 | 14 | - | M8 | 23,0 | 7,5 | 26,48 | 31,25 | 4 | 0,1 | 48000 | XO.X06.. |
| R217.69-1020.RE-06-5AN | Combimaster | 3,0 | 5,0 | 20,0 | 18 | - | M10 | 28,0 | 4,5 | 34,48 | 39,25 | 5 | 0,1 | 44000 | XO.X06.. |
| R217.69-1225.RE-06-7AN | Combimaster | 3,0 | 5,0 | 25,0 | 21 | - | M12 | 30,0 | 2,5 | 44,48 | 49,25 | 7 | 0,1 | 37600 | XO.X06.. |
| R217.69-1632.RE-06-8AN | Combimaster | 3,0 | 5,0 | 32,0 | 28 | - | M16 | 35,0 | 1,5 | 58,48 | 63,25 | 8 | 0,2 | 33600 | XO.X06.. |
| R220.69-0032-06-8AN | Arbor | 3,0 | 5,0 | 32,0 | 30 | 16 | - | 35,0 | 1,5 | 58,48 | 63,25 | 8 | 0,2 | 33600 | XO.X06.. |
| R217.69-1640.RE-06-10AN | Combimaster | 3,0 | 5,0 | 40,0 | 28 | - | M16 | 40,0 | 1,0 | 74,48 | 79,25 | 10 | 0,3 | 28000 | XO.X06.. |
| R220.69-0040-06-10AN | Arbor | 3,0 | 5,0 | 40,0 | 35 | 16 | - | 35,0 | 1,0 | 74,48 | 79,25 | 10 | 0,2 | 18600 | XO.X06.. |
| | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | |

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.69-.. | DOUBLE-T | C01804-T06P | H4B-T06P | - | 0,5 |
| R220.69-.. | DOUBLE-T | C01804-T06P | H4B-T06P | TCEI0825 | 0,5 |
| | | | | | |
| | | | | | |
| | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.69-06 – Insert selection

| SMG | | a_p | f_z | | |
|-----|------------------------|-------|-------|-------|-------|
| | | | 100% | 30% | 10% |
| P1 | XOMX060204R-M05 F40M | 2,5 | 0,070 | 0,080 | 0,12 |
| P2 | XOMX060204R-M05 F40M | 2,5 | 0,070 | 0,080 | 0,12 |
| P3 | XOMX060204R-M05 F40M | 2,5 | 0,070 | 0,075 | 0,11 |
| P4 | XOMX060204R-M05 F40M | 2,5 | 0,065 | 0,075 | 0,11 |
| P5 | XOMX060204R-M05 F40M | 2,5 | 0,065 | 0,070 | 0,11 |
| P6 | XOMX060204R-M05 F40M | 2,5 | 0,065 | 0,070 | 0,11 |
| P7 | XOMX060204R-M05 F40M | 2,5 | 0,065 | 0,070 | 0,11 |
| P8 | XOMX060204R-M05 F40M | 2,5 | 0,070 | 0,075 | 0,11 |
| P11 | XOMX060204R-M05 MP3000 | 2,5 | 0,065 | 0,070 | 0,11 |
| P12 | XOMX060204R-M05 MP3000 | 1,9 | 0,046 | 0,050 | 0,075 |
| M1 | XOMX060204R-M05 F40M | 2,5 | 0,070 | 0,080 | 0,12 |
| M2 | XOMX060204R-M05 F40M | 2,5 | 0,065 | 0,070 | 0,11 |
| M3 | XOMX060204R-M05 F40M | 1,9 | 0,055 | 0,060 | 0,090 |
| M4 | XOMX060204R-M05 MP3000 | 1,5 | 0,048 | 0,050 | 0,080 |
| M5 | XOMX060204R-M05 MM4500 | 1,5 | 0,048 | 0,050 | 0,080 |
| K1 | XOMX060204R-M05 MP3000 | 2,5 | 0,070 | 0,080 | 0,12 |
| K2 | XOMX060204R-M05 MP3000 | 2,5 | 0,065 | 0,070 | 0,11 |
| K3 | XOMX060204R-M05 MP3000 | 2,5 | 0,065 | 0,070 | 0,11 |
| K4 | XOMX060204R-M05 MP3000 | 2,5 | 0,065 | 0,070 | 0,11 |
| K5 | XOMX060204R-M05 MP3000 | 2,5 | 0,060 | 0,065 | 0,10 |
| K6 | XOMX060204R-M05 MP3000 | 2,5 | 0,065 | 0,070 | 0,11 |
| K7 | XOMX060204R-M05 MP3000 | 2,5 | 0,060 | 0,065 | 0,10 |
| N1 | XOEX060204FR-E03 H15 | 2,5 | 0,075 | 0,080 | 0,12 |
| N2 | XOEX060204FR-E03 H15 | 2,5 | 0,075 | 0,080 | 0,12 |
| N3 | XOEX060204FR-E03 H15 | 2,5 | 0,075 | 0,080 | 0,12 |
| N11 | XOEX060204FR-E03 H15 | 2,5 | 0,075 | 0,080 | 0,12 |
| S1 | XOMX060204R-M05 F40M | 1,5 | 0,048 | 0,050 | 0,080 |
| S2 | XOMX060204R-M05 F40M | 1,5 | 0,048 | 0,050 | 0,080 |
| S3 | XOMX060204R-M05 F40M | 1,5 | 0,044 | 0,048 | 0,075 |
| S11 | XOMX060204R-M05 MS2050 | 1,7 | 0,055 | 0,060 | 0,090 |
| S12 | XOMX060204R-M05 MS2050 | 1,7 | 0,055 | 0,060 | 0,090 |
| S13 | XOMX060208R-M05 MS2050 | 1,5 | 0,050 | 0,055 | 0,085 |
| H5 | XOMX060204R-M05 MP3000 | 1,9 | 0,046 | 0,050 | 0,075 |
| H8 | XOMX060204R-M05 MP3000 | 1,7 | 0,034 | 0,038 | 0,060 |
| H11 | XOMX060204R-M05 MP3000 | 1,9 | 0,046 | 0,050 | 0,075 |
| H12 | XOMX060204R-M05 MP3000 | 1,7 | 0,034 | 0,038 | 0,060 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

Square shoulder and slot milling cutters



R217/220.69-06 – Cutting data $v_c =$ (m/min)

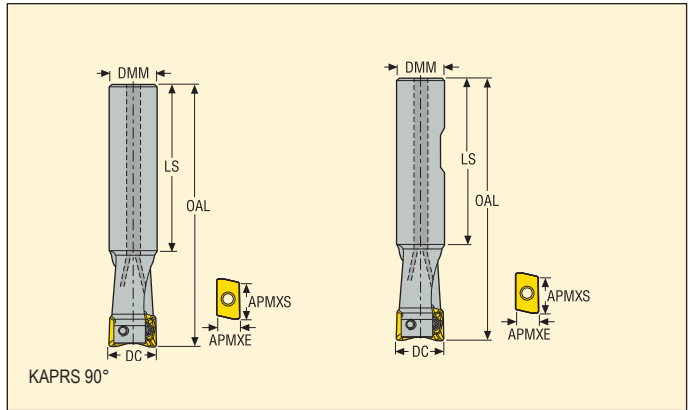
| SMG | MP3000 | | | MM4500 | | | MS2050 | | | F15M | | |
|-----|--------|------|------|--------|-----|-----|--------|-----|-----|------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 345 | 445 | 530 | 220 | 290 | 340 | — | — | — | — | — | — |
| P2 | 335 | 435 | 510 | 215 | 280 | 330 | — | — | — | — | — | — |
| P3 | 285 | 380 | 450 | 185 | 245 | 290 | — | — | — | — | — | — |
| P4 | 255 | 335 | 395 | 165 | 215 | 255 | — | — | — | — | — | — |
| P5 | 245 | 325 | 375 | 160 | 210 | 245 | — | — | — | — | — | — |
| P6 | 275 | 365 | 425 | 180 | 235 | 275 | — | — | — | — | — | — |
| P7 | 260 | 345 | 400 | 170 | 225 | 260 | — | — | — | — | — | — |
| P8 | 240 | 320 | 375 | 155 | 205 | 245 | — | — | — | — | — | — |
| P11 | 255 | 335 | 390 | 165 | 215 | 250 | — | — | — | — | — | — |
| P12 | 160 | 210 | 245 | 105 | 135 | 160 | 140 | 185 | 215 | 160 | 210 | 240 |
| M1 | 250 | 325 | 385 | 185 | 240 | 285 | 235 | 310 | 365 | 260 | 345 | 405 |
| M2 | 205 | 270 | 315 | 150 | 200 | 235 | 195 | 255 | 300 | 215 | 285 | 330 |
| M3 | 165 | 215 | 250 | 120 | 160 | 185 | 155 | 205 | 235 | 175 | 230 | 265 |
| M4 | 125 | 170 | 195 | 95 | 125 | 145 | 120 | 160 | 185 | 135 | 175 | 200 |
| M5 | 105 | 140 | 160 | 80 | 105 | 120 | 100 | 135 | 155 | 115 | 145 | 170 |
| K1 | 265 | 345 | 405 | — | — | — | — | — | — | — | — | — |
| K2 | 235 | 310 | 360 | — | — | — | — | — | — | — | — | — |
| K3 | 195 | 260 | 305 | — | — | — | — | — | — | — | — | — |
| K4 | 190 | 250 | 290 | — | — | — | — | — | — | — | — | — |
| K5 | 115 | 150 | 175 | — | — | — | — | — | — | — | — | — |
| K6 | 165 | 220 | 255 | — | — | — | — | — | — | — | — | — |
| K7 | 145 | 190 | 225 | — | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | 800 | 1050 | 1225 | — | — | — | — | — | — | — | — | — |
| N3 | 530 | 700 | 820 | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | 60 | 80 | 90 | 29 | 38 | 44 | 55 | 75 | 85 | — | — | — |
| S2 | 48 | 65 | 75 | 23 | 31 | 35 | 45 | 60 | 70 | — | — | — |
| S3 | 42 | 55 | 65 | 20 | 27 | 31 | 40 | 50 | 60 | — | — | — |
| S11 | 85 | 110 | 125 | 40 | 55 | 60 | 80 | 105 | 120 | — | — | — |
| S12 | 55 | 75 | 85 | 37 | 49 | 55 | 55 | 70 | 85 | — | — | — |
| S13 | 33 | 44 | 50 | 22 | 29 | 33 | 32 | 42 | 48 | — | — | — |
| H5 | 50 | 65 | 75 | — | — | — | — | — | — | — | — | — |
| H8 | 55 | 70 | 80 | — | — | — | — | — | — | — | — | — |
| H11 | 65 | 85 | 100 | — | — | — | — | — | — | — | — | — |
| H12 | 100 | 135 | 155 | — | — | — | — | — | — | — | — | — |
| H21 | 55 | 70 | 80 | — | — | — | — | — | — | — | — | — |

| SMG | F40M | | | H15 | | | MP1020 | | |
|-----|------|------|------|------|------|------|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 275 | 360 | 420 | — | — | — | 440 | 460 | 465 |
| P2 | 265 | 350 | 410 | — | — | — | 425 | 450 | 450 |
| P3 | 230 | 305 | 360 | — | — | — | 365 | 380 | 375 |
| P4 | 205 | 270 | 315 | — | — | — | 320 | 335 | 330 |
| P5 | 195 | 260 | 300 | — | — | — | 305 | 310 | 315 |
| P6 | 220 | 290 | 340 | — | — | — | 340 | 345 | 350 |
| P7 | 210 | 275 | 320 | — | — | — | 320 | 325 | 330 |
| P8 | 195 | 255 | 300 | — | — | — | 310 | 320 | 315 |
| P11 | 200 | 265 | 310 | — | — | — | 315 | 320 | 325 |
| P12 | 130 | 170 | 195 | — | — | — | 155 | 145 | 140 |
| M1 | 215 | 280 | 330 | — | — | — | — | — | — |
| M2 | 175 | 235 | 270 | — | — | — | — | — | — |
| M3 | 140 | 185 | 215 | — | — | — | — | — | — |
| M4 | 110 | 145 | 165 | — | — | — | — | — | — |
| M5 | 90 | 120 | 140 | — | — | — | — | — | — |
| K1 | 210 | 275 | 325 | — | — | — | — | — | — |
| K2 | 185 | 245 | 285 | — | — | — | — | — | — |
| K3 | 160 | 210 | 240 | — | — | — | — | — | — |
| K4 | 150 | 200 | 230 | — | — | — | — | — | — |
| K5 | 90 | 120 | 140 | — | — | — | — | — | — |
| K6 | 135 | 175 | 205 | — | — | — | — | — | — |
| K7 | 115 | 155 | 180 | — | — | — | — | — | — |
| N1 | 1575 | 2075 | 2450 | 1650 | 2200 | 2575 | — | — | — |
| N2 | 640 | 840 | 990 | 670 | 880 | 1050 | — | — | — |
| N3 | 425 | 560 | 660 | 445 | 590 | 690 | — | — | — |
| N11 | 485 | 640 | 750 | 510 | 670 | 790 | — | — | — |
| S1 | 50 | 70 | 80 | — | — | — | — | — | — |
| S2 | 41 | 55 | 65 | — | — | — | — | — | — |
| S3 | 36 | 48 | 55 | — | — | — | — | — | — |
| S11 | 70 | 95 | 110 | — | — | — | — | — | — |
| S12 | 50 | 65 | 75 | — | — | — | — | — | — |
| S13 | 29 | 38 | 44 | — | — | — | — | — | — |
| H5 | 43 | 55 | 65 | — | — | — | — | — | — |
| H8 | 45 | 60 | 70 | — | — | — | — | — | — |
| H11 | 55 | 70 | 85 | — | — | — | — | — | — |
| H12 | 80 | 105 | 125 | — | — | — | — | — | — |
| H21 | 45 | 60 | 70 | — | — | — | — | — | — |

Square shoulder and slot milling cutters

Turbo 10 – R217.69-10

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 28-29
- For complete insert programme, see page(s) 683
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|----------------------|------------------|------------------|-------|----|-----|-----|-----|-------|-------|-------|---|-----|-------|------------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | | | | |
| R217.69-1416.0-10-2A | Cylindrical | 6,0 | 9,0 | 16 | 14 | 160 | 134 | 7,5 | 20,96 | 30,5 | 2 | 0,2 | 29400 | XO.X10T3.. |
| R217.69-1616.0-10-2A | Cylindrical | 6,0 | 9,0 | 16 | 16 | 135 | 105 | 7,5 | 20,96 | 30,5 | 2 | 0,2 | 29400 | XO.X10T3.. |
| R217.69-1616.3-10-2A | Cyl.-Weldon | 6,0 | 9,0 | 16 | 16 | 78 | 54 | 7,5 | 20,96 | 30,5 | 2 | 0,1 | 29400 | XO.X10T3.. |
| R217.69-1618.0-10-2A | Cylindrical | 6,0 | 9,0 | 18 | 16 | 160 | 134 | 6,0 | 24,96 | 34,5 | 2 | 0,3 | 27800 | XO.X10T3.. |
| R217.69-2018.3-10-2A | Cyl.-Weldon | 6,0 | 9,0 | 18 | 20 | 85 | 56 | 6,0 | 24,96 | 34,5 | 2 | 0,2 | 27800 | XO.X10T3.. |
| R217.69-1820.0-10-2A | Cylindrical | 6,0 | 9,0 | 20 | 18 | 200 | 170 | 4,5 | 28,96 | 38,5 | 2 | 0,4 | 26300 | XO.X10T3.. |
| R217.69-2020.0-10-2A | Cylindrical | 6,0 | 9,0 | 20 | 20 | 150 | 115 | 4,5 | 28,96 | 38,5 | 2 | 0,4 | 26300 | XO.X10T3.. |
| R217.69-2020.3-10-2A | Cyl.-Weldon | 6,0 | 9,0 | 20 | 20 | 90 | 61 | 4,5 | 28,96 | 38,5 | 2 | 0,2 | 26300 | XO.X10T3.. |
| R217.69-2225.0-10-3A | Cylindrical | 6,0 | 9,0 | 25 | 22 | 200 | 170 | 3,0 | 38,96 | 48,5 | 3 | 0,6 | 23500 | XO.X10T3.. |
| R217.69-2525.0-10-3A | Cylindrical | 6,0 | 9,0 | 25 | 25 | 170 | 130 | 3,0 | 38,96 | 48,5 | 3 | 0,6 | 23500 | XO.X10T3.. |
| R217.69-2525.3-10-3A | Cyl.-Weldon | 6,0 | 9,0 | 25 | 25 | 101 | 67 | 3,0 | 38,96 | 48,5 | 3 | 0,4 | 23500 | XO.X10T3.. |
| R217.69-3232.0-10-3A | Cylindrical | 6,0 | 9,0 | 32 | 32 | 195 | 155 | 2,0 | 52,96 | 62,5 | 3 | 1,1 | 20800 | XO.X10T3.. |
| R217.69-3232.3-10-3A | Cyl.-Weldon | 6,0 | 9,0 | 32 | 32 | 110 | 75 | 2,0 | 52,96 | 62,5 | 3 | 0,6 | 20800 | XO.X10T3.. |

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.69-.. | DOUBLE-T | C02506-T07P | H4B-T07P | 0,9 |
| | | | | |
| | | | | |

Please check availability in current price and stock-list

Torque keys, see page 732

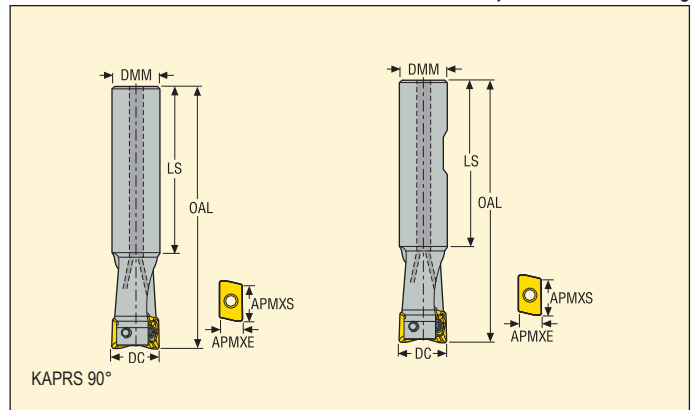
Square shoulder and slot milling cutters

Turbo 10 – R217.69-10

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 28-29
- For complete insert programme, see page(s) 683
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|----------------------|------------------|------------------|-------|----|-----|-----|-----|-------|-------|-------|---|-----|-------|------------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | | | | |
| R217.69-2020.0-10-3A | Cylindrical | 6,0 | 9,0 | 20 | 20 | 150 | 115 | 4,5 | 28,96 | 38,5 | 3 | 0,3 | 26300 | XO.X10T3.. |
| R217.69-2020.3-10-3A | Cyl.-Weldon | 6,0 | 9,0 | 20 | 20 | 90 | 61 | 4,5 | 28,96 | 38,5 | 3 | 0,2 | 26300 | XO.X10T3.. |
| R217.69-2525.0-10-4A | Cylindrical | 6,0 | 9,0 | 25 | 25 | 170 | 130 | 3,0 | 38,96 | 48,5 | 4 | 0,6 | 23500 | XO.X10T3.. |
| R217.69-2525.3-10-4A | Cyl.-Weldon | 6,0 | 9,0 | 25 | 25 | 101 | 67 | 3,0 | 38,96 | 48,5 | 4 | 0,3 | 23500 | XO.X10T3.. |
| R217.69-3232.0-10-5A | Cylindrical | 6,0 | 9,0 | 32 | 32 | 195 | 155 | 2,0 | 52,96 | 62,5 | 5 | 1,1 | 20800 | XO.X10T3.. |
| R217.69-3232.3-10-5A | Cyl.-Weldon | 6,0 | 9,0 | 32 | 32 | 110 | 75 | 2,0 | 52,96 | 62,5 | 5 | 0,6 | 20800 | XO.X10T3.. |
| | | | | | | | | | | | | | | |
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Spare Parts

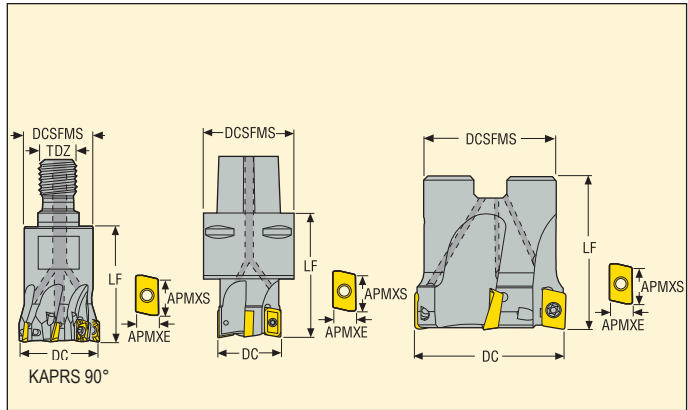
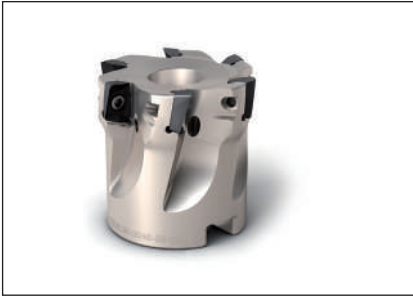
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.69-.. | DOUBLE-T | C02506-T07P | H4B-T07P | 0,9 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

Square shoulder and slot milling cutters

Turbo 10 – R217/220.69-10

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 28-29
- For complete insert programme, see page(s) 683
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | | | Insert |
|-----------------------|------------------|------------------|-------|------|--------|-----|-----|------|-------|--------|-------|---|-----|-------|------------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.69-0816.RE-10-2A | Combimaster | 6,0 | 9,0 | 16,0 | 14 | – | M8 | 23,0 | 7,5 | 20,96 | 30,5 | 2 | 0,1 | 29400 | XO.X10T3.. |
| R217.69-1020.RE-10-2A | Combimaster | 6,0 | 9,0 | 20,0 | 19 | – | M10 | 28,0 | 4,5 | 28,96 | 38,5 | 2 | 0,1 | 26300 | XO.X10T3.. |
| R217.69-1225.RE-10-3A | Combimaster | 6,0 | 9,0 | 25,0 | 23 | – | M12 | 30,0 | 3,0 | 38,96 | 48,5 | 3 | 0,1 | 23500 | XO.X10T3.. |
| R217.69-1632.RE-10-3A | Combimaster | 6,0 | 9,0 | 32,0 | 30 | – | M16 | 40,0 | 2,0 | 52,96 | 62,5 | 3 | 0,2 | 20800 | XO.X10T3.. |
| R220.69-0032-10-4A | Arbor | 6,0 | 9,0 | 32,0 | 30 | 16 | – | 35,0 | 2,0 | 52,96 | 62,5 | 4 | 0,2 | 20800 | XO.X10T3.. |
| R217.69-2040.RE-10-4A | Combimaster | 6,0 | 9,0 | 40,0 | 37 | – | M20 | 40,0 | 1,5 | 68,96 | 78,5 | 4 | 0,4 | 18600 | XO.X10T3.. |
| R220.69-0040-10-4A | Arbor | 6,0 | 9,0 | 40,0 | 35 | 16 | – | 40,0 | 1,5 | 68,96 | 78,5 | 4 | 0,2 | 18600 | XO.X10T3.. |
| C4-R217.69-044-10-4A | Seco-Capto | 6,0 | 9,0 | 44,0 | 40 | – | – | 60,0 | 1,3 | 76,96 | 86,5 | 4 | 0,6 | 28000 | XO.X10T3.. |
| R220.69-0044-10-4A | Arbor | 6,0 | 9,0 | 44,0 | 35 | 16 | – | 40,0 | 1,3 | 76,96 | 86,5 | 4 | 0,3 | 18600 | XO.X10T3.. |
| R220.69-0050-10-5A | Arbor | 6,0 | 9,0 | 50,0 | 47 | 22 | – | 40,0 | 1,2 | 88,96 | 98,5 | 5 | 0,4 | 16600 | XO.X10T3.. |
| R220.69-0052-10-5A | Arbor | 6,0 | 9,0 | 52,0 | 47 | 22 | – | 40,0 | 1,2 | 92,96 | 102,5 | 5 | 0,4 | 16400 | XO.X10T3.. |
| C5-R217.69-054-10-5A | Seco-Capto | 6,0 | 9,0 | 54,0 | 50 | – | – | 60,0 | 1,2 | 96,96 | 106,5 | 5 | 0,9 | 14200 | XO.X10T3.. |
| R220.69-0063-10-5A | Arbor | 6,0 | 9,0 | 63,0 | 52 | 27 | – | 40,0 | 0,9 | 114,96 | 124,5 | 5 | 0,6 | 14800 | XO.X10T3.. |
| R220.69-0066-10-5A | Arbor | 6,0 | 9,0 | 66,0 | 52 | 27 | – | 40,0 | 0,9 | 122,0 | 130,0 | 5 | 0,7 | 14800 | XO.X10T3.. |
| R220.69-0080-10-8A | Arbor | 6,0 | 9,0 | 80,0 | 62 | 27 | – | 50,0 | 0,5 | 148,96 | 158,5 | 8 | 1,1 | 13200 | XO.X10T3.. |
| R220.69-0084-10-8A | Arbor | 6,0 | 9,0 | 84,0 | 62 | 27 | – | 50,0 | 0,5 | 146,5 | 165,0 | 8 | 1,2 | 12900 | XO.X10T3.. |

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.69-.. | DOUBLE-T | C02506-T07P | H4B-T07P | – | 0,9 |
| R220.69-0032 | DOUBLE-T | C02506-T07P | H4B-T07P | 220.17-688 | 0,9 |
| R220.69-0040-0044 | DOUBLE-T | C02506-T07P | H4B-T07P | MC6S8X30 | 0,9 |
| Cx-R217.69-.. | DOUBLE-T | C02506-T07P | H4B-T07P | – | 0,9 |
| R220.69-0050-0052 | DOUBLE-T | C02506-T07P | H4B-T07P | 220.17-692 | 0,9 |
| R220.69-0063-0066 | DOUBLE-T | C02506-T07P | H4B-T07P | 220.17-693 | 0,9 |
| R220.69-0080-0084 | DOUBLE-T | C02506-T07P | H4B-T07P | – | 0,9 |

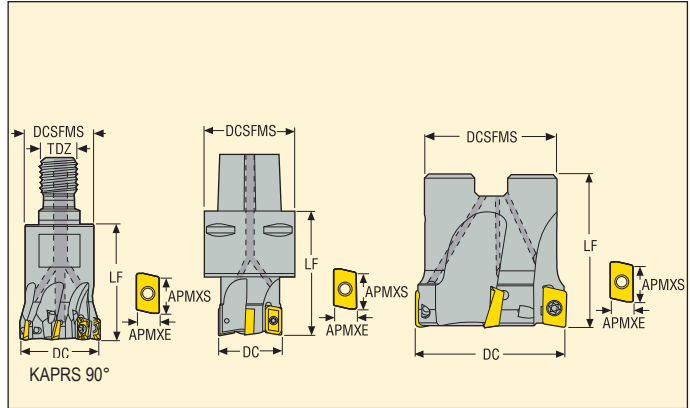
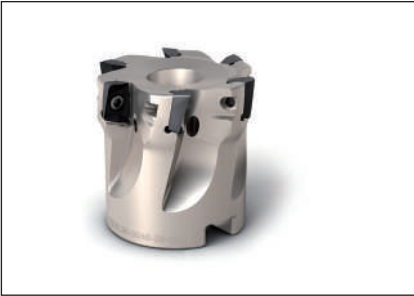
Please check availability in current price and stock-list

Torque keys, see page 732

Square shoulder and slot milling cutters

Turbo 10 – R217/220.69-10

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 28-29
- For complete insert programme, see page(s) 683
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | | | Insert |
|-----------------------|------------------|------------------|-------|-------|--------|-----|-----|------|-------|--------|-------|----|-----|-------|------------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.69-1020.RE-10-3A | Combimaster | 6,0 | 9,0 | 20,0 | 19 | – | M10 | 28,0 | 4,5 | 28,96 | 38,5 | 3 | 0,1 | 26300 | XO.X10T3.. |
| R217.69-1225.RE-10-4A | Combimaster | 6,0 | 9,0 | 25,0 | 23 | – | M12 | 30,0 | 3,0 | 38,96 | 48,5 | 4 | 0,1 | 23500 | XO.X10T3.. |
| R217.69-1632.RE-10-5A | Combimaster | 6,0 | 9,0 | 32,0 | 30 | – | M16 | 40,0 | 2,0 | 52,96 | 62,5 | 5 | 0,2 | 20800 | XO.X10T3.. |
| R220.69-0032-10-5A | Arbor | 6,0 | 9,0 | 32,0 | 30 | 16 | – | 35,0 | 2,0 | 52,96 | 62,5 | 5 | 0,2 | 20800 | XO.X10T3.. |
| R217.69-2040.RE-10-6A | Combimaster | 6,0 | 9,0 | 40,0 | 37 | – | M20 | 40,0 | 1,5 | 68,96 | 78,5 | 6 | 0,4 | 18600 | XO.X10T3.. |
| R220.69-0040-10-6A | Arbor | 6,0 | 9,0 | 40,0 | 35 | 16 | – | 40,0 | 1,5 | 68,96 | 78,5 | 6 | 0,2 | 18600 | XO.X10T3.. |
| R220.69-0050-10-7A | Arbor | 6,0 | 9,0 | 50,0 | 47 | 22 | – | 40,0 | 1,2 | 88,96 | 98,5 | 7 | 0,4 | 16600 | XO.X10T3.. |
| R220.69-0063-10-8A | Arbor | 6,0 | 9,0 | 63,0 | 52 | 27 | – | 40,0 | 0,9 | 114,96 | 124,5 | 8 | 0,6 | 14800 | XO.X10T3.. |
| R220.69-0080-10-10A | Arbor | 6,0 | 9,0 | 80,0 | 62 | 27 | – | 50,0 | 0,5 | 148,96 | 158,5 | 10 | 1,1 | 13200 | XO.X10T3.. |
| R220.69-0100-10-12A | Arbor | 6,0 | 9,0 | 100,0 | 77 | 32 | – | 50,0 | 0,5 | 188,96 | 198,5 | 12 | 1,8 | 11800 | XO.X10T3.. |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | |

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.69-... | DOUBLE-T | C02506-T07P | H4B-T07P | – | 0,9 |
| R220.69-0032 | DOUBLE-T | C02506-T07P | H4B-T07P | 220.17-688 | 0,9 |
| R220.69-0040 | DOUBLE-T | C02506-T07P | H4B-T07P | MC6S8X30 | 0,9 |
| R220.69-0050 | DOUBLE-T | C02506-T07P | H4B-T07P | 220.17-692 | 0,9 |
| R220.69-0063-0066 | DOUBLE-T | C02506-T07P | H4B-T07P | 220.17-693 | 0,9 |
| R220.69-0080-0100 | DOUBLE-T | C02506-T07P | H4B-T07P | – | 0,9 |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.69-10 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|-------|-------|
| | | | 100% | 30% | 10% |
| P1 | XOMX10T308TR-ME07 F40M | 4,5 | 0,11 | 0,12 | 0,19 |
| P2 | XOMX10T308TR-ME07 F40M | 4,5 | 0,12 | 0,13 | 0,19 |
| P3 | XOMX10T308TR-ME07 MP2500 | 4,5 | 0,11 | 0,12 | 0,18 |
| P4 | XOMX10T308TR-ME07 MP2500 | 4,5 | 0,11 | 0,12 | 0,18 |
| P5 | XOMX10T308TR-M09 MP2500 | 4,5 | 0,12 | 0,13 | 0,20 |
| P6 | XOMX10T308TR-M09 MP2500 | 4,5 | 0,12 | 0,13 | 0,20 |
| P7 | XOMX10T308TR-M09 MP2500 | 4,5 | 0,12 | 0,13 | 0,20 |
| P8 | XOMX10T308TR-M09 MP2500 | 4,5 | 0,12 | 0,13 | 0,20 |
| P11 | XOMX10T308TR-M09 T350M | 4,5 | 0,12 | 0,13 | 0,20 |
| P12 | XOEX10T308R-M06 MS2500 | 3,5 | 0,055 | 0,060 | 0,090 |
| M1 | XOEX10T308R-M06 F40M | 4,5 | 0,085 | 0,095 | 0,15 |
| M2 | XOEX10T308R-M06 F40M | 4,5 | 0,080 | 0,085 | 0,13 |
| M3 | XOEX10T308R-M06 F40M | 3,5 | 0,065 | 0,070 | 0,11 |
| M4 | XOEX10T308R-M06 T350M | 2,5 | 0,055 | 0,065 | 0,095 |
| M5 | XOEX10T308R-M06 T350M | 2,5 | 0,055 | 0,065 | 0,095 |
| K1 | XOMX10T308TR-M09 MK2050 | 4,5 | 0,13 | 0,14 | 0,22 |
| K2 | XOMX10T308TR-M09 MK2050 | 4,5 | 0,12 | 0,13 | 0,20 |
| K3 | XOMX10T308TR-M09 MK2050 | 4,5 | 0,12 | 0,13 | 0,20 |
| K4 | XOMX10T308TR-M09 MK2050 | 4,5 | 0,12 | 0,13 | 0,20 |
| K5 | XOMX10T308TR-M09 MK2050 | 4,5 | 0,11 | 0,12 | 0,18 |
| K6 | XOMX10T308TR-M09 MK2050 | 4,5 | 0,12 | 0,13 | 0,20 |
| K7 | XOMX10T308TR-M09 MK2050 | 4,5 | 0,11 | 0,12 | 0,18 |
| N1 | XOEX10T308FR-E05 H15 | 4,5 | 0,090 | 0,10 | 0,15 |
| N2 | XOEX10T308FR-E05 H15 | 4,5 | 0,090 | 0,10 | 0,15 |
| N3 | XOEX10T308FR-E05 H15 | 4,5 | 0,090 | 0,10 | 0,15 |
| N11 | XOEX10T308FR-E05 H15 | 4,5 | 0,090 | 0,10 | 0,15 |
| S1 | XOEX10T308R-M06 T350M | 2,5 | 0,055 | 0,065 | 0,095 |
| S2 | XOEX10T308R-M06 T350M | 2,5 | 0,055 | 0,065 | 0,095 |
| S3 | XOEX10T308R-M06 T350M | 2,5 | 0,055 | 0,060 | 0,090 |
| S11 | XOEX10T308R-M06 MS2050 | 3,0 | 0,065 | 0,070 | 0,11 |
| S12 | XOEX10T308R-M06 MS2050 | 3,0 | 0,065 | 0,070 | 0,11 |
| S13 | XOEX10T308R-M06 MS2050 | 2,5 | 0,055 | 0,065 | 0,095 |
| H5 | XOMX10T304TR-M09 MP1500 | 3,5 | 0,080 | 0,085 | 0,13 |
| H8 | XOMX10T308TR-M09 MP3000 | 3,0 | 0,065 | 0,070 | 0,11 |
| H11 | XOMX10T304TR-M09 MP1500 | 3,5 | 0,080 | 0,085 | 0,13 |
| H12 | XOMX10T304TR-M09 MP1500 | 3,0 | 0,060 | 0,065 | 0,10 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

Square shoulder and slot milling cutters



R217/220.69-10 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2050 | | | MP2500 | | | MP3000 | | | MM4500 | | | MK1500 | | | MK2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 370 | 490 | 570 | 330 | 435 | 510 | 330 | 435 | 510 | 310 | 410 | 480 | 200 | 265 | 310 | — | — | — | 295 | 390 | 460 |
| P2 | 355 | 470 | 560 | 325 | 425 | 500 | 315 | 415 | 495 | 295 | 390 | 470 | 190 | 255 | 305 | — | — | — | 290 | 380 | 445 |
| P3 | 310 | 410 | 485 | 280 | 375 | 435 | 275 | 365 | 430 | 260 | 345 | 410 | 170 | 225 | 265 | — | — | — | 255 | 335 | 395 |
| P4 | 275 | 360 | 430 | 250 | 330 | 385 | 245 | 320 | 380 | 230 | 305 | 360 | 150 | 195 | 235 | — | — | — | 225 | 295 | 345 |
| P5 | 260 | 355 | 410 | 240 | 315 | 370 | 230 | 315 | 360 | 220 | 295 | 345 | 140 | 190 | 220 | — | — | — | 215 | 280 | 330 |
| P6 | 300 | 395 | 465 | 270 | 355 | 415 | 265 | 350 | 410 | 255 | 335 | 390 | 165 | 215 | 255 | — | — | — | 240 | 315 | 370 |
| P7 | 285 | 375 | 440 | 265 | 335 | 395 | 250 | 330 | 390 | 240 | 315 | 370 | 155 | 205 | 240 | — | — | — | 225 | 300 | 350 |
| P8 | 260 | 345 | 410 | 235 | 315 | 365 | 230 | 305 | 360 | 220 | 290 | 345 | 140 | 190 | 220 | — | — | — | 215 | 280 | 330 |
| P11 | 275 | 365 | 425 | 245 | 325 | 385 | 245 | 320 | 380 | 230 | 305 | 360 | 150 | 200 | 230 | — | — | — | 220 | 290 | 340 |
| P12 | 175 | 235 | 275 | 160 | 210 | 245 | 155 | 205 | 240 | 150 | 195 | 230 | 95 | 125 | 150 | — | — | — | 145 | 190 | 225 |
| M1 | — | — | — | 230 | 305 | 355 | 225 | 300 | 355 | 220 | 295 | 350 | 165 | 220 | 260 | — | — | — | — | — | — |
| M2 | — | — | — | 190 | 250 | 295 | 185 | 250 | 290 | 185 | 245 | 285 | 135 | 185 | 215 | — | — | — | — | — | — |
| M3 | — | — | — | 155 | 205 | 240 | 155 | 200 | 235 | 150 | 200 | 230 | 110 | 145 | 170 | — | — | — | — | — | — |
| M4 | — | — | — | 120 | 160 | 180 | 120 | 160 | 185 | 120 | 155 | 180 | 90 | 115 | 135 | — | — | — | — | — | — |
| M5 | — | — | — | 100 | 135 | 150 | 100 | 135 | 155 | 100 | 130 | 150 | 75 | 95 | 110 | — | — | — | — | — | — |
| K1 | 280 | 370 | 440 | 255 | 335 | 395 | 250 | 330 | 390 | — | — | — | — | — | — | 350 | 465 | 550 | 310 | 410 | 480 |
| K2 | 250 | 335 | 390 | 230 | 300 | 355 | 220 | 295 | 345 | — | — | — | — | — | — | 310 | 420 | 485 | 275 | 365 | 430 |
| K3 | 210 | 285 | 330 | 195 | 255 | 300 | 185 | 250 | 290 | — | — | — | — | — | — | 265 | 355 | 410 | 235 | 310 | 360 |
| K4 | 200 | 270 | 315 | 185 | 240 | 285 | 180 | 240 | 280 | — | — | — | — | — | — | 250 | 340 | 395 | 220 | 295 | 345 |
| K5 | 125 | 165 | 190 | 110 | 145 | 170 | 110 | 145 | 170 | — | — | — | — | — | — | 155 | 205 | 240 | 135 | 180 | 210 |
| K6 | 175 | 240 | 275 | 160 | 210 | 250 | 155 | 210 | 245 | — | — | — | — | — | — | 220 | 300 | 345 | 195 | 260 | 305 |
| K7 | 160 | 210 | 245 | 140 | 190 | 220 | 140 | 185 | 220 | — | — | — | — | — | — | 200 | 265 | 310 | 175 | 230 | 270 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | 60 | 80 | 90 | — | — | — | 55 | 75 | 85 | 27 | 36 | 41 | — | — | — | — | — | — |
| S2 | — | — | — | 48 | 65 | 70 | — | — | — | 44 | 60 | 70 | 22 | 29 | 33 | — | — | — | — | — | — |
| S3 | — | — | — | 42 | 55 | 65 | — | — | — | 39 | 50 | 60 | 19 | 25 | 29 | — | — | — | — | — | — |
| S11 | — | — | — | 80 | 110 | 125 | — | — | — | 75 | 100 | 115 | 37 | 49 | 55 | — | — | — | — | — | — |
| S12 | — | — | — | 55 | 75 | 85 | — | — | — | 55 | 70 | 80 | 35 | 45 | 55 | — | — | — | — | — | — |
| S13 | — | — | — | 33 | 44 | 50 | — | — | — | 31 | 41 | 47 | 20 | 27 | 31 | — | — | — | — | — | — |
| H5 | 60 | 80 | 90 | 48 | 65 | 75 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | |
| H8 | 65 | 85 | 95 | 50 | 65 | 75 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | 75 | 100 | 115 | 60 | 80 | 95 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | 115 | 150 | 175 | 100 | 130 | 155 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | 65 | 85 | 95 | 50 | 65 | 75 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| SMG | MS2050 | | | MS2500 | | | T350M | | | F40M | | | H15 | | | MP1020 | | |
|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|------|------|------|------|------|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | 365 | 480 | 570 | 285 | 380 | 440 | 250 | 330 | 385 | — | — | — | 430 | 460 | 475 |
| P2 | — | — | — | 355 | 465 | 550 | 275 | 360 | 430 | 235 | 315 | 375 | — | — | — | 415 | 450 | 460 |
| P3 | — | — | — | 310 | 405 | 475 | 240 | 315 | 375 | 210 | 275 | 325 | — | — | — | 360 | 385 | 395 |
| P4 | — | — | — | 275 | 360 | 425 | 210 | 280 | 330 | 185 | 245 | 285 | — | — | — | 315 | 340 | 340 |
| P5 | — | — | — | 260 | 345 | 405 | 200 | 275 | 315 | 175 | 235 | 275 | — | — | — | 300 | 320 | 325 |
| P6 | — | — | — | 295 | 390 | 455 | 235 | 305 | 360 | 200 | 265 | 310 | — | — | — | 340 | 360 | 365 |
| P7 | — | — | — | 275 | 365 | 430 | 220 | 290 | 340 | 190 | 250 | 295 | — | — | — | 320 | 340 | 345 |
| P8 | — | — | — | 260 | 340 | 400 | 200 | 265 | 315 | 175 | 230 | 275 | — | — | — | 300 | 325 | 335 |
| P11 | — | — | — | 270 | 355 | 420 | 215 | 280 | 330 | 185 | 245 | 285 | — | — | — | 310 | 330 | 335 |
| P12 | 135 | 175 | 205 | 175 | 230 | 265 | 135 | 180 | 210 | 120 | 155 | 185 | — | — | — | 165 | 165 | 160 |
| M1 | 220 | 285 | 340 | 255 | 335 | 395 | 210 | 280 | 330 | 190 | 255 | 300 | — | — | — | — | — | — |
| M2 | 180 | 240 | 280 | 210 | 275 | 325 | 175 | 235 | 270 | 160 | 215 | 245 | — | — | — | — | — | — |
| M3 | 145 | 190 | 220 | 170 | 225 | 255 | 145 | 190 | 220 | 130 | 170 | 200 | — | — | — | — | — | — |
| M4 | 115 | 150 | 170 | 135 | 175 | 200 | 110 | 150 | 170 | 100 | 135 | 155 | — | — | — | — | — | — |
| M5 | 95 | 125 | 145 | 110 | 145 | 165 | 95 | 125 | 140 | 85 | 115 | 130 | — | — | — | — | — | — |
| K1 | — | — | — | — | — | — | — | — | — | 190 | 250 | 295 | — | — | — | — | — | — |
| K2 | — | — | — | — | — | — | — | — | — | 165 | 225 | 260 | — | — | — | — | — | — |
| K3 | — | — | — | — | — | — | — | — | — | 140 | 190 | 220 | — | — | — | — | — | — |
| K4 | — | — | — | — | — | — | — | — | — | 135 | 180 | 210 | — | — | — | — | — | — |
| K5 | — | — | — | — | — | — | — | — | — | 85 | 110 | 130 | — | — | — | — | — | — |
| K6 | — | — | — | — | — | — | — | — | — | 120 | 160 | 185 | — | — | — | — | — | — |
| K7 | — | — | — | — | — | — | — | — | — | 105 | 140 | 165 | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | 1400 | 1850 | 2200 | 1525 | 1975 | 2350 | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | 560 | 750 | 890 | 610 | 800 | 950 | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | 375 | 500 | 590 | 410 | 530 | 630 | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | 430 | 570 | 680 | 465 | 610 | 720 | — | — | — |
| S1 | 55 | 70 | 80 | 65 | 85 | 100 | 50 | 70 | 80 | 48 | 65 | 70 | — | — | — | — | — | — |
| S2 | 43 | 55 | 65 | 50 | 70 | 80 | 42 | 55 | 65 | 38 | 50 | 60 | — | — | — | — | — | — |
| S3 | 37 | 49 | 55 | 45 | 60 | 70 | 37 | 49 | 55 | 34 | 44 | 50 | — | — | — | — | — | — |
| S11 | 75 | 95 | 110 | 90 | 120 | 135 | 75 | 95 | 110 | 65 | 85 | 100 | — | — | — | — | — | — |
| S12 | 50 | 65 | 75 | 60 | 80 | 95 | 50 | 65 | 75 | 46 | 60 | 70 | — | — | — | — | — | — |
| S13 | 30 | 39 | 45 | 37 | 48 | 55 | 29 | 39 | 45 | 27 | 35 | 41 | — | — | — | — | — | — |
| H5 | — | — | — | — | — | — | — | 45 | 60 | 70 | 39 | 50 | 60 | — | — | — | — | — |
| H8 | — | — | — | — | — | — | — | 49 | 65 | 75 | 42 | 55 | 65 | — | — | — | — | — |
| H11 | — | — | — | — | — | — | — | 60 | 75 | 90 | 50 | 65 | 75 | — | — | — | — | — |
| H12 | — | — | — | — | — | — | — | 90 | 115 | 135 | 75 | 100 | 115 | — | — | — | — | — |

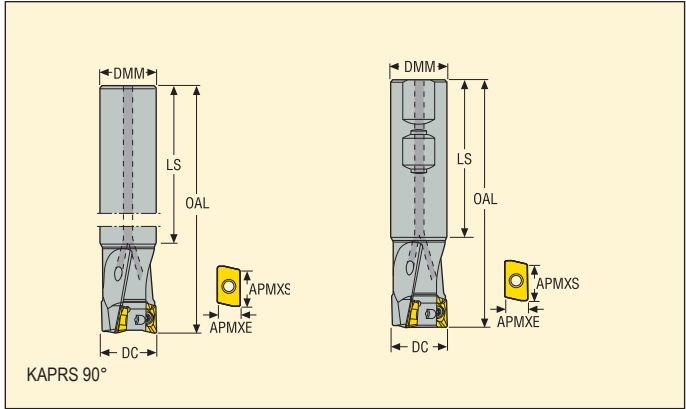
Square shoulder and slot milling cutters

Turbo 12 – R217.69-12

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 35-36
- For complete insert programme, see page(s) 684
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|------------------------|------------------|------------------|-------|----|-----|-----|-----|-------|-------|-------|---|-----|-------|----------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | | | | |
| R217.69-1820.0-12-2AN | Cylindrical | 7,0 | 11,0 | 20 | 18 | 150 | 120 | 8,0 | 27,12 | 38,25 | 2 | 0,3 | 23200 | XO.X12.. |
| R217.69-2020.0-12-2AN | Cylindrical | 7,0 | 11,0 | 20 | 20 | 150 | 120 | 8,0 | 27,12 | 38,25 | 2 | 0,4 | 23200 | XO.X12.. |
| R217.69-2020.3-12-2AN | Cyl.-Weldon | 7,0 | 11,0 | 20 | 20 | 85 | 55 | 8,0 | 27,12 | 38,25 | 2 | 0,2 | 23200 | XO.X12.. |
| R217.69-2025.3S-12-3AN | Seco-Weldon | 7,0 | 11,0 | 25 | 20 | 100 | 50 | 5,0 | 37,12 | 48,25 | 3 | 0,3 | 20800 | XO.X12.. |
| R217.69-2225.0-12-2AN | Cylindrical | 7,0 | 11,0 | 25 | 22 | 170 | 135 | 5,0 | 37,12 | 48,25 | 2 | 0,5 | 20800 | XO.X12.. |
| R217.69-2525.0-12-2AN | Cylindrical | 7,0 | 11,0 | 25 | 25 | 170 | 135 | 5,0 | 37,12 | 48,25 | 2 | 0,6 | 20800 | XO.X12.. |
| R217.69-2525.3-12-3AN | Cyl.-Weldon | 7,0 | 11,0 | 25 | 25 | 95 | 60 | 5,0 | 37,12 | 48,25 | 3 | 0,3 | 20800 | XO.X12.. |
| R217.69-3032.0-12-3AN | Cylindrical | 7,0 | 11,0 | 32 | 30 | 195 | 155 | 3,0 | 51,12 | 62,25 | 3 | 1,0 | 18400 | XO.X12.. |
| R217.69-3232.0-12-3AN | Cylindrical | 7,0 | 11,0 | 32 | 32 | 195 | 155 | 3,0 | 51,12 | 62,25 | 3 | 1,1 | 18400 | XO.X12.. |
| R217.69-3232.3-12-3AN | Cyl.-Weldon | 7,0 | 11,0 | 32 | 32 | 105 | 65 | 3,0 | 51,12 | 62,25 | 3 | 0,6 | 18400 | XO.X12.. |

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.69-.. | DOUBLE-T | C03507-T10P | H4B-T10P | 3,0 |
| R217.69-.. | DOUBLE-T | C03508-T10P | H4B-T10P | 3,0 |

Please check availability in current price and stock-list
Torque keys, see page 732

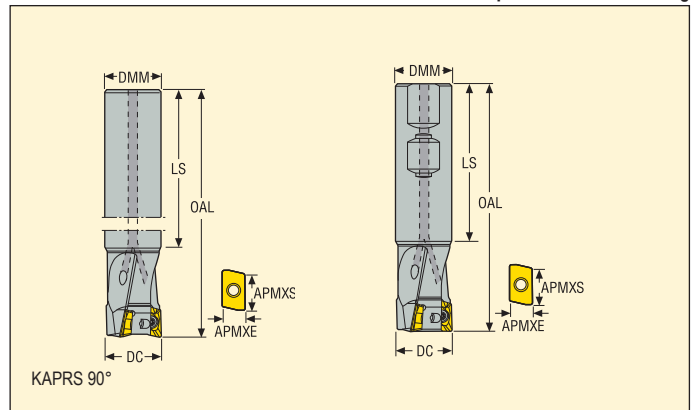
Square shoulder and slot milling cutters

Turbo 12 – R217.69-12

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 35-36
- For complete insert programme, see page(s) 684
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|------------------------|------------------|------------------|-------|----|-----|-----|-----|-------|-------|-------|---|-----|-------|----------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | | | | |
| R217.69-2525.0-12-3AN | Cylindrical | 7,0 | 11,0 | 25 | 25 | 170 | 135 | 5,0 | 37,12 | 48,25 | 3 | 0,6 | 20800 | XO.X12.. |
| R217.69-3232.0-12-4AN | Cylindrical | 7,0 | 11,0 | 32 | 32 | 195 | 155 | 3,0 | 51,12 | 62,25 | 4 | 1,1 | 18400 | XO.X12.. |
| R217.69-2532.3S-12-4AN | Seco-Weldon | 7,0 | 11,0 | 32 | 25 | 110 | 56 | 3,0 | 51,12 | 62,25 | 4 | 0,5 | 18400 | XO.X12.. |
| R217.69-3232.3-12-4AN | Cyl.-Weldon | 7,0 | 11,0 | 32 | 32 | 105 | 65 | 3,0 | 51,12 | 62,25 | 4 | 0,6 | 18400 | XO.X12.. |
| R217.69-3240.3S-12-5AN | Seco-Weldon | 7,0 | 11,0 | 40 | 32 | 120 | 60 | 2,5 | 67,12 | 78,25 | 5 | 0,8 | 16400 | XO.X12.. |
| | | | | | | | | | | | | | | |
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Spare Parts

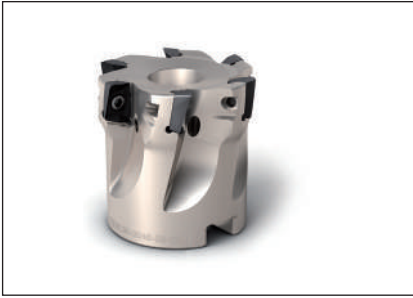
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| Ø25 | DOUBLE-T | C03507-T10P | H4B-T10P | 3,0 |
| Ø32 | DOUBLE-T | C03508-T10P | H4B-T10P | 3,0 |
| Ø40 | DOUBLE-T | C03509-T10P | H4B-T10P | 3,0 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

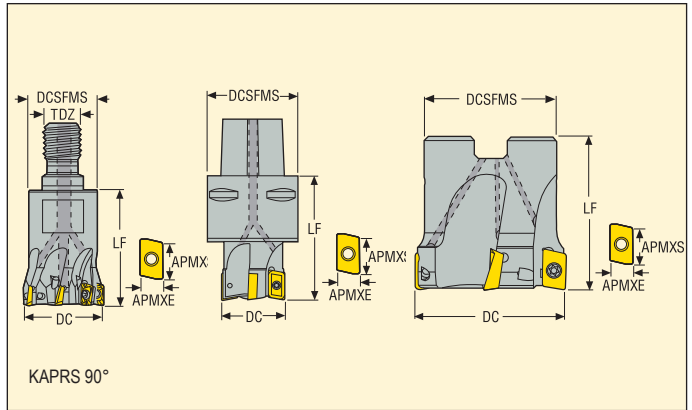
Square shoulder and slot milling cutters

Turbo 12 – R217/220.69-12

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 35-36
- For complete insert programme, see page(s) 684
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | | | Insert |
|------------------------|------------------|------------------|-------|-------|--------|-----|-----|------|-------|--------|--------|----|-----|-------|----------|
| | | APMX | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.69-1020.RE-12-2AN | Combimaster | 7,0 | 11,0 | 20,0 | 18 | – | M10 | 28,0 | 8,0 | 27,12 | 38,25 | 2 | 0,1 | 23200 | XO.X12.. |
| R217.69-1225.RE-12-3AN | Combimaster | 7,0 | 11,0 | 25,0 | 23 | – | M12 | 30,0 | 5,0 | 37,12 | 48,25 | 3 | 0,1 | 20800 | XO.X12.. |
| R217.69-1632.RE-12-3AN | Combimaster | 7,0 | 11,0 | 32,0 | 30 | – | M16 | 40,0 | 3,0 | 51,12 | 62,25 | 3 | 0,2 | 18400 | XO.X12.. |
| R220.69-0032-12-3AN | Arbor | 7,0 | 11,0 | 32,0 | 30 | 16 | – | 35,0 | 3,0 | 51,12 | 62,25 | 3 | 0,3 | 18400 | XO.X12.. |
| R217.69-1640.RE-12-4AN | Combimaster | 7,0 | 11,0 | 40,0 | 30 | – | M16 | 40,0 | 2,5 | 67,12 | 78,25 | 4 | 0,3 | 16400 | XO.X12.. |
| R217.69-2040.RE-12-4AN | Combimaster | 7,0 | 11,0 | 40,0 | 37 | – | M20 | 40,0 | 2,5 | 67,12 | 78,25 | 4 | 0,4 | 16400 | XO.X12.. |
| R220.69-0040-12-4AN | Arbor | 7,0 | 11,0 | 40,0 | 35 | 16 | – | 40,0 | 2,5 | 67,12 | 78,25 | 4 | 0,4 | 16400 | XO.X12.. |
| C5-R217.69-040-12-4AN | Seco-Capto | 7,0 | 11,0 | 40,0 | 50 | – | – | 80,0 | 2,5 | 67,12 | 78,25 | 4 | 0,9 | 16400 | XO.X12.. |
| R220.69-0044-12-4AN | Arbor | 7,0 | 11,0 | 44,0 | 36 | 16 | – | 40,0 | 2,2 | 75,12 | 86,25 | 4 | 0,1 | 15600 | XO.X12.. |
| R220.69-0050-12-5AN | Arbor | 7,0 | 11,0 | 50,0 | 47 | 22 | – | 40,0 | 2,0 | 87,12 | 98,25 | 5 | 0,4 | 14800 | XO.X12.. |
| R220.69-0052-12-5AN | Arbor | 7,0 | 11,0 | 52,0 | 47 | 22 | – | 40,0 | 1,7 | 92,96 | 102,5 | 5 | 0,6 | 14200 | XO.X12.. |
| C5-R217.69-054-12-5AN | Seco-Capto | 7,0 | 11,0 | 54,0 | 50 | – | – | 60,0 | 1,7 | 95,12 | 106,25 | 5 | 1,0 | 14200 | XO.X12.. |
| R220.69-0063-12-6AN | Arbor | 7,0 | 11,0 | 63,0 | 52 | 27 | – | 40,0 | 1,5 | 113,12 | 124,25 | 6 | 0,5 | 13200 | XO.X12.. |
| R220.69-0066-12-6AN | Arbor | 7,0 | 11,0 | 66,0 | 52 | 27 | – | 40,0 | 1,5 | 119,12 | 130,25 | 6 | 0,9 | 13200 | XO.X12.. |
| R220.69-0080-12-7AN | Arbor | 7,0 | 11,0 | 80,0 | 62 | 27 | – | 50,0 | 1,0 | 147,12 | 158,25 | 7 | 1,1 | 11600 | XO.X12.. |
| R220.69-0084-12-7AN | Arbor | 7,0 | 11,0 | 84,0 | 62 | 27 | – | 50,0 | 1,0 | 146,5 | 165,0 | 7 | 1,4 | 11300 | XO.X12.. |
| R220.69-0100-12-8AN | Arbor | 7,0 | 11,0 | 100,0 | 77 | 32 | – | 50,0 | 0,5 | 187,12 | 198,25 | 8 | 1,7 | 10400 | XO.X12.. |
| R220.69-0125-12-10AN | Arbor | 7,0 | 11,0 | 125,0 | 90 | 40 | – | 63,0 | 0,5 | 237,12 | 248,25 | 10 | 3,2 | 9200 | XO.X12.. |
| | | | | | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.69-.. Ø20-25 | DOUBLE-T | C03507-T10P | H4B-T10P | – | 3,0 |
| R217.69-.. Ø 32 | DOUBLE-T | C03508-T10P | H4B-T10P | – | 3,0 |
| R220.69-0032 | DOUBLE-T | C03508-T10P | H4B-T10P | 220.17-688 | 3,0 |
| R217.69- Ø40 | DOUBLE-T | C03509-T10P | H4B-T10P | – | 3,0 |
| R220.69-0040-0044 | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S8X30 | 3,0 |
| C5-R217.69-.. | DOUBLE-T | C03509-T10P | H4B-T10P | – | 3,0 |
| R220.69-0050-0052 | DOUBLE-T | C03509-T10P | H4B-T10P | 220.17-692 | 3,0 |
| R220.69-0063-0066 | DOUBLE-T | C03509-T10P | H4B-T10P | 220.17-693 | 3,0 |
| R220.69-0066-0066 | DOUBLE-T | C03509-T10P | H4B-T10P | 220.17-693 | 3,0 |
| R220.69-0080-0084 | DOUBLE-T | C03509-T10P | H4B-T10P | – | 3,0 |
| R220.69-0100-0125 | DOUBLE-T | C03509-T10P | H4B-T10PL | – | 3,0 |

Please check availability in current price and stock-list

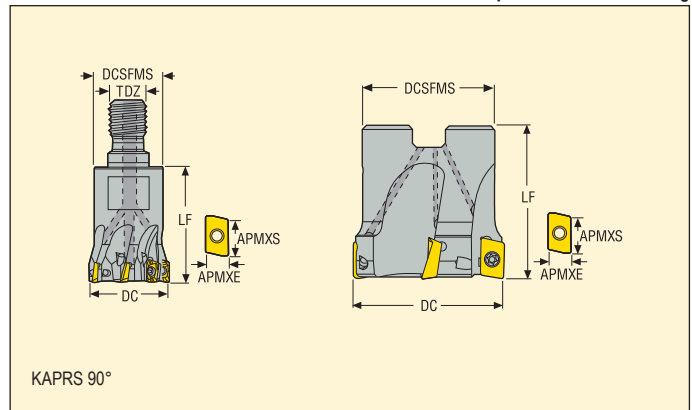
Torque keys, see page 732

Turbo 12 – R217/220.69-12

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 35-36
- For complete insert programme, see page(s) 684
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | | | Insert |
|------------------------|------------------|------------------|-------|-------|--------|-----|-----|------|-------|--------|--------|----|-----|-------|----------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.69-1632.RE-12-4AN | Combimaster | 7,0 | 11,0 | 32,0 | 30 | – | M16 | 40,0 | 3,0 | 51,12 | 62,25 | 4 | 0,2 | 18400 | XO.X12.. |
| R220.69-0032-12-4AN | Arbor | 7,0 | 11,0 | 32,0 | 30 | 16 | – | 35,0 | 3,0 | 51,12 | 62,25 | 4 | 0,3 | 18400 | XO.X12.. |
| R217.69-1640.RE-12-5AN | Combimaster | 7,0 | 11,0 | 40,0 | 30 | – | M16 | 40,0 | 2,5 | 67,12 | 78,25 | 5 | 0,3 | 16400 | XO.X12.. |
| R217.69-2040.RE-12-5AN | Combimaster | 7,0 | 11,0 | 40,0 | 37 | – | M20 | 40,0 | 2,5 | 67,12 | 78,25 | 5 | 0,4 | 16400 | XO.X12.. |
| R220.69-0040-12-5AN | Arbor | 7,0 | 11,0 | 40,0 | 35 | 16 | – | 40,0 | 2,5 | 67,12 | 78,25 | 5 | 0,2 | 16400 | XO.X12.. |
| R220.69-0050-12-7AN | Arbor | 7,0 | 11,0 | 50,0 | 47 | 22 | – | 40,0 | 2,0 | 87,12 | 98,25 | 7 | 0,4 | 14800 | XO.X12.. |
| R220.69-0063-12-8AN | Arbor | 7,0 | 11,0 | 63,0 | 52 | 27 | – | 40,0 | 1,5 | 113,12 | 124,25 | 8 | 0,6 | 13200 | XO.X12.. |
| R220.69-0080-12-10AN | Arbor | 7,0 | 11,0 | 80,0 | 62 | 27 | – | 50,0 | 1,0 | 147,12 | 158,25 | 10 | 1,0 | 11600 | XO.X12.. |
| R220.69-0100-12-12AN | Arbor | 7,0 | 11,0 | 100,0 | 77 | 32 | – | 50,0 | 0,5 | 187,12 | 198,25 | 12 | 1,7 | 10400 | XO.X12.. |
| R220.69-0125-12-14AN | Arbor | 7,0 | 11,0 | 125,0 | 90 | 40 | – | 63,0 | 0,5 | 237,12 | 248,25 | 14 | 3,2 | 9200 | XO.X12.. |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

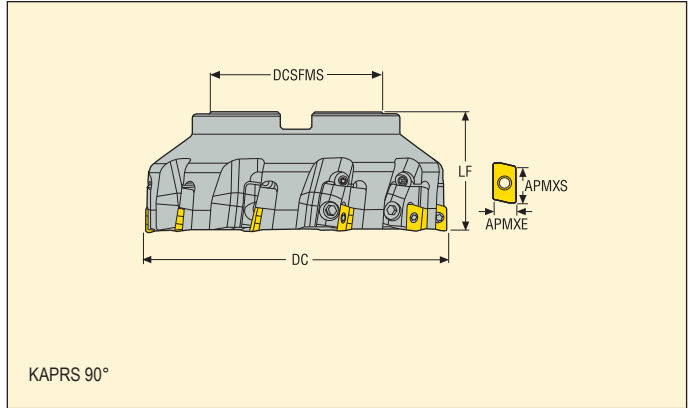
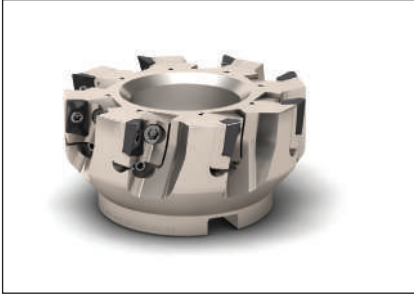
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.69- Ø32 | DOUBLE-T | C03508-T10P | H4B-T10P | – | 3,0 |
| R220.69-0032 | DOUBLE-T | C03507-T10P | H4B-T10P | 220.17-688 | 3,0 |
| R217.69- Ø40 | DOUBLE-T | C03509-T10P | H4B-T10P | – | 3,0 |
| R220.69-0040 | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S8X30 | 3,0 |
| R220.69-0050 | DOUBLE-T | C03509-T10P | H4B-T10P | 220.17-692 | 3,0 |
| R220.69-0063 | DOUBLE-T | C03509-T10P | H4B-T10P | 220.17-693 | 3,0 |
| R220.69-0080 | DOUBLE-T | C03509-T10P | H4B-T10P | – | 3,0 |
| R220.69-0100-0125 | DOUBLE-T | C03509-T10P | H4B-T10PL | – | 3,0 |

Please check availability in current price and stock-list
Torque keys, see page 732

Square shoulder and slot milling cutters

Turbo 12 – R220.69-12C

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 35-36
- For complete insert programme, see page(s) 684
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|----------------------|------------------|------------------|-------|-------|--------|-----|------|-------|--------|--------|----|------|------|----------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | LF | | | | | | | |
| R220.69-0125-12-8CN | Arbor | 7,0 | 11,0 | 125,0 | 90 | 40 | 63,0 | 0,5 | 237,12 | 248,25 | 8 | 3,1 | 9200 | XO.X12.. |
| R220.69-8160-12-10CN | Arbor | 7,0 | 11,0 | 160,0 | 90 | 40 | 63,0 | 0,3 | 307,12 | 318,25 | 10 | 5,3 | 8200 | XO.X12.. |
| R220.69-8200-12-12CN | Arbor | 7,0 | 11,0 | 200,0 | 130 | 60 | 63,0 | - | 387,12 | 398,25 | 12 | 7,4 | 7300 | XO.X12.. |
| R220.69-8250-12-16CN | Arbor | 7,0 | 11,0 | 250,0 | 130 | 60 | 63,0 | - | 487,12 | 498,25 | 16 | 14,8 | 6500 | XO.X12.. |
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Spare Parts

| For cutter | Setting gauge | Key (T-handle) | Insert screw | Insert key | Cassette screw | Cassette | Torque value (Nm) |
|-------------------|---------------|----------------|--------------|------------|----------------|----------|-------------------|
| R220.69-0125-8250 | AU1114T-T15P | DOUBLE-T | C03509-T10P | H4B-T10PL | FS96018 | XO12PRN | 3,0 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.69-12 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|-------|------|
| | | | 100% | 30% | 10% |
| P1 | XOMX120408TR-ME08 F40M | 5,0 | 0,14 | 0,16 | 0,24 |
| P2 | XOMX120408TR-ME08 F40M | 5,0 | 0,14 | 0,16 | 0,24 |
| P3 | XOMX120408TR-ME08 MP2500 | 5,0 | 0,14 | 0,15 | 0,22 |
| P4 | XOMX120408TR-ME08 MP2500 | 5,0 | 0,13 | 0,15 | 0,22 |
| P5 | XOMX120408TR-M12 MP2500 | 5,0 | 0,16 | 0,17 | 0,26 |
| P6 | XOMX120408TR-M12 MP2500 | 5,0 | 0,16 | 0,17 | 0,26 |
| P7 | XOMX120408TR-M12 MP2500 | 5,0 | 0,16 | 0,17 | 0,26 |
| P8 | XOMX120408TR-M12 MP2500 | 5,0 | 0,16 | 0,18 | 0,28 |
| P11 | XOMX120408TR-M12 T350M | 5,0 | 0,16 | 0,17 | 0,26 |
| P12 | XOEX120408R-M07 MS2500 | 4,5 | 0,070 | 0,080 | 0,12 |
| M1 | XOEX120408R-M07 F40M | 5,0 | 0,12 | 0,13 | 0,19 |
| M2 | XOEX120408R-M07 F40M | 5,0 | 0,11 | 0,11 | 0,18 |
| M3 | XOEX120408R-M07 F40M | 4,5 | 0,085 | 0,090 | 0,14 |
| M4 | XOEX120408R-M07 T350M | 3,0 | 0,075 | 0,080 | 0,13 |
| M5 | XOEX120408R-M07 T350M | 3,0 | 0,075 | 0,080 | 0,13 |
| K1 | XOMX120408TR-M12 MK2050 | 5,0 | 0,17 | 0,19 | 0,30 |
| K2 | XOMX120408TR-M12 MK2050 | 5,0 | 0,16 | 0,17 | 0,26 |
| K3 | XOMX120408TR-M12 MK2050 | 5,0 | 0,16 | 0,17 | 0,26 |
| K4 | XOMX120408TR-M12 MK2050 | 5,0 | 0,16 | 0,17 | 0,26 |
| K5 | XOMX120408TR-MD13 MK2050 | 5,0 | 0,15 | 0,17 | 0,26 |
| K6 | XOMX120408TR-MD13 MK2050 | 5,0 | 0,17 | 0,19 | 0,28 |
| K7 | XOMX120408TR-MD13 MK2050 | 5,0 | 0,15 | 0,17 | 0,26 |
| N1 | XOEX120408FR-E06 H15 | 5,0 | 0,13 | 0,14 | 0,22 |
| N2 | XOEX120408FR-E06 H15 | 5,0 | 0,13 | 0,14 | 0,22 |
| N3 | XOEX120408FR-E06 H15 | 5,0 | 0,13 | 0,14 | 0,22 |
| N11 | XOEX120408FR-E06 H15 | 5,0 | 0,13 | 0,14 | 0,22 |
| S1 | XOEX120408R-M07 T350M | 3,0 | 0,075 | 0,080 | 0,13 |
| S2 | XOEX120408R-M07 T350M | 3,0 | 0,075 | 0,080 | 0,13 |
| S3 | XOEX120408R-M07 T350M | 3,0 | 0,070 | 0,075 | 0,12 |
| S11 | XOEX120408R-M07 MS2050 | 3,5 | 0,085 | 0,095 | 0,14 |
| S12 | XOEX120408R-M07 MS2050 | 3,5 | 0,085 | 0,095 | 0,14 |
| S13 | XOEX120408R-M07 MS2050 | 3,0 | 0,075 | 0,080 | 0,13 |
| H5 | XOMX120408TR-MD13 MP1500 | 4,5 | 0,12 | 0,13 | 0,20 |
| H8 | XOMX120408TR-MD13 MP3000 | 3,5 | 0,090 | 0,10 | 0,15 |
| H11 | XOMX120408TR-MD13 MP1500 | 4,5 | 0,12 | 0,13 | 0,20 |
| H12 | XOMX120408TR-MD13 MP1500 | 3,5 | 0,090 | 0,10 | 0,15 |
| H21 | XOMX120408TR-D14 MP1500 | 3,5 | 0,095 | 0,11 | 0,16 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

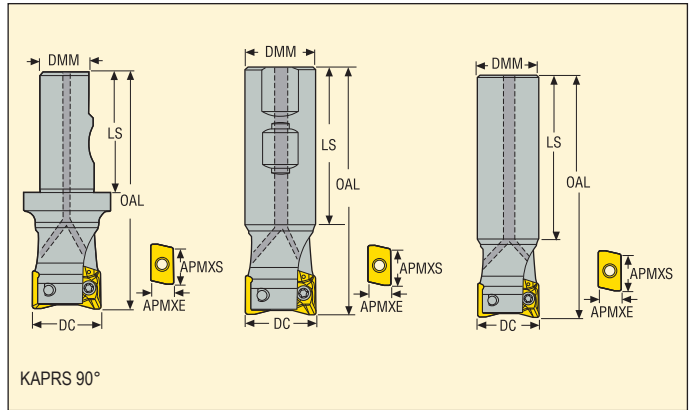
Square shoulder and slot milling cutters

Turbo 18 – R217.69-18

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 42-43
- For complete insert programme, see page(s) 685
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|------------------------|------------------|------------------|-------|----|-----|-----|-----|-------|-------|-------|---|-----|-------|----------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | | | | |
| R217.69-2532.3S-18-2AN | Seco-Weldon | 10,0 | 17,0 | 32 | 25 | 110 | 56 | 7,0 | 45,6 | 61,5 | 2 | 0,5 | 11100 | XO.X18.. |
| R217.69-3032.0-18-2AN | Cylindrical | 10,0 | 17,0 | 32 | 30 | 210 | 170 | 7,0 | 45,6 | 61,5 | 2 | 1,1 | 11100 | XO.X18.. |
| R217.69-3232.0-18-2AN | Cylindrical | 10,0 | 17,0 | 32 | 32 | 210 | 170 | 7,0 | 45,6 | 61,5 | 2 | 1,2 | 11100 | XO.X18.. |
| R217.69-3232.3-18-2AN | Cyl.-Weldon | 10,0 | 17,0 | 32 | 32 | 110 | 70 | 7,0 | 45,6 | 61,5 | 2 | 0,6 | 11100 | XO.X18.. |
| R217.69-3240.0-18-3AN | Cylindrical | 10,0 | 17,0 | 40 | 32 | 210 | 165 | 4,5 | 61,6 | 77,5 | 3 | 1,2 | 9900 | XO.X18.. |
| R217.69-3240.3S-18-3AN | Seco-Weldon | 10,0 | 17,0 | 40 | 32 | 120 | 60 | 4,5 | 61,6 | 77,5 | 3 | 0,8 | 9900 | XO.X18.. |
| | | | | | | | | | | | | | | |
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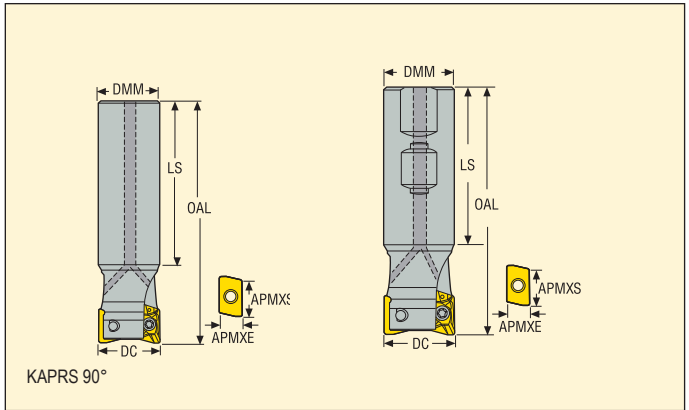
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.69-.. | DOUBLE-T | C04510-T20P | H6B-T20P | 5,0 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

Turbo 18 – R217.69-18

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 42-43
- For complete insert programme, see page(s) 685
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|-----------------------|------------------|------------------|-------|----|-----|-----|-----|-------|-------|-------|---|-----|-------|----------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | | | | |
| R217.69-3232.0-18-3AN | Cylindrical | 10,0 | 17,0 | 32 | 32 | 210 | 170 | 7,0 | 45,6 | 61,5 | 3 | 1,2 | 11100 | XO.X18.. |
| R217.69-3232.3-18-3AN | Cyl.-Weldon | 10,0 | 17,0 | 32 | 32 | 110 | 70 | 7,0 | 45,6 | 61,5 | 3 | 0,6 | 11100 | XO.X18.. |
| R217.69-3240.0-18-4AN | Cylindrical | 10,0 | 17,0 | 40 | 32 | 210 | 165 | 4,5 | 61,6 | 77,5 | 4 | 1,2 | 9900 | XO.X18.. |
| | | | | | | | | | | | | | | |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.69-.. | DOUBLE-T | C04510-T20P | H6B-T20P | 5,0 |
| | | | | |
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| | | | | |

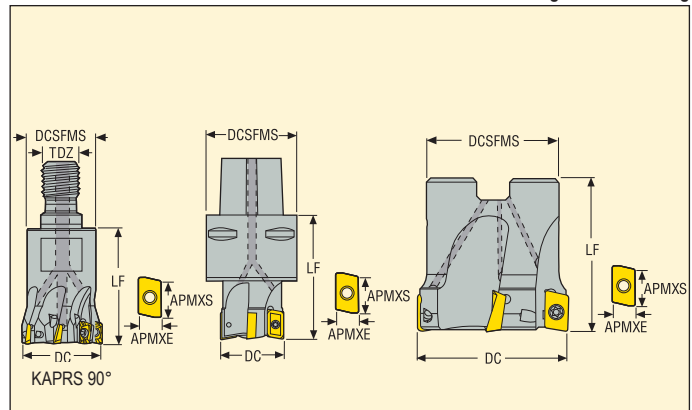
Please check availability in current price and stock-list
Torque keys, see page 732

Turbo 18 – R217/220.69-18

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 42-43
- For complete insert programme, see page(s) 685
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | | | Insert |
|------------------------|------------------|------------------|-------|-------|--------|-----|-----|------|-------|-------|-------|---|-----|-------|----------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.69-1632.RE-18-2AN | Combimaster | 10,0 | 17,0 | 32,0 | 30 | – | M16 | 45,0 | 7,0 | 45,6 | 61,5 | 2 | 0,2 | 11100 | XO.X18.. |
| R217.69-1640.RE-18-3AN | Combimaster | 10,0 | 17,0 | 40,0 | 30 | – | M16 | 45,0 | 4,5 | 61,6 | 77,5 | 3 | 0,3 | 9900 | XO.X18.. |
| R217.69-2040.RE-18-4AN | Combimaster | 10,0 | 17,0 | 40,0 | 37 | – | M20 | 45,0 | 4,5 | 61,6 | 77,5 | 4 | 0,4 | 9900 | XO.X18.. |
| C6-R217.69-040-18-3AN | Seco-Capto | 10,0 | 17,0 | 40,0 | 63 | – | – | 80,0 | 4,5 | 61,6 | 77,5 | 3 | 1,1 | 9900 | XO.X18.. |
| R220.69-0050-18-4AN | Arbor | 10,0 | 17,0 | 50,0 | 47 | 22 | – | 40,0 | 3,0 | 81,6 | 97,5 | 4 | 0,3 | 8900 | XO.X18.. |
| R220.69-0052-18-4AN | Arbor | 10,0 | 17,0 | 52,0 | 47 | 22 | – | 40,0 | 3,15 | 85,6 | 101,5 | 4 | 0,5 | 8900 | XO.X18.. |
| R220.69-0063-18-4AN | Arbor | 10,0 | 17,0 | 63,0 | 52 | 27 | – | 40,0 | 2,4 | 107,6 | 123,5 | 4 | 0,5 | 7900 | XO.X18.. |
| R220.69-0063-18-5AN | Arbor | 10,0 | 17,0 | 63,0 | 52 | 27 | – | 40,0 | 2,4 | 107,6 | 123,5 | 5 | 0,5 | 7900 | XO.X18.. |
| C6-R217.69-066-18-5AN | Seco-Capto | 10,0 | 17,0 | 66,0 | 63 | – | – | 60,0 | 2,0 | 113,6 | 129,5 | 5 | 1,4 | 7700 | XO.X18.. |
| R220.69-0066-18-5AN | Arbor | 10,0 | 17,0 | 66,0 | 52 | 27 | – | 40,0 | 2,0 | 113,6 | 129,5 | 5 | 0,6 | 7900 | XO.X18.. |
| R220.69-0080-18-5AN | Arbor | 10,0 | 17,0 | 80,0 | 62 | 27 | – | 50,0 | 1,5 | 141,6 | 157,5 | 5 | 1,0 | 7000 | XO.X18.. |
| R220.69-0080-18-6AN | Arbor | 10,0 | 17,0 | 80,0 | 62 | 27 | – | 50,0 | 1,5 | 141,6 | 157,5 | 6 | 1,0 | 7000 | XO.X18.. |
| C6-R217.69-080-18-6AN | Seco-Capto | 10,0 | 17,0 | 80,0 | 63 | – | – | 60,0 | 1,5 | 141,6 | 157,5 | 6 | 1,7 | 7000 | XO.X18.. |
| R220.69-0084-18-6AN | Arbor | 10,0 | 17,0 | 84,0 | 62 | 27 | – | 50,0 | 1,5 | 146,5 | 165,0 | 6 | 1,3 | 7000 | XO.X18.. |
| R220.69-0100-18-6AN | Arbor | 10,0 | 17,0 | 100,0 | 77 | 32 | – | 50,0 | 1,0 | 181,6 | 197,5 | 6 | 1,6 | 6300 | XO.X18.. |
| R220.69-0100-18-7AN | Arbor | 10,0 | 17,0 | 100,0 | 77 | 32 | – | 50,0 | 1,0 | 181,6 | 197,5 | 7 | 1,6 | 6300 | XO.X18.. |
| R220.69-0125-18-7AN | Arbor | 10,0 | 17,0 | 125,0 | 90 | 40 | – | 63,0 | 1,0 | 231,6 | 247,5 | 7 | 3,1 | 5600 | XO.X18.. |
| R220.69-0125-18-8AN | Arbor | 10,0 | 17,0 | 125,0 | 90 | 40 | – | 63,0 | 1,0 | 231,6 | 247,5 | 8 | 3,0 | 5600 | XO.X18.. |
| R220.69-8160-18-7N | Arbor | 10,0 | 17,0 | 160,0 | 90 | 40 | – | 63,0 | 0,5 | 301,6 | 317,5 | 7 | 4,5 | 5000 | XO.X18.. |
| R220.69-8160-18-9N | Arbor | 10,0 | 17,0 | 160,0 | 90 | 40 | – | 63,0 | 0,5 | 301,6 | 317,5 | 9 | 4,6 | 5000 | XO.X18.. |

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.69-... | DOUBLE-T | C04510-T20P | H6B-T20P | – | 5,0 |
| R220.69-0050-0052 | DOUBLE-T | C04510-T20P | H6B-T20P | 220.17-692 | 5,0 |
| R220.69-0063-0066 | DOUBLE-T | C04510-T20P | H6B-T20P | 220.17-693 | 5,0 |
| R220.69-0080-0084 | DOUBLE-T | C04510-T20P | H6B-T20P | – | 5,0 |
| R220.69-0100-8160 | DOUBLE-T | C04510-T20P | H6B-T20PL | – | 5,0 |

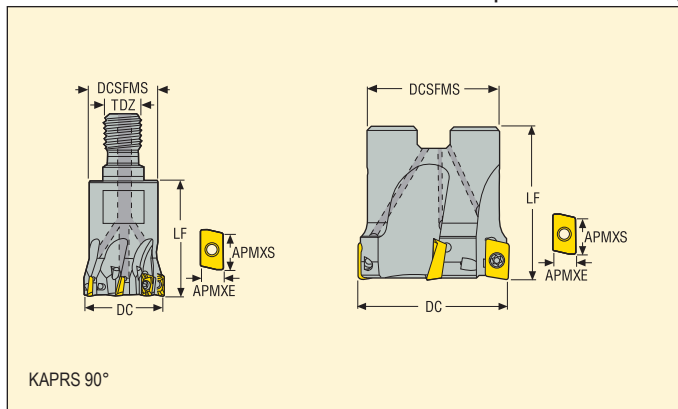
Please check availability in current price and stock-list
Torque keys, see page 732

Square shoulder and slot milling cutters



Turbo 18 – R217/220.69-18

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 42-43
- For complete insert programme, see page(s) 685
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | ⊘ | KG | ✎ | Insert |
|------------------------|------------------|------------------|-------|-------|--------|-----|-----|------|-------|-------|-------|----|-----|-------|----------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.69-1632.RE-18-3AN | Combimaster | 10,0 | 17,0 | 32,0 | 30 | – | M16 | 45,0 | 7,0 | 45,6 | 61,5 | 3 | 0,2 | 11100 | XO.X18.. |
| R217.69-1640.RE-18-4AN | Combimaster | 10,0 | 17,0 | 40,0 | 30 | – | M16 | 45,0 | 4,5 | 61,6 | 77,5 | 4 | 0,3 | 9900 | XO.X18.. |
| R217.69-2040.RE-18-3AN | Combimaster | 10,0 | 17,0 | 40,0 | 37 | – | M20 | 45,0 | 4,5 | 61,6 | 77,5 | 3 | 0,4 | 9900 | XO.X18.. |
| R220.69-0050-18-5AN | Arbor | 10,0 | 17,0 | 50,0 | 47 | 22 | – | 40,0 | 3,0 | 81,6 | 97,5 | 5 | 0,3 | 8900 | XO.X18.. |
| R220.69-0063-18-6AN | Arbor | 10,0 | 17,0 | 63,0 | 52 | 27 | – | 40,0 | 2,4 | 107,6 | 123,5 | 6 | 0,5 | 7900 | XO.X18.. |
| R220.69-0080-18-8AN | Arbor | 10,0 | 17,0 | 80,0 | 62 | 27 | – | 50,0 | 1,5 | 141,6 | 157,5 | 8 | 1,0 | 7000 | XO.X18.. |
| R220.69-0100-18-9AN | Arbor | 10,0 | 17,0 | 100,0 | 77 | 32 | – | 50,0 | 1,0 | 181,6 | 197,5 | 9 | 1,6 | 6300 | XO.X18.. |
| R220.69-0125-18-11AN | Arbor | 10,0 | 17,0 | 125,0 | 90 | 40 | – | 63,0 | 1,0 | 231,6 | 247,5 | 11 | 3,0 | 5600 | XO.X18.. |
| R220.69-8160-18-12N | Arbor | 10,0 | 17,0 | 160,0 | 90 | 40 | – | 63,0 | 0,5 | 301,6 | 317,5 | 12 | 4,6 | 5000 | XO.X18.. |
| | | | | | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.69-.. | DOUBLE-T | C04510-T20P | H6B-T20P | – | 5,0 |
| R220.69-0050 | DOUBLE-T | C04510-T20P | H6B-T20P | 220.17-692 | 5,0 |
| R220.69-0063 | DOUBLE-T | C04510-T20P | H6B-T20P | 220.17-693 | 5,0 |
| R220.69-0080 | DOUBLE-T | C04510-T20P | H6B-T20P | – | 5,0 |
| R220.69-0100-0125 | DOUBLE-T | C04510-T20P | H6B-T20PL | – | 5,0 |
| R220.69-8160 | DOUBLE-T | C04510-T20P | H4B-T10PL | – | 5,0 |

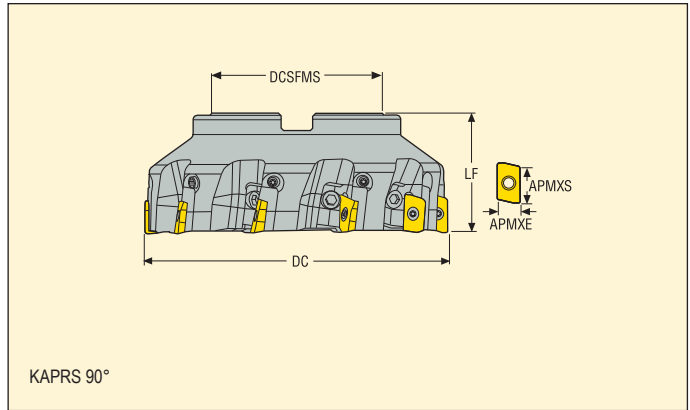
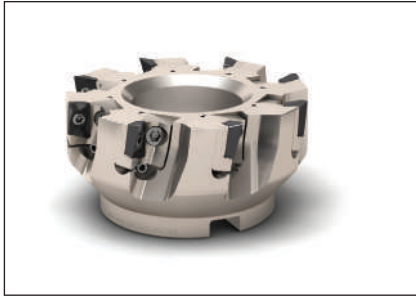
Please check availability in current price and stock-list

Torque keys, see page 732

Square shoulder and slot milling cutters

Turbo 18 – R220.69-18C

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 42-43
- For complete insert programme, see page(s) 685
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|----------------------|------------------|------------------|-------|-------|--------|-----|------|-------|-------|-------|----|------|------|----------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | LF | | | | | | | |
| R220.69-0125-18-8CN | Arbor | 10,0 | 17,0 | 125,0 | 90 | 40 | 63,0 | 1,0 | 231,6 | 247,5 | 8 | 3,3 | 5600 | XO.X18.. |
| R220.69-8160-18-10CN | Arbor | 10,0 | 17,0 | 160,0 | 90 | 40 | 63,0 | – | 301,6 | 317,5 | 10 | 5,2 | 5000 | XO.X18.. |
| R220.69-8200-18-12CN | Arbor | 10,0 | 17,0 | 200,0 | 130 | 60 | 63,0 | – | 381,6 | 397,5 | 12 | 7,4 | 4400 | XO.X18.. |
| R220.69-8250-18-16CN | Arbor | 10,0 | 17,0 | 250,0 | 130 | 60 | 63,0 | – | 481,6 | 497,5 | 16 | 14,7 | 3900 | XO.X18.. |
| | | | | | | | | | | | | | | |
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Spare Parts

| For cutter | Setting gauge | Key (T-handle) | Insert screw | Insert key | Cassette screw | Cassette | Torque value (Nm) |
|-------------------|---------------|----------------|--------------|------------|----------------|----------|-------------------|
| R220.69-0125-8250 | AU1114T-T15P | DOUBLE-T | C04510-T20P | H6B-T20PL | FS96018 | XO18PRN | 5,0 |
| | | | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.69-18 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|-------|------|
| | | | 100% | 30% | 10% |
| P1 | XOMX180608TR-ME13 F40M | 8,0 | 0,18 | 0,20 | 0,30 |
| P2 | XOMX180608TR-ME13 F40M | 8,0 | 0,19 | 0,20 | 0,32 |
| P3 | XOMX180608TR-M14 MP2500 | 8,0 | 0,19 | 0,20 | 0,32 |
| P4 | XOMX180608TR-M14 MP2500 | 8,0 | 0,19 | 0,20 | 0,32 |
| P5 | XOMX180608TR-M14 MP2500 | 8,0 | 0,18 | 0,20 | 0,30 |
| P6 | XOMX180608TR-M14 MP2500 | 8,0 | 0,18 | 0,20 | 0,30 |
| P7 | XOMX180608TR-M14 MP2500 | 8,0 | 0,18 | 0,20 | 0,30 |
| P8 | XOMX180608TR-MD15 MP1500 | 8,0 | 0,20 | 0,22 | 0,34 |
| P11 | XOMX180608TR-M14 T350M | 8,0 | 0,18 | 0,20 | 0,30 |
| P12 | XOMX180608TR-MD15 MP2500 | 7,0 | 0,13 | 0,15 | 0,22 |
| M1 | XOMX180608TR-M14 F40M | 8,0 | 0,20 | 0,22 | 0,34 |
| M2 | XOMX180608TR-M14 F40M | 8,0 | 0,18 | 0,20 | 0,30 |
| M3 | XOMX180608TR-M14 F40M | 7,0 | 0,15 | 0,16 | 0,24 |
| M4 | XOMX180608R-M10 T350M | 5,0 | 0,090 | 0,10 | 0,15 |
| M5 | XOMX180608R-M10 T350M | 5,0 | 0,090 | 0,10 | 0,15 |
| K1 | XOMX180608TR-M14 MK2050 | 8,0 | 0,20 | 0,22 | 0,34 |
| K2 | XOMX180608TR-M14 MK2050 | 8,0 | 0,18 | 0,20 | 0,30 |
| K3 | XOMX180608TR-M14 MK2050 | 8,0 | 0,18 | 0,20 | 0,30 |
| K4 | XOMX180608TR-M14 MK2050 | 8,0 | 0,18 | 0,20 | 0,30 |
| K5 | XOMX180608TR-M14 MK2050 | 8,0 | 0,16 | 0,18 | 0,28 |
| K6 | XOMX180608TR-M14 MK2050 | 8,0 | 0,18 | 0,20 | 0,30 |
| K7 | XOMX180608TR-M14 MK2050 | 8,0 | 0,16 | 0,18 | 0,28 |
| N1 | XOEX180608FR-E10 H25 | 8,0 | 0,18 | 0,20 | 0,30 |
| N2 | XOEX180608FR-E10 H25 | 8,0 | 0,18 | 0,20 | 0,30 |
| N3 | XOEX180608FR-E10 H25 | 8,0 | 0,18 | 0,20 | 0,30 |
| N11 | XOEX180608FR-E10 H25 | 8,0 | 0,18 | 0,20 | 0,30 |
| S1 | XOMX180608R-M10 T350M | 5,0 | 0,090 | 0,10 | 0,15 |
| S2 | XOMX180608R-M10 T350M | 5,0 | 0,090 | 0,10 | 0,15 |
| S3 | XOMX180608R-M10 T350M | 5,0 | 0,085 | 0,095 | 0,14 |
| S11 | XOMX180608R-M10 MS2050 | 6,0 | 0,10 | 0,11 | 0,18 |
| S12 | XOMX180608R-M10 MS2050 | 6,0 | 0,10 | 0,11 | 0,18 |
| S13 | XOMX180608R-M10 MS2050 | 5,0 | 0,090 | 0,10 | 0,15 |
| H5 | XOMX180608TR-MD15 MP1500 | 7,0 | 0,13 | 0,15 | 0,22 |
| H8 | XOMX180608TR-MD15 MP3000 | 6,0 | 0,10 | 0,11 | 0,17 |
| H11 | XOMX180608TR-MD15 MP1500 | 7,0 | 0,13 | 0,15 | 0,22 |
| H12 | XOMX180608TR-MD15 MP1500 | 6,0 | 0,10 | 0,11 | 0,17 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

Square shoulder and slot milling cutters

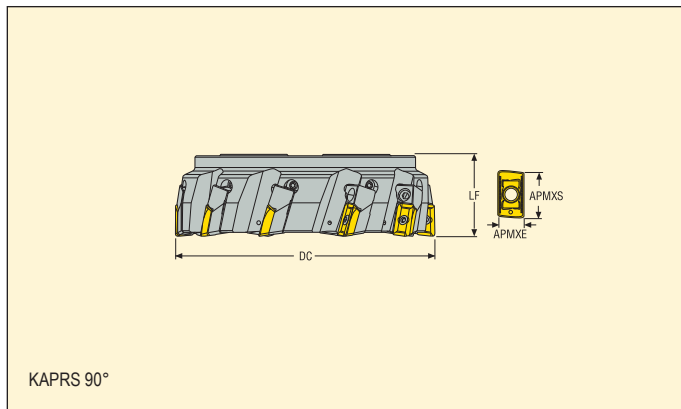


R217/220.69-18 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | MP3000 | | | MM4500 | | | MK1500 | | | MK2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 290 | 385 | 460 | 255 | 340 | 405 | 245 | 325 | 380 | 175 | 230 | 275 | — | — | — | 250 | 335 | 400 |
| P2 | 280 | 375 | 440 | 250 | 330 | 390 | 240 | 315 | 370 | 165 | 225 | 260 | — | — | — | 245 | 325 | 385 |
| P3 | 245 | 330 | 385 | 220 | 290 | 340 | 210 | 280 | 325 | 145 | 195 | 230 | — | — | — | 215 | 290 | 335 |
| P4 | 215 | 290 | 340 | 190 | 255 | 300 | 185 | 245 | 285 | 130 | 170 | 205 | — | — | — | 190 | 255 | 295 |
| P5 | 210 | 275 | 330 | 185 | 245 | 290 | 180 | 235 | 280 | 125 | 165 | 195 | — | — | — | 185 | 240 | 290 |
| P6 | 235 | 310 | 370 | 210 | 275 | 330 | 200 | 265 | 315 | 140 | 185 | 220 | — | — | — | 205 | 270 | 325 |
| P7 | 225 | 295 | 350 | 195 | 260 | 310 | 190 | 250 | 295 | 130 | 175 | 210 | — | — | — | 195 | 255 | 305 |
| P8 | 205 | 275 | 325 | 185 | 245 | 285 | 175 | 235 | 275 | 120 | 165 | 190 | — | — | — | 180 | 240 | 280 |
| P11 | 215 | 285 | 340 | 190 | 255 | 300 | 185 | 240 | 285 | 130 | 170 | 200 | — | — | — | 190 | 250 | 295 |
| P12 | 145 | 190 | 225 | 130 | 165 | 200 | 120 | 160 | 190 | 85 | 110 | 135 | — | — | — | 125 | 165 | 195 |
| M1 | — | — | — | 180 | 240 | 280 | 180 | 235 | 280 | 145 | 190 | 225 | — | — | — | — | — | — |
| M2 | — | — | — | 150 | 200 | 235 | 150 | 195 | 235 | 120 | 155 | 190 | — | — | — | — | — | — |
| M3 | — | — | — | 120 | 160 | 190 | 120 | 160 | 190 | 95 | 130 | 155 | — | — | — | — | — | — |
| M4 | — | — | — | 95 | 130 | 145 | 95 | 130 | 145 | 75 | 100 | 120 | — | — | — | — | — | — |
| M5 | — | — | — | 80 | 105 | 120 | 80 | 105 | 120 | 65 | 85 | 100 | — | — | — | — | — | — |
| K1 | 225 | 295 | 350 | 195 | 260 | 310 | 190 | 250 | 295 | — | — | — | 280 | 370 | 435 | 265 | 350 | 415 |
| K2 | 200 | 265 | 315 | 175 | 235 | 280 | 170 | 225 | 265 | — | — | — | 250 | 330 | 395 | 235 | 315 | 370 |
| K3 | 170 | 225 | 265 | 150 | 195 | 235 | 145 | 190 | 225 | — | — | — | 210 | 280 | 335 | 200 | 265 | 315 |
| K4 | 160 | 215 | 255 | 145 | 190 | 225 | 135 | 180 | 215 | — | — | — | 200 | 265 | 320 | 190 | 255 | 300 |
| K5 | 100 | 130 | 155 | 90 | 115 | 135 | 85 | 110 | 130 | — | — | — | 125 | 165 | 195 | 120 | 155 | 185 |
| K6 | 140 | 185 | 225 | 125 | 165 | 195 | 120 | 160 | 190 | — | — | — | 180 | 235 | 280 | 170 | 225 | 265 |
| K7 | 125 | 165 | 195 | 115 | 150 | 175 | 105 | 140 | 165 | — | — | — | 160 | 210 | 245 | 150 | 200 | 235 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | 550 | 740 | 880 | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | 370 | 495 | 590 | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | — | — | — | 45 | 60 | 70 | 23 | 31 | 36 | — | — | — | — | — | — |
| S2 | — | — | — | — | — | — | 36 | 48 | 55 | 19 | 25 | 29 | — | — | — | — | — | — |
| S3 | — | — | — | — | — | — | 32 | 42 | 48 | 17 | 22 | 26 | — | — | — | — | — | — |
| S11 | — | — | — | — | — | — | 60 | 85 | 95 | 32 | 43 | 50 | — | — | — | — | — | — |
| S12 | — | — | — | — | — | — | 42 | 55 | 65 | 30 | 40 | 47 | — | — | — | — | — | — |
| S13 | — | — | — | — | — | — | 25 | 34 | 38 | 18 | 23 | 27 | — | — | — | — | — | — |
| H5 | 48 | 60 | 75 | 39 | 50 | 60 | 37 | 50 | 60 | — | — | — | — | — | — | — | — | — |
| H8 | 50 | 70 | 80 | 41 | 55 | 65 | 41 | 55 | 60 | — | — | — | — | — | — | — | — | — |
| H11 | 60 | 80 | 95 | 49 | 65 | 75 | 47 | 65 | 75 | — | — | — | — | — | — | — | — | — |
| H12 | 90 | 125 | 140 | 80 | 110 | 125 | 80 | 105 | 120 | — | — | — | — | — | — | — | — | — |
| H21 | 50 | 70 | 80 | 41 | 55 | 65 | 41 | 55 | 60 | — | — | — | — | — | — | — | — | — |

| SMG | MS2050 | | | T350M | | | F40M | | | H25 | | | MP1020 | | |
|-----|--------|-----|-----|-------|-----|-----|------|------|------|------|------|------|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | — | — | — | 195 | 255 | 310 | — | — | — | 345 | 415 | 445 |
| P2 | — | — | — | — | — | — | 190 | 250 | 295 | — | — | — | 335 | 390 | 435 |
| P3 | — | — | — | — | — | — | 165 | 220 | 260 | — | — | — | 290 | 350 | 390 |
| P4 | — | — | — | — | — | — | 145 | 195 | 230 | — | — | — | 270 | 305 | 345 |
| P5 | — | — | — | — | — | — | 140 | 185 | 220 | — | — | — | 255 | 305 | 325 |
| P6 | — | — | — | — | — | — | 160 | 210 | 250 | — | — | — | 285 | 340 | 365 |
| P7 | — | — | — | — | — | — | 150 | 195 | 235 | — | — | — | 270 | 320 | 345 |
| P8 | — | — | — | 160 | 215 | 250 | 140 | 185 | 215 | — | — | — | 240 | 295 | 325 |
| P11 | — | — | — | 165 | 220 | 260 | 145 | 190 | 230 | — | — | — | 265 | 315 | 335 |
| P12 | 120 | 160 | 185 | 110 | 145 | 175 | 95 | 125 | 150 | — | — | — | 185 | 200 | 210 |
| M1 | 195 | 250 | 300 | 165 | 220 | 260 | 150 | 200 | 240 | — | — | — | — | — | — |
| M2 | 160 | 210 | 250 | 140 | 185 | 220 | 125 | 170 | 200 | — | — | — | — | — | — |
| M3 | 130 | 175 | 200 | 115 | 150 | 180 | 105 | 135 | 160 | — | — | — | — | — | — |
| M4 | 100 | 135 | 155 | 90 | 120 | 135 | 80 | 110 | 125 | — | — | — | — | — | — |
| M5 | 85 | 110 | 130 | 75 | 100 | 115 | 70 | 90 | 105 | — | — | — | — | — | — |
| K1 | — | — | — | — | — | — | 150 | 200 | 235 | — | — | — | — | — | — |
| K2 | — | — | — | — | — | — | 135 | 175 | 210 | — | — | — | — | — | — |
| K3 | — | — | — | — | — | — | 115 | 150 | 180 | — | — | — | — | — | — |
| K4 | — | — | — | — | — | — | 110 | 145 | 170 | — | — | — | — | — | — |
| K5 | — | — | — | — | — | — | 65 | 90 | 105 | — | — | — | — | — | — |
| K6 | — | — | — | — | — | — | 95 | 125 | 150 | — | — | — | — | — | — |
| K7 | — | — | — | — | — | — | 85 | 110 | 130 | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | 1075 | 1450 | 1725 | 1275 | 1675 | 2000 | — | — | — |
| N2 | — | — | — | — | — | — | 435 | 590 | 700 | 520 | 680 | 810 | — | — | — |
| N3 | — | — | — | — | — | — | 290 | 390 | 465 | 345 | 455 | 540 | — | — | — |
| N11 | — | — | — | — | — | — | 335 | 445 | 530 | 395 | 520 | 620 | — | — | — |
| S1 | 48 | 65 | 75 | — | — | — | 38 | 50 | 60 | — | — | — | — | — | — |
| S2 | 38 | 50 | 60 | — | — | — | 30 | 41 | 47 | — | — | — | — | — | — |
| S3 | 33 | 44 | 50 | — | — | — | 27 | 36 | 41 | — | — | — | — | — | — |
| S11 | 65 | 90 | 100 | — | — | — | 50 | 70 | 80 | — | — | — | — | — | — |
| S12 | 46 | 60 | 70 | — | — | — | 36 | 49 | 55 | — | — | — | — | — | — |
| S13 | 27 | 35 | 41 | — | — | — | 21 | 28 | 33 | — | — | — | — | — | — |
| H5 | — | — | — | — | — | — | 32 | 42 | 50 | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — | 34 | 46 | 55 | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — | 41 | 55 | 65 | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — | 60 | 85 | 95 | — | — | — | — | — | — |

R220.90 ABEX



- For insert selection and cutting data recommendations, see page(s) 47
- For complete insert programme, see page(s) 641
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|------------------------------|------------------|------------------|------|-------|--------|-----|------|-------|-------|-------|----|------|------|----------|
| | | APMXE | APMS | DC | DCSFMS | DCB | LF | | | | | | | |
| R220.90-8160-26-8CAN | Arbor | 12,8 | 20,0 | 160,0 | 90 | 40 | 63,0 | 0,4 | 296,5 | 316,8 | 8 | 5,9 | 4200 | ABEX26.. |
| R220.90-8200-26-10CAN | Arbor | 12,8 | 20,0 | 200,0 | 130 | 60 | 63,0 | 0,35 | 376,5 | 396,8 | 10 | 7,5 | 3800 | ABEX26.. |
| R220.90-8250-26-12CAN | Arbor | 12,8 | 20,0 | 250,0 | 130 | 60 | 63,0 | 0,3 | 476,5 | 496,8 | 12 | 13,4 | 3400 | ABEX26.. |
| R220.90-8315-26-14CAN | Arbor | 10,0 | 20,0 | 315,0 | 225 | 60 | 80,0 | 0,3 | 606,5 | 626,8 | 14 | 28,1 | 3000 | ABEX26.. |
| | | | | | | | | | | | | | | |
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Spare Parts

| For cutter | Setting gauge | Key (T-handle) | Insert screw | Insert key | Cassette screw | Cassette | Torque value (Nm) |
|-------------------|---------------|----------------|--------------|------------|----------------|----------|-------------------|
| | | | | | | | |
| R220.90-.. | AU1114T-T15P | DOUBLE-T | C04510-T20P | H6B-T20PL | FS96018 | AB26PRN | 5,0 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.90-26 ABEX – Insert selection

| SMG | | a_p | f_z | | |
|-----|-------------------------|-------|-------|------|------|
| | | | 100% | 30% | 10% |
| P1 | ABEX2606ZFFR-M15 F40M | 10,0 | 0,22 | 0,24 | 0,36 |
| P2 | ABEX2606ZFFR-M15 F40M | 10,0 | 0,22 | 0,24 | 0,36 |
| P3 | ABEX2606ZFFR-M15 MP2500 | 10,0 | 0,20 | 0,22 | 0,34 |
| P4 | ABEX2606ZFFR-M15 MP2500 | 10,0 | 0,20 | 0,22 | 0,34 |
| P5 | ABEX2606ZFFR-M15 MP2500 | 10,0 | 0,20 | 0,22 | 0,34 |
| P6 | ABEX2606ZFFR-M15 MP2500 | 10,0 | 0,20 | 0,22 | 0,32 |
| P7 | ABEX2606ZFFR-M15 MP2500 | 10,0 | 0,20 | 0,22 | 0,32 |
| P8 | ABEX2606ZFFR-M15 MP2500 | 10,0 | 0,20 | 0,22 | 0,34 |
| P11 | ABEX2606ZFFR-M15 T350M | 10,0 | 0,20 | 0,22 | 0,32 |
| P12 | ABEX2606ZFFR-M15 MP2500 | 8,0 | 0,14 | 0,15 | 0,22 |
| M1 | ABEX2606ZFFR-M15 F40M | 10,0 | 0,22 | 0,24 | 0,36 |
| M2 | ABEX2606ZFFR-M15 F40M | 10,0 | 0,20 | 0,22 | 0,34 |
| M3 | ABEX2606ZFFR-M15 F40M | 8,0 | 0,16 | 0,17 | 0,26 |
| M4 | ABEX2606ZFFR-M15 T350M | 6,0 | 0,14 | 0,15 | 0,24 |
| M5 | ABEX2606ZFFR-M15 MM4500 | 6,0 | 0,14 | 0,15 | 0,24 |
| K1 | ABEX2606ZFFR-M15 MK1500 | 10,0 | 0,22 | 0,24 | 0,36 |
| K2 | ABEX2606ZFFR-M15 MK1500 | 10,0 | 0,20 | 0,22 | 0,34 |
| K3 | ABEX2606ZFFR-M15 MK1500 | 10,0 | 0,20 | 0,22 | 0,34 |
| K4 | ABEX2606ZFFR-M15 MK1500 | 10,0 | 0,20 | 0,22 | 0,34 |
| K5 | ABEX2606ZFFR-M15 T350M | — | — | — | — |
| K6 | ABEX2606ZFFR-M15 T350M | — | — | — | — |
| K7 | ABEX2606ZFFR-M15 T350M | — | — | — | — |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R220.90-26 ABEX – Cutting data v_c = (m/min)

| SMG | MP1500 | | | MP2500 | | | MM4500 | | | MK1500 | | | T350M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 280 | 370 | 440 | 245 | 330 | 390 | 150 | 200 | 240 | — | — | — | 215 | 285 | 340 | 185 | 250 | 295 |
| P2 | 270 | 360 | 430 | 240 | 320 | 380 | 150 | 195 | 235 | — | — | — | 210 | 280 | 330 | 180 | 240 | 285 |
| P3 | 240 | 320 | 375 | 215 | 285 | 330 | 130 | 175 | 205 | — | — | — | 185 | 245 | 290 | 160 | 215 | 250 |
| P4 | 210 | 280 | 330 | 190 | 250 | 290 | 115 | 155 | 180 | — | — | — | 165 | 215 | 255 | 145 | 190 | 220 |
| P5 | 205 | 270 | 320 | 180 | 240 | 285 | 110 | 145 | 175 | — | — | — | 155 | 205 | 250 | 135 | 180 | 215 |
| P6 | 230 | 300 | 360 | 200 | 265 | 320 | 125 | 165 | 195 | — | — | — | 175 | 230 | 280 | 155 | 200 | 240 |
| P7 | 215 | 285 | 340 | 190 | 250 | 300 | 115 | 155 | 185 | — | — | — | 165 | 220 | 260 | 145 | 190 | 230 |
| P8 | 205 | 270 | 315 | 180 | 240 | 280 | 110 | 145 | 170 | — | — | — | 155 | 205 | 245 | 135 | 180 | 210 |
| P11 | 210 | 275 | 330 | 185 | 245 | 295 | 115 | 150 | 180 | — | — | — | 160 | 215 | 255 | 140 | 185 | 220 |
| P12 | 140 | 185 | 215 | 125 | 165 | 190 | 75 | 100 | 120 | — | — | — | 105 | 145 | 165 | 95 | 125 | 145 |
| M1 | — | — | — | 175 | 230 | 275 | 125 | 170 | 200 | — | — | — | 160 | 215 | 255 | 145 | 195 | 230 |
| M2 | — | — | — | 145 | 190 | 230 | 105 | 140 | 165 | — | — | — | 135 | 180 | 215 | 120 | 160 | 195 |
| M3 | — | — | — | 120 | 160 | 185 | 85 | 115 | 135 | — | — | — | 110 | 150 | 175 | 100 | 135 | 155 |
| M4 | — | — | — | 95 | 125 | 145 | 70 | 90 | 105 | — | — | — | 90 | 120 | 135 | 80 | 105 | 125 |
| M5 | — | — | — | 80 | 105 | 120 | 60 | 75 | 90 | — | — | — | 75 | 100 | 115 | 65 | 90 | 105 |
| K1 | 215 | 285 | 340 | 190 | 255 | 300 | — | — | — | 270 | 360 | 425 | — | — | — | 145 | 190 | 225 |
| K2 | 190 | 255 | 305 | 170 | 225 | 270 | — | — | — | 240 | 320 | 380 | — | — | — | 130 | 170 | 205 |
| K3 | 165 | 215 | 260 | 145 | 190 | 230 | — | — | — | 205 | 270 | 325 | — | — | — | 110 | 145 | 175 |
| K4 | 155 | 205 | 245 | 140 | 180 | 220 | — | — | — | 195 | 260 | 310 | — | — | — | 105 | 140 | 165 |
| K5 | 95 | 130 | 150 | 85 | 115 | 130 | — | — | — | 120 | 160 | 185 | — | — | — | 65 | 85 | 100 |
| K6 | 135 | 180 | 215 | 120 | 160 | 190 | — | — | — | 170 | 225 | 270 | — | — | — | 90 | 120 | 145 |
| K7 | 120 | 165 | 190 | 110 | 145 | 170 | — | — | — | 155 | 205 | 240 | — | — | — | 80 | 110 | 130 |

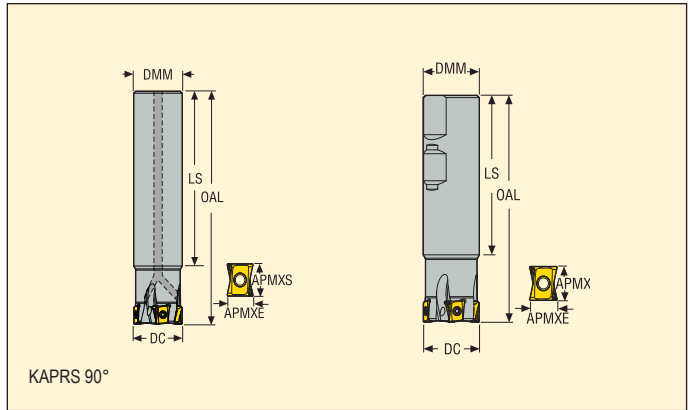
Square shoulder and slot milling cutters

Square T4 – R217.94-08

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 52–53
- For complete insert programme, see page(s) 647
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|----------------------|------------------|------------------|-------|------|------|-------|-------|---|-----|-------|----------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | |
| R217.94-1616.0-08-2A | Cylindrical | 2,0 | 8,0 | 16,0 | 16,0 | 90,0 | 60,0 | 2 | 0,2 | 20600 | LOEX08.. |
| R217.94-1616.3-08-2A | Cyl.-Weldon | 2,0 | 8,0 | 16,0 | 16,0 | 78,0 | 53,0 | 2 | 0,1 | 20600 | LOEX08.. |
| R217.94-2018.3-08-2A | Cyl.-Weldon | 2,0 | 8,0 | 18,0 | 20,0 | 90,0 | 60,0 | 2 | 0,2 | 19400 | LOEX08.. |
| R217.94-1820.0-08-2A | Cylindrical | 2,0 | 8,0 | 20,0 | 18,0 | 160,0 | 130,0 | 2 | 0,3 | 18400 | LOEX08.. |
| R217.94-2020.0-08-2A | Cylindrical | 2,0 | 8,0 | 20,0 | 20,0 | 160,0 | 130,0 | 2 | 0,4 | 18400 | LOEX08.. |
| R217.94-2020.3-08-2A | Cyl.-Weldon | 2,0 | 8,0 | 20,0 | 20,0 | 90,0 | 60,0 | 2 | 0,2 | 18400 | LOEX08.. |
| R217.94-2522.3-08-3A | Cyl.-Weldon | 2,0 | 8,0 | 22,0 | 25,0 | 101,0 | 71,0 | 3 | 0,3 | 17600 | LOEX08.. |
| R217.94-2225.0-08-3A | Cylindrical | 2,0 | 8,0 | 25,0 | 22,0 | 180,0 | 150,0 | 3 | 0,5 | 17600 | LOEX08.. |
| R217.94-2525.0-08-3A | Cylindrical | 2,0 | 8,0 | 25,0 | 25,0 | 180,0 | 150,0 | 3 | 0,7 | 16500 | LOEX08.. |
| R217.94-2525.3-08-3A | Cyl.-Weldon | 2,0 | 8,0 | 25,0 | 25,0 | 101,0 | 71,0 | 3 | 0,4 | 16500 | LOEX08.. |
| R217.94-3232.0-08-3A | Cylindrical | 2,0 | 8,0 | 32,0 | 32,0 | 200,0 | 170,0 | 3 | 1,2 | 14600 | LOEX08.. |
| R217.94-3232.3-08-3A | Cyl.-Weldon | 2,0 | 8,0 | 32,0 | 32,0 | 105,0 | 75,0 | 3 | 0,6 | 14600 | LOEX08.. |
| | | | | | | | | | | | |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.94-.. ø16-18 | DOUBLE-T | C02707-T08P | H4B-T08P | 1,2 |
| R217.94-.. ø20-32 | DOUBLE-T | C02708-T08P | H4B-T08P | 1,2 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

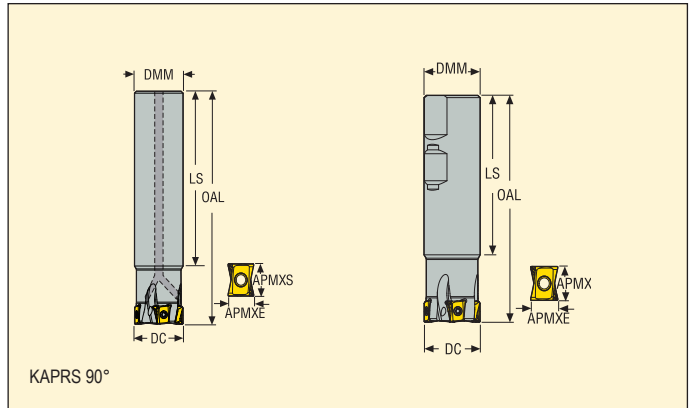
Square shoulder and slot milling cutters

Square T4 – R217.94-08

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 52–53
- For complete insert programme, see page(s) 647
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | Flutes | KG | Inserts | Insert |
|----------------------|------------------|------------------|-------|------|------|-------|-------|--------|-----|---------|----------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | |
| R217.94-2020.0-08-3A | Cylindrical | 2,0 | 8,0 | 20,0 | 20,0 | 110,0 | 80,0 | 3 | 0,3 | 18400 | LOEX08.. |
| R217.94-2020.3-08-3A | Cyl.-Weldon | 2,0 | 8,0 | 20,0 | 20,0 | 90,0 | 60,0 | 3 | 0,2 | 18400 | LOEX08.. |
| R217.94-2525.0-08-4A | Cylindrical | 2,0 | 8,0 | 25,0 | 25,0 | 120,0 | 90,0 | 4 | 0,4 | 16500 | LOEX08.. |
| R217.94-2525.3-08-4A | Cyl.-Weldon | 2,0 | 8,0 | 25,0 | 25,0 | 101,0 | 71,0 | 4 | 0,4 | 16500 | LOEX08.. |
| R217.94-3032.0-08-4A | Cylindrical | 2,0 | 8,0 | 32,0 | 30,0 | 200,0 | 170,0 | 4 | 1,0 | 14600 | LOEX08.. |
| R217.94-3232.0-08-5A | Cylindrical | 2,0 | 8,0 | 32,0 | 32,0 | 130,0 | 100,0 | 5 | 0,8 | 14600 | LOEX08.. |
| R217.94-3232.3-08-5A | Cyl.-Weldon | 2,0 | 8,0 | 32,0 | 32,0 | 105,0 | 75,0 | 5 | 0,6 | 14600 | LOEX08.. |
| | | | | | | | | | | | |
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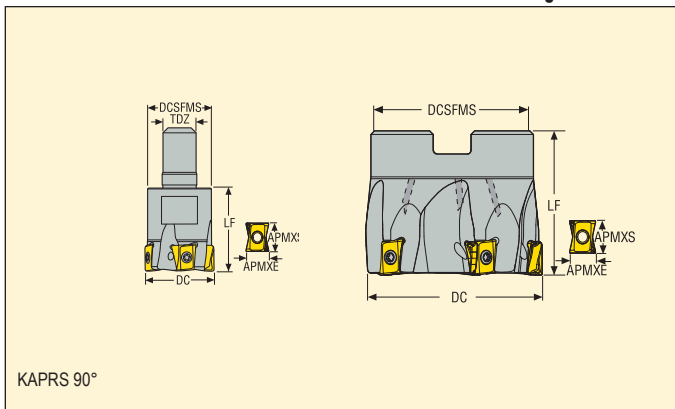
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.94-08 | DOUBLE-T | C02708-T08P | H4B-T08P | 1,2 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

Square T4 – R217/220.94-08

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 52–53
- For complete insert programme, see page(s) 647
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|-----------------------|------------------|------------------|-------|------|--------|-----|------|---|-----|-------|----------|
| | | APMXE | APMXS | DC | DCSFMS | TDZ | LF | | | | |
| R217.94-0816.RE-08-2A | Combimaster | 2,0 | 8,0 | 16,0 | 13,5 | M8 | 23,0 | 2 | 0,1 | 20600 | LOEX08.. |
| R217.94-1020.RE-08-2A | Combimaster | 2,0 | 8,0 | 20,0 | 18,5 | M10 | 28,0 | 2 | 0,1 | 18400 | LOEX08.. |
| R217.94-1225.RE-08-3A | Combimaster | 2,0 | 8,0 | 25,0 | 23,0 | M12 | 30,0 | 3 | 0,1 | 16500 | LOEX08.. |
| R217.94-1632.RE-08-3A | Combimaster | 2,0 | 8,0 | 32,0 | 30,0 | M16 | 35,0 | 3 | 0,2 | 14600 | LOEX08.. |
| R220.94-0032-08-3A | Arbor | 2,0 | 8,0 | 32,0 | 29,3 | – | 35,0 | 3 | 0,2 | 13000 | LOEX08.. |
| R217.94-2040.RE-08-4A | Combimaster | 2,0 | 8,0 | 40,0 | 36,5 | M20 | 40,0 | 4 | 0,4 | 14600 | LOEX08.. |
| R220.94-0040-08-4A | Arbor | 2,0 | 8,0 | 40,0 | 35,0 | – | 40,0 | 4 | 0,3 | 13000 | LOEX08.. |
| R220.94-0050-08-5A | Arbor | 2,0 | 8,0 | 50,0 | 45,0 | – | 40,0 | 5 | 0,4 | 11700 | LOEX08.. |
| R220.94-0063-08-6A | Arbor | 2,0 | 8,0 | 63,0 | 56,0 | – | 40,0 | 6 | 0,6 | 10400 | LOEX08.. |
| | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

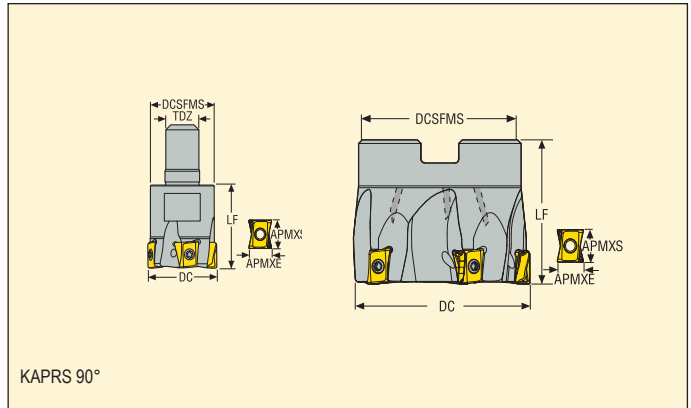
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|---------------------|----------------|--------------|------------|-------------|-------------------|
| R217.94-... Ø 16 | DOUBLE-T | C02707-T08P | H4B-T08P | – | 1,2 |
| R217.94-... Ø 20-40 | DOUBLE-T | C02708-T08P | H4B-T08P | – | 1,2 |
| R220.94-0032-0040 | DOUBLE-T | C02708-T08P | H4B-T08P | TCEI0825 | 1,2 |
| R220.94-0050 | DOUBLE-T | C02708-T08P | H4B-T08P | 220.17-692 | 1,2 |
| R220.94-0063 | DOUBLE-T | C02708-T08P | H4B-T08P | MLC6S12X30 | 1,2 |

Please check availability in current price and stock-list
Torque keys, see page 732

Square shoulder and slot milling cutters

Square T4 – R217/220.94-08

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 52–53
- For complete insert programme, see page(s) 647
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|-----------------------|------------------|------------------|-------|------|--------|-----|------|---|-----|-------|----------|
| | | APMXE | APMXS | DC | DCSFMS | TDZ | LF | | | | |
| R217.94-1020.RE-08-3A | Combimaster | 2,0 | 8,0 | 20,0 | 18,5 | M10 | 28,0 | 3 | 0,1 | 18400 | LOEX08.. |
| R217.94-1225.RE-08-4A | Combimaster | 2,0 | 8,0 | 25,0 | 23,0 | M12 | 30,0 | 4 | 0,1 | 16500 | LOEX08.. |
| R217.94-1632.RE-08-5A | Combimaster | 2,0 | 8,0 | 32,0 | 30,0 | M16 | 35,0 | 5 | 0,2 | 14600 | LOEX08.. |
| R220.94-0032-08-5A | Arbor | 2,0 | 8,0 | 32,0 | 29,3 | – | 35,0 | 5 | 0,2 | 13000 | LOEX08.. |
| R217.94-2040.RE-08-6A | Combimaster | 2,0 | 8,0 | 40,0 | 36,5 | M20 | 40,0 | 6 | 0,4 | 13000 | LOEX08.. |
| R220.94-0040-08-6A | Arbor | 2,0 | 8,0 | 40,0 | 35,0 | – | 40,0 | 6 | 0,3 | 13000 | LOEX08.. |
| R220.94-0050-08-7A | Arbor | 2,0 | 8,0 | 50,0 | 45,0 | – | 40,0 | 7 | 0,4 | 11700 | LOEX08.. |
| R220.94-0063-08-9A | Arbor | 2,0 | 8,0 | 63,0 | 56,0 | – | 40,0 | 9 | 0,6 | 10400 | LOEX08.. |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.94-.. | DOUBLE-T | C02708-T08P | H4B-T08P | – | 1,2 |
| R220.94-0032-0040 | DOUBLE-T | C02708-T08P | H4B-T08P | TCEI0825 | 1,2 |
| R220.94-0050 | DOUBLE-T | C02708-T08P | H4B-T08P | 220.17-692 | 1,2 |
| R220.94-0063 | DOUBLE-T | C02708-T08P | H4B-T08P | MLC6S12X30 | 1,2 |
| | | | | | |
| | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.94-08 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|-------|------|
| | | | 100% | 30% | 10% |
| P1 | LOEX080408TR-M08 F40M | 4,0 | 0,11 | 0,13 | 0,19 |
| P2 | LOEX080408TR-M08 F40M | 4,0 | 0,12 | 0,13 | 0,20 |
| P3 | LOEX080408TR-M08 MP2500 | 4,0 | 0,11 | 0,12 | 0,19 |
| P4 | LOEX080408TR-M08 MP2500 | 4,0 | 0,11 | 0,12 | 0,18 |
| P5 | LOEX080408TR-M08 MP2500 | 4,0 | 0,11 | 0,12 | 0,18 |
| P6 | LOEX080408TR-M08 MP2500 | 4,0 | 0,10 | 0,11 | 0,18 |
| P7 | LOEX080408TR-M08 MP2500 | 4,0 | 0,10 | 0,11 | 0,18 |
| P8 | LOEX080408TR-M08 MP2500 | 4,0 | 0,11 | 0,12 | 0,19 |
| P11 | LOEX080408TR-M08 MP3000 | 4,0 | 0,10 | 0,11 | 0,18 |
| P12 | LOEX080408TR-M08 MP2500 | 3,0 | 0,075 | 0,080 | 0,12 |
| M1 | LOEX080408TR-M08 F40M | 4,0 | 0,12 | 0,13 | 0,20 |
| M2 | LOEX080408TR-M08 F40M | 4,0 | 0,11 | 0,12 | 0,18 |
| M3 | LOEX080408TR-M08 F40M | 3,0 | 0,085 | 0,095 | 0,14 |
| K1 | LOEX080408TR-MD08 MK2050 | 4,0 | 0,12 | 0,13 | 0,20 |
| K2 | LOEX080408TR-MD08 MK2050 | 4,0 | 0,11 | 0,12 | 0,18 |
| K3 | LOEX080408TR-MD08 MK2050 | 4,0 | 0,11 | 0,12 | 0,18 |
| K4 | LOEX080408TR-MD08 MK2050 | 4,0 | 0,11 | 0,12 | 0,18 |
| K5 | LOEX080408TR-MD08 MK2050 | 4,0 | 0,095 | 0,10 | 0,16 |
| K6 | LOEX080408TR-MD08 MK2050 | 4,0 | 0,11 | 0,12 | 0,18 |
| K7 | LOEX080408TR-MD08 MK2050 | 4,0 | 0,095 | 0,10 | 0,16 |
| N1 | LOEX080408TR-M08 F40M | 4,0 | 0,15 | 0,16 | 0,26 |
| N2 | LOEX080408TR-M08 F40M | 4,0 | 0,15 | 0,16 | 0,26 |
| N3 | LOEX080408TR-M08 F40M | 4,0 | 0,15 | 0,16 | 0,26 |
| N11 | LOEX080408TR-M08 F40M | 4,0 | 0,15 | 0,16 | 0,26 |
| S1 | LOEX080408TR-M08 F40M | 2,5 | 0,075 | 0,085 | 0,13 |
| S2 | LOEX080408TR-M08 F40M | 2,5 | 0,075 | 0,085 | 0,13 |
| S3 | LOEX080408TR-M08 F40M | 2,5 | 0,070 | 0,075 | 0,12 |
| S11 | LOEX080408TR-M08 MS2050 | 2,5 | 0,085 | 0,095 | 0,15 |
| S12 | LOEX080408TR-M08 MS2050 | 2,5 | 0,085 | 0,095 | 0,15 |
| S13 | LOEX080408TR-M08 MS2050 | 2,5 | 0,075 | 0,085 | 0,13 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

Square shoulder and slot milling cutters



R217/220.94-08 – Cutting data $v_c =$ (m/min)

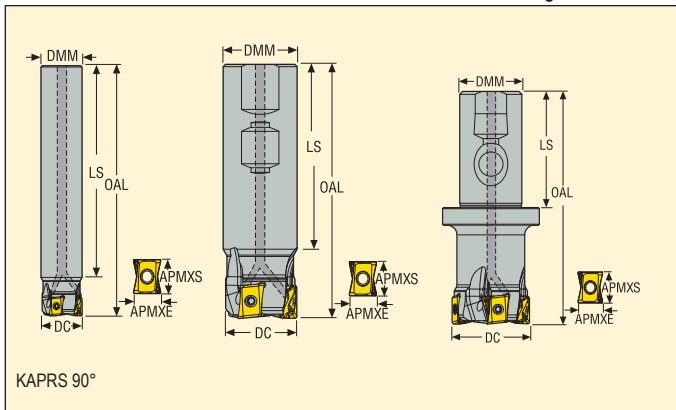
| SMG | MP1500 | | | MP2050 | | | MP2500 | | | MP3000 | | | MM4500 | | | MK1500 | | | MK2050 | | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | |
| P1 | 355 | 470 | 550 | 295 | 390 | 460 | 315 | 415 | 485 | 300 | 395 | 460 | 195 | 255 | 300 | — | — | — | — | 310 | 410 | 475 |
| P2 | 340 | 445 | 530 | 290 | 380 | 445 | 300 | 395 | 470 | 285 | 375 | 445 | 185 | 245 | 290 | — | — | — | — | 295 | 390 | 465 |
| P3 | 300 | 395 | 465 | 255 | 330 | 395 | 265 | 350 | 410 | 250 | 330 | 390 | 160 | 215 | 255 | — | — | — | — | 260 | 345 | 405 |
| P4 | 260 | 345 | 410 | 225 | 295 | 345 | 230 | 305 | 360 | 220 | 290 | 345 | 145 | 190 | 225 | — | — | — | — | 230 | 300 | 355 |
| P5 | 250 | 330 | 390 | 215 | 280 | 330 | 220 | 295 | 345 | 210 | 275 | 330 | 135 | 180 | 210 | — | — | — | — | 220 | 290 | 340 |
| P6 | 290 | 380 | 445 | 240 | 315 | 370 | 255 | 335 | 395 | 240 | 320 | 375 | 155 | 205 | 240 | — | — | — | — | 250 | 330 | 390 |
| P7 | 270 | 360 | 420 | 225 | 300 | 350 | 240 | 315 | 370 | 230 | 300 | 350 | 150 | 195 | 230 | — | — | — | — | 235 | 310 | 365 |
| P8 | 250 | 330 | 390 | 215 | 275 | 330 | 220 | 295 | 345 | 210 | 275 | 330 | 135 | 180 | 210 | — | — | — | — | 220 | 290 | 340 |
| P11 | 265 | 350 | 410 | 220 | 290 | 340 | 235 | 310 | 360 | 220 | 290 | 340 | 145 | 190 | 220 | — | — | — | — | 230 | 305 | 355 |
| P12 | 170 | 225 | 260 | 145 | 190 | 225 | 150 | 200 | 230 | 140 | 185 | 220 | 90 | 120 | 140 | — | — | — | — | 145 | 195 | 230 |
| M1 | — | — | — | 205 | 275 | 320 | 215 | 285 | 340 | 210 | 280 | 335 | 160 | 210 | 250 | — | — | — | — | — | — | — |
| M2 | — | — | — | 170 | 225 | 265 | 180 | 235 | 280 | 175 | 230 | 275 | 130 | 170 | 205 | — | — | — | — | — | — | — |
| M3 | — | — | — | 140 | 180 | 215 | 145 | 190 | 225 | 145 | 190 | 220 | 105 | 140 | 165 | — | — | — | — | — | — | — |
| K1 | 270 | 355 | 420 | 230 | 300 | 355 | 235 | 315 | 375 | 225 | 295 | 355 | — | — | — | 335 | 445 | 530 | 320 | 420 | 500 | |
| K2 | 240 | 315 | 370 | 200 | 265 | 315 | 210 | 280 | 330 | 200 | 265 | 310 | — | — | — | 300 | 395 | 465 | 280 | 370 | 440 | |
| K3 | 200 | 265 | 315 | 170 | 225 | 265 | 180 | 235 | 280 | 170 | 225 | 265 | — | — | — | 250 | 335 | 395 | 240 | 315 | 375 | |
| K4 | 190 | 255 | 300 | 165 | 215 | 255 | 170 | 225 | 265 | 160 | 210 | 250 | — | — | — | 240 | 320 | 375 | 230 | 300 | 355 | |
| K5 | 120 | 160 | 185 | 100 | 130 | 155 | 105 | 140 | 165 | 100 | 130 | 155 | — | — | — | 150 | 200 | 230 | 140 | 185 | 220 | |
| K6 | 170 | 225 | 265 | 145 | 190 | 225 | 150 | 200 | 235 | 140 | 185 | 220 | — | — | — | 210 | 280 | 330 | 200 | 265 | 315 | |
| K7 | 150 | 200 | 235 | 125 | 170 | 200 | 135 | 180 | 210 | 125 | 170 | 195 | — | — | — | 190 | 255 | 295 | 180 | 240 | 280 | |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | 55 | 70 | 80 | — | — | — | 50 | 70 | 80 | 25 | 34 | 39 | — | — | — | — | — | — | — |
| S2 | — | — | — | 43 | 55 | 65 | — | — | — | 42 | 55 | 65 | 21 | 27 | 31 | — | — | — | — | — | — | — |
| S3 | — | — | — | 37 | 49 | 55 | — | — | — | 37 | 49 | 55 | 18 | 24 | 28 | — | — | — | — | — | — | — |
| S11 | — | — | — | 75 | 95 | 115 | — | — | — | 75 | 95 | 110 | 36 | 47 | 55 | — | — | — | — | — | — | — |
| S12 | — | — | — | 50 | 65 | 80 | — | — | — | 50 | 65 | 80 | 33 | 43 | 50 | — | — | — | — | — | — | — |

| SMG | MS2050 | | | MP2050 | | | T350M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | 300 | 395 | 465 | 275 | 360 | 420 | 240 | 315 | 365 |
| P2 | — | — | — | 290 | 385 | 455 | 260 | 345 | 410 | 225 | 300 | 355 |
| P3 | — | — | — | 255 | 335 | 390 | 230 | 305 | 360 | 200 | 265 | 310 |
| P4 | — | — | — | 225 | 295 | 350 | 200 | 265 | 315 | 175 | 230 | 275 |
| P5 | — | — | — | 215 | 285 | 335 | 195 | 255 | 300 | 170 | 220 | 260 |
| P6 | — | — | — | 245 | 325 | 380 | 220 | 295 | 345 | 195 | 255 | 300 |
| P7 | — | — | — | 230 | 305 | 355 | 210 | 275 | 325 | 180 | 240 | 280 |
| P8 | — | — | — | 215 | 285 | 330 | 195 | 255 | 300 | 170 | 220 | 260 |
| P11 | — | — | — | 225 | 295 | 345 | 205 | 270 | 315 | 175 | 235 | 275 |
| P12 | 125 | 165 | 190 | 145 | 190 | 225 | 130 | 170 | 200 | 115 | 150 | 175 |
| M1 | 200 | 265 | 315 | 210 | 275 | 325 | 200 | 265 | 315 | 185 | 240 | 290 |
| M2 | 165 | 220 | 260 | 170 | 225 | 270 | 165 | 220 | 260 | 150 | 200 | 235 |
| M3 | 135 | 180 | 210 | 140 | 185 | 215 | 135 | 180 | 210 | 125 | 165 | 190 |
| K1 | — | — | — | — | — | — | — | — | — | 180 | 240 | 285 |
| K2 | — | — | — | — | — | — | — | — | — | 160 | 210 | 250 |
| K3 | — | — | — | — | — | — | — | — | — | 135 | 180 | 210 |
| K4 | — | — | — | — | — | — | — | — | — | 130 | 170 | 200 |
| K5 | — | — | — | — | — | — | — | — | — | 80 | 105 | 125 |
| K6 | — | — | — | — | — | — | — | — | — | 115 | 150 | 175 |
| K7 | — | — | — | — | — | — | — | — | — | 100 | 135 | 160 |
| N1 | — | — | — | — | — | — | — | — | — | 1325 | 1775 | 2100 |
| N2 | — | — | — | — | — | — | — | — | — | 540 | 720 | 850 |
| N3 | — | — | — | — | — | — | — | — | — | 360 | 480 | 570 |
| N11 | — | — | — | — | — | — | — | — | — | 410 | 550 | 650 |
| S1 | 50 | 65 | 75 | 55 | 70 | 80 | 50 | 65 | 75 | 45 | 60 | 70 |
| S2 | 40 | 55 | 60 | 43 | 60 | 65 | 40 | 55 | 60 | 36 | 48 | 55 |
| S3 | 35 | 46 | 55 | 38 | 50 | 60 | 35 | 46 | 55 | 32 | 42 | 49 |
| S11 | 70 | 90 | 105 | 75 | 100 | 115 | 70 | 90 | 105 | 65 | 85 | 95 |
| S12 | 48 | 65 | 75 | 50 | 70 | 80 | 48 | 65 | 75 | 44 | 55 | 65 |
| S13 | 28 | 37 | 43 | 30 | 40 | 46 | 28 | 37 | 43 | 25 | 33 | 39 |

Square shoulder and slot milling cutters

Square T4 – R217.94-12

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 58-59
- For complete insert programme, see page(s) 647
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|-----------------------|------------------|------------------|-------|------|------|-------|-------|---|-----|-------|--------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | |
| R217.94-3232.0-12-3A | Cylindrical | 3,5 | 12,0 | 32,0 | 32,0 | 195,0 | 165,0 | 3 | 1,2 | 12400 | LOEX12 |
| R217.94-3232.3-12-3A | Cyl/Weldon | 3,5 | 12,0 | 32,0 | 32,0 | 110,0 | 80,0 | 3 | 0,7 | 12400 | LOEX12 |
| R217.94-2532.3S-12-3A | Seco/Weldon | 3,5 | 12,0 | 32,0 | 25,0 | 110,0 | 56,0 | 3 | 0,7 | 12400 | LOEX12 |
| R217.94-3240.0-12-4A | Cylindrical | 3,5 | 12,0 | 40,0 | 32,0 | 210,0 | 180,0 | 4 | 1,4 | 11100 | LOEX12 |
| R217.94-3240.3S-12-4A | Seco/Weldon | 3,5 | 12,0 | 40,0 | 32,0 | 120,0 | 60,0 | 4 | 1,3 | 11100 | LOEX12 |
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Spare Parts

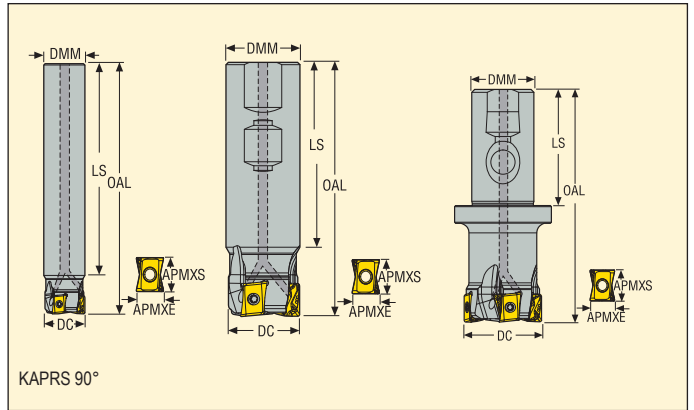
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.94-.. | DOUBLE-T | C04012-T15P | H4B-T15P | 3,5 |
| | | | | |
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Please check availability in current price and stock-list
 Torque keys, see page 732

Square shoulder and slot milling cutters

Square T4 – R217.94-12

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 58-59
- For complete insert programme, see page(s) 647
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|----------------------|------------------|------------------|-------|------|------|-------|-------|---|-----|-------|--------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | |
| R217.94-2525.0-12-2A | Cylindrical | 3,5 | 12,0 | 25,0 | 25,0 | 170,0 | 135,0 | 2 | 0,5 | 14000 | LOEX12 |
| R217.94-2525.3-12-2A | Cyl/Weldon | 3,5 | 12,0 | 25,0 | 25,0 | 101,0 | 71,0 | 2 | 0,4 | 14000 | LOEX12 |
| R217.94-3240.0-12-5A | Cylindrical | 3,5 | 12,0 | 40,0 | 32,0 | 210,0 | 180,0 | 5 | 1,4 | 11100 | LOEX12 |
| | | | | | | | | | | | |
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Spare Parts

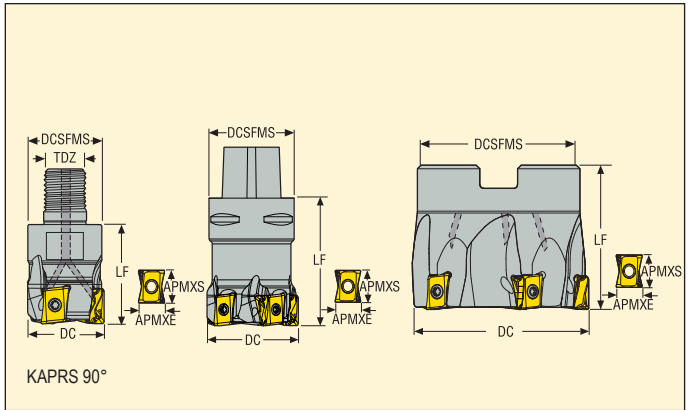
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|--------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.94-2525 | DOUBLE-T | C040105-T15P | H4B-T15P | 3,5 |
| R217.94-3240 | DOUBLE-T | C04012-T15P | H4B-T15P | 3,5 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

Square shoulder and slot milling cutters

Square T4 – R217/220.94-12

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 58-59
- For complete insert programme, see page(s) 647
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|-----------------------|------------------|------------------|-------|-------|--------|-----|------|----|-----|-------|--------|
| | | APMXE | APMXS | DC | DCSFMS | TDZ | LF | | | | |
| R217.94-1632.RE-12-3A | Combimaster | 3,5 | 12,0 | 32,0 | 30,0 | M16 | 40,0 | 3 | 0,3 | 12400 | LOEX12 |
| R217.94-2040.RE-12-3A | Combimaster | 3,5 | 12,0 | 40,0 | 36,5 | M20 | 40,0 | 3 | 0,4 | 11100 | LOEX12 |
| R220.94-0040-12-4A | Arbor | 3,5 | 12,0 | 40,0 | 35,0 | – | 40,0 | 4 | 0,3 | 11100 | LOEX12 |
| C4-R217.94-044-12-4A | Seco-Capto | 3,5 | 12,0 | 44,0 | 40,0 | – | 60,0 | 4 | 0,6 | 10600 | LOEX12 |
| R220.94-0050-12-5A | Arbor | 3,5 | 12,0 | 50,0 | 45,0 | – | 40,0 | 5 | 0,5 | 9900 | LOEX12 |
| C5-R217.94-054-12-5A | Seco-Capto | 3,5 | 12,0 | 54,0 | 50,0 | – | 60,0 | 5 | 1,0 | 9500 | LOEX12 |
| R220.94-0063-12-6A | Arbor | 3,5 | 12,0 | 63,0 | 56,0 | – | 40,0 | 6 | 0,7 | 8800 | LOEX12 |
| C6-R217.94-066-12-6A | Seco-Capto | 3,5 | 12,0 | 66,0 | 63,0 | – | 60,0 | 6 | 1,6 | 8600 | LOEX12 |
| R220.94-0080-12-7A | Arbor | 3,5 | 12,0 | 80,0 | 62,0 | – | 50,0 | 7 | 1,3 | 7800 | LOEX12 |
| R220.94-0100-12-9A | Arbor | 3,5 | 12,0 | 100,0 | 77,0 | – | 50,0 | 9 | 1,8 | 7000 | LOEX12 |
| R220.94-0125-12-12A | Arbor | 3,5 | 12,0 | 125,0 | 90,0 | – | 63,0 | 12 | 3,3 | 6300 | LOEX12 |
| | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.94-.. | DOUBLE-T | C04012-T15P | H4B-T15P | – | 3,5 |
| R220.94-0040 | DOUBLE-T | C04012-T15P | H4B-T15PL | TCEI0825 | 3,5 |
| C.-R217.94-.. | DOUBLE-T | C04012-T15P | H4B-T15P | – | 3,5 |
| R220.94-0050 | DOUBLE-T | C04012-T15P | H4B-T15P | 220.17-692 | 3,5 |
| R220.94-0063 | DOUBLE-T | C04012-T15P | H4B-T15P | MLC6S12X30 | 3,5 |
| R220.94-0080 | DOUBLE-T | C04012-T15P | H4B-T15P | MC6S12X35 | 3,5 |
| R220.94-0100-0125 | DOUBLE-T | C04012-T15P | H4B-T15PL | – | 3,5 |

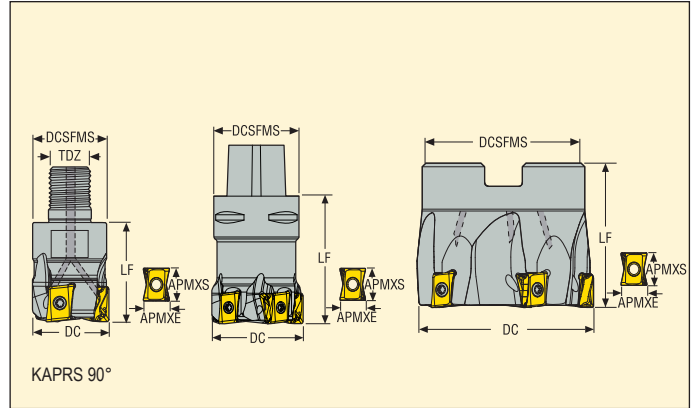
Please check availability in current price and stock-list

Torque keys, see page 732

Square shoulder and slot milling cutters

Square T4 – R217/220.94-12

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 58-59
- For complete insert programme, see page(s) 647
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|-----------------------|------------------|------------------|-------|-------|--------|-----|------|----|-----|-------|--------|
| | | APMXE | APMXS | DC | DCSFMS | TDZ | LF | | | | |
| R217.94-2040.RE-12-5A | Combimaster | 3,5 | 12,0 | 40,0 | 36,5 | M20 | 40,0 | 5 | 0,5 | 11100 | LOEX12 |
| R220.94-0040-12-5A | Arbor | 3,5 | 12,0 | 40,0 | 35,0 | – | 40,0 | 5 | 0,4 | 11100 | LOEX12 |
| R220.94-0050-12-6A | Arbor | 3,5 | 12,0 | 50,0 | 45,0 | – | 40,0 | 6 | 0,5 | 9900 | LOEX12 |
| R220.94-0063-12-8A | Arbor | 3,5 | 12,0 | 63,0 | 56,0 | – | 40,0 | 8 | 0,7 | 8800 | LOEX12 |
| R220.94-0080-12-10A | Arbor | 3,5 | 12,0 | 80,0 | 62,0 | – | 50,0 | 10 | 1,3 | 7800 | LOEX12 |
| R220.94-0100-12-12A | Arbor | 3,5 | 12,0 | 100,0 | 77,0 | – | 50,0 | 12 | 1,9 | 7000 | LOEX12 |
| R220.94-0125-12-15A | Arbor | 3,5 | 12,0 | 125,0 | 90,0 | – | 63,0 | 15 | 3,4 | 6300 | LOEX12 |
| | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.94-.. | DOUBLE-T | C04012-T15P | H4B-T15P | – | 3,5 |
| R220.94-0040 | DOUBLE-T | C04012-T15P | H4B-T15P | TCEI0825 | 3,5 |
| R220.94-0050 | DOUBLE-T | C04012-T15P | H4B-T15P | 220.17-692 | 3,5 |
| R220.94-0063 | DOUBLE-T | C04012-T15P | H4B-T15P | MLC6S12X30 | 3,5 |
| R220.94-0080 | DOUBLE-T | C04012-T15P | H4B-T15P | MC6S12X35 | 3,5 |
| R220.94-0100-0125 | DOUBLE-T | C04012-T15P | H4B-T15PL | – | 3,5 |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.94-12 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|------|------|
| | | | 100% | 30% | 10% |
| P1 | LOEX120708TR-M12 F40M | 6,0 | 0,18 | 0,20 | 0,30 |
| P2 | LOEX120708TR-M12 F40M | 6,0 | 0,19 | 0,20 | 0,32 |
| P3 | LOEX120708TR-M12 MP2500 | 6,0 | 0,18 | 0,19 | 0,30 |
| P4 | LOEX120708TR-M12 MP2500 | 6,0 | 0,17 | 0,19 | 0,30 |
| P5 | LOEX120708TR-M12 MP2500 | 6,0 | 0,17 | 0,19 | 0,28 |
| P6 | LOEX120708TR-M12 MP2500 | 6,0 | 0,17 | 0,18 | 0,28 |
| P7 | LOEX120708TR-M12 MP2500 | 6,0 | 0,17 | 0,18 | 0,28 |
| P8 | LOEX120708TR-M12 MP2500 | 6,0 | 0,18 | 0,19 | 0,30 |
| P11 | LOEX120708TR-M12 T350M | 6,0 | 0,17 | 0,18 | 0,28 |
| P12 | LOEX120708TR-M12 MS2500 | 4,5 | 0,11 | 0,12 | 0,18 |
| M1 | LOEX120708R-M09 MS2050 | 6,0 | 0,14 | 0,16 | 0,24 |
| M2 | LOEX120708R-M09 MS2050 | 6,0 | 0,13 | 0,14 | 0,22 |
| M3 | LOEX120708R-M09 F40M | 4,5 | 0,11 | 0,12 | 0,18 |
| M4 | LOEX120708R-M09 F40M | 3,5 | 0,095 | 0,10 | 0,16 |
| M5 | LOEX120708R-M09 F40M | 3,5 | 0,095 | 0,10 | 0,16 |
| K1 | LOEX120708TR-MD13 MK2050 | 6,0 | 0,20 | 0,22 | 0,34 |
| K2 | LOEX120708TR-MD13 MK2050 | 6,0 | 0,18 | 0,20 | 0,30 |
| K3 | LOEX120708TR-MD13 MK2050 | 6,0 | 0,18 | 0,20 | 0,30 |
| K4 | LOEX120708TR-MD13 MK2050 | 6,0 | 0,18 | 0,20 | 0,30 |
| K5 | LOEX120708TR-MD13 MK2050 | 6,0 | 0,17 | 0,18 | 0,28 |
| K6 | LOEX120708TR-MD13 MK2050 | 6,0 | 0,18 | 0,20 | 0,30 |
| K7 | LOEX120708TR-MD13 MK2050 | 6,0 | 0,17 | 0,18 | 0,28 |
| N1 | LOEX120708R-M09 F40M | 6,0 | 0,18 | 0,20 | 0,30 |
| N2 | LOEX120708R-M09 F40M | 6,0 | 0,18 | 0,20 | 0,30 |
| N3 | LOEX120708R-M09 F40M | 6,0 | 0,18 | 0,20 | 0,30 |
| N11 | LOEX120708R-M09 F40M | 6,0 | 0,18 | 0,20 | 0,30 |
| S1 | LOEX120708R-M09 MS2050 | 3,5 | 0,095 | 0,10 | 0,16 |
| S2 | LOEX120708R-M09 MS2050 | 3,5 | 0,095 | 0,10 | 0,16 |
| S3 | LOEX120708TR-M12 MS2050 | 3,5 | 0,11 | 0,12 | 0,19 |
| S11 | LOEX120708R-M09 MS2050 | 4,0 | 0,11 | 0,12 | 0,18 |
| S12 | LOEX120708R-M09 MS2050 | 4,0 | 0,11 | 0,12 | 0,18 |
| S13 | LOEX120708TR-M12 MS2050 | 3,5 | 0,12 | 0,13 | 0,20 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

Square shoulder and slot milling cutters



R217/220.94-12 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2050 | | | MP2500 | | | MP3000 | | | MM4500 | | | MK1500 | | | MK2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 285 | 375 | 445 | 265 | 350 | 415 | 270 | 355 | 425 | 255 | 335 | 400 | 165 | 220 | 260 | — | — | — | 250 | 330 | 390 |
| P2 | 275 | 365 | 435 | 255 | 340 | 400 | 260 | 345 | 405 | 245 | 330 | 385 | 160 | 215 | 250 | — | — | — | 240 | 320 | 380 |
| P3 | 240 | 325 | 380 | 220 | 295 | 350 | 225 | 300 | 355 | 215 | 285 | 335 | 140 | 185 | 220 | — | — | — | 210 | 285 | 330 |
| P4 | 215 | 285 | 335 | 200 | 260 | 305 | 200 | 265 | 315 | 190 | 250 | 295 | 125 | 165 | 190 | — | — | — | 185 | 250 | 290 |
| P5 | 205 | 275 | 325 | 190 | 250 | 300 | 195 | 255 | 305 | 185 | 240 | 290 | 120 | 155 | 185 | — | — | — | 180 | 240 | 285 |
| P6 | 230 | 305 | 365 | 215 | 285 | 335 | 215 | 290 | 340 | 205 | 275 | 325 | 135 | 180 | 210 | — | — | — | 200 | 265 | 320 |
| P7 | 220 | 290 | 345 | 200 | 270 | 315 | 205 | 275 | 325 | 195 | 260 | 305 | 125 | 170 | 200 | — | — | — | 190 | 250 | 300 |
| P8 | 205 | 275 | 320 | 185 | 250 | 295 | 190 | 255 | 300 | 180 | 240 | 285 | 115 | 155 | 185 | — | — | — | 175 | 240 | 280 |
| P11 | 215 | 280 | 335 | 195 | 260 | 310 | 200 | 265 | 315 | 190 | 250 | 295 | 120 | 165 | 195 | — | — | — | 185 | 245 | 290 |
| P12 | 140 | 185 | 220 | 130 | 170 | 200 | 130 | 175 | 205 | 125 | 165 | 195 | 80 | 105 | 125 | — | — | — | 120 | 160 | 195 |
| M1 | — | — | — | 180 | 245 | 285 | 185 | 250 | 290 | 185 | 245 | 285 | 135 | 180 | 215 | — | — | — | — | — | — |
| M2 | — | — | — | 150 | 200 | 240 | 155 | 205 | 245 | 155 | 200 | 240 | 115 | 150 | 180 | — | — | — | — | — | — |
| M3 | — | — | — | 125 | 165 | 195 | 125 | 170 | 200 | 125 | 165 | 195 | 90 | 125 | 145 | — | — | — | — | — | — |
| K1 | 220 | 290 | 345 | 200 | 270 | 315 | 205 | 275 | 320 | 195 | 260 | 305 | — | — | — | 275 | 365 | 430 | 260 | 345 | 410 |
| K2 | 195 | 260 | 310 | 180 | 235 | 285 | 185 | 240 | 290 | 175 | 230 | 275 | — | — | — | 245 | 325 | 385 | 235 | 310 | 365 |
| K3 | 165 | 220 | 260 | 150 | 200 | 240 | 155 | 205 | 245 | 145 | 195 | 230 | — | — | — | 210 | 275 | 330 | 195 | 260 | 310 |
| K4 | 160 | 210 | 250 | 145 | 190 | 230 | 150 | 195 | 235 | 140 | 185 | 220 | — | — | — | 200 | 260 | 315 | 190 | 250 | 295 |
| K5 | 95 | 130 | 150 | 90 | 120 | 140 | 90 | 120 | 140 | 85 | 115 | 135 | — | — | — | 120 | 160 | 190 | 115 | 155 | 180 |
| K6 | 140 | 185 | 220 | 130 | 170 | 200 | 130 | 170 | 205 | 125 | 165 | 195 | — | — | — | 175 | 230 | 275 | 165 | 220 | 260 |
| K7 | 125 | 165 | 195 | 115 | 150 | 180 | 115 | 155 | 180 | 110 | 145 | 170 | — | — | — | 155 | 205 | 245 | 145 | 195 | 230 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | 48 | 65 | 75 | — | — | — | 46 | 60 | 70 | 22 | 30 | 34 | — | — | — | — | — | — |
| S2 | — | — | — | 38 | 50 | 60 | — | — | — | 37 | 49 | 55 | 18 | 24 | 28 | — | — | — | — | — | — |
| S3 | — | — | — | 34 | 45 | 50 | — | — | — | 32 | 43 | 50 | 16 | 21 | 25 | — | — | — | — | — | — |
| S11 | — | — | — | 65 | 85 | 105 | — | — | — | 65 | 85 | 100 | 31 | 41 | 48 | — | — | — | — | — | — |
| S12 | — | — | — | 45 | 60 | 70 | — | — | — | 44 | 60 | 70 | 28 | 38 | 45 | — | — | — | — | — | — |
| S13 | — | — | — | 27 | 36 | 41 | — | — | — | 26 | 34 | 40 | 17 | 22 | 26 | — | — | — | — | — | — |

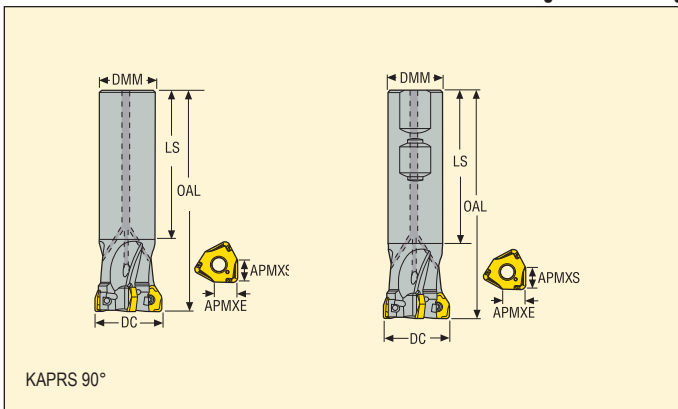
| SMG | MS2050 | | | MP2500 | | | T250M | | | T350M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|-------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | 295 | 390 | 460 | — | — | — | 235 | 310 | 370 | 205 | 270 | 320 |
| P2 | — | — | — | 285 | 375 | 445 | — | — | — | 225 | 300 | 355 | 195 | 260 | 305 |
| P3 | — | — | — | 245 | 330 | 395 | — | — | — | 195 | 265 | 310 | 170 | 230 | 270 |
| P4 | — | — | — | 220 | 290 | 345 | — | — | — | 175 | 230 | 275 | 155 | 200 | 235 |
| P5 | — | — | — | 210 | 280 | 330 | — | — | — | 170 | 220 | 265 | 145 | 195 | 230 |
| P6 | — | — | — | 240 | 315 | 370 | — | — | — | 190 | 255 | 300 | 165 | 220 | 260 |
| P7 | — | — | — | 225 | 300 | 350 | — | — | — | 180 | 240 | 280 | 155 | 205 | 245 |
| P8 | — | — | — | 205 | 275 | 330 | — | — | — | 165 | 220 | 260 | 145 | 195 | 225 |
| P11 | — | — | — | 220 | 290 | 340 | — | — | — | 175 | 230 | 275 | 150 | 200 | 240 |
| P12 | 120 | 155 | 185 | 145 | 190 | 220 | — | — | — | 115 | 150 | 180 | 100 | 130 | 155 |
| M1 | 195 | 250 | 300 | 205 | 270 | 320 | — | — | — | 175 | 235 | 270 | 155 | 210 | 245 |
| M2 | 160 | 210 | 250 | 170 | 225 | 265 | — | — | — | 145 | 190 | 230 | 130 | 175 | 210 |
| M3 | 130 | 170 | 200 | 135 | 180 | 215 | — | — | — | 120 | 155 | 185 | 105 | 145 | 170 |
| M4 | 100 | 135 | 155 | 105 | 145 | 165 | — | — | — | 95 | 125 | 145 | 85 | 115 | 130 |
| M5 | 85 | 110 | 130 | 90 | 120 | 140 | — | — | — | 75 | 105 | 120 | 70 | 95 | 110 |
| K1 | — | — | — | 225 | 295 | 355 | — | — | — | — | — | — | 155 | 210 | 245 |
| K2 | — | — | — | 200 | 265 | 315 | — | — | — | — | — | — | 140 | 185 | 220 |
| K3 | — | — | — | 170 | 225 | 265 | — | — | — | — | — | — | 120 | 155 | 185 |
| K4 | — | — | — | 160 | 215 | 255 | — | — | — | — | — | — | 110 | 150 | 175 |
| K5 | — | — | — | 100 | 130 | 155 | — | — | — | — | — | — | 70 | 90 | 110 |
| K6 | — | — | — | 145 | 190 | 225 | — | — | — | — | — | — | 100 | 130 | 155 |
| K7 | — | — | — | 125 | 170 | 200 | — | — | — | — | — | — | 90 | 115 | 140 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1125 | 1525 | 1800 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 460 | 610 | 720 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 305 | 410 | 485 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 350 | 465 | 550 |
| S1 | 47 | 65 | 75 | — | — | — | — | — | — | 43 | 60 | 65 | 39 | 55 | 60 |
| S2 | 38 | 50 | 60 | — | — | — | — | — | — | 35 | 47 | 55 | 32 | 42 | 49 |
| S3 | 33 | 44 | 50 | — | — | — | — | — | — | 31 | 41 | 48 | 28 | 37 | 43 |
| S11 | 65 | 85 | 100 | — | — | — | — | — | — | 60 | 80 | 95 | 55 | 70 | 85 |
| S12 | 45 | 60 | 70 | — | — | — | — | — | — | 41 | 55 | 65 | 38 | 50 | 60 |
| S13 | 26 | 35 | 41 | — | — | — | — | — | — | 24 | 33 | 38 | 22 | 30 | 34 |

Square 6™ – R217.96-04

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 64-65
- For complete insert programme, see page(s) 680
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|----------------------|------------------|------------------|-------|----|-----|-----|-----|---|-----|-------|----------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | |
| R217.96-2020.0-04-2A | Cylindrical | 2,0 | 4,0 | 20 | 20 | 150 | 121 | 2 | 1,9 | 29400 | XNEX04.. |
| R217.96-2020.3-04-2A | Cyl.-Weldon | 2,0 | 4,0 | 20 | 20 | 90 | 61 | 2 | 1,9 | 29400 | XNEX04.. |
| R217.96-2525.0-04-4A | Cylindrical | 2,0 | 4,0 | 25 | 25 | 170 | 141 | 4 | 0,6 | 26300 | XNEX04.. |
| R217.96-2525.3-04-4A | Cyl.-Weldon | 2,0 | 4,0 | 25 | 25 | 101 | 67 | 4 | 0,4 | 26300 | XNEX04.. |
| R217.96-3032.0-04-5A | Cylindrical | 2,0 | 4,0 | 32 | 30 | 195 | 164 | 5 | 1,0 | 23200 | XNEX04.. |
| R217.96-3232.0-04-5A | Cylindrical | 2,0 | 4,0 | 32 | 32 | 195 | 164 | 5 | 1,2 | 23200 | XNEX04.. |
| R217.96-3232.3-04-5A | Cyl.-Weldon | 2,0 | 4,0 | 32 | 32 | 105 | 68 | 5 | 0,5 | 23200 | XNEX04.. |
| | | | | | | | | | | | |
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Spare Parts

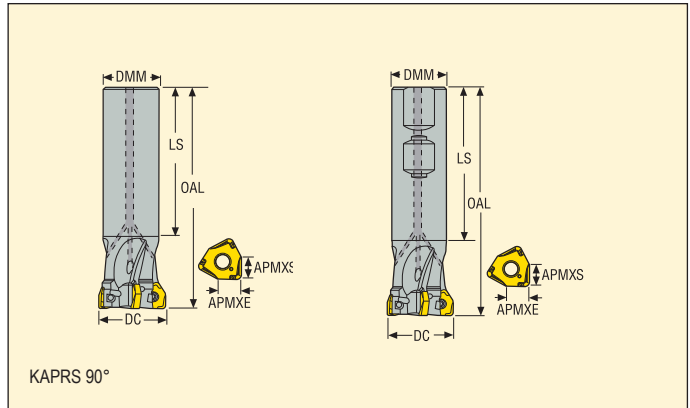
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.96-.. | DOUBLE-T | C02506-T08P | H4B-T08P | 1,2 |
| | | | | |
| | | | | |
| | | | | |
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Please check availability in current price and stock-list
 Torque keys, see page 732

Square shoulder and slot milling cutters

Square 6™ – R217.96-04

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 64-65
- For complete insert programme, see page(s) 680
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|----------------------|------------------|------------------|-------|----|-----|-----|-----|---|-----|-------|----------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | |
| R217.96-1820.0-04-3A | Cylindrical | 2,0 | 4,0 | 20 | 18 | 150 | 121 | 3 | 0,3 | 29400 | XNEX04.. |
| R217.96-2020.0-04-3A | Cylindrical | 2,0 | 4,0 | 20 | 20 | 150 | 121 | 3 | 0,3 | 29400 | XNEX04.. |
| R217.96-2020.3-04-3A | Cyl.-Weldon | 2,0 | 4,0 | 20 | 20 | 90 | 61 | 3 | 0,2 | 29400 | XNEX04.. |
| R217.96-2525.0-04-5A | Cylindrical | 2,0 | 4,0 | 25 | 25 | 170 | 141 | 5 | 0,6 | 26300 | XNEX04.. |
| R217.96-2525.3-04-5A | Cyl.-Weldon | 2,0 | 4,0 | 25 | 25 | 101 | 67 | 5 | 0,4 | 26300 | XNEX04.. |
| R217.96-3232.0-04-6A | Cylindrical | 2,0 | 4,0 | 32 | 32 | 195 | 164 | 6 | 1,2 | 23200 | XNEX04.. |
| R217.96-3232.3-04-6A | Cyl.-Weldon | 2,0 | 4,0 | 32 | 32 | 105 | 68 | 6 | 0,6 | 23200 | XNEX04.. |
| | | | | | | | | | | | |
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Spare Parts

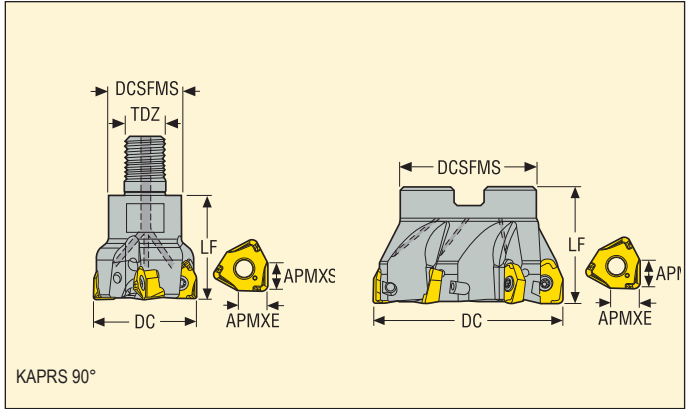
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.96-.. | DOUBLE-T | C02506-T08P | H4B-T08P | 1,2 |
| | | | | |
| | | | | |
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Please check availability in current price and stock-list
 Torque keys, see page 732

Square shoulder and slot milling cutters

Square 6™ – R217/220.96-04

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 64-65
- For complete insert programme, see page(s) 680
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | Insert |
|-----------------------|------------------|------------------|-------|------|--------|-----|-----|------|---|-----|--------|----------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | |
| R217.96-1020.RE-04-2A | Combimaster | 2,0 | 4,0 | 20,0 | 18 | – | M10 | 28,0 | 2 | 1,9 | 29400 | XNEX04.. |
| R217.96-1225.RE-04-4A | Combimaster | 2,0 | 4,0 | 25,0 | 23 | – | M12 | 30,0 | 4 | 0,1 | 26300 | XNEX04.. |
| R217.96-1632.RE-04-5A | Combimaster | 2,0 | 4,0 | 32,0 | 30 | – | M16 | 40,0 | 5 | 0,3 | 23200 | XNEX04.. |
| R220.96-0032-04-4A | Arbor | 2,0 | 4,0 | 32,0 | 35 | 16 | – | 40,0 | 4 | 0,2 | 23200 | XNEX04.. |
| R217.96-2040.RE-04-6A | Combimaster | 2,0 | 4,0 | 40,0 | 37 | – | M20 | 40,0 | 6 | 0,4 | 20700 | XNEX04.. |
| R220.96-0040-04-5A | Arbor | 2,0 | 4,0 | 40,0 | 35 | 16 | – | 40,0 | 5 | 0,3 | 20700 | XNEX04.. |
| R220.96-0050-04-6A | Arbor | 2,0 | 4,0 | 50,0 | 47 | 22 | – | 40,0 | 6 | 0,4 | 18600 | XNEX04.. |
| R220.96-0063-04-7A | Arbor | 2,0 | 4,0 | 63,0 | 62 | 27 | – | 40,0 | 7 | 0,7 | 150000 | XNEX04.. |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.96-.. | DOUBLE-T | C02506-T08P | H4B-T08P | – | 1,2 |
| R220.96-0032-0040 | DOUBLE-T | C02506-T08P | H4B-T08P | TCEI0825 | 1,2 |
| R220.96-0050 | DOUBLE-T | C02506-T08P | H4B-T08P | 220.17-692 | 1,2 |
| R220.96-0063 | DOUBLE-T | C02506-T08P | H4B-T08P | – | 1,2 |

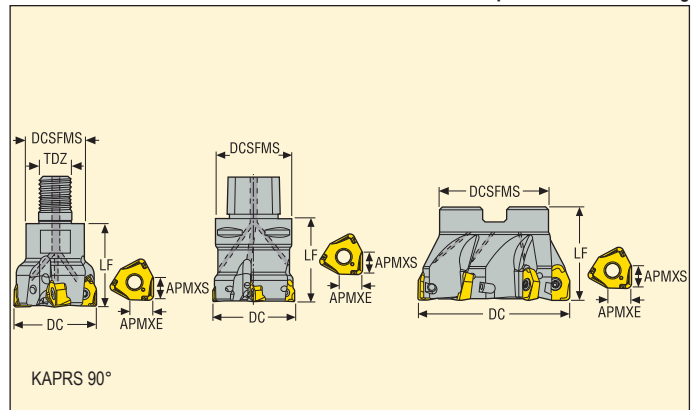
Please check availability in current price and stock-list
Torque keys, see page 732

Square 6™ – R217/220.96-04

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 64-65
- For complete insert programme, see page(s) 680
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | Insert |
|-----------------------|------------------|------------------|-------|------|--------|-----|-----|------|---|-----|-------|----------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | |
| R217.96-1020.RE-04-3A | Combimaster | 2,0 | 4,0 | 20,0 | 18 | – | M10 | 28,0 | 3 | 0,1 | 29400 | XNEX04.. |
| R217.96-1225.RE-04-5A | Combimaster | 2,0 | 4,0 | 25,0 | 23 | – | M12 | 30,0 | 5 | 0,1 | 26300 | XNEX04.. |
| R217.96-1632.RE-04-6A | Combimaster | 2,0 | 4,0 | 32,0 | 30 | – | M16 | 40,0 | 6 | 0,3 | 23200 | XNEX04.. |
| R220.96-0032-04-6A | Arbor | 2,0 | 4,0 | 32,0 | 35 | 16 | – | 40,0 | 6 | 0,2 | 23200 | XNEX04.. |
| R217.96-2040.RE-04-7A | Combimaster | 2,0 | 4,0 | 40,0 | 37 | – | M20 | 40,0 | 7 | 0,4 | 20700 | XNEX04.. |
| R220.96-0040-04-6A | Arbor | 2,0 | 4,0 | 40,0 | 35 | 16 | – | 40,0 | 6 | 0,3 | 20700 | XNEX04.. |
| R220.96-0040-04-7A | Arbor | 2,0 | 4,0 | 40,0 | 35 | 16 | – | 40,0 | 7 | 0,3 | 20700 | XNEX04.. |
| C4-R217.96-044-04-6A | Seco-Capto | 2,0 | 4,0 | 44,0 | 40 | – | – | 50,0 | 6 | 0,5 | 19800 | XNEX04.. |
| R220.96-0050-04-8A | Arbor | 2,0 | 4,0 | 50,0 | 47 | 22 | – | 40,0 | 8 | 0,4 | 18600 | XNEX04.. |
| R220.96-0050-04-9A | Arbor | 2,0 | 4,0 | 50,0 | 47 | 22 | – | 40,0 | 9 | 0,4 | 18600 | XNEX04.. |
| C5-R217.96-054-04-8A | Seco-Capto | 2,0 | 4,0 | 54,0 | 50 | – | – | 50,0 | 8 | 0,8 | 17900 | XNEX04.. |
| R220.96-0063-04-9A | Arbor | 2,0 | 4,0 | 63,0 | 52 | 27 | – | 40,0 | 9 | 0,7 | 16500 | XNEX04.. |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|---------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.96-.. | DOUBLE-T | C02506-T08P | H4B-T08P | – | 1,2 |
| R220.96-0032 | DOUBLE-T | C02506-T08P | H4B-T08P | TCEI0825 | 1,2 |
| R220.96-0040 | DOUBLE-T | C02506-T08P | H4B-T08P | TCEI0825 | 1,2 |
| Cx-R217.96-.. | DOUBLE-T | C02506-T08P | H4B-T08P | – | 1,2 |
| R220.96-0050 | DOUBLE-T | C02506-T08P | H4B-T08P | 220.17-692 | 1,2 |
| R220.96-0063 | DOUBLE-T | C02506-T08P | H4B-T08P | – | 1,2 |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.96-04 – Insert selection

| SMG | | a_p | f_z | | |
|-----|-------------------------|-------|-------|-------|-------|
| | | | 100% | 30% | 10% |
| P1 | XNEX040304TR-M08 F40M | 1,9 | 0,11 | 0,13 | 0,19 |
| P2 | XNEX040304TR-M08 F40M | 1,9 | 0,12 | 0,13 | 0,20 |
| P3 | XNEX040304TR-M08 MP2500 | 1,9 | 0,11 | 0,12 | 0,19 |
| P4 | XNEX040304TR-M08 MP2500 | 1,9 | 0,11 | 0,12 | 0,18 |
| P5 | XNEX040304TR-M08 MP2500 | 1,9 | 0,11 | 0,12 | 0,18 |
| P6 | XNEX040304TR-M08 MP2500 | 1,9 | 0,11 | 0,11 | 0,18 |
| P7 | XNEX040304TR-M08 MP2500 | 1,9 | 0,11 | 0,11 | 0,18 |
| P8 | XNEX040304TR-M08 MP2500 | 1,9 | 0,11 | 0,12 | 0,19 |
| P11 | XNEX040304TR-M08 MP3000 | 1,9 | 0,11 | 0,11 | 0,18 |
| P12 | XNEX040304TR-M08 MP2500 | 1,5 | 0,075 | 0,080 | 0,12 |
| M1 | XNEX040304R-M06 F40M | 1,9 | 0,090 | 0,095 | 0,15 |
| M2 | XNEX040304R-M06 F40M | 1,9 | 0,080 | 0,085 | 0,13 |
| M3 | XNEX040304R-M06 F40M | 1,5 | 0,065 | 0,070 | 0,11 |
| M4 | XNEX040304R-M06 F40M | 1,1 | 0,060 | 0,065 | 0,095 |
| M5 | XNEX040304R-M06 MM4500 | 1,1 | 0,060 | 0,065 | 0,095 |
| K1 | XNEX040304TR-M08 MK2050 | 1,9 | 0,12 | 0,13 | 0,20 |
| K2 | XNEX040304TR-M08 MK2050 | 1,9 | 0,11 | 0,12 | 0,18 |
| K3 | XNEX040304TR-M08 MK2050 | 1,9 | 0,11 | 0,12 | 0,18 |
| K4 | XNEX040304TR-M08 MK2050 | 1,9 | 0,11 | 0,12 | 0,18 |
| K5 | XNEX040304TR-M08 MK2050 | 1,9 | 0,095 | 0,10 | 0,16 |
| K6 | XNEX040304TR-M08 MK2050 | 1,9 | 0,11 | 0,12 | 0,18 |
| K7 | XNEX040304TR-M08 MK2050 | 1,9 | 0,095 | 0,10 | 0,16 |
| N1 | XNEX040304R-M06 F40M | 1,9 | 0,11 | 0,12 | 0,19 |
| N2 | XNEX040304R-M06 F40M | 1,9 | 0,11 | 0,12 | 0,19 |
| N3 | XNEX040304R-M06 F40M | 1,9 | 0,11 | 0,12 | 0,19 |
| N11 | XNEX040304R-M06 F40M | 1,9 | 0,11 | 0,12 | 0,19 |
| S1 | XNEX040304R-M06 F40M | 1,1 | 0,060 | 0,065 | 0,095 |
| S2 | XNEX040304R-M06 F40M | 1,1 | 0,060 | 0,065 | 0,095 |
| S3 | XNEX040304R-M06 F40M | 1,1 | 0,055 | 0,060 | 0,090 |
| S11 | XNEX040304R-M06 MS2050 | 1,3 | 0,065 | 0,070 | 0,11 |
| S12 | XNEX040304R-M06 MS2050 | 1,3 | 0,065 | 0,070 | 0,11 |
| S13 | XNEX040304R-M06 MS2050 | 1,1 | 0,060 | 0,065 | 0,095 |
| H5 | XNEX040304TR-M08 MP2500 | 1,5 | 0,075 | 0,080 | 0,12 |
| H8 | XNEX040304TR-M08 MP3000 | 1,3 | 0,055 | 0,060 | 0,095 |
| H11 | XNEX040304TR-M08 MP2500 | 1,5 | 0,075 | 0,080 | 0,12 |
| H12 | XNEX040304TR-M08 MP2500 | 1,3 | 0,055 | 0,060 | 0,095 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

Square shoulder and slot milling cutters



R217/220.96-04 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | MP3000 | | | MM4500 | | | MK1500 | | | MK2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 350 | 465 | 540 | 310 | 410 | 480 | 295 | 390 | 455 | 190 | 255 | 295 | — | — | — | 305 | 405 | 470 |
| P2 | 340 | 455 | 530 | 305 | 400 | 465 | 285 | 380 | 440 | 185 | 245 | 285 | — | — | — | 300 | 395 | 460 |
| P3 | 295 | 390 | 460 | 260 | 345 | 405 | 245 | 325 | 385 | 160 | 210 | 250 | — | — | — | 255 | 340 | 400 |
| P4 | 260 | 350 | 410 | 230 | 310 | 360 | 220 | 295 | 345 | 140 | 190 | 220 | — | — | — | 225 | 305 | 355 |
| P5 | 255 | 335 | 390 | 225 | 295 | 345 | 210 | 280 | 325 | 140 | 180 | 210 | — | — | — | 220 | 290 | 340 |
| P6 | 285 | 375 | 440 | 250 | 330 | 390 | 240 | 315 | 365 | 155 | 205 | 240 | — | — | — | 250 | 325 | 380 |
| P7 | 270 | 355 | 415 | 240 | 315 | 365 | 225 | 295 | 345 | 145 | 190 | 225 | — | — | — | 235 | 310 | 360 |
| P8 | 250 | 325 | 385 | 220 | 290 | 340 | 210 | 275 | 325 | 135 | 180 | 210 | — | — | — | 215 | 285 | 335 |
| P11 | 260 | 345 | 400 | 230 | 305 | 355 | 220 | 290 | 335 | 140 | 185 | 220 | — | — | — | 225 | 300 | 350 |
| P12 | 170 | 220 | 260 | 150 | 195 | 230 | 140 | 185 | 220 | 90 | 120 | 140 | — | — | — | 145 | 190 | 225 |
| M1 | — | — | — | 220 | 290 | 335 | 215 | 285 | 330 | 160 | 210 | 245 | — | — | — | — | — | — |
| M2 | — | — | — | 180 | 240 | 280 | 175 | 235 | 275 | 130 | 175 | 205 | — | — | — | — | — | — |
| M3 | — | — | — | 145 | 195 | 225 | 140 | 190 | 220 | 105 | 140 | 165 | — | — | — | — | — | — |
| M4 | — | — | — | 115 | 150 | 170 | 110 | 145 | 170 | 80 | 110 | 125 | — | — | — | — | — | — |
| M5 | — | — | — | 95 | 125 | 145 | 90 | 120 | 140 | 70 | 90 | 105 | — | — | — | — | — | — |
| K1 | 270 | 360 | 415 | 240 | 320 | 370 | 230 | 300 | 350 | — | — | — | 340 | 450 | 520 | 320 | 425 | 495 |
| K2 | 240 | 315 | 370 | 215 | 280 | 330 | 200 | 265 | 310 | — | — | — | 300 | 400 | 465 | 285 | 375 | 440 |
| K3 | 205 | 270 | 315 | 180 | 240 | 280 | 170 | 225 | 265 | — | — | — | 255 | 335 | 395 | 240 | 320 | 370 |
| K4 | 195 | 255 | 300 | 170 | 225 | 265 | 165 | 215 | 250 | — | — | — | 245 | 320 | 375 | 230 | 305 | 355 |
| K5 | 120 | 155 | 185 | 105 | 140 | 160 | 100 | 130 | 155 | — | — | — | 150 | 195 | 230 | 140 | 185 | 220 |
| K6 | 170 | 225 | 265 | 150 | 200 | 235 | 145 | 190 | 220 | — | — | — | 215 | 285 | 330 | 205 | 270 | 315 |
| K7 | 150 | 200 | 235 | 135 | 175 | 210 | 125 | 165 | 195 | — | — | — | 190 | 250 | 295 | 180 | 235 | 280 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | — | — | — | 50 | 70 | 80 | 25 | 33 | 38 | — | — | — | — | — | — |
| S2 | — | — | — | — | — | — | 42 | 55 | 65 | 20 | 27 | 31 | — | — | — | — | — | — |
| S3 | — | — | — | — | — | — | 36 | 48 | 55 | 18 | 23 | 27 | — | — | — | — | — | — |
| S11 | — | — | — | — | — | — | 70 | 95 | 110 | 35 | 46 | 55 | — | — | — | — | — | — |
| S12 | — | — | — | — | — | — | 50 | 65 | 75 | 32 | 43 | 50 | — | — | — | — | — | — |
| S13 | — | — | — | — | — | — | 29 | 39 | 44 | 19 | 25 | 29 | — | — | — | — | — | — |
| H5 | 55 | 75 | 85 | 45 | 60 | 70 | 44 | 55 | 70 | — | — | — | — | — | — | — | — | — |
| H8 | 60 | 80 | 90 | 48 | 65 | 75 | 46 | 60 | 70 | — | — | — | — | — | — | — | — | — |
| H11 | 70 | 95 | 110 | 55 | 75 | 90 | 55 | 75 | 85 | — | — | — | — | — | — | — | — | — |
| H12 | 105 | 140 | 160 | 95 | 125 | 145 | 90 | 115 | 135 | — | — | — | — | — | — | — | — | — |

| SMG | MS2050 | | | F40M | | |
|-----|--------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | 235 | 310 | 360 |
| P2 | — | — | — | 230 | 305 | 355 |
| P3 | — | — | — | 200 | 260 | 305 |
| P4 | — | — | — | 175 | 235 | 275 |
| P5 | — | — | — | 170 | 225 | 260 |
| P6 | — | — | — | 190 | 250 | 295 |
| P7 | — | — | — | 180 | 235 | 275 |
| P8 | — | — | — | 165 | 220 | 260 |
| P11 | — | — | — | 175 | 230 | 270 |
| P12 | 135 | 180 | 210 | 115 | 150 | 175 |
| M1 | 225 | 295 | 345 | 185 | 245 | 285 |
| M2 | 185 | 245 | 285 | 155 | 200 | 235 |
| M3 | 150 | 200 | 230 | 125 | 165 | 190 |
| M4 | 115 | 155 | 175 | 95 | 125 | 145 |
| M5 | 95 | 125 | 145 | 80 | 105 | 120 |
| K1 | — | — | — | 180 | 240 | 280 |
| K2 | — | — | — | 160 | 215 | 250 |
| K3 | — | — | — | 135 | 180 | 210 |
| K4 | — | — | — | 130 | 170 | 200 |
| K5 | — | — | — | 80 | 105 | 125 |
| K6 | — | — | — | 115 | 150 | 175 |
| K7 | — | — | — | 100 | 135 | 155 |
| N1 | — | — | — | 1325 | 1775 | 2075 |
| N2 | — | — | — | 540 | 720 | 830 |
| N3 | — | — | — | 360 | 480 | 560 |
| N11 | — | — | — | 410 | 550 | 630 |
| S1 | 55 | 70 | 80 | 45 | 60 | 70 |
| S2 | 43 | 55 | 65 | 36 | 48 | 55 |
| S3 | 38 | 50 | 60 | 31 | 41 | 48 |
| S11 | 75 | 100 | 115 | 60 | 80 | 95 |
| S12 | 50 | 70 | 80 | 43 | 55 | 65 |
| S13 | 30 | 40 | 46 | 25 | 33 | 38 |
| H5 | — | — | — | 38 | 49 | 60 |
| H8 | — | — | — | 40 | 50 | 60 |
| H11 | — | — | — | 48 | 65 | 75 |
| H12 | — | — | — | 70 | 95 | 110 |

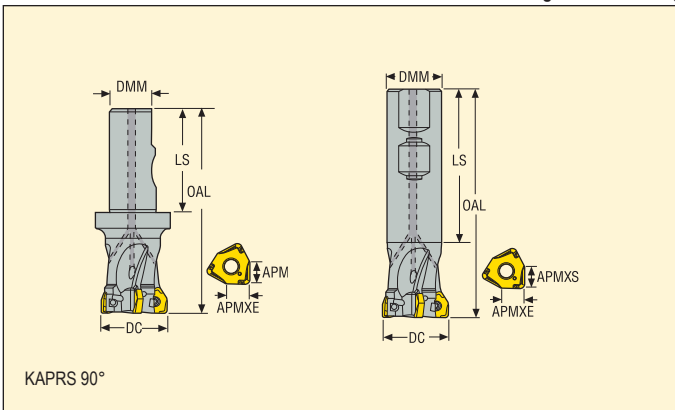
Square shoulder and slot milling cutters

Square 6™ – R217.96-08

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 71–72
- For complete insert programme, see page(s) 680
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|-----------------------|------------------|------------------|-------|----|-----|-----|----|---|-----|-------|----------|
| | | APMXE | APMXS | DC | DMM | OAL | LS | | | | |
| R217.96-3240.3-08-3A | Cyl.-Weldon | 3,0 | 7,5 | 40 | 32 | 120 | 85 | 3 | 0,7 | 11800 | XNEX08.. |
| R217.96-3240.3S-08-3A | Seco-Weldon | 3,0 | 7,5 | 40 | 32 | 120 | 60 | 3 | 0,8 | 11800 | XNEX08.. |
| | | | | | | | | | | | |
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Spare Parts

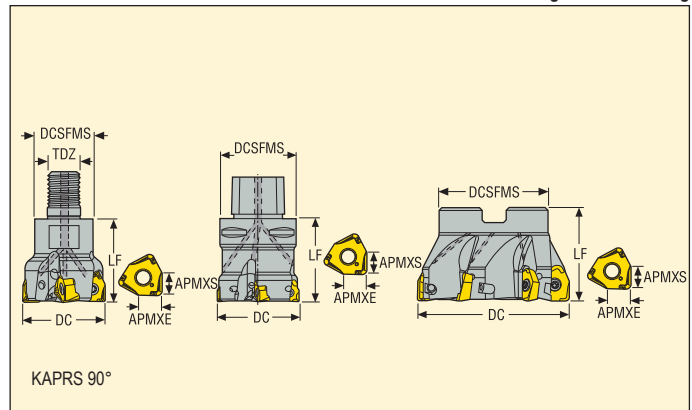
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.96-.. | DOUBLE-T | C04011-T15P | H4B-T15PL | 3,5 |
| | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

Square shoulder and slot milling cutters

Square 6™ – R217/220.96-08

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 71–72
- For complete insert programme, see page(s) 680
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | Insert |
|-----------------------|------------------|------------------|-------|-------|--------|-----|-----|------|----|-----|-------|----------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | |
| R217.96-1640.RE-08-3A | Combimaster | 3,0 | 7,5 | 40,0 | 28 | – | M16 | 40,0 | 3 | 0,3 | 11800 | XNEX08.. |
| R217.96-2040.RE-08-3A | Combimaster | 3,0 | 7,5 | 40,0 | 37 | – | M20 | 40,0 | 3 | 0,4 | 11800 | XNEX08.. |
| C4-R217.96-044-08-3A | Seco-Capto | 3,0 | 7,5 | 44,0 | 40 | – | – | 60,0 | 3 | 0,6 | 11300 | XNEX08.. |
| R220.96-0050-08-4A | Arbor | 3,0 | 7,5 | 50,0 | 47 | 22 | – | 40,0 | 4 | 0,3 | 10600 | XNEX08.. |
| R220.96-0052-08-5A | Arbor | 3,0 | 7,5 | 52,0 | 47 | 22 | – | 40,0 | 5 | 0,4 | 10600 | XNEX08.. |
| C5-R217.96-054-08-4A | Seco-Capto | 3,0 | 7,5 | 54,0 | 50 | – | – | 60,0 | 4 | 0,9 | 10200 | XNEX08.. |
| R220.96-0063-08-4A | Arbor | 3,0 | 7,5 | 63,0 | 47 | 22 | – | 40,0 | 4 | 0,5 | 9400 | XNEX08.. |
| R220.96-0063-08-6A | Arbor | 3,0 | 7,5 | 63,0 | 47 | 22 | – | 40,0 | 6 | 0,5 | 9400 | XNEX08.. |
| R220.96-0063-08-6A-27 | Arbor | 3,0 | 7,5 | 63,0 | 62 | 27 | – | 40,0 | 6 | 0,6 | 9400 | XNEX08.. |
| C5-R217.96-063-08-6A | Seco-Capto | 3,0 | 7,5 | 63,0 | 50 | – | – | 60,0 | 6 | 1,0 | 9400 | XNEX08.. |
| C6-R217.96-066-08-6A | Seco-Capto | 3,0 | 7,5 | 66,0 | 63 | – | – | 60,0 | 6 | 1,3 | 9400 | XNEX08.. |
| C6-R217.96-066-08-7A | Seco-Capto | 3,0 | 7,5 | 66,0 | 63 | – | – | 60,0 | 7 | 1,4 | 9400 | XNEX08.. |
| R220.96-0066-08-6A | Arbor | 3,0 | 7,5 | 66,0 | 47 | 22 | – | 40,0 | 6 | 0,6 | 9400 | XNEX08.. |
| R220.96-0080-08-5A | Arbor | 3,0 | 7,5 | 80,0 | 62 | 27 | – | 50,0 | 5 | 1,1 | 8400 | XNEX08.. |
| R220.96-0080-08-7A | Arbor | 3,0 | 7,5 | 80,0 | 62 | 27 | – | 50,0 | 7 | 1,0 | 8400 | XNEX08.. |
| C6-R217.96-080-08-7A | Seco-Capto | 3,0 | 7,5 | 80,0 | 63 | – | – | 60,0 | 7 | 1,7 | 8400 | XNEX08.. |
| R220.96-0084-08-7A | Arbor | 3,0 | 7,5 | 84,0 | 62 | 27 | – | 50,0 | 7 | 1,2 | 8400 | XNEX08.. |
| R220.96-0100-08-6A | Arbor | 3,0 | 7,5 | 100,0 | 77 | 32 | – | 50,0 | 6 | 1,6 | 7500 | XNEX08.. |
| R220.96-0100-08-8A | Arbor | 3,0 | 7,5 | 100,0 | 77 | 32 | – | 50,0 | 8 | 1,5 | 7500 | XNEX08.. |
| R220.96-0125-08-7A | Arbor | 3,0 | 7,5 | 125,0 | 90 | 40 | – | 63,0 | 7 | 2,9 | 6700 | XNEX08.. |
| R220.96-0125-08-11A | Arbor | 3,0 | 7,5 | 125,0 | 90 | 40 | – | 63,0 | 11 | 2,8 | 6700 | XNEX08.. |
| R220.96-8160-08-12 | Arbor | 3,0 | 7,5 | 160,0 | 90 | 40 | – | 63,0 | 12 | 4,8 | 5900 | XNEX08.. |

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

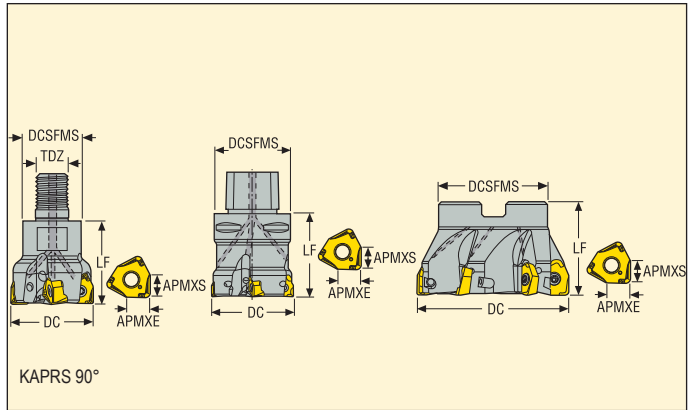
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.96-.. | DOUBLE-T | C04011-T15P | H4B-T15P | – | 3,5 |
| C.-R217.96-.. | DOUBLE-T | C04011-T15P | H4B-T15P | – | 3,5 |
| R220.96-0050 | DOUBLE-T | C04011-T15P | H4B-T15P | 220.17-696 | 3,5 |
| R220.96-0052-0063 | DOUBLE-T | C04011-T15P | H4B-T15P | 220.17-692 | 3,5 |
| R220.96-0063-27 | DOUBLE-T | C04011-T15P | H4B-T15P | 220.17-693 | 3,5 |
| R220.96-0066 | DOUBLE-T | C04011-T15P | H4B-T15P | 220.17-693 | 3,5 |
| R220.96-0080 | DOUBLE-T | C04011-T15P | H4B-T15P | MC6S12X35 | 3,5 |
| R220.96-0084 | DOUBLE-T | C04011-T15P | H4B-T15P | – | 3,5 |
| R220.96-0100-8160 | DOUBLE-T | C04011-T15P | H4B-T15PL | – | 3,5 |

Please check availability in current price and stock-list
Torque keys, see page 732

Square shoulder and slot milling cutters

Square 6™ – R217/220.96-08

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 71–72
- For complete insert programme, see page(s) 680
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | Insert |
|-----------------------|------------------|------------------|-------|-------|--------|-----|-----|------|----|-----|-------|----------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | |
| R217.96-1640.RE-08-4A | Combimaster | 3,0 | 7,5 | 40,0 | 28 | – | M16 | 40,0 | 4 | 0,2 | 11800 | XNEX08.. |
| R217.96-2040.RE-08-4A | Combimaster | 3,0 | 7,5 | 40,0 | 37 | – | M20 | 40,0 | 4 | 0,4 | 11800 | XNEX08.. |
| C4-R217.96-044-08-4A | Seco-Capto | 3,0 | 7,5 | 44,0 | 40 | – | – | 60,0 | 4 | 0,5 | 11300 | XNEX08.. |
| R220.96-0050-08-5A | Arbor | 3,0 | 7,5 | 50,0 | 47 | 22 | – | 40,0 | 5 | 0,3 | 10600 | XNEX08.. |
| C5-R217.96-054-08-5A | Seco-Capto | 3,0 | 7,5 | 54,0 | 50 | – | – | 60,0 | 5 | 0,9 | 10200 | XNEX08.. |
| R220.96-0063-08-7A | Arbor | 3,0 | 7,5 | 63,0 | 47 | 22 | – | 40,0 | 7 | 0,7 | 9400 | XNEX08.. |
| R220.96-0063-08-7A-27 | Arbor | 3,0 | 7,5 | 63,0 | 62 | 27 | – | 40,0 | 7 | 0,6 | 9400 | XNEX08.. |
| C5-R217.96-063-08-7A | Seco-Capto | 3,0 | 7,5 | 63,0 | 50 | – | – | 60,0 | 7 | 1,0 | 9400 | XNEX08.. |
| R220.96-0080-08-9A | Arbor | 3,0 | 7,5 | 80,0 | 62 | 27 | – | 50,0 | 9 | 1,0 | 8400 | XNEX08.. |
| C6-R217.96-080-08-9A | Seco-Capto | 3,0 | 7,5 | 80,0 | 63 | – | – | 60,0 | 9 | 1,2 | 8400 | XNEX08.. |
| R220.96-0100-08-11A | Arbor | 3,0 | 7,5 | 100,0 | 77 | 32 | – | 50,0 | 11 | 1,5 | 7500 | XNEX08.. |
| R220.96-0125-08-14A | Arbor | 3,0 | 7,5 | 125,0 | 90 | 40 | – | 63,0 | 14 | 2,7 | 6700 | XNEX08.. |
| R220.96-8160-08-16 | Arbor | 3,0 | 7,5 | 160,0 | 90 | 40 | – | 63,0 | 16 | 4,8 | 5900 | XNEX08.. |
| | | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

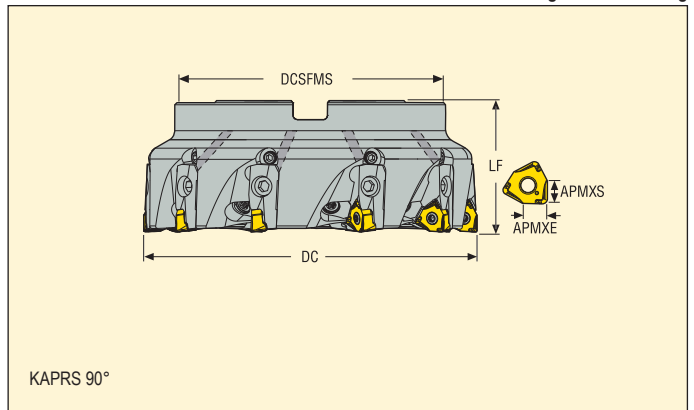
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.96-.. | DOUBLE-T | C04011-T15P | H4B-T15P | – | 3,5 |
| C.-R217.96-.. | DOUBLE-T | C04011-T15P | H4B-T15P | – | 3,5 |
| R220.96-0050 | DOUBLE-T | C04011-T15P | H4B-T15P | 220.17-696 | 3,5 |
| R220.96-0063 | DOUBLE-T | C04011-T15P | H4B-T15P | 220.17-692 | 3,5 |
| R220.96-0063 | DOUBLE-T | C04011-T15P | H4B-T15P | 220.17-693 | 3,5 |
| R220.96-0080 | DOUBLE-T | C04011-T15P | H4B-T15P | MC6S12X35 | 3,5 |
| R220.96-0100-8160 | DOUBLE-T | C04011-T15P | H4B-T15PL | – | 3,5 |

Please check availability in current price and stock-list

Torque keys, see page 732

Square 6™ – R220.96-08

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 71–72
- For complete insert programme, see page(s) 680
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|-----|-----|------|----|------|------|----------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | |
| R220.96-8160-08-7C | Arbor | 3,0 | 7,5 | 160,0 | 130 | 40 | – | 63,0 | 7 | 5,6 | 5900 | XNEX08.. |
| R220.96-8200-08-8C | Arbor | 3,0 | 7,5 | 200,0 | 160 | 60 | – | 63,0 | 8 | 8,0 | 5300 | XNEX08.. |
| R220.96-8250-08-10C | Arbor | 3,0 | 7,5 | 250,0 | 210 | 60 | – | 63,0 | 10 | 15,2 | 4200 | XNEX08.. |
| R220.96-8315-08-12C | Arbor | 3,0 | 7,5 | 315,0 | 225 | 60 | – | 63,0 | 12 | 25,9 | 4200 | XNEX08.. |
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Spare Parts

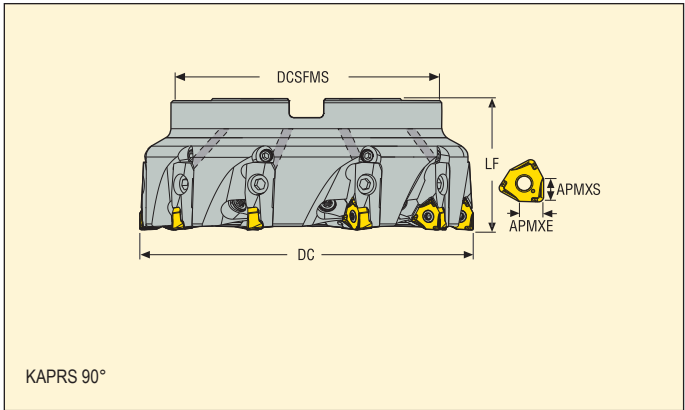
| For cutter | Wedge screw | Wedge clamp radial adj. | Wedge clamp axial adj. | Key (T-handle) | Insert screw | Insert key | Cassette screw | Cassette | Torque value (Nm) |
|------------|-------------|-------------------------|------------------------|----------------|--------------|------------|----------------|----------|-------------------|
| | | | | | | | | | |
| R220.96-.. | LD8020-T25P | CW0810 | AU1114T-T15P | DOUBLE-T | C04011-T15P | H4B-T15PL | FS96018 | XN08PRN | 3,5 |
| | | | | | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

Square shoulder and slot milling cutters

Square 6™ – R220.96-08

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 71–72
- For complete insert programme, see page(s) 680
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|-----|------|----|-----|------|----------|
| | | APMXE | APMXS | DC | DCSFMS | DCB | LF | | | | |
| R220.96-8160-08-10C | Arbor | 3,0 | 7,5 | 160,0 | 130 | 40 | 63,0 | 10 | 5,5 | 5900 | XNEX08.. |
| R220.96-8200-08-12C | Arbor | 3,0 | 7,5 | 200,0 | 160 | 60 | 63,0 | 12 | 7,8 | 5300 | XNEX08.. |
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Spare Parts

| For cutter | Wedge screw | Wedge clamp radial adj. | Wedge clamp axial adj. | Key (T-handle) | Insert screw | Insert key | Cassette screw | Cassette | Torque value (Nm) |
|------------|-------------|-------------------------|------------------------|----------------|--------------|------------|----------------|----------|-------------------|
| R220.96-.. | LD8020-T25P | CW0810 | AU1114T-T15P | DOUBLE-T | C04011-T15P | H4B-T15PL | FS96018 | XN08PRN | 3,5 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.96-08 – Insert selection

| SMG | | a_p | f_z | | |
|-----|-------------------------|-------|-------|-------|------|
| | | | 100% | 30% | 10% |
| P1 | XNEX080608TR-ME09 F40M | 3,5 | 0,13 | 0,14 | 0,22 |
| P2 | XNEX080608TR-ME09 F40M | 3,5 | 0,13 | 0,14 | 0,22 |
| P3 | XNEX080608TR-M13 MP2500 | 3,5 | 0,18 | 0,20 | 0,30 |
| P4 | XNEX080608TR-M13 MP2500 | 3,5 | 0,18 | 0,19 | 0,30 |
| P5 | XNEX080608TR-M13 MP2500 | 3,5 | 0,17 | 0,19 | 0,30 |
| P6 | XNEX080608TR-M13 MP2500 | 3,5 | 0,17 | 0,19 | 0,28 |
| P7 | XNEX080608TR-M13 MP2500 | 3,5 | 0,17 | 0,19 | 0,28 |
| P8 | XNEX080608TR-M13 MP2500 | 3,5 | 0,18 | 0,20 | 0,30 |
| P11 | XNEX080608TR-M13 T350M | 3,5 | 0,17 | 0,19 | 0,28 |
| P12 | XNEX080608TR-M13 MP2500 | 3,0 | 0,12 | 0,13 | 0,20 |
| M1 | XNEX080608R-M08 F40M | 3,5 | 0,12 | 0,13 | 0,20 |
| M2 | XNEX080608R-M08 F40M | 3,5 | 0,11 | 0,12 | 0,18 |
| M3 | XNEX080608R-M08 F40M | 3,0 | 0,085 | 0,095 | 0,14 |
| M4 | XNEX080608R-M08 T350M | 2,0 | 0,080 | 0,085 | 0,13 |
| M5 | XNEX080608R-M08 T350M | 2,0 | 0,080 | 0,085 | 0,13 |
| K1 | XNEX080608TR-M13 MK2050 | 3,5 | 0,19 | 0,20 | 0,32 |
| K2 | XNEX080608TR-M13 MK2050 | 3,5 | 0,17 | 0,19 | 0,30 |
| K3 | XNEX080608TR-M13 MK2050 | 3,5 | 0,17 | 0,19 | 0,30 |
| K4 | XNEX080608TR-M13 MK2050 | 3,5 | 0,17 | 0,19 | 0,30 |
| K5 | XNEX080608TR-M13 MK2050 | 3,5 | 0,16 | 0,17 | 0,26 |
| K6 | XNEX080608TR-M13 MK2050 | 3,5 | 0,17 | 0,19 | 0,30 |
| K7 | XNEX080608TR-M13 MK2050 | 3,5 | 0,16 | 0,17 | 0,26 |
| N1 | XNEX080608R-M08 H25 | 3,5 | 0,15 | 0,16 | 0,24 |
| N2 | XNEX080608R-M08 H25 | 3,5 | 0,15 | 0,16 | 0,24 |
| N3 | XNEX080608R-M08 H25 | 3,5 | 0,15 | 0,16 | 0,24 |
| N11 | XNEX080608R-M08 H25 | 3,5 | 0,15 | 0,16 | 0,24 |
| S1 | XNEX080608R-M08 T350M | 2,0 | 0,080 | 0,085 | 0,13 |
| S2 | XNEX080608R-M08 T350M | 2,0 | 0,080 | 0,085 | 0,13 |
| S3 | XNEX080608R-M08 T350M | 2,0 | 0,075 | 0,080 | 0,12 |
| S11 | XNEX080608R-M08 MS2050 | 2,5 | 0,085 | 0,095 | 0,15 |
| S12 | XNEX080608R-M08 MS2050 | 2,5 | 0,085 | 0,095 | 0,15 |
| S13 | XNEX080608R-M08 MS2050 | 2,0 | 0,080 | 0,085 | 0,13 |
| H5 | XNEX080608TR-M13 MP1500 | 3,0 | 0,12 | 0,13 | 0,20 |
| H8 | XNEX080608TR-M13 MP3000 | 2,5 | 0,090 | 0,10 | 0,15 |
| H11 | XNEX080608TR-M13 MP1500 | 3,0 | 0,12 | 0,13 | 0,20 |
| H12 | XNEX080608TR-M13 MP1500 | 2,5 | 0,090 | 0,10 | 0,15 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

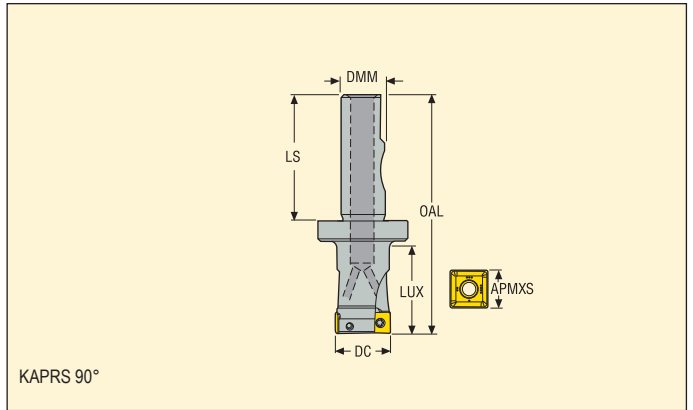
R217/220.96-08 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2050 | | | MP2500 | | | MP3000 | | | MM4500 | | | MK1500 | | | MK2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 345 | 455 | 530 | 295 | 390 | 455 | 305 | 405 | 475 | 290 | 385 | 450 | 185 | 250 | 290 | — | — | — | 260 | 350 | 415 |
| P2 | 335 | 445 | 520 | 285 | 380 | 445 | 295 | 395 | 460 | 280 | 375 | 435 | 180 | 240 | 285 | — | — | — | 255 | 340 | 395 |
| P3 | 295 | 380 | 460 | 250 | 325 | 390 | 260 | 340 | 405 | 245 | 320 | 385 | 160 | 210 | 250 | — | — | — | 220 | 290 | 345 |
| P4 | 260 | 345 | 405 | 220 | 295 | 345 | 230 | 305 | 360 | 220 | 290 | 340 | 140 | 185 | 220 | — | — | — | 195 | 260 | 305 |
| P5 | 250 | 330 | 385 | 210 | 280 | 330 | 220 | 290 | 340 | 210 | 275 | 325 | 135 | 180 | 210 | — | — | — | 190 | 250 | 295 |
| P6 | 280 | 370 | 435 | 235 | 315 | 370 | 245 | 325 | 385 | 235 | 310 | 365 | 150 | 200 | 235 | — | — | — | 210 | 280 | 335 |
| P7 | 265 | 345 | 410 | 225 | 295 | 350 | 235 | 310 | 360 | 220 | 290 | 345 | 145 | 190 | 220 | — | — | — | 200 | 265 | 315 |
| P8 | 250 | 320 | 385 | 210 | 275 | 330 | 220 | 285 | 340 | 210 | 270 | 325 | 135 | 175 | 210 | — | — | — | 185 | 245 | 290 |
| P11 | 255 | 340 | 395 | 215 | 290 | 340 | 225 | 300 | 350 | 215 | 285 | 335 | 140 | 185 | 215 | — | — | — | 195 | 255 | 305 |
| P12 | 170 | 220 | 260 | 145 | 185 | 220 | 150 | 195 | 230 | 140 | 185 | 220 | 90 | 120 | 140 | — | — | — | 125 | 170 | 200 |
| M1 | — | — | — | 205 | 270 | 320 | 215 | 285 | 330 | 210 | 280 | 325 | 155 | 205 | 245 | — | — | — | — | — | — |
| M2 | — | — | — | 170 | 225 | 265 | 175 | 235 | 275 | 175 | 230 | 270 | 130 | 170 | 200 | — | — | — | — | — | — |
| M3 | — | — | — | 135 | 180 | 210 | 145 | 185 | 220 | 140 | 185 | 220 | 105 | 135 | 160 | — | — | — | — | — | — |
| M4 | — | — | — | 105 | 140 | 165 | 110 | 150 | 170 | 110 | 145 | 170 | 80 | 110 | 125 | — | — | — | — | — | — |
| M5 | — | — | — | 90 | 120 | 135 | 90 | 125 | 145 | 90 | 120 | 140 | 70 | 90 | 105 | — | — | — | — | — | — |
| K1 | 265 | 350 | 410 | 225 | 300 | 350 | 235 | 310 | 365 | — | — | — | — | — | — | 290 | 385 | 450 | 275 | 365 | 425 |
| K2 | 235 | 310 | 365 | 200 | 265 | 310 | 210 | 275 | 325 | — | — | — | — | — | — | 260 | 340 | 405 | 245 | 320 | 385 |
| K3 | 200 | 265 | 310 | 170 | 225 | 265 | 175 | 235 | 275 | — | — | — | — | — | — | 220 | 285 | 345 | 205 | 270 | 325 |
| K4 | 190 | 250 | 295 | 160 | 215 | 250 | 170 | 225 | 260 | — | — | — | — | — | — | 210 | 275 | 325 | 195 | 260 | 310 |
| K5 | 115 | 155 | 180 | 100 | 130 | 155 | 105 | 135 | 160 | — | — | — | — | — | — | 125 | 170 | 200 | 120 | 160 | 190 |
| K6 | 165 | 220 | 260 | 145 | 190 | 220 | 150 | 195 | 230 | — | — | — | — | — | — | 185 | 240 | 290 | 175 | 230 | 275 |
| K7 | 150 | 195 | 230 | 125 | 165 | 195 | 130 | 175 | 205 | — | — | — | — | — | — | 160 | 215 | 255 | 155 | 205 | 240 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | 50 | 70 | 80 | — | — | — | 50 | 70 | 80 | 25 | 33 | 38 | — | — | — | — | — | — |
| S2 | — | — | — | 42 | 55 | 65 | — | — | — | 41 | 55 | 65 | 20 | 27 | 31 | — | — | — | — | — | — |
| S3 | — | — | — | 37 | 48 | 55 | — | — | — | 36 | 48 | 55 | 18 | 23 | 27 | — | — | — | — | — | — |
| S11 | — | — | — | 70 | 95 | 110 | — | — | — | 70 | 95 | 110 | 35 | 46 | 55 | — | — | — | — | — | — |
| S12 | — | — | — | 50 | 65 | 80 | — | — | — | 49 | 65 | 75 | 32 | 42 | 50 | — | — | — | — | — | — |
| S13 | — | — | — | 29 | 39 | 45 | — | — | — | 29 | 38 | 44 | 19 | 25 | 29 | — | — | — | — | — | — |
| H5 | 55 | 75 | 85 | 43 | 55 | 65 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | 60 | 75 | 90 | 45 | 60 | 70 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | 70 | 95 | 110 | 55 | 70 | 85 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | 105 | 140 | 165 | 90 | 120 | 140 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| SMG | MS2050 | | | MS2500 | | | T350M | | | F40M | | | H25 | | | MP1020 | | |
|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|------|------|------|------|------|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | 335 | 440 | 530 | 265 | 350 | 415 | 230 | 305 | 360 | — | — | — | 280 | 355 | 380 |
| P2 | — | — | — | 325 | 430 | 510 | 260 | 345 | 400 | 225 | 300 | 350 | — | — | — | 260 | 320 | 370 |
| P3 | — | — | — | 285 | 375 | 445 | 230 | 295 | 355 | 200 | 255 | 310 | — | — | — | 235 | 295 | 335 |
| P4 | — | — | — | 250 | 330 | 395 | 200 | 265 | 310 | 175 | 230 | 270 | — | — | — | 220 | 260 | 295 |
| P5 | — | — | — | 240 | 315 | 375 | 190 | 255 | 300 | 165 | 220 | 260 | — | — | — | 210 | 260 | 280 |
| P6 | — | — | — | 270 | 365 | 425 | 215 | 285 | 335 | 185 | 245 | 290 | — | — | — | 235 | 290 | 330 |
| P7 | — | — | — | 255 | 345 | 405 | 205 | 270 | 315 | 175 | 235 | 275 | — | — | — | 220 | 275 | 310 |
| P8 | — | — | — | 240 | 315 | 375 | 190 | 250 | 300 | 165 | 215 | 260 | — | — | — | 200 | 250 | 280 |
| P11 | — | — | — | 245 | 335 | 390 | 195 | 260 | 305 | 170 | 225 | 265 | — | — | — | 215 | 265 | 300 |
| P12 | 125 | 165 | 190 | 160 | 215 | 250 | 130 | 170 | 200 | 110 | 145 | 175 | — | — | — | 170 | 185 | 200 |
| M1 | 200 | 265 | 315 | 230 | 305 | 365 | 200 | 265 | 310 | 180 | 240 | 280 | — | — | — | — | — | — |
| M2 | 165 | 220 | 260 | 190 | 255 | 300 | 165 | 220 | 255 | 150 | 200 | 235 | — | — | — | — | — | — |
| M3 | 135 | 175 | 210 | 155 | 205 | 245 | 135 | 175 | 205 | 120 | 160 | 190 | — | — | — | — | — | — |
| M4 | 105 | 140 | 160 | 120 | 160 | 190 | 105 | 140 | 160 | 95 | 125 | 145 | — | — | — | — | — | — |
| M5 | 85 | 115 | 135 | 100 | 135 | 155 | 85 | 115 | 135 | 80 | 105 | 120 | — | — | — | — | — | — |
| K1 | — | — | — | — | — | — | — | — | — | 180 | 235 | 275 | — | — | — | — | — | — |
| K2 | — | — | — | — | — | — | — | — | — | 160 | 210 | 245 | — | — | — | — | — | — |
| K3 | — | — | — | — | — | — | — | — | — | 135 | 175 | 210 | — | — | — | — | — | — |
| K4 | — | — | — | — | — | — | — | — | — | 130 | 170 | 200 | — | — | — | — | — | — |
| K5 | — | — | — | — | — | — | — | — | — | 80 | 105 | 120 | — | — | — | — | — | — |
| K6 | — | — | — | — | — | — | — | — | — | 110 | 150 | 175 | — | — | — | — | — | — |
| K7 | — | — | — | — | — | — | — | — | — | 100 | 130 | 155 | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | 1300 | 1750 | 2050 | 1250 | 1675 | 2000 | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | 530 | 700 | 830 | 510 | 680 | 800 | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | 350 | 470 | 550 | 340 | 450 | 540 | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | 400 | 540 | 630 | 390 | 520 | 610 | — | — | — |
| S1 | 49 | 65 | 75 | 60 | 80 | 90 | 48 | 65 | 75 | 44 | 60 | 70 | — | — | — | — | — | — |
| S2 | 39 | 50 | 60 | 48 | 65 | 75 | 39 | 50 | 60 | 35 | 47 | 55 | — | — | — | — | — | — |
| S3 | 34 | 45 | 55 | 42 | 55 | 65 | 34 | 45 | 55 | 31 | 41 | 48 | — | — | — | — | — | — |
| S11 | 70 | 90 | 105 | 85 | 110 | 130 | 65 | 90 | 105 | 60 | 80 | 95 | — | — | — | — | — | — |
| S12 | 47 | 60 | 75 | 60 | 75 | 90 | 47 | 60 | 70 | 42 | 55 | 65 | — | — | — | — | — | — |
| S13 | 27 | 36 | 43 | 33 | 44 | 50 | 27 | 36 | 42 | 25 | 33 | 38 | — | — | — | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — | 43 | 55 | 65 | 37 | 49 | 60 | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | 45 | 60 | 70 | 39 | 50 | 60 | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | 55 | 70 | 85 | 48 | 60 | 75 | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | 80 | 105 | 125 | 70 | 95 | 110 | — | — | — |

Mini Square – R217.99-09

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 75–76
- For complete insert programme, see page(s) 674
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | Insert |
|-----------------------|------------------|------------------|----|-----|-----|----|---|-----|-------|----------|
| | | APMXS | DC | DMM | OAL | LS | | | | |
| R217.99-2532.3S-09-3A | Seco-Weldon | 8,0 | 32 | 25 | 111 | 55 | 3 | 0,5 | 18600 | SONX09T3 |
| | | | | | | | | | | |
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Spare Parts

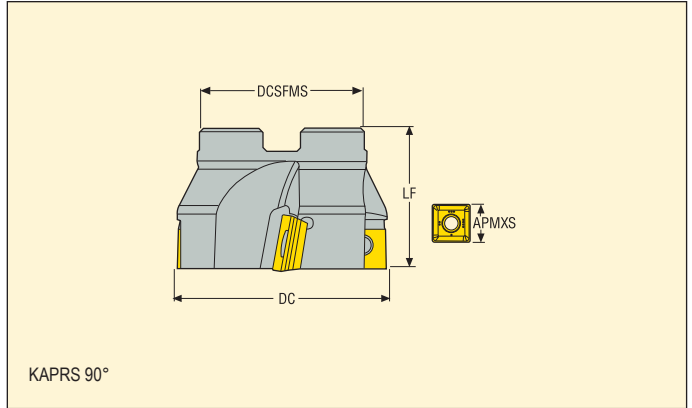
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.99-.. | DOUBLE-T | C03006-T09P | H4B-T09P | 2,0 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

Square shoulder and slot milling cutters

Mini Square – R217.99-09

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 75–76
- For complete insert programme, see page(s) 674
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | Insert |
|--------------------|------------------|------------------|------|--------|------|------|---|-----|-------|----------|
| | | APMXS | DC | DCSFMS | DCB | LF | | | | |
| R220.99-0040-09-4T | Arbor | 8,0 | 40,0 | 35,0 | 16,0 | 40,0 | 4 | 0,2 | 16600 | SONX09T3 |
| R220.99-0050-09-4 | Arbor | 8,0 | 50,0 | 47,0 | 22,0 | 40,0 | 4 | 0,4 | 14800 | SONX09T3 |
| R220.99-0050-09-6T | Arbor | 8,0 | 50,0 | 47,0 | 22,0 | 40,0 | 6 | 0,3 | 14800 | SONX09T3 |
| R220.99-0063-09-7T | Arbor | 8,0 | 63,0 | 47,0 | 22,0 | 40,0 | 7 | 0,5 | 13200 | SONX09T3 |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.99-0040 | DOUBLE-T | C03006-T09P | H4B-T09P | MC6S8X30 | 2,0 |
| R220.99-0050-0063 | DOUBLE-T | C03006-T09P | H4B-T09P | 220.17-692 | 2,0 |
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Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.99-09 – Insert selection

| SMG | | a_p | f_z | | |
|-----|-------------------------|-------|-------|-------|------|
| | | | 100% | 30% | 10% |
| P1 | SONX09T308TR-M10 F40M | 4,0 | 0,14 | 0,16 | 0,24 |
| P2 | SONX09T308TR-M10 F40M | 4,0 | 0,15 | 0,16 | 0,24 |
| P3 | SONX09T308TR-M10 MP2500 | 4,0 | 0,14 | 0,15 | 0,24 |
| P4 | SONX09T308TR-M10 MP2500 | 4,0 | 0,14 | 0,15 | 0,22 |
| P5 | SONX09T308TR-M10 MP2500 | 4,0 | 0,13 | 0,14 | 0,22 |
| P6 | SONX09T308TR-M10 MP2500 | 4,0 | 0,13 | 0,14 | 0,22 |
| P7 | SONX09T308TR-M10 MP2500 | 4,0 | 0,13 | 0,14 | 0,22 |
| P8 | SONX09T308TR-M10 MP2500 | 4,0 | 0,14 | 0,15 | 0,24 |
| P11 | SONX09T304TR-M10 T350M | 4,0 | 0,13 | 0,14 | 0,22 |
| P12 | SONX09T308TR-M10 MP2500 | 3,0 | 0,090 | 0,10 | 0,15 |
| M1 | SONX09T304TR-ME06 F40M | 4,0 | 0,085 | 0,095 | 0,14 |
| M2 | SONX09T304TR-ME06 F40M | 4,0 | 0,080 | 0,085 | 0,13 |
| M3 | SONX09T304TR-ME06 F40M | 3,0 | 0,065 | 0,070 | 0,11 |
| M4 | SONX09T304TR-M10 F40M | 2,5 | 0,090 | 0,10 | 0,15 |
| M5 | SONX09T304TR-M10 F40M | 2,5 | 0,090 | 0,10 | 0,15 |
| K1 | SONX09T308TR-M10 MK2050 | 4,0 | 0,15 | 0,16 | 0,24 |
| K2 | SONX09T308TR-M10 MK2050 | 4,0 | 0,13 | 0,14 | 0,22 |
| K3 | SONX09T308TR-M10 MK2050 | 4,0 | 0,13 | 0,14 | 0,22 |
| K4 | SONX09T308TR-M10 MK2050 | 4,0 | 0,13 | 0,14 | 0,22 |
| K5 | SONX09T308TR-M10 MK2050 | 4,0 | 0,12 | 0,13 | 0,20 |
| K6 | SONX09T308TR-M10 MK2050 | 4,0 | 0,13 | 0,14 | 0,22 |
| K7 | SONX09T308TR-M10 MK2050 | 4,0 | 0,12 | 0,13 | 0,20 |
| N1 | SONX09T304TR-ME06 F40M | 4,0 | 0,11 | 0,12 | 0,18 |
| N2 | SONX09T304TR-ME06 F40M | 4,0 | 0,11 | 0,12 | 0,18 |
| N3 | SONX09T304TR-ME06 F40M | 4,0 | 0,11 | 0,12 | 0,18 |
| N11 | SONX09T304TR-ME06 F40M | 4,0 | 0,11 | 0,12 | 0,18 |
| S1 | SONX09T304TR-M10 T350M | 2,5 | 0,090 | 0,10 | 0,15 |
| S2 | SONX09T304TR-M10 T350M | 2,5 | 0,090 | 0,10 | 0,15 |
| S3 | SONX09T304TR-M10 T350M | 2,5 | 0,085 | 0,095 | 0,14 |
| S11 | SONX09T304TR-M10 T350M | 2,5 | 0,11 | 0,11 | 0,18 |
| S12 | SONX09T304TR-ME06 F40M | 2,5 | 0,065 | 0,070 | 0,11 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

Square shoulder and slot milling cutters



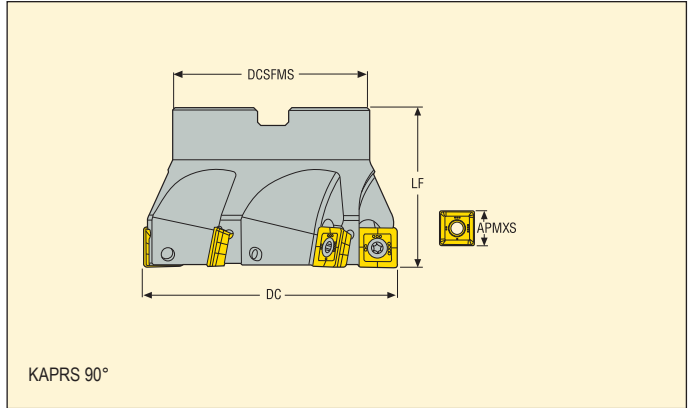
R217/220.99-09 – Cutting data $v_c =$ (m/min)

| SMG | MP2500 | | | MK1500 | | | MK2050 | | | T350M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 300 | 390 | 460 | — | — | — | 295 | 385 | 450 | 255 | 340 | 395 | 225 | 295 | 345 |
| P2 | 285 | 380 | 445 | — | — | — | 280 | 370 | 440 | 245 | 325 | 385 | 215 | 285 | 340 |
| P3 | 250 | 330 | 395 | — | — | — | 245 | 325 | 385 | 215 | 285 | 340 | 190 | 250 | 300 |
| P4 | 220 | 290 | 345 | — | — | — | 215 | 285 | 340 | 190 | 250 | 295 | 165 | 220 | 260 |
| P5 | 215 | 285 | 330 | — | — | — | 210 | 280 | 325 | 185 | 240 | 285 | 160 | 215 | 250 |
| P6 | 240 | 320 | 370 | — | — | — | 235 | 315 | 365 | 205 | 270 | 320 | 180 | 240 | 280 |
| P7 | 225 | 300 | 350 | — | — | — | 225 | 295 | 345 | 195 | 255 | 300 | 170 | 230 | 265 |
| P8 | 210 | 280 | 330 | — | — | — | 205 | 275 | 325 | 180 | 240 | 285 | 160 | 210 | 250 |
| P11 | 220 | 290 | 340 | — | — | — | 215 | 290 | 335 | 190 | 250 | 290 | 165 | 220 | 260 |
| P12 | 145 | 190 | 220 | — | — | — | 145 | 190 | 220 | 125 | 165 | 190 | 110 | 145 | 165 |
| M1 | 205 | 270 | 320 | — | — | — | — | — | — | 190 | 250 | 295 | 175 | 230 | 270 |
| M2 | 170 | 230 | 265 | — | — | — | — | — | — | 155 | 210 | 245 | 145 | 195 | 225 |
| M3 | 140 | 185 | 215 | — | — | — | — | — | — | 130 | 170 | 200 | 120 | 155 | 180 |
| M4 | 110 | 145 | 165 | — | — | — | — | — | — | 100 | 135 | 155 | 95 | 125 | 140 |
| M5 | 90 | 120 | 140 | — | — | — | — | — | — | 85 | 110 | 130 | 80 | 105 | 120 |
| K1 | 225 | 300 | 355 | 320 | 425 | 500 | 300 | 400 | 475 | — | — | — | 170 | 225 | 270 |
| K2 | 205 | 270 | 315 | 290 | 380 | 445 | 275 | 360 | 420 | — | — | — | 155 | 205 | 240 |
| K3 | 170 | 230 | 265 | 245 | 325 | 375 | 230 | 305 | 355 | — | — | — | 130 | 175 | 200 |
| K4 | 165 | 220 | 255 | 235 | 310 | 360 | 220 | 290 | 340 | — | — | — | 125 | 165 | 190 |
| K5 | 100 | 130 | 155 | 140 | 185 | 220 | 135 | 175 | 205 | — | — | — | 75 | 100 | 115 |
| K6 | 145 | 190 | 225 | 205 | 270 | 315 | 195 | 255 | 300 | — | — | — | 110 | 145 | 170 |
| K7 | 130 | 170 | 200 | 180 | 240 | 280 | 170 | 225 | 265 | — | — | — | 95 | 130 | 150 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1250 | 1675 | 2000 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 510 | 680 | 800 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 340 | 455 | 540 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 385 | 520 | 610 |
| S1 | — | — | — | — | — | — | — | — | — | 47 | 60 | 70 | 43 | 55 | 65 |
| S2 | — | — | — | — | — | — | — | — | — | 38 | 50 | 60 | 35 | 46 | 55 |
| S3 | — | — | — | — | — | — | — | — | — | 33 | 44 | 50 | 31 | 41 | 47 |
| S11 | — | — | — | — | — | — | — | — | — | 65 | 85 | 100 | 60 | 80 | 90 |
| S12 | — | — | — | — | — | — | — | — | — | 45 | 60 | 70 | 42 | 55 | 65 |

Square shoulder and slot milling cutters

Midi Square – R220.99-12

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 78–79
- For complete insert programme, see page(s) 674
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | Z | KG | A | Insert |
|--------------------|------------------|------------------|-------|--------|------|------|---|-----|-------|----------|
| | | APMXS | DC | DCSFMS | DCB | LF | | | | |
| R220.99-0050-12-4 | Arbor | 11,0 | 50,0 | 47,0 | 22,0 | 40,0 | 4 | 0,3 | 10800 | SONX1205 |
| R220.99-0050-12-5T | Arbor | 11,0 | 50,0 | 42,0 | 22,0 | 40,0 | 5 | 0,3 | 10800 | SONX1205 |
| R220.99-0063-12-4 | Arbor | 11,0 | 63,0 | 47,0 | 22,0 | 40,0 | 4 | 0,6 | 9600 | SONX1205 |
| R220.99-0063-12-6T | Arbor | 11,0 | 63,0 | 47,0 | 22,0 | 40,0 | 6 | 0,5 | 9600 | SONX1205 |
| R220.99-0080-12-6 | Arbor | 11,0 | 80,0 | 62,0 | 27,0 | 50,0 | 6 | 1,1 | 8400 | SONX1205 |
| R220.99-0100-12-8 | Arbor | 11,0 | 100,0 | 77,0 | 32,0 | 50,0 | 8 | 1,5 | 7600 | SONX1205 |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.99-0050-0063 | DOUBLE-T | C04011-T15P | H4B-T15P | 220.17-692 | 3,5 |
| R220.99-0080 | DOUBLE-T | C04011-T15P | H4B-T15P | MC6S12X40 | 3,5 |
| R220.99-0100 | DOUBLE-T | C04011-T15P | H4B-T15PL | - | 3,5 |
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Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.99-12 – Insert selection

| SMG | | a_p | f_z | | |
|-----|-------------------------|-------|-------|-------|------|
| | | | 100% | 30% | 10% |
| P1 | SONX120508TR-ME08 F40M | 5,0 | 0,11 | 0,12 | 0,19 |
| P2 | SONX120508TR-ME08 F40M | 5,0 | 0,12 | 0,13 | 0,19 |
| P3 | SONX120508TR-M12 MP2500 | 5,0 | 0,16 | 0,18 | 0,28 |
| P4 | SONX120508TR-M12 MP2500 | 5,0 | 0,16 | 0,18 | 0,28 |
| P5 | SONX120508TR-M12 MP2500 | 5,0 | 0,16 | 0,17 | 0,26 |
| P6 | SONX120508TR-M12 MP2500 | 5,0 | 0,16 | 0,17 | 0,26 |
| P7 | SONX120508TR-M12 MP2500 | 5,0 | 0,16 | 0,17 | 0,26 |
| P8 | SONX120508TR-M12 MP2500 | 5,0 | 0,16 | 0,18 | 0,28 |
| P11 | SONX120508TR-M12 T350M | 5,0 | 0,16 | 0,17 | 0,26 |
| P12 | SONX120508TR-M12 MP2500 | 4,5 | 0,11 | 0,12 | 0,18 |
| M1 | SONX120508TR-ME08 F40M | 5,0 | 0,12 | 0,13 | 0,19 |
| M2 | SONX120508TR-ME08 F40M | 5,0 | 0,11 | 0,11 | 0,18 |
| M3 | SONX120508TR-M12 F40M | 4,5 | 0,13 | 0,14 | 0,22 |
| M4 | SONX120508TR-M12 F40M | 3,0 | 0,11 | 0,12 | 0,19 |
| M5 | SONX120508TR-M12 F40M | 3,0 | 0,11 | 0,12 | 0,19 |
| K1 | SONX120508TR-M12 MK2050 | 5,0 | 0,17 | 0,19 | 0,30 |
| K2 | SONX120508TR-M12 MK2050 | 5,0 | 0,16 | 0,17 | 0,26 |
| K3 | SONX120508TR-M12 MK2050 | 5,0 | 0,16 | 0,17 | 0,26 |
| K4 | SONX120508TR-M12 MK2050 | 5,0 | 0,16 | 0,17 | 0,26 |
| K5 | SONX120508TR-M12 MK2050 | 5,0 | 0,14 | 0,16 | 0,24 |
| K6 | SONX120508TR-M12 MK2050 | 5,0 | 0,16 | 0,17 | 0,26 |
| K7 | SONX120508TR-M12 MK2050 | 5,0 | 0,14 | 0,16 | 0,24 |
| N1 | SONX120508TR-ME08 F40M | 5,0 | 0,15 | 0,16 | 0,24 |
| N2 | SONX120508TR-ME08 F40M | 5,0 | 0,15 | 0,16 | 0,24 |
| N3 | SONX120508TR-ME08 F40M | 5,0 | 0,15 | 0,16 | 0,24 |
| N11 | SONX120508TR-ME08 F40M | 5,0 | 0,15 | 0,16 | 0,24 |
| S1 | SONX120508TR-M12 T350M | 3,0 | 0,11 | 0,12 | 0,19 |
| S2 | SONX120508TR-M12 T350M | 3,0 | 0,11 | 0,12 | 0,19 |
| S3 | SONX120508TR-M12 T350M | 3,0 | 0,10 | 0,11 | 0,18 |
| S11 | SONX120508TR-M12 T350M | 3,5 | 0,13 | 0,14 | 0,22 |
| S12 | SONX120508TR-ME08 F40M | 3,5 | 0,085 | 0,095 | 0,14 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

Square shoulder and slot milling cutters



R217/220.99-12 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | MK1500 | | | MK2050 | | | T350M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 315 | 415 | 490 | 280 | 365 | 435 | — | — | — | 275 | 360 | 430 | 245 | 320 | 380 | 210 | 275 | 330 |
| P2 | 305 | 400 | 480 | 270 | 355 | 425 | — | — | — | 265 | 350 | 415 | 235 | 310 | 370 | 205 | 270 | 320 |
| P3 | 270 | 350 | 410 | 240 | 310 | 365 | — | — | — | 235 | 305 | 360 | 205 | 270 | 320 | 180 | 235 | 275 |
| P4 | 235 | 310 | 370 | 210 | 275 | 330 | — | — | — | 205 | 270 | 325 | 180 | 240 | 285 | 160 | 210 | 250 |
| P5 | 225 | 300 | 355 | 200 | 265 | 315 | — | — | — | 195 | 260 | 310 | 175 | 230 | 275 | 150 | 200 | 235 |
| P6 | 255 | 335 | 395 | 225 | 300 | 350 | — | — | — | 220 | 295 | 345 | 195 | 260 | 305 | 170 | 225 | 265 |
| P7 | 240 | 320 | 375 | 210 | 280 | 330 | — | — | — | 210 | 280 | 325 | 185 | 245 | 290 | 160 | 215 | 250 |
| P8 | 225 | 295 | 345 | 200 | 260 | 305 | — | — | — | 195 | 260 | 300 | 175 | 230 | 265 | 150 | 200 | 230 |
| P11 | 230 | 310 | 365 | 205 | 275 | 320 | — | — | — | 205 | 270 | 315 | 180 | 240 | 280 | 155 | 205 | 245 |
| P12 | 155 | 205 | 235 | 135 | 180 | 210 | — | — | — | 135 | 175 | 205 | 120 | 155 | 185 | 105 | 135 | 160 |
| M1 | — | — | — | 195 | 255 | 305 | — | — | — | — | — | — | 180 | 240 | 285 | 165 | 215 | 260 |
| M2 | — | — | — | 160 | 215 | 250 | — | — | — | — | — | — | 150 | 200 | 235 | 135 | 180 | 215 |
| M3 | — | — | — | 130 | 175 | 205 | — | — | — | — | — | — | 120 | 160 | 190 | 110 | 145 | 175 |
| M4 | — | — | — | 105 | 140 | 160 | — | — | — | — | — | — | 100 | 130 | 150 | 90 | 115 | 135 |
| M5 | — | — | — | 85 | 115 | 130 | — | — | — | — | — | — | 80 | 110 | 125 | 75 | 100 | 110 |
| K1 | 245 | 320 | 380 | 215 | 280 | 335 | 305 | 400 | 475 | 290 | 380 | 450 | — | — | — | 165 | 215 | 255 |
| K2 | 215 | 285 | 335 | 190 | 250 | 295 | 270 | 360 | 420 | 255 | 340 | 400 | — | — | — | 145 | 190 | 225 |
| K3 | 180 | 240 | 285 | 160 | 215 | 250 | 225 | 305 | 355 | 215 | 285 | 335 | — | — | — | 120 | 160 | 190 |
| K4 | 175 | 230 | 270 | 155 | 205 | 240 | 215 | 290 | 340 | 205 | 275 | 320 | — | — | — | 115 | 155 | 180 |
| K5 | 105 | 140 | 165 | 95 | 125 | 145 | 135 | 180 | 205 | 125 | 170 | 195 | — | — | — | 70 | 95 | 110 |
| K6 | 150 | 205 | 240 | 135 | 180 | 210 | 190 | 255 | 300 | 180 | 240 | 285 | — | — | — | 100 | 135 | 160 |
| K7 | 135 | 180 | 210 | 120 | 160 | 185 | 170 | 230 | 265 | 165 | 215 | 250 | — | — | — | 90 | 120 | 140 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1200 | 1575 | 1875 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 480 | 640 | 750 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 320 | 425 | 500 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 365 | 485 | 570 |
| S1 | — | — | — | — | — | — | — | — | — | — | — | — | 46 | 60 | 70 | 41 | 55 | 65 |
| S2 | — | — | — | — | — | — | — | — | — | — | — | — | 37 | 49 | 55 | 33 | 44 | 50 |
| S3 | — | — | — | — | — | — | — | — | — | — | — | — | 32 | 43 | 49 | 29 | 39 | 44 |
| S11 | — | — | — | — | — | — | — | — | — | — | — | — | 60 | 85 | 95 | 55 | 75 | 90 |
| S12 | — | — | — | — | — | — | — | — | — | — | — | — | 43 | 55 | 65 | 39 | 50 | 60 |

Helical milling cutters

| Cutter | Insert | Material suitability | | | | | Corner radius (mm) | | | | | |
|------------------|------------|----------------------|---|---|---|---|---|---|---|---|---|---|
| | | P | M | K | N | S | | | | | | |
| Turbo | XO..06 | ■ | ■ | ■ | ■ | ■ | 0,2 / 0,4 / 0,8 / 1,6 | ■ | □ | ■ | ■ | ■ |
| | XO..10 | ■ | ■ | ■ | ■ | ■ | 0,2/0,4 / 0,8 / 1,2 / 1,6 / 2,0 / 2,4 / 3,1 | ■ | ■ | ■ | ■ | ■ |
| | XO..12 | ■ | ■ | ■ | ■ | ■ | 0,2/0,4 / 0,8 / 1,2 / 1,6 / 2,0 / 2,4 / 3,1 / 4 / 5,0 / 6,3 | ■ | ■ | ■ | ■ | ■ |
| | XO..18 | ■ | ■ | ■ | ■ | ■ | 0,4 / 0,8 / 1,2 / 1,6 / 2,0 / 2,4 / 3,1 / 4,0 / 5,0 / 6,3 | □ | ■ | ■ | ■ | ■ |
| Helical T4 | LO..08 | ■ | □ | ■ | - | ■ | 0,4 / 0,8 / 1,2 / 1,6 | ■ | ■ | ■ | - | □ |
| | LO..12 | ■ | ■ | ■ | ■ | ■ | 0,4 / 0,8 / 1,2 / 1,6 / 2,0 / 2,4 / 3,1 / 4,0 / 5,0 / 6,3 | ■ | ■ | ■ | - | □ |
| 215/220.59 | SC12 | ■ | ■ | ■ | □ | □ | 1,2/3,0/3,1/6,0 | - | ■ | □ | - | □ |
| 220.69-15/220.59 | ACET15 | ■ | ■ | ■ | □ | □ | 1,2/2,4/3,0/3,1/4,0/5,0/6,0 | - | ■ | □ | - | □ |

Helical solution for side-finishing operation (small radial engagement)

| | | | | | | | | | | | | |
|--------|--|---|---|---|---|---|---------|---|---|---|---|---|
| 235.15 | | ■ | ■ | ■ | - | ■ | chamfer | ■ | ■ | ■ | - | - |
|--------|--|---|---|---|---|---|---------|---|---|---|---|---|

| | | | | | |
|--------------------|---|--|---|--------------------------------|--|
| 1st choice | ■ | High speed machine with low Power/ Torque | | Unstable condition suitability | |
| Alternative choice | ■ | Strong stable machine with rigid connexion | | Ramping ability | |
| Possible choice | □ | Not recommended | - | Plunging ability | |

Helical milling cutters

| No. of cutting edges | Applica-tion | Cutter diameter available/maximum depth of cut | | | | | | | | | | | | | | See page | |
|-------------------------------|--------------|--|----|----|----|----|----|----|----|----------|----|--------|----|--------|-----|----------|-----|
| | | 12 | 14 | 16 | 20 | 25 | 32 | 40 | 44 | 50 | 54 | 63 | 66 | 80 | 100 | | |
| 2 | | 10 | 15 | 15 | 20 | | | | | | | | | | | | 83 |
| | | | | 16 | 20 | | | | | | | | | | | | 85 |
| 2 | | | | | 25 | 25 | 34 | 34 | | 42 | | | | | | | 88 |
| | | | | | | 42 | 50 | 58 | 58 | 42 | 66 | | | | | | 90 |
| 2 | | | | | | 33 | 33 | 33 | 33 | 44 | 44 | 55 | 44 | 66 | | | 94 |
| | | | | | | | 55 | 66 | | 106 | | 107 | | 107 | | | 96 |
| 2 | | | | | | | | 47 | | 62 | 47 | 62 | 47 | 62 | 62 | | 101 |
| | | | | | | | | | | 77 | | 93 | | 93 | 77 | | 103 |
| 4 | | | | | | 36 | 36 | 36 | | 43 | | | | | | | 106 |
| | | | | | | 43 | 50 | 50 | 57 | 57 | 64 | | | | | | 108 |
| 4 | | | | | | | | | | 46 | | 46 | | | | | 106 |
| | | | | | | | | | | 58 | | 81 | | 69 | 81 | | 108 |
| 2 & 4 half effective | | | | | | | | | | 50/59/77 | | 77 | | 68 | 77 | | 117 |
| 2 & 4 full and half effective | | | | | | | | | | 72/120 | | 72/160 | | 72/120 | | | 121 |
| 2 | | | | | | | | | | | | 38 | | 38/50 | | | 125 |
| 1 | | | | | | | 40 | | | 50 | | | | 90 | | | 128 |

Slotting and contouring operations (x indicates the maximum depth of cut)

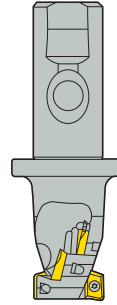
For contouring operations only(x indicates the maximum depth of cut)

Slotting and contouring

Contouring only

Code key

Note that parts of the code can vary for different cutter systems



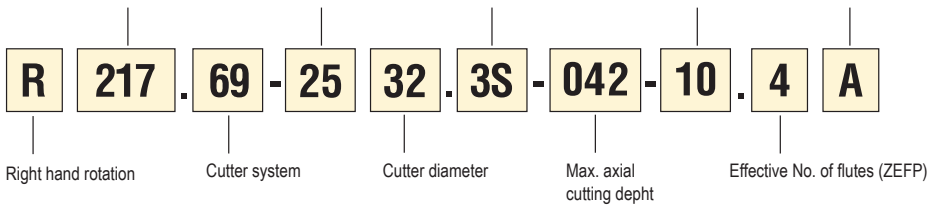
217 = With shank
220 = For arbor
Cx = For Seco-Capto

Shank diameter

Shank type

Insert size

Through coolant supply



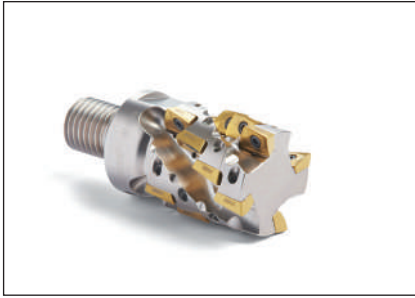
Dimensions of mounting

| | Dimensions in mm | | | | | | Spindle-nose |
|--|------------------|-----|------|-----|-------|-------|--------------|
| | DCSFMS | DCB | KWW | C | DBC1 | DBC2 | |
| | 30-35 | 16 | 8,4 | 5,6 | - | - | - |
| | 42-47 | 22 | 10,4 | 6,3 | - | - | - |
| | 48-62 | 27 | 12,4 | 7 | - | - | - |
| | 60-90 | 32 | 14,4 | 8 | - | - | - |
| | 90-130 | 40 | 16,4 | 9 | 66,7 | - | (8xxx) |
| | 130-270 | 60 | 25,7 | 14 | 101,6 | 177,8 | (8xxx) |
| | | | | | | | |
| | | | | | | | |

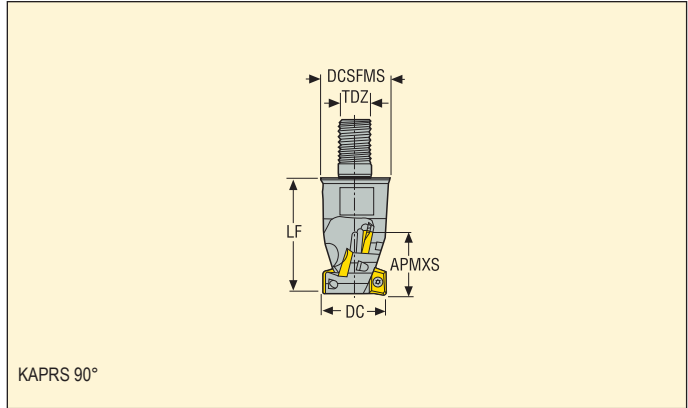
For a more exact DCSFMS and DCB measurement, see each product table.

Turbo 06 – R217.69-06

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 86–87
- For complete insert programme, see page(s) 682
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | RMPX° | C min | C max | ZEFP | | | | Insert |
|---------------------------|------------------|------------------|------|--------|-----|------|-------|-------|-------|------|----|-----|-------|-----------|
| | | APMXS | DC | DCSFMS | TDZ | LF | | | | | | | | |
| R217.69-0814.RE-15-06.2N | Combimaster | 15,0 | 14,0 | 13,2 | M8 | 25,0 | 5,0 | 22,48 | 27,25 | 2 | 6 | 0,1 | 51200 | XO.X06..* |
| R217.69-0816.RE-15-06.2N | Combimaster | 15,0 | 16,0 | 13,5 | M8 | 25,0 | 4,0 | 26,48 | 31,25 | 2 | 6 | 0,1 | 48000 | XO.X06..* |
| R217.69-0816.RE-15-06.3N | Combimaster | 15,0 | 16,0 | 13,5 | M8 | 25,0 | 6,0 | 26,48 | 31,25 | 3 | 9 | 0,1 | 48000 | XO.X06..* |
| R217.69-1020.RE-20-06.3AN | Combimaster | 20,0 | 20,0 | 18,5 | M10 | 35,0 | 4,5 | 34,48 | 39,25 | 3 | 12 | 0,1 | 44800 | XO.X06..* |
| | | | | | | | | | | | | | | |
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*All corner radii can be used in front row insert, modification of the body needed for radii > 0,8mm
For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.69-.. | DOUBLE-T | C01804-T06P | H4B-T06P | 0,5 |
| | | | | |
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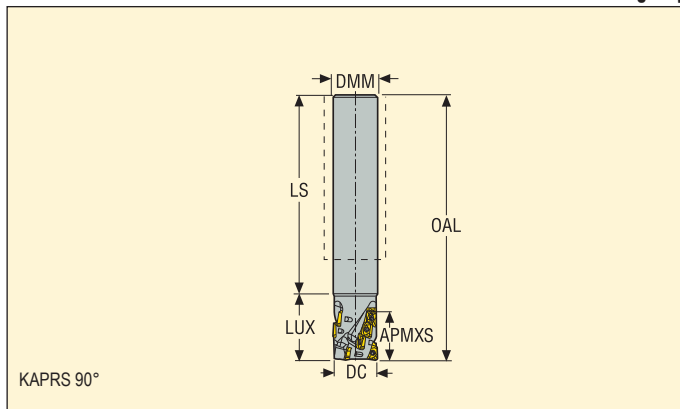
Please check availability in current price and stock-list
Torque keys, see page 732

Turbo 06 – R217.69-06

Contouring only



- For insert selection and cutting data recommendations, see page(s) 86–87
- For complete insert programme, see page(s) 682
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | ZEFP | | | | Insert |
|-------------------------|------------------|------------------|------|------|-------|------|------|-------|-------|-------|------|----|-----|-------|-----------|
| | | APMXS | DC | DMM | OAL | LUX | LS | | | | | | | | |
| R217.69-1616.0-20-06.2N | Cylindrical | 20,0 | 16,0 | 16,0 | 110,0 | 30,0 | 80,0 | 4,0 | 26,48 | 31,25 | 2 | 8 | 0,2 | 48000 | XO.X06..* |
| R217.69-2020.0-25-06.3N | Cylindrical | 25,0 | 20,0 | 20,0 | 120,0 | 35,0 | 85,0 | 2,5 | 34,48 | 39,25 | 3 | 15 | 0,3 | 44000 | XO.X06..* |
| | | | | | | | | | | | | | | | |
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*All corner radii can be used in front row insert, modification of the body needed for radii > 0,8mm

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.69-.. | DOUBLE-T | C01804-T06P | H4B-T06P | 0,5 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217.69-06 – Insert selection

| SMG | | f_z | | |
|-----|------------------------|-------|-------|-------|
| | | 100% | 30% | 10% |
| P1 | XOMX060204R-M05 F40M | 0,055 | 0,060 | 0,095 |
| P2 | XOMX060204R-M05 F40M | 0,055 | 0,065 | 0,095 |
| P3 | XOMX060204R-M05 F40M | 0,055 | 0,060 | 0,090 |
| P4 | XOMX060204R-M05 F40M | 0,055 | 0,060 | 0,090 |
| P5 | XOMX060204R-M05 F40M | 0,050 | 0,055 | 0,085 |
| P6 | XOMX060204R-M05 F40M | 0,050 | 0,055 | 0,085 |
| P7 | XOMX060204R-M05 F40M | 0,050 | 0,055 | 0,085 |
| P8 | XOMX060204R-M05 F40M | 0,055 | 0,060 | 0,090 |
| P11 | XOMX060204R-M05 MP3000 | 0,050 | 0,055 | 0,085 |
| P12 | XOMX060204R-M05 MS2050 | 0,036 | 0,038 | 0,060 |
| M1 | XOMX060204R-M05 F40M | 0,055 | 0,065 | 0,095 |
| M2 | XOMX060204R-M05 F40M | 0,050 | 0,055 | 0,085 |
| M3 | XOMX060204R-M05 F40M | 0,042 | 0,046 | 0,070 |
| M4 | XOMX060204R-M05 MP3000 | 0,036 | 0,040 | 0,060 |
| M5 | XOMX060204R-M05 MM4500 | 0,036 | 0,040 | 0,060 |
| K1 | XOMX060204R-M05 MP3000 | 0,055 | 0,065 | 0,095 |
| K2 | XOMX060204R-M05 MP3000 | 0,050 | 0,055 | 0,085 |
| K3 | XOMX060204R-M05 MP3000 | 0,050 | 0,055 | 0,085 |
| K4 | XOMX060204R-M05 MP3000 | 0,050 | 0,055 | 0,085 |
| K5 | XOMX060204R-M05 MP3000 | 0,046 | 0,050 | 0,080 |
| K6 | XOMX060204R-M05 MP3000 | 0,050 | 0,055 | 0,085 |
| K7 | XOMX060204R-M05 MP3000 | 0,046 | 0,050 | 0,080 |
| N1 | XOEX060204FR-E03 H15 | 0,060 | 0,065 | 0,10 |
| N2 | XOMX060204R-M05 MP3000 | 0,075 | 0,080 | 0,12 |
| N3 | XOMX060204R-M05 MP3000 | 0,075 | 0,080 | 0,12 |
| N11 | XOEX060204FR-E03 H15 | 0,060 | 0,065 | 0,10 |
| S1 | XOMX060204R-M05 F40M | 0,036 | 0,040 | 0,060 |
| S2 | XOMX060204R-M05 F40M | 0,036 | 0,040 | 0,060 |
| S3 | XOMX060204R-M05 F40M | 0,034 | 0,038 | 0,055 |
| S11 | XOMX060204R-M05 F40M | 0,042 | 0,046 | 0,070 |
| S12 | XOMX060204R-M05 F40M | 0,042 | 0,046 | 0,070 |
| S13 | XOMX060204R-M05 F40M | 0,036 | 0,040 | 0,060 |
| H11 | XOMX060204R-M05 MP3000 | 0,036 | 0,038 | 0,060 |
| H12 | XOMX060204R-M05 MP3000 | 0,028 | 0,030 | 0,046 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

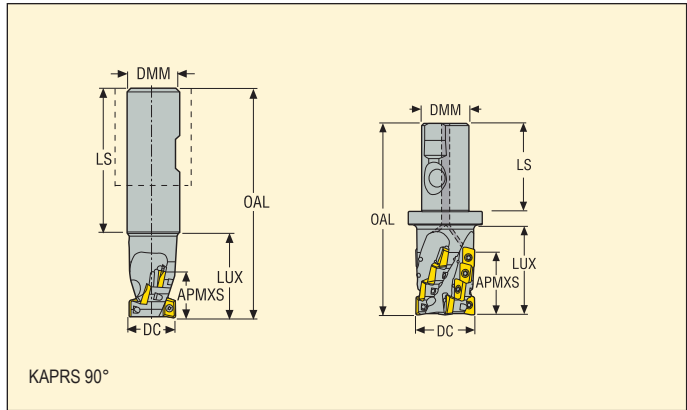
All cutting data are start values

R217.69-06 – Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | F40M | | | MM4500 | | | MS2050 | | | F30M | | | H15 | | |
|-----|--------|-----|-----|------|-----|-----|--------|-----|-----|--------|-----|-----|------|-----|-----|------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 175 | 195 | 205 | 160 | 180 | 190 | 145 | 165 | 175 | — | — | — | 165 | 180 | 190 | — | — | — |
| P2 | 175 | 190 | 200 | 160 | 175 | 185 | 145 | 160 | 175 | — | — | — | 160 | 180 | 190 | — | — | — |
| P3 | 165 | 180 | 195 | 150 | 165 | 180 | 135 | 155 | 165 | — | — | — | 155 | 170 | 180 | — | — | — |
| P4 | 155 | 175 | 185 | 140 | 160 | 170 | 125 | 145 | 155 | — | — | — | 145 | 160 | 175 | — | — | — |
| P5 | 155 | 170 | 180 | 140 | 155 | 165 | 125 | 140 | 155 | — | — | — | 140 | 160 | 170 | — | — | — |
| P6 | 160 | 180 | 190 | 145 | 165 | 175 | 130 | 150 | 160 | — | — | — | 150 | 170 | 180 | — | — | — |
| P7 | 155 | 175 | 185 | 140 | 160 | 170 | 130 | 145 | 155 | — | — | — | 145 | 165 | 175 | — | — | — |
| P8 | 150 | 170 | 180 | 135 | 155 | 165 | 125 | 140 | 150 | — | — | — | 140 | 160 | 170 | — | — | — |
| P11 | 155 | 175 | 185 | 140 | 160 | 170 | 125 | 145 | 155 | — | — | — | 145 | 160 | 170 | — | — | — |
| P12 | 125 | 145 | 155 | 110 | 130 | 140 | 95 | 115 | 125 | 115 | 135 | 145 | 115 | 130 | 140 | — | — | — |
| M1 | 155 | 170 | 185 | 145 | 160 | 175 | 135 | 150 | 165 | — | — | — | 145 | 165 | 175 | — | — | — |
| M2 | 140 | 160 | 170 | 130 | 150 | 160 | 120 | 140 | 150 | — | — | — | 135 | 155 | 165 | — | — | — |
| M3 | 125 | 145 | 155 | 115 | 135 | 145 | 105 | 125 | 135 | — | — | — | 120 | 135 | 150 | — | — | — |
| M4 | 110 | 125 | 135 | 100 | 115 | 125 | 90 | 105 | 115 | — | — | — | 100 | 120 | 130 | — | — | — |
| M5 | 95 | 115 | 125 | 85 | 105 | 115 | 75 | 95 | 105 | — | — | — | 90 | 110 | 120 | — | — | — |
| K1 | 160 | 175 | 185 | 145 | 160 | 170 | — | — | — | — | — | — | 145 | 165 | 175 | — | — | — |
| K2 | 150 | 170 | 180 | 135 | 155 | 165 | — | — | — | — | — | — | 140 | 155 | 165 | — | — | — |
| K3 | 140 | 155 | 165 | 125 | 140 | 150 | — | — | — | — | — | — | 130 | 145 | 155 | — | — | — |
| K4 | 135 | 155 | 165 | 120 | 140 | 150 | — | — | — | — | — | — | 125 | 140 | 155 | — | — | — |
| K5 | 100 | 120 | 130 | 85 | 105 | 115 | — | — | — | — | — | — | 90 | 110 | 120 | — | — | — |
| K6 | 125 | 145 | 155 | 110 | 130 | 140 | — | — | — | — | — | — | 115 | 135 | 145 | — | — | — |
| K7 | 120 | 135 | 145 | 105 | 120 | 130 | — | — | — | — | — | — | 105 | 125 | 135 | — | — | — |
| N1 | — | — | — | 275 | 295 | 305 | — | — | — | — | — | — | 280 | 300 | 310 | 280 | 300 | 310 |
| N2 | 230 | 250 | 260 | 215 | 235 | 245 | — | — | — | — | — | — | 220 | 240 | 250 | 220 | 235 | 250 |
| N3 | 205 | 220 | 235 | 190 | 205 | 220 | — | — | — | — | — | — | 195 | 210 | 220 | 190 | 210 | 220 |
| N11 | — | — | — | 200 | 215 | 225 | — | — | — | — | — | — | 200 | 220 | 230 | 200 | 220 | 230 |
| S1 | 60 | 75 | 85 | 50 | 65 | 75 | 28 | 37 | 43 | 55 | 70 | 80 | 55 | 70 | 80 | — | — | — |
| S2 | 47 | 60 | 70 | 41 | 55 | 60 | 23 | 30 | 35 | 45 | 60 | 70 | 43 | 55 | 65 | — | — | — |
| S3 | 41 | 55 | 65 | 35 | 46 | 55 | 20 | 26 | 31 | 39 | 50 | 60 | 38 | 49 | 55 | — | — | — |
| S11 | 80 | 100 | 110 | 70 | 90 | 100 | 40 | 50 | 60 | 75 | 95 | 105 | 75 | 90 | 100 | — | — | — |
| S12 | 55 | 75 | 85 | 49 | 65 | 75 | 37 | 48 | 55 | 55 | 70 | 80 | 43 | 55 | 65 | — | — | — |
| S13 | 33 | 43 | 50 | 28 | 37 | 43 | 21 | 28 | 33 | 31 | 41 | 47 | 25 | 33 | 38 | — | — | — |
| H11 | 65 | 80 | 90 | 55 | 70 | 80 | — | — | — | — | — | — | 55 | 75 | 85 | — | — | — |
| H12 | 95 | 110 | 120 | 80 | 95 | 105 | — | — | — | — | — | — | 80 | 100 | 110 | — | — | — |

Turbo 10 – R217.69-10

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 92–93
- For complete insert programme, see page(s) 683
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX* | C min | C max | ZEFP | | | | Insert |
|---------------------------|------------------|------------------|------|------|-------|------|------|-------|-------|-------|------|----|-----|-------|--------------|
| | | APMXS | DC | DMM | OAL | LUX | LS | | | | | | | | |
| R217.69-2020.3-017-10.2A | Cyl.-Weldon | 17,0 | 20,0 | 20,0 | 85,0 | 35,0 | 50,0 | 4,5 | 28,96 | 38,5 | 2 | 4 | 0,2 | 26300 | XO.X10T3..* |
| R217.69-2020.3-025-10.1A | Cyl.-Weldon | 25,0 | 20,0 | 20,0 | 95,0 | 45,0 | 50,0 | 4,5 | 28,96 | 38,5 | 1 | 3 | 0,3 | 26300 | XO.X10T3..* |
| R217.69-2525.3-025-10.2A | Cyl.-Weldon | 25,0 | 25,0 | 25,0 | 100,0 | 44,0 | 50,0 | 3,0 | 38,96 | 48,5 | 2 | 6 | 0,4 | 23500 | XO.X10T3..* |
| R217.69-2025.3S-025-10.3A | Seco-Weldon | 25,0 | 25,0 | 20,0 | 100,0 | 43,0 | 50,0 | 3,0 | 38,96 | 48,5 | 3 | 9 | 0,4 | 23500 | XO.X10T3..** |
| R217.69-2532.3S-034-10.4A | Seco-Weldon | 34,0 | 32,0 | 25,0 | 110,0 | 43,0 | 56,0 | 2,0 | 52,96 | 62,5 | 4 | 16 | 0,5 | 20800 | XO.X10T3..** |
| | | | | | | | | | | | | | | | |
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*All corner radii can be used in front row insert, modification of the body needed for radii > 2,0mm
 **Maxi corner radii 1,6mm can be used in front row insert

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.69-.. | DOUBLE-T | C02506-T07P | H4B-T07P | 0,9 |
| | | | | |
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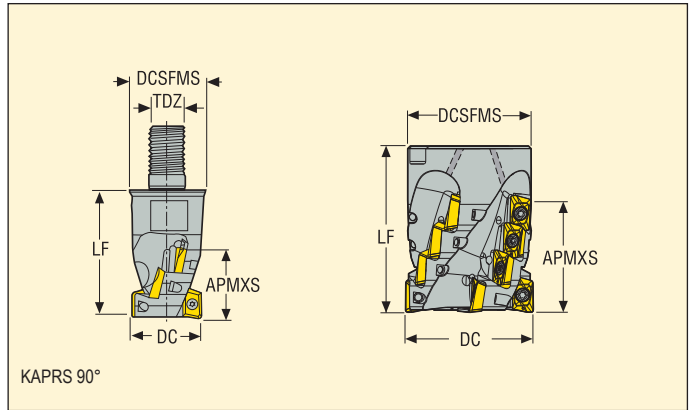
Please check availability in current price and stock-list
 Torque keys, see page 732

Turbo 10 – R217/220.69-10

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 92–93
- For complete insert programme, see page(s) 683
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | ZEFP | | | | Insert |
|---------------------------|------------------|------------------|------|--------|------|-----|------|-----|-------|-------|-------|------|-----|-------|--------------|--------|
| | | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | | | | | | |
| R217.69-1020.RE-017-10.2A | Combimaster | 17,0 | 20,0 | 18,5 | – | M10 | 28,0 | 4,5 | 28,96 | 38,5 | 2 | 4 | 0,1 | 26300 | XO.X10T3..* | |
| R217.69-1225.RE-017-10.3A | Combimaster | 17,0 | 25,0 | 23,0 | – | M12 | 35,0 | 3,0 | 38,96 | 48,5 | 3 | 6 | 0,1 | 23500 | XO.X10T3..** | |
| R217.69-1225.RE-025-10.2A | Combimaster | 25,0 | 25,0 | 23,0 | – | M12 | 40,0 | 3,0 | 38,96 | 48,5 | 2 | 6 | 0,1 | 23500 | XO.X10T3..* | |
| R217.69-1632.RE-025-10.3A | Combimaster | 25,0 | 32,0 | 30,0 | – | M16 | 45,0 | 2,0 | 52,96 | 62,5 | 3 | 9 | 0,2 | 20800 | XO.X10T3..* | |
| R220.69-00040-034-10.4A | Arbor | 34,0 | 40,0 | 35,0 | 16,0 | – | 55,0 | 1,5 | 68,96 | 78,5 | 4 | 16 | 0,3 | 18600 | XO.X10T3..* | |
| R220.69-00050-042-10.5A | Arbor | 42,0 | 50,0 | 48,0 | 27,0 | – | 65,0 | 1,2 | 88,96 | 98,5 | 5 | 25 | 0,5 | 16600 | XO.X10T3..* | |
| | | | | | | | | | | | | | | | | |
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*All corner radii can be used in front row insert, modification of the body needed for radii > 2,0mm
 **Maxi corner radii 1,6mm can be used in front row insert

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|---------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.69-.. | DOUBLE-T | C02506-T07P | H4B-T07P | – | 0,9 |
| R220.69-00040 | DOUBLE-T | C02506-T07P | H4B-T07P | 950D0850 | 0,9 |
| R220.69-00050 | DOUBLE-T | C02506-T07P | H4B-T07P | MC6S12X60 | 0,9 |
| | | | | | |
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Please check availability in current price and stock-list
 Torque keys, see page 732

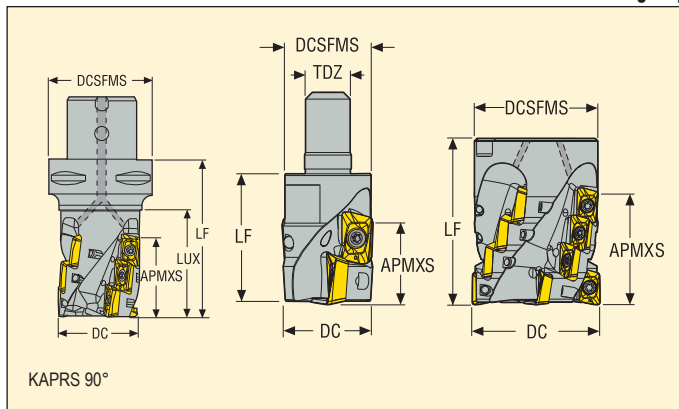
For Combimaster Shanks, see Machining Navigator Tooling System

Turbo 10 – R217/220.69-10

Contouring only



- For insert selection and cutting data recommendations, see page(s) 92–93
- For complete insert programme, see page(s) 683
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | ZEFP | | | | Insert |
|---------------------------|------------------|------------------|------|--------|------|-----|------|-------|--------|--------|------|----|-----|-------|-------------|
| | | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | | | | | |
| R217.69-1632.RE-034-10.4A | Combimaster | 34,0 | 32,0 | 30,0 | – | M16 | 50,0 | 2,0 | 52,96 | 62,5 | 4 | 16 | 0,3 | 20800 | XO.X10T3..* |
| R220.69-00040-034-10.5A | Arbor | 34,0 | 40,0 | 38,0 | 16,0 | – | 55,0 | 1,5 | 68,96 | 78,5 | 5 | 20 | 0,3 | 18600 | XO.X10T3..* |
| C4-R217.69-044-058-10.5A | Seco-Capto | 58,0 | 44,0 | 40,0 | – | – | 90,0 | 1,0 | 76,96 | 86,5 | 5 | 35 | 0,7 | 16600 | XO.X10T3..* |
| R220.69-00050-042-10.6A | Arbor | 42,0 | 50,0 | 48,0 | 27,0 | – | 65,0 | 1,2 | 88,96 | 98,5 | 6 | 30 | 0,5 | 16600 | XO.X10T3..* |
| C5-R217.69-054-066-10.6A | Seco-Capto | 66,0 | 54,0 | 50,0 | – | – | 98,0 | 1,0 | 102,48 | 107,25 | 6 | 48 | 1,3 | 16600 | XO.X10T3..* |
| | | | | | | | | | | | | | | | |
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For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling
*Maxi corner radii 1,6mm can be used in front row insert

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|----------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.69-... | DOUBLE-T | C02506-T07P | H4B-T07P | – | 0,9 |
| R220.69-00040 | DOUBLE-T | C02506-T07P | H4B-T07P | 950D0850 | 0,9 |
| Cx-R217.69-... | DOUBLE-T | C02506-T07P | H4B-T07P | – | 0,9 |
| R220.69-00050 | DOUBLE-T | C02506-T07P | H4B-T07P | MC6S12X60 | 0,9 |
| | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.69-10 – Insert selection

| SMG | | f _z | | |
|-----|--------------------------|----------------|-------|-------|
| | | 100% | 30% | 10% |
| P1 | XOMX10T308TR-ME07 F40M | 0,090 | 0,10 | 0,15 |
| P2 | XOMX10T308TR-ME07 F40M | 0,090 | 0,10 | 0,15 |
| P3 | XOMX10T308TR-ME07 MP2500 | 0,085 | 0,095 | 0,15 |
| P4 | XOMX10T308TR-M09 MP2500 | 0,095 | 0,10 | 0,16 |
| P5 | XOMX10T308TR-M09 MP2500 | 0,095 | 0,10 | 0,16 |
| P6 | XOMX10T308TR-M09 MP2500 | 0,095 | 0,10 | 0,16 |
| P7 | XOMX10T308TR-M09 MP2500 | 0,095 | 0,10 | 0,16 |
| P8 | XOMX10T308TR-M09 MP2500 | 0,10 | 0,11 | 0,16 |
| P11 | XOMX10T308TR-M09 MP3000 | 0,095 | 0,10 | 0,16 |
| P12 | XOEX10T308R-M06 MS2050 | 0,042 | 0,046 | 0,070 |
| M1 | XOEX10T308R-M06 F40M | 0,070 | 0,075 | 0,12 |
| M2 | XOEX10T308R-M06 F40M | 0,065 | 0,070 | 0,10 |
| M3 | XOEX10T308R-M06 F40M | 0,050 | 0,055 | 0,085 |
| M4 | XOEX10T308R-M06 T350M | 0,044 | 0,048 | 0,075 |
| M5 | XOEX10T308R-M06 T350M | 0,044 | 0,048 | 0,075 |
| K1 | XOMX10T308TR-M09 MK2050 | 0,10 | 0,11 | 0,17 |
| K2 | XOMX10T308TR-M09 MK2050 | 0,095 | 0,10 | 0,16 |
| K3 | XOMX10T308TR-M09 MK2050 | 0,095 | 0,10 | 0,16 |
| K4 | XOMX10T308TR-M09 MK2050 | 0,095 | 0,10 | 0,16 |
| K5 | XOMX10T308TR-M09 MK2050 | 0,085 | 0,090 | 0,14 |
| K6 | XOMX10T308TR-M09 MK2050 | 0,095 | 0,10 | 0,16 |
| K7 | XOMX10T308TR-M09 MK2050 | 0,085 | 0,090 | 0,14 |
| N1 | XOEX10T308FR-E05 H15 | 0,075 | 0,080 | 0,12 |
| N2 | XOEX10T308FR-E05 H15 | 0,075 | 0,080 | 0,12 |
| N3 | XOEX10T308FR-E05 H15 | 0,075 | 0,080 | 0,12 |
| N11 | XOEX10T308FR-E05 H15 | 0,075 | 0,080 | 0,12 |
| S1 | XOEX10T308R-M06 F40M | 0,044 | 0,048 | 0,075 |
| S2 | XOEX10T308R-M06 F40M | 0,044 | 0,048 | 0,075 |
| S3 | XOEX10T308R-M06 F40M | 0,042 | 0,046 | 0,070 |
| S11 | XOEX10T308R-M06 MS2050 | 0,050 | 0,055 | 0,085 |
| S12 | XOEX10T308R-M06 MS2050 | 0,050 | 0,055 | 0,085 |
| S13 | XOEX10T308R-M06 MS2050 | 0,044 | 0,048 | 0,075 |
| H5 | XOMX10T308TR-M09 MP1500 | 0,065 | 0,070 | 0,11 |
| H11 | XOMX10T308TR-M09 MP1500 | 0,065 | 0,070 | 0,11 |
| H12 | XOMX10T308TR-M09 MP1500 | 0,050 | 0,055 | 0,080 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

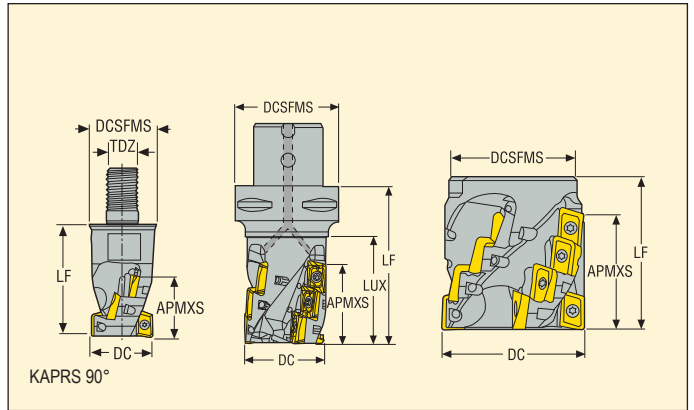
R217/220.69-10 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | MP3000 | | | T350M | | | F40M | | | MS2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 160 | 175 | 185 | 155 | 170 | 180 | 150 | 165 | 175 | 145 | 160 | 170 | 135 | 155 | 165 | 145 | 160 | 170 |
| P2 | 160 | 175 | 185 | 150 | 170 | 180 | 150 | 165 | 175 | 145 | 160 | 170 | 135 | 150 | 160 | 140 | 160 | 170 |
| P3 | 150 | 165 | 175 | 145 | 160 | 170 | 140 | 155 | 165 | 135 | 150 | 160 | 125 | 145 | 150 | 135 | 150 | 160 |
| P4 | 145 | 160 | 170 | 135 | 150 | 160 | 130 | 150 | 160 | 125 | 145 | 155 | 120 | 135 | 145 | 125 | 145 | 155 |
| P5 | 140 | 155 | 165 | 135 | 150 | 160 | 130 | 145 | 155 | 125 | 140 | 150 | 115 | 135 | 145 | 125 | 140 | 150 |
| P6 | 145 | 165 | 175 | 140 | 155 | 165 | 135 | 155 | 165 | 130 | 150 | 160 | 125 | 140 | 150 | 130 | 150 | 160 |
| P7 | 145 | 160 | 170 | 135 | 155 | 165 | 135 | 150 | 160 | 130 | 145 | 155 | 120 | 135 | 145 | 130 | 145 | 155 |
| P8 | 140 | 155 | 165 | 135 | 150 | 160 | 130 | 145 | 155 | 125 | 140 | 150 | 115 | 130 | 140 | 125 | 140 | 150 |
| P11 | 140 | 160 | 170 | 135 | 150 | 160 | 130 | 150 | 160 | 125 | 145 | 155 | 120 | 135 | 145 | 125 | 140 | 155 |
| P12 | 115 | 135 | 140 | 110 | 125 | 135 | 105 | 120 | 130 | 100 | 115 | 125 | 95 | 110 | 120 | 100 | 115 | 125 |
| M1 | — | — | — | 130 | 150 | 160 | 130 | 145 | 155 | 130 | 145 | 155 | 120 | 140 | 150 | 130 | 145 | 155 |
| M2 | — | — | — | 120 | 135 | 145 | 120 | 135 | 145 | 115 | 135 | 140 | 110 | 125 | 135 | 120 | 135 | 145 |
| M3 | — | — | — | 110 | 125 | 135 | 105 | 120 | 130 | 105 | 120 | 130 | 100 | 115 | 125 | 105 | 120 | 130 |
| M4 | — | — | — | 90 | 110 | 115 | 90 | 105 | 115 | 85 | 105 | 115 | 80 | 100 | 105 | 90 | 105 | 115 |
| M5 | — | — | — | 80 | 95 | 105 | 80 | 95 | 105 | 75 | 95 | 100 | 70 | 85 | 95 | 80 | 95 | 105 |
| K1 | 145 | 160 | 170 | 140 | 155 | 165 | — | — | — | — | — | — | 120 | 135 | 145 | — | — | — |
| K2 | 135 | 155 | 165 | 130 | 145 | 155 | — | — | — | — | — | — | 115 | 130 | 140 | — | — | — |
| K3 | 125 | 145 | 155 | 120 | 135 | 145 | — | — | — | — | — | — | 105 | 120 | 130 | — | — | — |
| K4 | 125 | 140 | 150 | 115 | 135 | 145 | — | — | — | — | — | — | 100 | 115 | 125 | — | — | — |
| K5 | 95 | 110 | 120 | 90 | 105 | 115 | — | — | — | — | — | — | 70 | 90 | 95 | — | — | — |
| K6 | 115 | 135 | 145 | 110 | 125 | 135 | — | — | — | — | — | — | 95 | 110 | 120 | — | — | — |
| K7 | 110 | 125 | 135 | 105 | 120 | 130 | — | — | — | — | — | — | 85 | 105 | 110 | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 240 | 255 | 265 | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 185 | 205 | 215 | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 160 | 180 | 190 | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 170 | 185 | 195 | — | — | — |
| S1 | — | — | — | — | — | — | 47 | 60 | 70 | 44 | 60 | 65 | 40 | 55 | 60 | 46 | 60 | 70 |
| S2 | — | — | — | — | — | — | 37 | 49 | 60 | 36 | 47 | 55 | 32 | 43 | 50 | 37 | 48 | 55 |
| S3 | — | — | — | — | — | — | 33 | 43 | 50 | 31 | 41 | 48 | 28 | 37 | 44 | 32 | 42 | 49 |
| S11 | — | — | — | — | — | — | 65 | 80 | 90 | 60 | 80 | 90 | 55 | 70 | 85 | 65 | 80 | 90 |
| S12 | — | — | — | — | — | — | 46 | 60 | 70 | 43 | 55 | 65 | 39 | 50 | 60 | 44 | 60 | 65 |
| S13 | — | — | — | — | — | — | 26 | 34 | 40 | 25 | 33 | 38 | 23 | 30 | 35 | 26 | 34 | 39 |
| H5 | 50 | 65 | 75 | — | — | — | — | — | — | 39 | 50 | 60 | 34 | 45 | 50 | — | — | — |
| H11 | 65 | 80 | 90 | — | — | — | — | — | — | 50 | 65 | 75 | 44 | 55 | 65 | — | — | — |
| H12 | 90 | 105 | 115 | — | — | — | — | — | — | 75 | 90 | 100 | 65 | 80 | 90 | — | — | — |

| SMG | MK2050 | | | MM4500 | | | MK1500 | | | MP2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 150 | 165 | 175 | 125 | 140 | 150 | — | — | — | 155 | 170 | 180 |
| P2 | 145 | 165 | 170 | 120 | 140 | 150 | — | — | — | 150 | 170 | 180 |
| P3 | 135 | 155 | 165 | 115 | 130 | 140 | — | — | — | 145 | 160 | 170 |
| P4 | 130 | 145 | 155 | 105 | 125 | 135 | — | — | — | 135 | 150 | 160 |
| P5 | 125 | 145 | 155 | 105 | 120 | 130 | — | — | — | 135 | 150 | 160 |
| P6 | 135 | 150 | 160 | 110 | 130 | 135 | — | — | — | 140 | 155 | 165 |
| P7 | 130 | 150 | 155 | 105 | 125 | 135 | — | — | — | 135 | 155 | 165 |
| P8 | 125 | 145 | 155 | 105 | 120 | 130 | — | — | — | 135 | 150 | 160 |
| P11 | 130 | 145 | 155 | 105 | 120 | 130 | — | — | — | 135 | 150 | 160 |
| P12 | 105 | 120 | 130 | 80 | 95 | 105 | — | — | — | 110 | 125 | 135 |
| M1 | — | — | — | 115 | 130 | 140 | — | — | — | 130 | 150 | 160 |
| M2 | — | — | — | 100 | 120 | 130 | — | — | — | 120 | 135 | 145 |
| M3 | — | — | — | 90 | 105 | 115 | — | — | — | 105 | 125 | 130 |
| M4 | — | — | — | 75 | 90 | 100 | — | — | — | 90 | 105 | 115 |
| M5 | — | — | — | 60 | 80 | 90 | — | — | — | 80 | 95 | 105 |
| K1 | 150 | 165 | 175 | — | — | — | 155 | 170 | 180 | 135 | 155 | 165 |
| K2 | 145 | 160 | 170 | — | — | — | 145 | 165 | 170 | 130 | 145 | 155 |
| K3 | 135 | 150 | 160 | — | — | — | 135 | 155 | 160 | 120 | 135 | 145 |
| K4 | 130 | 145 | 155 | — | — | — | 135 | 150 | 160 | 115 | 135 | 145 |
| K5 | 100 | 115 | 125 | — | — | — | 105 | 120 | 130 | 90 | 105 | 115 |
| K6 | 120 | 140 | 150 | — | — | — | 125 | 145 | 150 | 110 | 125 | 135 |
| K7 | 115 | 130 | 140 | — | — | — | 120 | 135 | 145 | 105 | 120 | 130 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | 23 | 30 | 35 | — | — | — | 49 | 65 | 75 |
| S2 | — | — | — | 18 | 24 | 28 | — | — | — | 40 | 50 | 60 |
| S3 | — | — | — | 16 | 21 | 25 | — | — | — | 35 | 45 | 55 |
| S11 | — | — | — | 32 | 42 | 49 | — | — | — | 70 | 85 | 95 |
| S12 | — | — | — | 30 | 38 | 46 | — | — | — | 48 | 60 | 70 |
| S13 | — | — | — | 17 | 22 | 26 | — | — | — | 28 | 36 | 42 |
| H5 | — | — | — | — | — | — | — | — | — | 40 | 55 | 60 |
| H11 | — | — | — | — | — | — | — | — | — | 50 | 65 | 75 |
| H12 | — | — | — | — | — | — | — | — | — | 80 | 95 | 105 |

Turbo 12 – R217/220.69-12

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 99–100
- For complete insert programme, see page(s) 684
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | ZEFP | | | | Insert |
|----------------------------|------------------|------------------|------|--------|------|-----|------|-----|--------|--------|-------|------|-----|-------|------------|--------|
| | | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | | | | | | |
| R217.69-1225.RE-022-12.2AN | Combimaster | 22,0 | 25,0 | 23,0 | – | M12 | 40,0 | 3,0 | 37,12 | 48,25 | 2 | 4 | 0,1 | 20800 | XO.X12..* | |
| R217.69-1632.RE-022-12.3AN | Combimaster | 22,0 | 32,0 | 30,0 | – | M16 | 40,0 | 2,0 | 51,12 | 62,25 | 3 | 6 | 0,2 | 18400 | XO.X12..* | |
| R217.69-2040.RE-033-12.3AN | Combimaster | 33,0 | 40,0 | 36,5 | – | M20 | 50,0 | 2,5 | – | – | 3 | 9 | 0,4 | 16400 | XO.X12..** | |
| C4-R217.69-044-033-12.3AN | Seco-Capto | 33,0 | 44,0 | 40,0 | – | – | 68,0 | 2,0 | 75,12 | 86,25 | 3 | 9 | 0,6 | 15500 | XO.X12..** | |
| R220.69-00050-033-12.4AN | Arbor | 33,0 | 50,0 | 48,0 | 27,0 | – | 55,0 | 2,0 | 87,12 | 98,25 | 4 | 12 | 0,4 | 14800 | XO.X12..** | |
| R220.69-00050-044-12.4AN | Arbor | 44,0 | 50,0 | 48,0 | 27,0 | – | 65,0 | 2,0 | 87,12 | 98,25 | 4 | 16 | 0,5 | 14800 | XO.X12..** | |
| C5-R217.69-054-044-12.4AN | Seco-Capto | 44,0 | 54,0 | 50,0 | – | – | 79,0 | 1,5 | 95,12 | 106,25 | 4 | 16 | 1,2 | 13900 | XO.X12..** | |
| R220.69-00063-033-12.5AN | Arbor | 33,0 | 63,0 | 62,0 | 27,0 | – | 63,0 | 1,5 | 113,12 | 124,25 | 5 | 15 | 1,0 | 13200 | XO.X12..** | |
| C6-R217.69-066-044-12.5AN | Seco-Capto | 44,0 | 66,0 | 63,0 | – | – | 81,0 | 1,0 | 119,12 | 130,25 | 5 | 20 | 1,9 | 12000 | XO.X12..** | |
| | | | | | | | | | | | | | | | | |
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*All corner radii can be used in front row insert, modification of the body needed for radii > 3,1 mm
 **Maxi corner radii 1,6mm can be used in front row insert

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|--------------------|----------------|--------------|------------|-------------|-------------------|
| 217.69-...Ø25 | DOUBLE-T | C03507-T10P | H4B-T10P | – | 3,0 |
| 217.69-...Ø32 | DOUBLE-T | C03508-T10P | H4B-T10P | – | 3,0 |
| Cx217.69-...Ø40-66 | DOUBLE-T | C03509-T10P | H4B-T10P | – | 3,0 |
| R220.69-00050 | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S12X40 | 3,0 |
| R220.69-00050 | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S12X50 | 3,0 |
| R220.69-00063 | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S12X50 | 3,0 |

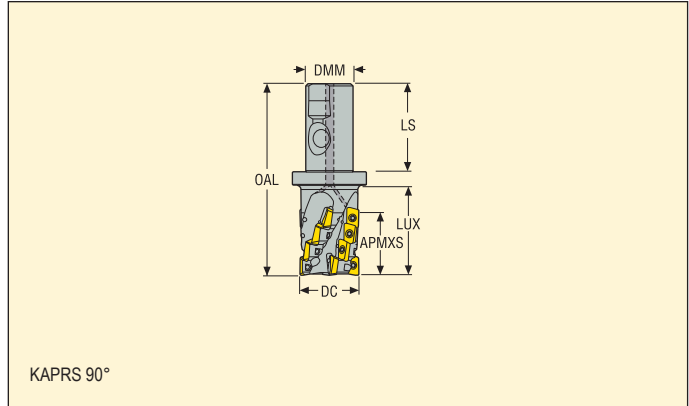
Please check availability in current price and stock-list
 Torque keys, see page 732
 For Combimaster Shanks, see Machining Navigator Tooling System

Turbo 12 – R217.69-12

Contouring only



- For insert selection and cutting data recommendations, see page(s) 99–100
- For complete insert programme, see page(s) 684
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX* | C min | C max | ZEFP | | | | Insert |
|----------------------------|------------------|------------------|------|------|-------|------|------|-------|-------|-------|------|----|-----|-------|------------|
| | | APMXS | DC | DMM | OAL | LUX | LS | | | | | | | | |
| R217.69-2532.3S-044-12.3AN | Seco-Weldon | 44,0 | 32,0 | 25,0 | 125,5 | 58,0 | 56,0 | 3,0 | 51,12 | 62,25 | 3 | 12 | 0,5 | 18400 | XO.X12..* |
| R217.69-3240.3S-044-12.4AN | Seco-Weldon | 44,0 | 40,0 | 32,0 | 129,5 | 57,0 | 60,0 | 2,5 | 67,12 | 78,25 | 4 | 16 | 0,8 | 16400 | XO.X12..* |
| R217.69-3240.3S-055-12.3AN | Seco-Weldon | 55,0 | 40,0 | 32,0 | 139,5 | 69,0 | 60,0 | 2,5 | 67,12 | 78,25 | 3 | 15 | 0,9 | 16400 | XO.X12..** |
| R217.69-3250.3S-055-12.4AN | Seco-Weldon | 55,0 | 50,0 | 32,0 | 139,5 | 67,0 | 60,0 | 2,0 | 87,12 | 98,25 | 4 | 20 | 1,1 | 14800 | XO.X12..** |
| | | | | | | | | | | | | | | | |
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*All corner radii can be used in front row insert, modification of the body needed for radii > 3,1 mm
 **Maxi corner radii 1,6mm can be used in front row insert

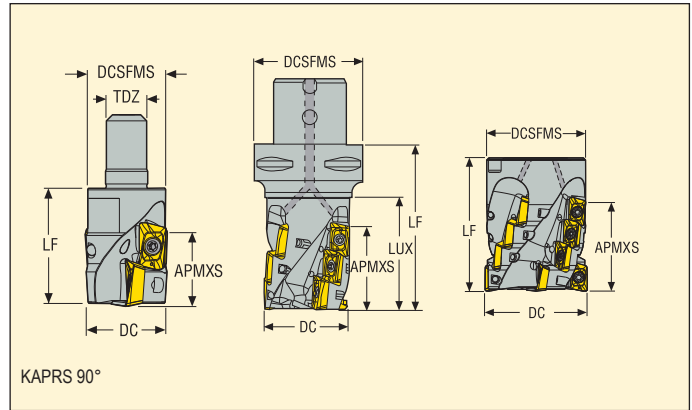
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.69...Ø32 | DOUBLE-T | C03508-T10P | H4B-T10P | 3,0 |
| R217.69...Ø40-50 | DOUBLE-T | C03509-T10P | H4B-T10P | 3,0 |
| | | | | |
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Please check availability in current price and stock-list
 Torque keys, see page 732

Turbo 12 – R217/220.69-12

Contouring only



- For insert selection and cutting data recommendations, see page(s) 99–100
- For complete insert programme, see page(s) 684
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | RMPX* | C min | C max | ZEPF | | | | Insert |
|----------------------------|------------------|------------------|------|--------|------|-----|------|-------|-----|--------|--------|-------|------|-----|-------|------------|--------|
| | | APMXS | DC | DCSFMS | DCB | TDZ | LUX | LF | | | | | | | | | |
| C5-R217.69-032-044-12.3AN | Seco-Capto | 44,0 | 32,0 | 50,0 | – | – | 56,0 | 79,0 | 3,0 | 51,12 | 62,25 | 3 | 12 | 0,7 | 18400 | XO.X12..* | |
| C5-R217.69-032-055-12.3AN | Seco-Capto | 55,0 | 32,0 | 50,0 | – | – | 67,0 | 90,0 | 3,0 | 51,12 | 62,25 | 3 | 15 | 0,7 | 18400 | XO.X12..* | |
| C6-R217.69-040-055-12.3AN | Seco-Capto | 55,0 | 40,0 | 63,0 | – | – | 67,0 | 92,0 | 2,5 | 67,12 | 78,25 | 3 | 15 | 1,1 | 16400 | XO.X12..** | |
| C6-R217.69-040-066-12.3AN | Seco-Capto | 65,5 | 40,0 | 63,0 | – | – | 79,9 | 103,0 | 2,5 | 67,12 | 78,25 | 3 | 18 | 1,2 | 16400 | XO.X12..** | |
| R217.69-2040.RE-044-12.4AN | Combimaster | 44,0 | 40,0 | 36,5 | – | M20 | – | 61,0 | 2,5 | – | – | 4 | 16 | 0,4 | 16400 | XO.X12..** | |
| R220.69-00050-044-12.5AN | Arbor | 44,0 | 50,0 | 48,0 | 27,0 | – | – | 65,0 | 2,0 | 87,12 | 98,25 | 5 | 20 | 0,5 | 14800 | XO.X12..** | |
| C6-R217.69-050-055-12.4AN | Seco-Capto | 55,0 | 50,0 | 63,0 | – | – | 67,0 | 92,0 | 2,0 | 87,12 | 98,25 | 4 | 20 | 1,4 | 14800 | XO.X12..* | |
| R220.69-00063-055-12.5AN | Arbor | 55,0 | 63,0 | 60,0 | 27,0 | – | – | 75,0 | 1,5 | 113,12 | 124,25 | 5 | 25 | 1,0 | 13200 | XO.X12..** | |
| R220.69-00080-064-12.6AN | Arbor | 64,0 | 80,0 | 77,0 | 32,0 | – | – | 85,0 | 1,0 | 147,12 | 158,25 | 6 | 36 | 2,0 | 7000 | XO.X12..** | |
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*Maxi corner radii 1,6mm can be used in front row insert
 **All corner radii can be used in front row insert, modification of the body needed for radii > 3,1 mm

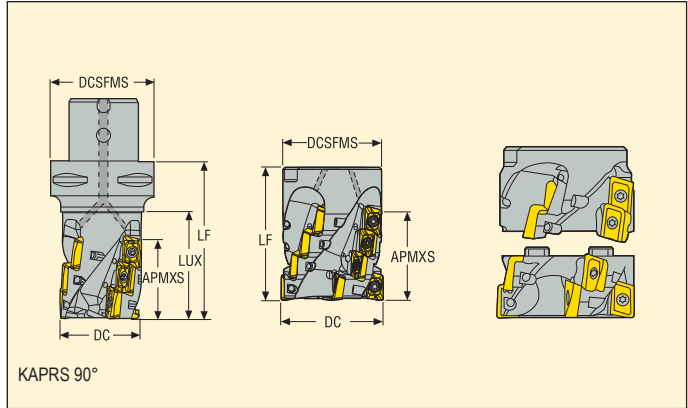
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|--------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| C5-R217.69-032 | DOUBLE-T | C03508-T10P | H4B-T10P | – | 3,0 |
| C6-R217.69-040-050 | DOUBLE-T | C03509-T10P | H4B-T10P | – | 3,0 |
| R217.69-..040 | DOUBLE-T | C03509-T10P | H4B-T10P | – | 3,0 |
| R220.69-00050 | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S12X50 | 3,0 |
| R220.69-00063 | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S12X60 | 3,0 |
| R220.69-00080 | DOUBLE-T | C03509-T10P | H4B-T10P | MP6S16X80 | 3,0 |

Please check availability in current price and stock-list
 Torque keys, see page 732

Turbo 12 – R217/220.69-12

Contouring only



- For insert selection and cutting data recommendations, see page(s) 99–100
- For complete insert programme, see page(s) 684
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | ZEFP | | | | Insert |
|-----------------------------------|------------------|------------------|------|--------|------|-------|-------|-----|--------|--------|-------|------|-----|-------|------------|--------|
| | | APMXS | DC | DCSFMS | DCB | LF | LUX | | | | | | | | | |
| C6-R217.69-050-066-12.4SAN | Seco-Capto | 66,0 | 50,0 | 63,0 | – | 101,0 | 76,0 | 2,0 | 87,12 | 98,25 | 4 | 24 | 1,4 | 14800 | XO.X12..** | |
| C6-R217.69-050-086-12.5SAN | Seco-Capto | 86,0 | 50,0 | 63,0 | – | 119,0 | 97,0 | 2,0 | 87,12 | 98,25 | 5 | 40 | 1,7 | 14800 | XO.X12..** | |
| C6-R217.69-050-106-12.5SAN | Seco-Capto | 106,0 | 50,0 | 63,0 | – | 140,0 | 118,0 | 2,0 | 87,12 | 98,25 | 5 | 50 | 1,7 | 12000 | XO.X12..** | |
| R220.69-00063-077-12.4SAN | Arbor | 77,0 | 63,0 | 60,0 | 27,0 | 100,0 | – | 1,5 | 113,12 | 124,25 | 4 | 28 | 1,5 | 13200 | XO.X12..** | |
| C6-R217.69-063-107-12.5SAN | Seco-Capto | 107,0 | 63,0 | 63,0 | – | 140,0 | 118,0 | 1,5 | 113,12 | 124,25 | 5 | 50 | 2,4 | 12000 | XO.X12..** | |
| C8-R217.69-080-107-12.6SAN | Seco-Capto | 107,0 | 80,0 | 80,0 | – | 150,0 | 120,0 | 1,0 | 147,12 | 158,25 | 6 | 60 | 4,8 | 12000 | XO.X12..** | |
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*Maxi corner radii 1,6mm can be used in front row insert

**All corner radii can be used in front row insert, modification of the body needed for radii > 3,1 mm

Spare Parts

| For cutter | Replaceable end | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------------------|-------------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | | |
| C6-R217.69-050-12.4SAN | R220.69-RE050022-12.4AN | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S10X40 | 3,0 |
| C6-R217.69-050-12.5SAN | R220.69-RE050022-12.5AN | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S10X40 | 3,0 |
| R220.69-00063-12.4SAN | R220.69-RE063033-12.4AN | DOUBLE-T | C03509-T10P | H4B-T10P | MP6S12X80 | 3,0 |
| C6-R217.69-063-12.5SAN | R220.69-RE063033-12.5AN | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S10X40 | 3,0 |
| C8-R217.69-080-12.6SAN | R220.69-RE080033-12.6AN | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S16X40 | 3,0 |

Please check availability in current price and stock-list

Torque keys, see page 732

R217/220.69-12 – Insert selection

| SMG | | f_z | | |
|-----|--------------------------|-------|-------|------|
| | | 100% | 30% | 10% |
| P1 | XOMX120408TR-ME08 F40M | 0,12 | 0,13 | 0,20 |
| P2 | XOMX120408TR-ME08 F40M | 0,12 | 0,13 | 0,20 |
| P3 | XOMX120408TR-ME08 MP2500 | 0,12 | 0,13 | 0,20 |
| P4 | XOMX120408TR-M12 MP2500 | 0,14 | 0,15 | 0,22 |
| P5 | XOMX120408TR-M12 MP2500 | 0,13 | 0,15 | 0,22 |
| P6 | XOMX120408TR-M12 MP2500 | 0,13 | 0,15 | 0,22 |
| P7 | XOMX120408TR-M12 MP2500 | 0,13 | 0,15 | 0,22 |
| P8 | XOMX120408TR-M12 MP2500 | 0,14 | 0,15 | 0,24 |
| P11 | XOMX120408TR-M12 T350M | 0,13 | 0,15 | 0,22 |
| P12 | XOEX120408R-M07 MS2050 | 0,060 | 0,065 | 0,10 |
| M1 | XOEX120408R-M07 F40M | 0,10 | 0,11 | 0,17 |
| M2 | XOEX120408R-M07 F40M | 0,090 | 0,10 | 0,15 |
| M3 | XOEX120408R-M07 F40M | 0,070 | 0,080 | 0,12 |
| M4 | XOEX120408R-M07 T350M | 0,065 | 0,070 | 0,11 |
| M5 | XOEX120408R-M07 T350M | 0,065 | 0,070 | 0,11 |
| K1 | XOMX120408TR-M12 MK2050 | 0,15 | 0,16 | 0,24 |
| K2 | XOMX120408TR-M12 MK2050 | 0,13 | 0,15 | 0,22 |
| K3 | XOMX120408TR-M12 MK2050 | 0,13 | 0,15 | 0,22 |
| K4 | XOMX120408TR-M12 MK2050 | 0,13 | 0,15 | 0,22 |
| K5 | XOMX120408TR-MD13 MK2050 | 0,13 | 0,14 | 0,22 |
| K6 | XOMX120408TR-MD13 MK2050 | 0,15 | 0,16 | 0,24 |
| K7 | XOMX120408TR-MD13 MK2050 | 0,13 | 0,14 | 0,22 |
| N1 | XOEX120408FR-E06 H15 | 0,11 | 0,12 | 0,18 |
| N2 | XOEX120408R-M07 MP3000 | 0,13 | 0,14 | 0,22 |
| N3 | XOEX120408R-M07 MP3000 | 0,13 | 0,14 | 0,22 |
| N11 | XOEX120408FR-E06 H15 | 0,11 | 0,12 | 0,18 |
| S1 | XOEX120408R-M07 F40M | 0,065 | 0,070 | 0,11 |
| S2 | XOEX120408R-M07 F40M | 0,065 | 0,070 | 0,11 |
| S3 | XOEX120408R-M07 F40M | 0,060 | 0,065 | 0,10 |
| S11 | XOEX120408R-M07 MS2050 | 0,070 | 0,080 | 0,12 |
| S12 | XOEX120408R-M07 MS2050 | 0,070 | 0,080 | 0,12 |
| S13 | XOEX120408R-M07 MS2050 | 0,065 | 0,070 | 0,11 |
| H5 | XOMX120408TR-MD13 MP1500 | 0,10 | 0,11 | 0,17 |
| H11 | XOMX120412TR-MD13 MP3000 | 0,10 | 0,11 | 0,17 |
| H12 | XOMX120408TR-MD13 MP1500 | 0,075 | 0,085 | 0,13 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_{ϕ}/DC = %

All cutting data are start values

R217/220.69-12 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | MP3000 | | | T350M | | | F40M | | | MS2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 150 | 165 | 175 | 140 | 160 | 170 | 140 | 155 | 165 | 135 | 150 | 160 | 125 | 140 | 150 | — | — | — |
| P2 | 145 | 165 | 175 | 140 | 155 | 165 | 135 | 155 | 165 | 130 | 150 | 160 | 125 | 140 | 150 | — | — | — |
| P3 | 140 | 155 | 165 | 130 | 150 | 160 | 130 | 145 | 155 | 125 | 140 | 150 | 115 | 130 | 140 | — | — | — |
| P4 | 130 | 150 | 160 | 125 | 140 | 150 | 120 | 140 | 145 | 115 | 135 | 140 | 105 | 125 | 135 | — | — | — |
| P5 | 130 | 145 | 155 | 120 | 140 | 150 | 120 | 135 | 145 | 115 | 130 | 140 | 105 | 120 | 135 | — | — | — |
| P6 | 135 | 155 | 165 | 130 | 145 | 155 | 125 | 145 | 155 | 120 | 140 | 150 | 115 | 130 | 140 | — | — | — |
| P7 | 135 | 150 | 160 | 125 | 145 | 155 | 125 | 140 | 150 | 120 | 135 | 145 | 110 | 125 | 135 | — | — | — |
| P8 | 130 | 145 | 155 | 120 | 140 | 150 | 120 | 135 | 145 | 115 | 130 | 140 | 105 | 120 | 130 | — | — | — |
| P11 | 130 | 150 | 160 | 125 | 140 | 150 | 120 | 140 | 150 | 115 | 135 | 145 | 105 | 125 | 135 | — | — | — |
| P12 | 105 | 120 | 130 | 100 | 115 | 125 | 95 | 110 | 120 | 90 | 105 | 115 | 80 | 100 | 110 | 100 | 115 | 125 |
| M1 | — | — | — | 120 | 135 | 150 | 120 | 135 | 145 | 115 | 130 | 145 | 110 | 125 | 140 | 125 | 145 | 155 |
| M2 | — | — | — | 110 | 125 | 135 | 110 | 125 | 135 | 105 | 120 | 130 | 100 | 115 | 125 | 115 | 130 | 140 |
| M3 | — | — | — | 95 | 115 | 120 | 95 | 110 | 120 | 90 | 110 | 120 | 85 | 105 | 115 | 105 | 120 | 130 |
| M4 | — | — | — | 80 | 100 | 105 | 80 | 95 | 105 | 75 | 95 | 105 | 70 | 90 | 95 | 85 | 105 | 115 |
| M5 | — | — | — | 70 | 85 | 95 | 70 | 85 | 95 | 65 | 85 | 90 | 60 | 75 | 85 | 75 | 90 | 100 |
| K1 | 130 | 150 | 160 | 125 | 140 | 155 | 120 | 140 | 150 | — | — | — | 110 | 125 | 135 | — | — | — |
| K2 | 125 | 140 | 155 | 120 | 135 | 145 | 115 | 130 | 145 | — | — | — | 105 | 120 | 130 | — | — | — |
| K3 | 115 | 130 | 145 | 110 | 125 | 135 | 105 | 120 | 135 | — | — | — | 95 | 110 | 120 | — | — | — |
| K4 | 115 | 130 | 140 | 105 | 120 | 135 | 105 | 120 | 130 | — | — | — | 90 | 105 | 115 | — | — | — |
| K5 | 85 | 100 | 110 | 75 | 95 | 105 | 75 | 90 | 100 | — | — | — | 60 | 75 | 85 | — | — | — |
| K6 | 105 | 120 | 135 | 100 | 115 | 125 | 95 | 110 | 120 | — | — | — | 80 | 100 | 110 | — | — | — |
| K7 | 100 | 115 | 125 | 90 | 110 | 120 | 90 | 105 | 115 | — | — | — | 75 | 90 | 100 | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 230 | 245 | 255 | — | — | — |
| N2 | — | — | — | — | — | — | 190 | 205 | 215 | — | — | — | 175 | 190 | 200 | — | — | — |
| N3 | — | — | — | — | — | — | 165 | 180 | 190 | — | — | — | 150 | 165 | 175 | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 160 | 175 | 185 | — | — | — |
| S1 | — | — | — | — | — | — | 39 | 50 | 60 | 37 | 49 | 55 | 34 | 45 | 50 | 44 | 55 | 65 |
| S2 | — | — | — | — | — | — | 31 | 42 | 49 | 30 | 39 | 46 | 27 | 36 | 42 | 35 | 46 | 55 |
| S3 | — | — | — | — | — | — | 28 | 36 | 43 | 26 | 34 | 40 | 24 | 31 | 37 | 31 | 41 | 48 |
| S11 | — | — | — | — | — | — | 55 | 70 | 80 | 50 | 70 | 75 | 47 | 60 | 70 | 60 | 75 | 90 |
| S12 | — | — | — | — | — | — | 38 | 50 | 60 | 36 | 47 | 55 | 33 | 43 | 50 | 43 | 55 | 65 |
| S13 | — | — | — | — | — | — | 22 | 29 | 34 | 21 | 28 | 32 | 19 | 25 | 29 | 25 | 32 | 38 |
| H5 | 42 | 55 | 65 | 34 | 45 | 55 | 33 | 44 | 50 | 33 | 43 | 50 | 28 | 37 | 44 | — | — | — |
| H11 | 55 | 70 | 80 | 43 | 55 | 65 | 42 | 55 | 65 | 42 | 55 | 65 | 36 | 47 | 55 | — | — | — |
| H12 | 80 | 95 | 105 | 70 | 90 | 95 | 70 | 85 | 95 | 65 | 80 | 90 | 55 | 70 | 80 | — | — | — |

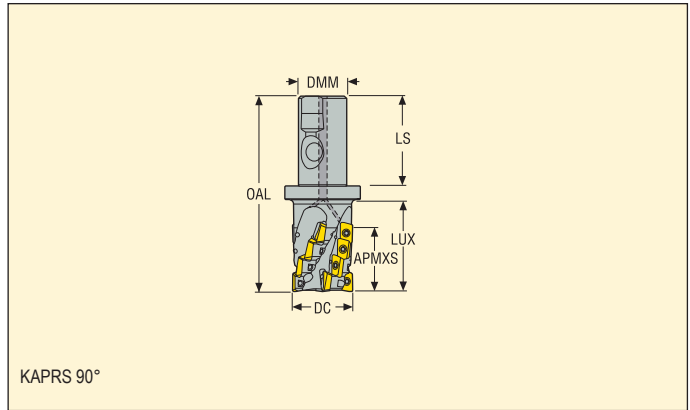
| SMG | MK2050 | | | MM4500 | | | MK1500 | | | MS2500 | | | MP2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 150 | 165 | 180 | 125 | 145 | 155 | — | — | — | 170 | 185 | 195 | 165 | 180 | 195 |
| P2 | 145 | 165 | 175 | 125 | 145 | 155 | — | — | — | 165 | 185 | 195 | 160 | 180 | 190 |
| P3 | 140 | 155 | 170 | 115 | 135 | 145 | — | — | — | 155 | 175 | 185 | 150 | 170 | 180 |
| P4 | 130 | 150 | 160 | 105 | 125 | 135 | — | — | — | 150 | 165 | 180 | 145 | 160 | 175 |
| P5 | 130 | 145 | 160 | 105 | 125 | 135 | — | — | — | 145 | 165 | 175 | 140 | 160 | 170 |
| P6 | 135 | 155 | 165 | 110 | 130 | 140 | — | — | — | 155 | 170 | 185 | 150 | 165 | 180 |
| P7 | 130 | 150 | 160 | 110 | 125 | 140 | — | — | — | 150 | 170 | 180 | 145 | 165 | 175 |
| P8 | 125 | 145 | 155 | 105 | 120 | 135 | — | — | — | 145 | 165 | 175 | 140 | 160 | 170 |
| P11 | 130 | 150 | 160 | 105 | 125 | 135 | — | — | — | 150 | 165 | 175 | 145 | 160 | 170 |
| P12 | 100 | 120 | 130 | 80 | 95 | 105 | — | — | — | 120 | 135 | 150 | 115 | 130 | 140 |
| M1 | — | — | — | 115 | 135 | 145 | — | — | — | 145 | 160 | 175 | 140 | 160 | 170 |
| M2 | — | — | — | 100 | 120 | 130 | — | — | — | 130 | 150 | 160 | 125 | 145 | 155 |
| M3 | — | — | — | 85 | 105 | 115 | — | — | — | 115 | 135 | 145 | 110 | 130 | 140 |
| M4 | — | — | — | 70 | 90 | 100 | — | — | — | 100 | 120 | 130 | 95 | 115 | 125 |
| M5 | — | — | — | 60 | 75 | 85 | — | — | — | 85 | 105 | 115 | 85 | 100 | 110 |
| K1 | 150 | 170 | 180 | — | — | — | 155 | 175 | 185 | — | — | — | — | — | — |
| K2 | 145 | 160 | 175 | — | — | — | 150 | 165 | 180 | — | — | — | — | — | — |
| K3 | 135 | 150 | 165 | — | — | — | 140 | 155 | 165 | — | — | — | — | — | — |
| K4 | 130 | 150 | 160 | — | — | — | 135 | 150 | 165 | — | — | — | — | — | — |
| K5 | 100 | 115 | 125 | — | — | — | 100 | 120 | 130 | — | — | — | — | — | — |
| K6 | 120 | 140 | 150 | — | — | — | 125 | 145 | 155 | — | — | — | — | — | — |
| K7 | 115 | 135 | 145 | — | — | — | 120 | 135 | 145 | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | 21 | 28 | 33 | — | — | — | 55 | 70 | 80 | 50 | 65 | 75 |
| S2 | — | — | — | 17 | 23 | 27 | — | — | — | 43 | 55 | 65 | 40 | 55 | 60 |
| S3 | — | — | — | 15 | 20 | 24 | — | — | — | 38 | 49 | 60 | 35 | 46 | 55 |
| S11 | — | — | — | 30 | 40 | 46 | — | — | — | 75 | 90 | 105 | 70 | 85 | 100 |
| S12 | — | — | — | 28 | 37 | 43 | — | — | — | 50 | 70 | 80 | 48 | 65 | 75 |
| S13 | — | — | — | 16 | 21 | 25 | — | — | — | 30 | 39 | 47 | 28 | 37 | 43 |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

Turbo 18 – R217.69-18

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 104–105
- For complete insert programme, see page(s) 685
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX* | C min | C max | ZEPF | | | | Insert |
|----------------------------|------------------|------------------|------|------|-------|------|------|-------|-------|-------|------|---|-----|------|-----------|
| | | APMXS | DC | DMM | OAL | LUX | LS | | | | | | | | |
| R217.69-3240.3S-047-18.2AN | Seco-Weldon | 47,0 | 40,0 | 32,0 | 130,0 | 57,0 | 60,0 | 4,5 | 61,6 | 77,5 | 2 | 6 | 0,8 | 9900 | XO.X18..* |
| R217.69-3250.3S-047-18.3AN | Seco-Weldon | 47,0 | 50,0 | 32,0 | 134,5 | 65,0 | 60,0 | 3,0 | 81,6 | 97,5 | 3 | 9 | 1,1 | 8900 | XO.X18..* |
| | | | | | | | | | | | | | | | |
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*All corner radii can be used in front row insert, modification of the body needed for radii > 3,1 mm

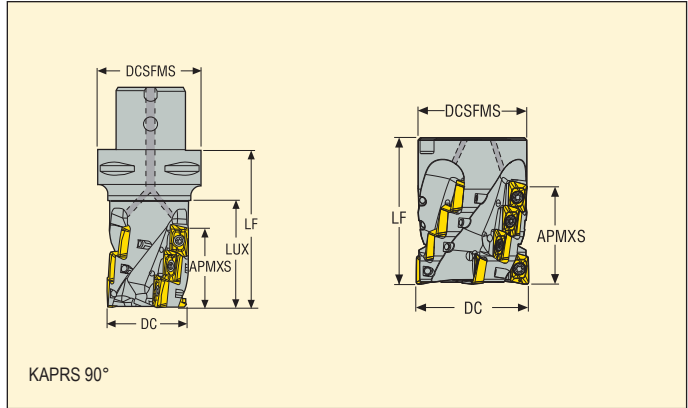
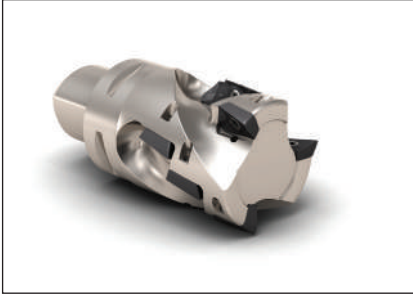
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.69-.. | DOUBLE-T | C04510-T20P | H6B-T20P | 5,0 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

Turbo 18 – R217/220.69-18

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 104–105
- For complete insert programme, see page(s) 685
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | ZEFP | | | | Insert |
|---------------------------|------------------|------------------|-------|--------|------|------|------|-------|-------|-------|------|----|-----|------|-----------|
| | | APMXS | DC | DCSFMS | DCB | LF | LUX | | | | | | | | |
| C5-R217.69-040-047-18.2AN | Seco-Capto | 47,0 | 40,0 | 50,0 | – | 82,0 | 58,0 | 4,5 | 61,6 | 77,5 | 2 | 6 | 0,8 | 9900 | XO.X18..* |
| C6-R217.69-050-062-18.3AN | Seco-Capto | 62,0 | 50,0 | 63,0 | – | 99,0 | 73,0 | 3,0 | 81,6 | 97,5 | 3 | 12 | 1,5 | 8900 | XO.X18..* |
| C5-R217.69-054-047-18.3AN | Seco-Capto | 47,0 | 54,0 | 50,0 | – | 82,0 | 62,0 | 2,5 | 89,6 | 105,5 | 3 | 9 | 1,1 | 8600 | XO.X18..* |
| R220.69-00063-047-18.4AN | Arbor | 47,0 | 63,0 | 60,0 | 27,0 | 70,0 | – | 2,4 | 107,6 | 123,5 | 4 | 12 | 0,8 | 7900 | XO.X18..* |
| R220.69-00063-062-18.3AN | Arbor | 62,0 | 63,0 | 60,0 | 27,0 | 85,0 | – | 2,4 | 107,6 | 123,5 | 3 | 12 | 1,1 | 7900 | XO.X18..* |
| R220.69-00063-062-18.4AN | Arbor | 62,0 | 63,0 | 60,0 | 27,0 | 85,0 | – | 2,4 | 107,6 | 123,5 | 4 | 16 | 1,0 | 7900 | XO.X18..* |
| C6-R217.69-066-047-18.4AN | Seco-Capto | 47,0 | 66,0 | 63,0 | – | 84,0 | 62,0 | 2,0 | 113,6 | 129,5 | 4 | 12 | 1,7 | 7700 | XO.X18..* |
| R220.69-00080-047-18.5AN | Arbor | 47,0 | 80,0 | 77,0 | 32,0 | 70,0 | – | 1,55 | 141,6 | 157,5 | 5 | 15 | 1,6 | 7000 | XO.X18..* |
| R220.69-00080-062-18.5AN | Arbor | 62,0 | 80,0 | 77,0 | 32,0 | 85,0 | – | 1,55 | 141,6 | 157,5 | 5 | 20 | 1,9 | 7000 | XO.X18..* |
| R220.69-00100-062-18.6AN | Arbor | 62,0 | 100,0 | 90,0 | 40,0 | 85,0 | – | 1,3 | 181,6 | 197,5 | 6 | 24 | 3,1 | 6300 | XO.X18..* |
| | | | | | | | | | | | | | | | |
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*All corner radii can be used in front row insert, modification of the body needed for radii > 3,1 mm

Spare Parts

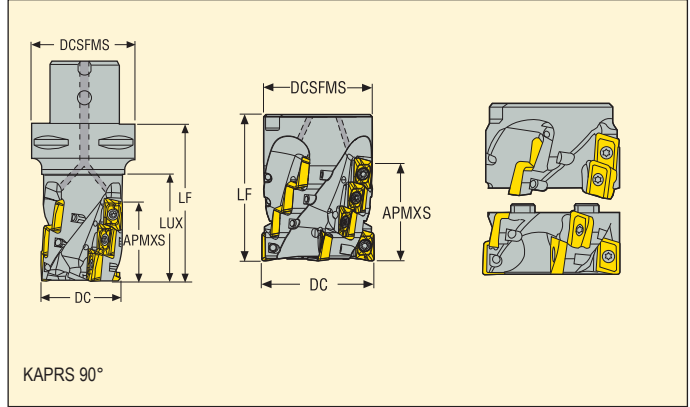
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| C5-C6-R217.69-.. | DOUBLE-T | C04510-T20P | H6B-T20P | – | 5,0 |
| R220.69-00063 | DOUBLE-T | C04510-T20P | H6B-T20P | MC6S12X60 | 5,0 |
| R220.69-00080 | DOUBLE-T | C04510-T20P | H6B-T20P | MC6S16X70 | 5,0 |
| R220.69-00100 | DOUBLE-T | C04510-T20P | H6B-T20PL | MC6S20X70 | 5,0 |
| | | | | | |
| | | | | | |

Please check availability in current price and stock-list

Torque keys, see page 732

Turbo 18 – R217/220.69-18

Contouring only



- For insert selection and cutting data recommendations, see page(s) 104–105
- For complete insert programme, see page(s) 685
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | ZEPF | | | | Insert |
|----------------------------|------------------|------------------|-------|--------|------|-------|-------|-------|-------|-------|------|----|-----|------|-----------|
| | | APMXS | DC | DCSFMS | DCB | LF | LUX | | | | | | | | |
| C6-R217.69-050-077-18.2SAN | Seco-Capto | 77,0 | 50,0 | 63,0 | – | 114,0 | 89,0 | 3,0 | 81,6 | 97,5 | 2 | 10 | 1,7 | 8900 | XO.X18..* |
| R220.69-00063-077-18.4SAN | Arbor | 77,0 | 63,0 | 60,0 | 27,0 | 100,0 | – | 2,4 | 107,6 | 123,5 | 4 | 20 | 1,3 | 7900 | XO.X18..* |
| R220.69-00080-077-18.4SAN | Arbor | 77,0 | 80,0 | 77,0 | 32,0 | 100,0 | – | 1,55 | 141,6 | 157,5 | 4 | 20 | 2,4 | 7000 | XO.X18..* |
| C8-R217.69-080-093-18.5SAN | Seco-Capto | 93,0 | 80,0 | 80,0 | – | 140,0 | 110,0 | 1,5 | 141,6 | 157,5 | 5 | 30 | 4,2 | 7000 | XO.X18..* |
| R220.69-00100-077-18.5SAN | Arbor | 77,0 | 100,0 | 90,0 | 40,0 | 100,0 | – | 1,3 | 181,6 | 197,5 | 5 | 25 | 4,0 | 6300 | XO.X18..* |
| | | | | | | | | | | | | | | | |
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*All corner radii can be used in front row insert, modification of the body needed for radii > 3,1 mm

Spare Parts

| For cutter | Replaceable end | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|----------------|-------------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | | |
| C6-R217.69-050 | R220.69-RE050031-18.2AN | DOUBLE-T | C04510-T20P | H6B-T20P | MC6S10X40 | 5,0 |
| R220.69-00063 | R220.69-RE063031-18.4AN | DOUBLE-T | C04510-T20P | H6B-T20P | MP6S12X80 | 5,0 |
| R220.69-00080 | R220.69-RE080031-18.4AN | DOUBLE-T | C04510-T20P | H6B-T20P | MP6S16X80 | 5,0 |
| C8-R217.69-080 | R220.69-RE080031-18.5AN | DOUBLE-T | C04510-T20P | H6B-T20P | MC6S16X40 | 5,0 |
| R220.69-00100 | R220.69-RE100031-18.5AN | DOUBLE-T | C04510-T20P | H6B-T20PL | MP6S20X80 | 5,0 |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.69-18 – Insert selection

| SMG | | f _z | | |
|-----|--------------------------|----------------|-------|------|
| | | 100% | 30% | 10% |
| P1 | XOMX180608TR-ME13 F40M | 0,15 | 0,16 | 0,24 |
| P2 | XOMX180608TR-ME13 F40M | 0,15 | 0,16 | 0,24 |
| P3 | XOMX180608TR-ME13 MP2500 | 0,14 | 0,15 | 0,24 |
| P4 | XOMX180608TR-M14 MP2500 | 0,15 | 0,16 | 0,24 |
| P5 | XOMX180608TR-M14 MP2500 | 0,15 | 0,16 | 0,24 |
| P6 | XOMX180608TR-M14 MP2500 | 0,14 | 0,16 | 0,24 |
| P7 | XOMX180608TR-M14 MP2500 | 0,14 | 0,16 | 0,24 |
| P8 | XOMX180608TR-M14 MP2500 | 0,15 | 0,17 | 0,26 |
| P11 | XOMX180608TR-M14 T350M | 0,14 | 0,16 | 0,24 |
| P12 | XOMX180608R-M10 MS2050 | 0,070 | 0,075 | 0,12 |
| M1 | XOMX180608TR-M14 F40M | 0,16 | 0,17 | 0,26 |
| M2 | XOMX180608TR-M14 F40M | 0,15 | 0,16 | 0,24 |
| M3 | XOMX180608TR-M14 F40M | 0,12 | 0,13 | 0,20 |
| M4 | XOMX180608TR-M14 T350M | 0,10 | 0,11 | 0,17 |
| M5 | XOMX180608TR-M14 T350M | 0,10 | 0,11 | 0,17 |
| K1 | XOMX180608TR-M14 MK2050 | 0,16 | 0,17 | 0,26 |
| K2 | XOMX180608TR-M14 MK2050 | 0,15 | 0,16 | 0,24 |
| K3 | XOMX180608TR-M14 MK2050 | 0,15 | 0,16 | 0,24 |
| K4 | XOMX180608TR-M14 MK2050 | 0,15 | 0,16 | 0,24 |
| K5 | XOMX180608TR-M14 MK2050 | 0,13 | 0,14 | 0,22 |
| K6 | XOMX180608TR-M14 MK2050 | 0,15 | 0,16 | 0,24 |
| K7 | XOMX180608TR-M14 MK2050 | 0,13 | 0,14 | 0,22 |
| N1 | XOEX180608FR-E10 H25 | 0,15 | 0,16 | 0,24 |
| N2 | XOMX180608R-M10 F30M | 0,15 | 0,16 | 0,24 |
| N3 | XOMX180608R-M10 F30M | 0,15 | 0,16 | 0,24 |
| N11 | XOEX180608FR-E10 H25 | 0,15 | 0,16 | 0,24 |
| S1 | XOMX180608R-M10 F40M | 0,075 | 0,080 | 0,12 |
| S2 | XOMX180608R-M10 F40M | 0,075 | 0,080 | 0,12 |
| S3 | XOMX180608R-M10 F40M | 0,070 | 0,075 | 0,11 |
| S11 | XOMX180608R-M10 MS2050 | 0,085 | 0,090 | 0,14 |
| S12 | XOMX180608R-M10 MS2050 | 0,085 | 0,090 | 0,14 |
| S13 | XOMX180608R-M10 MS2050 | 0,075 | 0,080 | 0,12 |
| H5 | XOMX180608TR-MD15 MP1500 | 0,11 | 0,12 | 0,18 |
| H11 | XOMX180608TR-MD15 MP1500 | 0,11 | 0,12 | 0,18 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R217/220.69-18 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | MP3000 | | | T350M | | | MS2050 | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|--------|-----|-----|------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 150 | 165 | 175 | 140 | 160 | 170 | 140 | 155 | 165 | 135 | 150 | 160 | — | — | — | 125 | 140 | 150 |
| P2 | 145 | 165 | 175 | 140 | 155 | 170 | 135 | 155 | 165 | 130 | 150 | 160 | — | — | — | 125 | 140 | 150 |
| P3 | 140 | 155 | 165 | 130 | 150 | 160 | 130 | 145 | 155 | 125 | 140 | 150 | — | — | — | 115 | 130 | 140 |
| P4 | 130 | 150 | 160 | 125 | 140 | 150 | 120 | 140 | 150 | 115 | 135 | 145 | — | — | — | 110 | 125 | 135 |
| P5 | 130 | 145 | 155 | 120 | 140 | 150 | 120 | 135 | 145 | 115 | 130 | 140 | — | — | — | 105 | 120 | 135 |
| P6 | 135 | 155 | 165 | 130 | 145 | 155 | 125 | 145 | 155 | 120 | 140 | 150 | — | — | — | 115 | 130 | 140 |
| P7 | 135 | 150 | 160 | 125 | 140 | 155 | 125 | 140 | 150 | 120 | 135 | 145 | — | — | — | 110 | 125 | 135 |
| P8 | 130 | 145 | 155 | 120 | 140 | 150 | 120 | 135 | 145 | 115 | 130 | 140 | — | — | — | 105 | 120 | 130 |
| P11 | 130 | 150 | 160 | 125 | 140 | 150 | 120 | 135 | 150 | 115 | 130 | 145 | — | — | — | 110 | 125 | 135 |
| P12 | 105 | 120 | 130 | 100 | 115 | 125 | 95 | 110 | 120 | 90 | 105 | 115 | 95 | 110 | 120 | 80 | 100 | 110 |
| M1 | — | — | — | 120 | 140 | 150 | 120 | 135 | 145 | 115 | 135 | 145 | 125 | 140 | 150 | 110 | 130 | 140 |
| M2 | — | — | — | 110 | 125 | 135 | 105 | 125 | 135 | 105 | 120 | 130 | 115 | 130 | 140 | 100 | 115 | 125 |
| M3 | — | — | — | 95 | 115 | 125 | 95 | 110 | 125 | 90 | 110 | 120 | 100 | 115 | 125 | 85 | 105 | 115 |
| M4 | — | — | — | 80 | 100 | 110 | 80 | 100 | 105 | 80 | 95 | 105 | 85 | 100 | 110 | 70 | 90 | 100 |
| M5 | — | — | — | 70 | 90 | 95 | 70 | 85 | 95 | 65 | 85 | 95 | 75 | 90 | 100 | 60 | 80 | 85 |
| K1 | 135 | 150 | 160 | 125 | 145 | 155 | 125 | 140 | 150 | — | — | — | — | — | — | 110 | 125 | 135 |
| K2 | 125 | 145 | 155 | 120 | 135 | 145 | 115 | 130 | 145 | — | — | — | — | — | — | 100 | 120 | 130 |
| K3 | 115 | 135 | 145 | 110 | 125 | 135 | 105 | 120 | 135 | — | — | — | — | — | — | 90 | 110 | 120 |
| K4 | 115 | 130 | 140 | 105 | 125 | 135 | 100 | 120 | 130 | — | — | — | — | — | — | 90 | 105 | 115 |
| K5 | 85 | 100 | 110 | 75 | 95 | 105 | 75 | 90 | 100 | — | — | — | — | — | — | 60 | 75 | 85 |
| K6 | 105 | 125 | 135 | 100 | 115 | 125 | 95 | 110 | 125 | — | — | — | — | — | — | 80 | 100 | 110 |
| K7 | 100 | 115 | 125 | 90 | 110 | 120 | 90 | 105 | 115 | — | — | — | — | — | — | 75 | 90 | 100 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 230 | 245 | 255 |
| N2 | — | — | — | — | — | — | 190 | 205 | 215 | — | — | — | — | — | — | 175 | 190 | 200 |
| N3 | — | — | — | — | — | — | 165 | 180 | 190 | — | — | — | — | — | — | 150 | 165 | 175 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 160 | 175 | 185 |
| S1 | — | — | — | — | — | — | 40 | 50 | 60 | 38 | 50 | 60 | 42 | 55 | 65 | 34 | 45 | 55 |
| S2 | — | — | — | — | — | — | 32 | 42 | 50 | 30 | 40 | 47 | 34 | 45 | 55 | 28 | 36 | 43 |
| S3 | — | — | — | — | — | — | 28 | 37 | 43 | 26 | 35 | 41 | 30 | 39 | 46 | 24 | 32 | 37 |
| S11 | — | — | — | — | — | — | 55 | 70 | 80 | 50 | 70 | 80 | 60 | 75 | 85 | 47 | 60 | 75 |
| S12 | — | — | — | — | — | — | 38 | 50 | 60 | 36 | 47 | 55 | 41 | 55 | 65 | 33 | 43 | 50 |
| S13 | — | — | — | — | — | — | 22 | 29 | 35 | 21 | 28 | 33 | 24 | 31 | 37 | 19 | 25 | 30 |
| H5 | 43 | 55 | 65 | 34 | 45 | 55 | 34 | 44 | 50 | 33 | 43 | 50 | — | — | — | 29 | 38 | 45 |
| H11 | 55 | 70 | 80 | 44 | 60 | 70 | 43 | 55 | 65 | 42 | 55 | 65 | — | — | — | 37 | 48 | 55 |

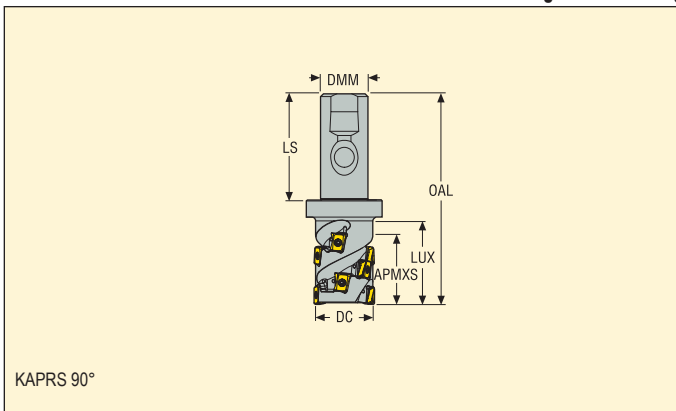
| SMG | MK1500 | | | MK2050 | | | MM4500 | | | H25 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | 140 | 160 | 170 | 115 | 135 | 145 | — | — | — |
| P2 | — | — | — | 140 | 155 | 165 | 115 | 135 | 145 | — | — | — |
| P3 | — | — | — | 130 | 145 | 160 | 110 | 125 | 135 | — | — | — |
| P4 | — | — | — | 125 | 140 | 150 | 100 | 120 | 125 | — | — | — |
| P5 | — | — | — | 120 | 140 | 150 | 100 | 115 | 125 | — | — | — |
| P6 | — | — | — | 130 | 145 | 155 | 105 | 120 | 135 | — | — | — |
| P7 | — | — | — | 125 | 140 | 150 | 100 | 120 | 130 | — | — | — |
| P8 | — | — | — | 120 | 135 | 145 | 100 | 115 | 125 | — | — | — |
| P11 | — | — | — | 125 | 140 | 150 | 100 | 115 | 125 | — | — | — |
| P12 | — | — | — | 100 | 115 | 125 | 75 | 90 | 100 | — | — | — |
| M1 | — | — | — | — | — | — | 105 | 125 | 135 | — | — | — |
| M2 | — | — | — | — | — | — | 95 | 110 | 125 | — | — | — |
| M3 | — | — | — | — | — | — | 85 | 100 | 110 | — | — | — |
| M4 | — | — | — | — | — | — | 70 | 85 | 95 | — | — | — |
| M5 | — | — | — | — | — | — | 55 | 75 | 85 | — | — | — |
| K1 | 145 | 165 | 175 | 145 | 160 | 170 | — | — | — | — | — | — |
| K2 | 140 | 155 | 165 | 135 | 155 | 165 | — | — | — | — | — | — |
| K3 | 130 | 145 | 155 | 125 | 145 | 155 | — | — | — | — | — | — |
| K4 | 125 | 145 | 155 | 125 | 140 | 150 | — | — | — | — | — | — |
| K5 | 100 | 115 | 125 | 95 | 110 | 120 | — | — | — | — | — | — |
| K6 | 120 | 135 | 145 | 115 | 135 | 145 | — | — | — | — | — | — |
| K7 | 115 | 130 | 140 | 110 | 125 | 135 | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | 235 | 255 | 265 |
| N2 | — | — | — | — | — | — | — | — | — | 185 | 200 | 210 |
| N3 | — | — | — | — | — | — | — | — | — | 160 | 175 | 185 |
| N11 | — | — | — | — | — | — | — | — | — | 165 | 185 | 195 |
| S1 | — | — | — | — | — | — | 21 | 28 | 33 | — | — | — |
| S2 | — | — | — | — | — | — | 17 | 23 | 26 | — | — | — |
| S3 | — | — | — | — | — | — | 15 | 20 | 23 | — | — | — |
| S11 | — | — | — | — | — | — | 29 | 38 | 46 | — | — | — |
| S12 | — | — | — | — | — | — | 27 | 36 | 42 | — | — | — |
| S13 | — | — | — | — | — | — | 16 | 21 | 24 | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — |

R217.94-08

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 110-111
- For complete insert programme, see page(s) 647
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | ZEFP | | | | Insert |
|---------------------------|------------------|------------------|------|------|-------|------|------|------|----|-----|-------|-----------|
| | | APMXS | DC | DMM | OAL | LUX | LS | | | | | |
| R217.94-2025.3S-029-08.2A | Seco-Weldon | 29,0 | 25,0 | 20,0 | 100,0 | 44,0 | 50,0 | 2 | 8 | 0,3 | 20800 | LOEX08..* |
| R217.94-2025.3S-036-08.2A | Seco-Weldon | 36,0 | 25,0 | 20,0 | 100,0 | 44,0 | 50,0 | 2 | 10 | 0,3 | 20800 | LOEX08..* |
| R217.94-2532.3S-029-08.2A | Seco-Weldon | 29,0 | 32,0 | 25,0 | 111,0 | 45,0 | 56,0 | 2 | 8 | 0,5 | 18400 | LOEX08..* |
| R217.94-2532.3S-036-08.2A | Seco-Weldon | 36,0 | 32,0 | 25,0 | 111,0 | 45,0 | 56,0 | 2 | 10 | 0,5 | 18400 | LOEX08..* |
| R217.94-3240.3S-036-08.3A | Seco-Weldon | 36,0 | 40,0 | 32,0 | 115,0 | 45,0 | 60,0 | 3 | 15 | 0,8 | 16400 | LOEX08..* |
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*All corner radii can be used in front row insert

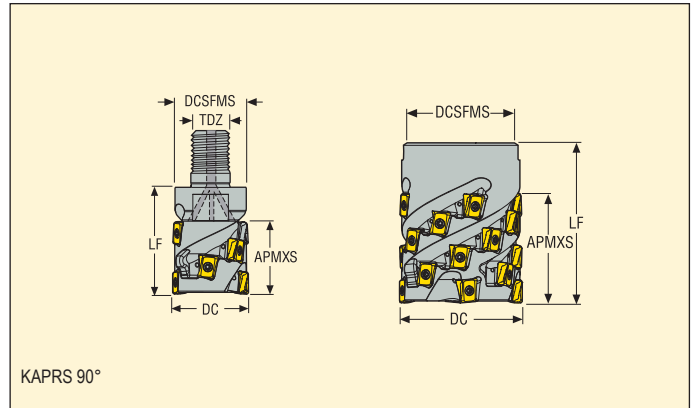
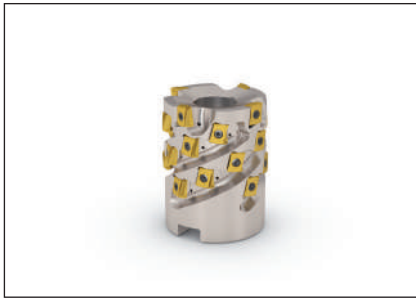
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.94-.. | DOUBLE-T | C02708-T08P | H4B-T08P | 1,2 |
| | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.94-08

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 110-111
- For complete insert programme, see page(s) 647
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | ZEFP | ⊙ | KG | | Insert |
|---------------------------|------------------|------------------|------|--------|------|-----|------|------|----|-----|-------|-----------|
| | | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | | |
| R217.94-1225.RE-022-08.2A | Combimaster | 22,0 | 25,0 | 23,0 | – | M12 | 35,0 | 2 | 6 | 0,1 | 20800 | LOEX08..* |
| R217.94-1632.RE-029-08.2A | Combimaster | 29,0 | 32,0 | 30,0 | – | M16 | 45,0 | 2 | 8 | 0,2 | 18400 | LOEX08..* |
| R217.94-2040.RE-036-08.3A | Combimaster | 36,0 | 40,0 | 36,5 | – | M20 | 55,0 | 3 | 15 | 0,4 | 16400 | LOEX08..* |
| R220.94-00050-043-08.4A | Arbor | 43,0 | 50,0 | 48,0 | 27,0 | – | 65,0 | 4 | 24 | 0,6 | 14800 | LOEX08..* |
| | | | | | | | | | | | | |
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*All corner radii can be used in front row insert

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.94-.. | DOUBLE-T | C02708-T08P | H4B-T08P | – | 1,2 |
| R220.94-.. | DOUBLE-T | C02708-T08P | H4B-T08P | MC6S12X60 | 1,2 |
| | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

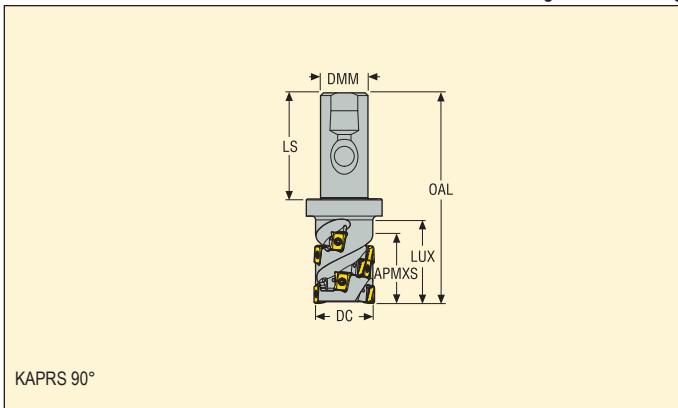
For Combimaster Shanks, see Machining Navigator Tooling System

R217.94-08

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 110-111
- For complete insert programme, see page(s) 647
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | ZEFP | [Icon] | [Icon] | [Icon] | Insert |
|---------------------------|------------------|------------------|------|------|-------|------|------|------|--------|--------|--------|-----------|
| | | APMXS | DC | DMM | OAL | LUX | LS | | | | | |
| R217.94-2025.3S-043-08.2A | Seco-Weldon | 43,0 | 25,0 | 20,0 | 105,0 | 49,0 | 50,0 | 2 | 12 | 0,3 | 20800 | LOEX08..* |
| R217.94-2532.3S-043-08.3A | Seco-Weldon | 43,0 | 32,0 | 25,0 | 121,0 | 55,0 | 56,0 | 3 | 18 | 0,5 | 18400 | LOEX08..* |
| R217.94-2532.3S-050-08.3A | Seco-Weldon | 50,0 | 32,0 | 25,0 | 125,0 | 59,0 | 56,0 | 3 | 21 | 0,5 | 18400 | LOEX08..* |
| R217.94-3240.3S-050-08.4A | Seco-Weldon | 50,0 | 40,0 | 32,0 | 130,0 | 60,0 | 60,0 | 4 | 28 | 0,9 | 16400 | LOEX08..* |
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*All corner radii can be used in front row insert

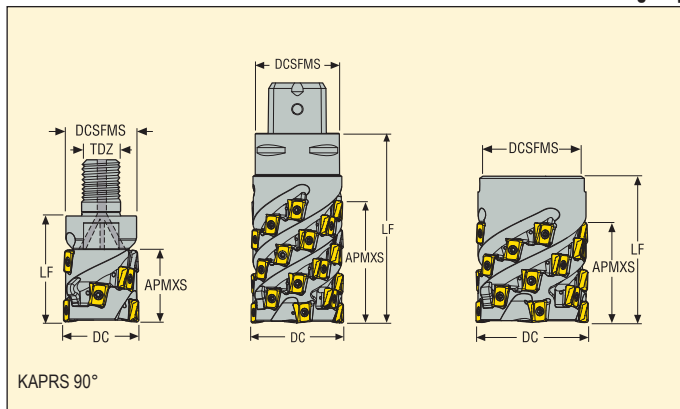
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.94-08 | DOUBLE-T | C02708-T08P | H4B-T08P | 1,2 |
| | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.94-08

Contouring only



- For insert selection and cutting data recommendations, see page(s) 110-111
- For complete insert programme, see page(s) 647
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | ZEFP | | | | Insert |
|---------------------------|------------------|------------------|------|--------|------|-----|------|------|------|----|------|-------|-----------|
| | | APMXS | DC | DCSFMS | DCB | TDZ | LF | LUX | | | | | |
| R217.94-1225.RE-029-08.2A | Combimaster | 29,0 | 25,0 | 23,0 | - | M12 | 40,0 | - | 2 | 8 | 0,1 | 20800 | LOEX08..* |
| R217.94-1632.RE-036-08.3A | Combimaster | 36,0 | 32,0 | 30,0 | - | M16 | 55,0 | - | 3 | 15 | 0,3 | 18400 | LOEX08..* |
| R217.94-2040.RE-043-08.4A | Combimaster | 36,0 | 40,0 | 36,5 | - | M20 | 60,0 | - | 4 | 24 | 0,45 | 16400 | LOEX08..* |
| C4-R217.94-044-057-08.4A | Seco-Capto | 57,0 | 44,0 | 40,0 | - | - | 90,0 | 70,0 | 4 | 32 | 0,8 | 15500 | LOEX08..* |
| R220.94-00050-057-08.5A | Arbor | 57,0 | 50,0 | 48,0 | 27,0 | - | 70,0 | - | 5 | 40 | 0,6 | 14800 | LOEX08..* |
| C5-R217.94-054-064-08.5A | Seco-Capto | 64,0 | 54,0 | 50,0 | - | - | 78,0 | 98,0 | 5 | 45 | 1,4 | 14800 | LOEX08..* |
| | | | | | | | | | | | | | |
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*All corner radii can be used in front row insert

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|---------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.94-.. | DOUBLE-T | C02708-T08P | H4B-T08P | - | 1,2 |
| Cx-R217.94-08 | DOUBLE-T | C02708-T08P | H4B-T08P | - | 1,2 |
| R220.94-.. | DOUBLE-T | C02708-T08P | H4B-T08P | MC6S12X60 | 1,2 |
| | | | | | |
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| | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

For Combimaster Shanks, see Machining Navigator Tooling System

R217/220.94-08 – Insert selection

| SMG | | f _z | | |
|-----|--------------------------|----------------|-------|-------|
| | | 100% | 30% | 10% |
| P1 | LOEX080408TR-M08 F40M | 0,090 | 0,10 | 0,15 |
| P2 | LOEX080408TR-M08 F40M | 0,090 | 0,10 | 0,15 |
| P3 | LOEX080408TR-M08 F40M | 0,085 | 0,095 | 0,15 |
| P4 | LOEX080408TR-M08 F40M | 0,085 | 0,095 | 0,14 |
| P5 | LOEX080408TR-M08 F40M | 0,085 | 0,090 | 0,14 |
| P6 | LOEX080408TR-M08 F40M | 0,085 | 0,090 | 0,14 |
| P7 | LOEX080408TR-M08 F40M | 0,085 | 0,090 | 0,14 |
| P8 | LOEX080408TR-M08 F40M | 0,085 | 0,095 | 0,15 |
| P11 | LOEX080408TR-M08 F40M | 0,085 | 0,090 | 0,14 |
| P12 | LOEX080408TR-M08 MS2050 | 0,055 | 0,060 | 0,095 |
| M1 | LOEX080408TR-M08 F40M | 0,090 | 0,10 | 0,15 |
| M2 | LOEX080408TR-M08 F40M | 0,085 | 0,090 | 0,14 |
| M3 | LOEX080408TR-M08 F40M | 0,065 | 0,075 | 0,11 |
| M4 | LOEX080408TR-M08 F40M | 0,060 | 0,065 | 0,10 |
| M5 | LOEX080408TR-M08 F40M | 0,060 | 0,065 | 0,10 |
| K1 | LOEX080408TR-MD08 MK2050 | 0,090 | 0,10 | 0,15 |
| K2 | LOEX080408TR-MD08 MK2050 | 0,085 | 0,090 | 0,14 |
| K3 | LOEX080408TR-MD08 MK2050 | 0,085 | 0,090 | 0,14 |
| K4 | LOEX080408TR-MD08 MK2050 | 0,085 | 0,090 | 0,14 |
| K5 | LOEX080408TR-MD08 MK2050 | 0,075 | 0,080 | 0,13 |
| K6 | LOEX080408TR-MD08 MK2050 | 0,085 | 0,090 | 0,14 |
| K7 | LOEX080408TR-MD08 MK2050 | 0,075 | 0,080 | 0,13 |
| S1 | LOEX080408TR-M08 F40M | 0,060 | 0,065 | 0,10 |
| S2 | LOEX080408TR-M08 F40M | 0,060 | 0,065 | 0,10 |
| S3 | LOEX080408TR-M08 F40M | 0,055 | 0,060 | 0,095 |
| S11 | LOEX080408TR-M08 MS2050 | 0,065 | 0,075 | 0,11 |
| S12 | LOEX080408TR-M08 MS2050 | 0,065 | 0,075 | 0,11 |
| S13 | LOEX080408TR-M08 MS2050 | 0,060 | 0,065 | 0,10 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

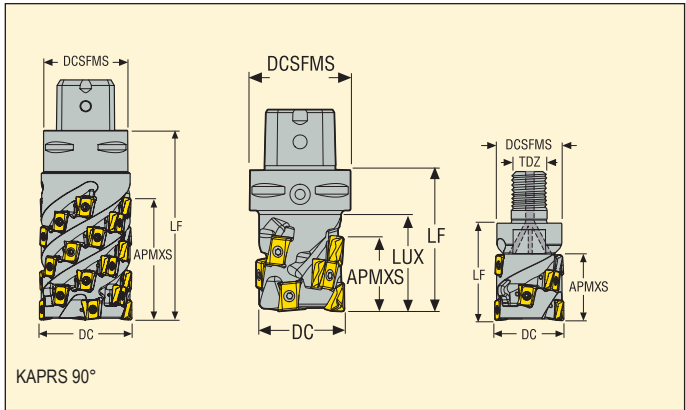
a_e/DC = %

All cutting data are start values

R217/220.94-08 – Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | F40M | | | MK2050 | | | MS2050 | | | MP2050 | | |
|-----|--------|-----|-----|------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 165 | 185 | 195 | 150 | 170 | 180 | 170 | 185 | 195 | — | — | — | 165 | 185 | 195 |
| P2 | 165 | 180 | 195 | 150 | 165 | 180 | 165 | 185 | 195 | — | — | — | 165 | 180 | 195 |
| P3 | 155 | 170 | 185 | 140 | 160 | 170 | 155 | 175 | 185 | — | — | — | 155 | 170 | 185 |
| P4 | 145 | 165 | 175 | 130 | 150 | 160 | 150 | 165 | 180 | — | — | — | 145 | 165 | 175 |
| P5 | 145 | 160 | 175 | 130 | 145 | 160 | 145 | 165 | 175 | — | — | — | 145 | 160 | 175 |
| P6 | 150 | 170 | 180 | 135 | 155 | 165 | 155 | 170 | 185 | — | — | — | 150 | 170 | 180 |
| P7 | 145 | 165 | 175 | 130 | 150 | 160 | 150 | 170 | 180 | — | — | — | 145 | 165 | 175 |
| P8 | 145 | 160 | 170 | 130 | 145 | 155 | 145 | 165 | 175 | — | — | — | 145 | 160 | 175 |
| P11 | 145 | 165 | 175 | 130 | 150 | 160 | 150 | 165 | 175 | — | — | — | 145 | 165 | 175 |
| P12 | 115 | 135 | 145 | 100 | 120 | 130 | 120 | 135 | 150 | 110 | 125 | 135 | 115 | 135 | 145 |
| M1 | 145 | 160 | 175 | 135 | 150 | 165 | — | — | — | 140 | 160 | 170 | 140 | 160 | 170 |
| M2 | 130 | 150 | 160 | 120 | 140 | 150 | — | — | — | 130 | 145 | 155 | 130 | 150 | 160 |
| M3 | 120 | 135 | 145 | 110 | 125 | 135 | — | — | — | 115 | 130 | 145 | 115 | 135 | 145 |
| M4 | 100 | 120 | 130 | 90 | 110 | 120 | — | — | — | 95 | 115 | 125 | 100 | 115 | 125 |
| M5 | 90 | 105 | 115 | 80 | 95 | 105 | — | — | — | 85 | 100 | 115 | 85 | 105 | 115 |
| K1 | 150 | 165 | 180 | 135 | 150 | 165 | 170 | 190 | 200 | — | — | — | 150 | 165 | 180 |
| K2 | 140 | 160 | 170 | 125 | 145 | 155 | 165 | 180 | 190 | — | — | — | 140 | 160 | 170 |
| K3 | 130 | 145 | 160 | 115 | 130 | 145 | 150 | 170 | 180 | — | — | — | 130 | 150 | 160 |
| K4 | 125 | 145 | 155 | 110 | 130 | 140 | 150 | 165 | 180 | — | — | — | 125 | 145 | 155 |
| K5 | 95 | 110 | 120 | 80 | 95 | 105 | 115 | 135 | 145 | — | — | — | 95 | 110 | 125 |
| K6 | 115 | 135 | 145 | 100 | 120 | 130 | 140 | 160 | 170 | — | — | — | 115 | 135 | 145 |
| K7 | 110 | 130 | 140 | 95 | 115 | 125 | 135 | 150 | 160 | — | — | — | 110 | 130 | 140 |
| S1 | 50 | 65 | 75 | 44 | 60 | 70 | — | — | — | 49 | 65 | 75 | 50 | 70 | 80 |
| S2 | 41 | 55 | 65 | 36 | 47 | 55 | — | — | — | 39 | 50 | 60 | 42 | 55 | 65 |
| S3 | 36 | 48 | 55 | 31 | 41 | 48 | — | — | — | 34 | 45 | 55 | 37 | 49 | 55 |
| S11 | 70 | 90 | 100 | 60 | 80 | 90 | — | — | — | 70 | 85 | 95 | 75 | 90 | 100 |
| S12 | 50 | 65 | 75 | 43 | 55 | 65 | — | — | — | 48 | 60 | 75 | 50 | 65 | 75 |
| S13 | 29 | 38 | 44 | 25 | 33 | 38 | — | — | — | 27 | 36 | 42 | 29 | 39 | 45 |

Helical T4 – R217/220.94-12



- For insert selection and cutting data recommendations, see page(s) 115-116
- For complete insert programme, see page(s) 655
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | ZEFP | | | | Insert |
|---------------------------|------------------|------------------|----|--------|-----|-----|-------|------|----|-----|-------|----------|
| | | APMXS | DC | DCSFMS | TDZ | LF | LUX | | | | | |
| R217.94-2040.RE-035-12.2A | Combimaster | 35,0 | 40 | 37 | M20 | 50 | 73,0 | 2 | 6 | 0,4 | 11000 | LOEX12.. |
| C5-R217.94-044-035-12.3A | Seco-Capto | 35,0 | 44 | 50 | – | 70 | 48,0 | 3 | 9 | 0,8 | 10600 | LOEX12.. |
| C5-R217.94-044-058-12.3A | Seco-Capto | 58,0 | 44 | 50 | – | 95 | 73,0 | 3 | 15 | 0,9 | 10600 | LOEX12.. |
| C6-R217.94-050-081-12.4SA | Seco-Capto | 81,0 | 50 | 63 | – | 115 | 91,0 | 4 | 28 | 1,4 | 10000 | LOEX12.. |
| C5-R217.94-054-069-12.4A | Seco-Capto | 69,0 | 54 | 50 | – | 105 | 84,1 | 4 | 24 | 1,3 | 9700 | LOEX12.. |
| C6-R217.94-063-092-12.4SA | Seco-Capto | 92,0 | 63 | 63 | – | 125 | 101,5 | 4 | 32 | 2,2 | 9000 | LOEX12.. |
| C6-R217.94-066-081-12.5A | Seco-Capto | 81,0 | 66 | 63 | – | 115 | 101,7 | 5 | 35 | 2,3 | 8700 | LOEX12.. |
| | | | | | | | | | | | | |
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Spare Parts

| For cutter | Replaceable end | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-----------------------------|------------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | | |
| R217.94-../C5-C6-R217.94-.. | – | DOUBLE-T | C04012-T15P | H4B-T15P | – | 3,5 |
| C6-R217.94-..050 | R220.94-RE050023-12.4A | DOUBLE-T | C04012-T15P | H4B-T15P | – | 3,5 |
| C6-R217.94-..063 | R220.94-RE063036-12.4A | DOUBLE-T | C04012-T15P | H4B-T15P | MC6S12X35 | 3,5 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.94-12 – Insert selection

| SMG | | f_z | | |
|-----|--------------------------|-------|-------|------|
| | | 100% | 30% | 10% |
| P1 | LOEX120708TR-M12 F40M | 0,15 | 0,16 | 0,24 |
| P2 | LOEX120708TR-M12 F40M | 0,15 | 0,16 | 0,24 |
| P3 | LOEX120708TR-M12 F40M | 0,14 | 0,15 | 0,24 |
| P4 | LOEX120708TR-M12 F40M | 0,14 | 0,15 | 0,24 |
| P5 | LOEX120708TR-M12 MP2500 | 0,14 | 0,15 | 0,22 |
| P6 | LOEX120708TR-M12 MP2500 | 0,13 | 0,15 | 0,22 |
| P7 | LOEX120708TR-M12 MP2500 | 0,13 | 0,15 | 0,22 |
| P8 | LOEX120708TR-M12 MP2500 | 0,14 | 0,15 | 0,24 |
| P11 | LOEX120708TR-M12 T350M | 0,13 | 0,15 | 0,22 |
| P12 | LOEX120708TR-M12 MS2050 | 0,090 | 0,10 | 0,15 |
| M1 | LOEX120708TR-M12 F40M | 0,15 | 0,16 | 0,24 |
| M2 | LOEX120708TR-M12 F40M | 0,14 | 0,15 | 0,22 |
| M3 | LOEX120708TR-M12 F40M | 0,11 | 0,12 | 0,18 |
| M4 | LOEX120708TR-M12 F40M | 0,095 | 0,10 | 0,16 |
| M5 | LOEX120708TR-M12 F40M | 0,095 | 0,10 | 0,16 |
| K1 | LOEX120708TR-MD13 MK2050 | 0,16 | 0,18 | 0,26 |
| K2 | LOEX120708TR-MD13 MK2050 | 0,15 | 0,16 | 0,24 |
| K3 | LOEX120708TR-MD13 MK2050 | 0,15 | 0,16 | 0,24 |
| K4 | LOEX120708TR-MD13 MK2050 | 0,15 | 0,16 | 0,24 |
| K5 | LOEX120708TR-MD13 MK2050 | 0,13 | 0,14 | 0,22 |
| K6 | LOEX120708TR-MD13 MK2050 | 0,15 | 0,16 | 0,24 |
| K7 | LOEX120708TR-MD13 MK2050 | 0,13 | 0,14 | 0,22 |
| S1 | LOEX120708TR-M12 F40M | 0,095 | 0,10 | 0,16 |
| S2 | LOEX120708TR-M12 F40M | 0,095 | 0,10 | 0,16 |
| S3 | LOEX120708TR-M12 F40M | 0,090 | 0,095 | 0,15 |
| S11 | LOEX120708TR-M12 MS2050 | 0,11 | 0,12 | 0,18 |
| S12 | LOEX120708TR-M12 MS2050 | 0,11 | 0,12 | 0,18 |
| S13 | LOEX120708TR-M12 MS2050 | 0,095 | 0,10 | 0,16 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R217/220.94-12 – Cutting data $v_c =$ (m/min)

| SMG | MS2050 | | | MP2500 | | | MP3000 | | | T350M | | | F40M | | | MP2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | 155 | 175 | 190 | 155 | 175 | 185 | 150 | 165 | 180 | 140 | 160 | 170 | 155 | 175 | 185 |
| P2 | — | — | — | 155 | 175 | 185 | 150 | 170 | 185 | 145 | 165 | 175 | 135 | 155 | 170 | 155 | 175 | 185 |
| P3 | — | — | — | 145 | 165 | 175 | 145 | 160 | 175 | 140 | 155 | 165 | 130 | 145 | 160 | 145 | 165 | 175 |
| P4 | — | — | — | 140 | 155 | 170 | 135 | 155 | 165 | 130 | 150 | 160 | 120 | 140 | 150 | 135 | 155 | 165 |
| P5 | — | — | — | 135 | 155 | 165 | 130 | 150 | 165 | 125 | 145 | 155 | 115 | 135 | 150 | 135 | 155 | 165 |
| P6 | — | — | — | 145 | 160 | 175 | 140 | 160 | 170 | 135 | 155 | 165 | 125 | 145 | 155 | 145 | 160 | 175 |
| P7 | — | — | — | 140 | 160 | 170 | 135 | 155 | 165 | 130 | 150 | 160 | 120 | 140 | 150 | 140 | 155 | 170 |
| P8 | — | — | — | 135 | 155 | 165 | 130 | 150 | 160 | 125 | 145 | 155 | 115 | 135 | 145 | 135 | 155 | 165 |
| P11 | — | — | — | 140 | 155 | 170 | 135 | 150 | 165 | 130 | 145 | 160 | 120 | 140 | 150 | 135 | 155 | 165 |
| P12 | 100 | 115 | 125 | 110 | 130 | 140 | 105 | 125 | 135 | 100 | 120 | 130 | 90 | 110 | 120 | 110 | 125 | 140 |
| M1 | 130 | 150 | 160 | 135 | 155 | 165 | 130 | 150 | 165 | 130 | 150 | 160 | 125 | 140 | 155 | 130 | 150 | 165 |
| M2 | 115 | 135 | 145 | 120 | 140 | 150 | 120 | 140 | 150 | 115 | 135 | 145 | 110 | 130 | 140 | 120 | 140 | 150 |
| M3 | 105 | 120 | 135 | 105 | 125 | 135 | 105 | 125 | 135 | 105 | 120 | 135 | 95 | 115 | 125 | 105 | 125 | 135 |
| M4 | 85 | 105 | 115 | 90 | 110 | 120 | 90 | 110 | 120 | 85 | 105 | 115 | 80 | 100 | 110 | 90 | 110 | 120 |
| M5 | 75 | 95 | 105 | 80 | 100 | 110 | 80 | 95 | 105 | 75 | 95 | 105 | 70 | 85 | 95 | 75 | 95 | 105 |
| K1 | — | — | — | 140 | 160 | 170 | 135 | 155 | 165 | — | — | — | 120 | 140 | 150 | 140 | 160 | 170 |
| K2 | — | — | — | 130 | 150 | 165 | 130 | 145 | 160 | — | — | — | 115 | 130 | 145 | 130 | 150 | 160 |
| K3 | — | — | — | 120 | 140 | 150 | 115 | 135 | 150 | — | — | — | 100 | 120 | 135 | 120 | 140 | 150 |
| K4 | — | — | — | 120 | 135 | 150 | 115 | 135 | 145 | — | — | — | 100 | 120 | 130 | 115 | 135 | 145 |
| K5 | — | — | — | 85 | 105 | 115 | 80 | 100 | 110 | — | — | — | 65 | 85 | 95 | 85 | 105 | 115 |
| K6 | — | — | — | 110 | 130 | 140 | 105 | 125 | 135 | — | — | — | 90 | 110 | 120 | 110 | 125 | 140 |
| K7 | — | — | — | 100 | 120 | 130 | 100 | 115 | 130 | — | — | — | 85 | 105 | 115 | 100 | 120 | 130 |
| S1 | 42 | 55 | 65 | — | — | — | 44 | 60 | 70 | 42 | 55 | 65 | 38 | 50 | 60 | 46 | 60 | 70 |
| S2 | 34 | 45 | 50 | — | — | — | 36 | 47 | 55 | 34 | 45 | 50 | 31 | 41 | 47 | 37 | 49 | 55 |
| S3 | 30 | 39 | 46 | — | — | — | 31 | 41 | 48 | 30 | 39 | 46 | 27 | 36 | 41 | 32 | 43 | 50 |
| S11 | 60 | 75 | 85 | — | — | — | 60 | 80 | 90 | 60 | 75 | 85 | 55 | 70 | 80 | 65 | 80 | 95 |
| S12 | 40 | 55 | 65 | — | — | — | 42 | 55 | 65 | 40 | 55 | 65 | 37 | 48 | 55 | 44 | 60 | 70 |
| S13 | 24 | 31 | 36 | — | — | — | 25 | 33 | 38 | 24 | 31 | 36 | 21 | 28 | 33 | 26 | 34 | 40 |

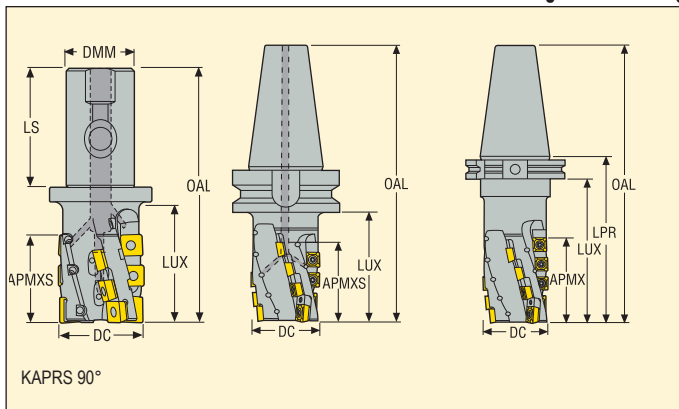
| SMG | MK1500 | | | MK2050 | | | MM4500 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | 150 | 170 | 185 | 125 | 145 | 155 |
| P2 | — | — | — | 150 | 170 | 180 | 125 | 140 | 155 |
| P3 | — | — | — | 140 | 160 | 170 | 115 | 135 | 145 |
| P4 | — | — | — | 135 | 155 | 165 | 105 | 125 | 135 |
| P5 | — | — | — | 130 | 150 | 160 | 105 | 120 | 135 |
| P6 | — | — | — | 140 | 155 | 170 | 110 | 130 | 140 |
| P7 | — | — | — | 135 | 155 | 165 | 110 | 125 | 140 |
| P8 | — | — | — | 130 | 150 | 160 | 105 | 120 | 130 |
| P11 | — | — | — | 135 | 150 | 165 | 105 | 125 | 135 |
| P12 | — | — | — | 105 | 125 | 135 | 80 | 95 | 105 |
| M1 | — | — | — | — | — | — | 115 | 130 | 145 |
| M2 | — | — | — | — | — | — | 100 | 120 | 130 |
| M3 | — | — | — | — | — | — | 85 | 105 | 115 |
| M4 | — | — | — | — | — | — | 70 | 90 | 100 |
| M5 | — | — | — | — | — | — | 60 | 75 | 85 |
| K1 | 160 | 180 | 190 | 155 | 175 | 185 | — | — | — |
| K2 | 150 | 170 | 180 | 150 | 165 | 180 | — | — | — |
| K3 | 140 | 160 | 170 | 135 | 155 | 165 | — | — | — |
| K4 | 135 | 155 | 170 | 135 | 150 | 165 | — | — | — |
| K5 | 105 | 125 | 135 | 100 | 120 | 130 | — | — | — |
| K6 | 130 | 150 | 160 | 125 | 145 | 155 | — | — | — |
| K7 | 120 | 140 | 150 | 120 | 135 | 150 | — | — | — |
| S1 | — | — | — | — | — | — | 22 | 29 | 33 |
| S2 | — | — | — | — | — | — | 17 | 23 | 27 |
| S3 | — | — | — | — | — | — | 15 | 20 | 23 |
| S11 | — | — | — | — | — | — | 30 | 39 | 47 |
| S12 | — | — | — | — | — | — | 28 | 36 | 43 |
| S13 | — | — | — | — | — | — | 16 | 21 | 25 |

R215.59-12.4 – Half effective

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 123-124
- For complete insert programme, see page(s) 642, 658
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | ZEFP | | | | No. of inserts | |
|----------------------------|------------------|------------------|------|------|-------|-------|-------|------|------|----|-----|------|----------------|------|
| | | APMXS | DC | DMM | OAL | LUX | LPR | LS | | | | | SCE. | ACE. |
| R215.59-4050.3S-050-12.4A | Seco-Weldon | 50,0 | 50,0 | 40,0 | 150,0 | 66,0 | 80,0 | 70,0 | 2 | 12 | 1,4 | 8300 | 10* | 2* |
| R215.59-BT50.050.059-12.4A | BT 50 | 59,0 | 50,0 | – | 237,0 | 97,0 | 135,0 | – | 2 | 14 | 4,5 | 8300 | 12* | 2* |
| R215.59-CV50050.077-12.4A | CV50-DIN | 77,0 | 50,0 | – | 252,0 | 109,0 | 150,0 | – | 2 | 18 | 4,2 | 8300 | 16* | 2* |
| R215.59-CV50063077-12.4 | CV50-DIN | 77,0 | 63,0 | – | 252,0 | 115,0 | 150,0 | – | 2 | 18 | 4,9 | 7400 | 16* | 2* |
| | | | | | | | | | | | | | | |
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*All corner radii can be used in front row insert, modification of the body needed for radii >= 3,0mm

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|--------------|----------------|--------------|------------|-------------------|
| R215.59-12.4 | DOUBLE-T | C45011-T20P | H6B-T20P | 5,0 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

215/220.59-12- Insert selection

| SMG | | | f _z | | |
|-----|------------------------|-------------------------|----------------|-------|------|
| | | | 100% | 30% | 10% |
| P1 | SCET120612T-ME10 F40M | ACET150612TR-ME10 F40M | 0,11 | 0,12 | 0,19 |
| P2 | SCET120612T-ME10 F40M | ACET150612TR-ME10 F40M | 0,11 | 0,13 | 0,19 |
| P3 | SCET120612T-M14 F40M | ACET150612TR-M14 F40M | 0,15 | 0,17 | 0,26 |
| P4 | SCET120612T-M14 MP2500 | ACET150612TR-M14 MP2500 | 0,15 | 0,16 | 0,24 |
| P5 | SCET120612T-M11 MP2500 | ACET150612TR-M11 MP2500 | 0,11 | 0,13 | 0,19 |
| P6 | SCET120612T-M11 MP2500 | ACET150612TR-M11 MP2500 | 0,11 | 0,12 | 0,19 |
| P7 | SCET120612T-M11 MP2500 | ACET150612TR-M11 MP2500 | 0,11 | 0,12 | 0,19 |
| P8 | SCET120612T-M11 MP2500 | ACET150612TR-M11 MP2500 | 0,12 | 0,13 | 0,20 |
| P11 | SCET120612T-M14 T350M | ACMT150612TR-M14 T350M | 0,14 | 0,16 | 0,24 |
| P12 | SCET120612T-M14 MS2050 | ACET150612R-M10 MS2050 | 0,10 | 0,11 | 0,17 |
| M1 | SCET120612T-M11 F40M | ACMT150612TR-M14 F40M | 0,13 | 0,14 | 0,22 |
| M2 | SCET120612T-M11 F40M | ACMT150612TR-M14 F40M | 0,11 | 0,13 | 0,19 |
| M3 | SCET120612R-M10 F40M | ACMT150612TR-M14 F40M | 0,085 | 0,090 | 0,14 |
| M4 | SCET120612T-M11 F40M | ACMT150612TR-M14 F40M | 0,080 | 0,090 | 0,13 |
| M5 | SCET120612R-M10 F40M | ACMT150612TR-M14 F40M | 0,075 | 0,080 | 0,12 |
| K1 | SCET120612T-M14 MK1500 | ACET150612TR-M14 MK1500 | 0,16 | 0,18 | 0,26 |
| K2 | SCET120612T-M14 MK1500 | ACET150612TR-M14 MK1500 | 0,15 | 0,16 | 0,24 |
| K3 | SCET120612T-M14 MK1500 | ACET150612TR-M14 MK1500 | 0,15 | 0,16 | 0,24 |
| K4 | SCET120612T-M14 MK1500 | ACET150612TR-M14 MK1500 | 0,15 | 0,16 | 0,24 |
| K5 | SCET120612T-M14 MK1500 | ACET150612TR-M14 MK1500 | 0,13 | 0,14 | 0,22 |
| K6 | SCET120612T-M14 MK1500 | ACET150612TR-M14 MK1500 | 0,15 | 0,16 | 0,24 |
| K7 | SCET120612T-M14 MK1500 | ACET150612TR-M14 MK1500 | 0,13 | 0,14 | 0,22 |
| S1 | SCET120612T-M11 T350M | ACMT150612TR-M14 T350M | 0,080 | 0,090 | 0,13 |
| S2 | SCET120612T-M14 T350M | ACMT150612TR-M14 T350M | 0,10 | 0,11 | 0,17 |
| S3 | SCET120612T-M14 T350M | ACMT150612TR-M14 T350M | 0,095 | 0,10 | 0,16 |
| S11 | SCET120612T-M14 MS2050 | ACET150612TR-M14 MS2050 | 0,12 | 0,13 | 0,20 |
| S12 | SCET120612T-M14 MS2050 | ACET150612TR-M14 MS2050 | 0,12 | 0,13 | 0,20 |
| S13 | SCET120612T-M14 MS2050 | ACET150612TR-M14 MS2050 | 0,10 | 0,11 | 0,17 |
| H11 | SCET120612T-M14 T350M | ACMT150612TR-M14 T350M | 0,10 | 0,11 | 0,17 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

215/220.59-12 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | T350M | | | F40M | | | MK1500 | | | MS2050 | | |
|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 140 | 155 | 160 | 135 | 145 | 155 | 125 | 140 | 150 | 120 | 135 | 140 | — | — | — | — | — | — |
| P2 | 135 | 150 | 160 | 130 | 145 | 155 | 125 | 140 | 145 | 115 | 130 | 140 | — | — | — | — | — | — |
| P3 | 130 | 145 | 155 | 125 | 140 | 145 | 115 | 130 | 140 | 110 | 125 | 135 | — | — | — | — | — | — |
| P4 | 125 | 140 | 145 | 120 | 130 | 140 | 110 | 125 | 135 | 105 | 120 | 125 | — | — | — | — | — | — |
| P5 | 125 | 135 | 145 | 115 | 130 | 140 | 110 | 125 | 130 | 105 | 115 | 125 | — | — | — | — | — | — |
| P6 | 130 | 145 | 150 | 125 | 135 | 145 | 115 | 130 | 140 | 110 | 125 | 130 | — | — | — | — | — | — |
| P7 | 125 | 140 | 150 | 120 | 135 | 140 | 115 | 125 | 135 | 105 | 120 | 130 | — | — | — | — | — | — |
| P8 | 120 | 135 | 145 | 115 | 130 | 140 | 110 | 125 | 130 | 100 | 115 | 125 | — | — | — | — | — | — |
| P11 | 125 | 140 | 145 | 120 | 130 | 140 | 110 | 125 | 135 | 105 | 120 | 125 | — | — | — | — | — | — |
| P12 | 100 | 115 | 125 | 95 | 110 | 120 | 90 | 105 | 110 | 80 | 95 | 105 | — | — | — | 85 | 100 | 105 |
| M1 | — | — | — | 115 | 130 | 135 | 110 | 125 | 135 | 105 | 120 | 130 | — | — | — | 110 | 125 | 130 |
| M2 | — | — | — | 105 | 120 | 130 | 100 | 115 | 125 | 95 | 110 | 120 | — | — | — | 100 | 115 | 120 |
| M3 | — | — | — | 95 | 110 | 115 | 90 | 105 | 115 | 85 | 100 | 110 | — | — | — | 90 | 100 | 110 |
| M4 | — | — | — | 80 | 95 | 105 | 80 | 90 | 100 | 75 | 85 | 95 | — | — | — | 75 | 90 | 100 |
| M5 | — | — | — | 75 | 85 | 95 | 70 | 85 | 90 | 65 | 80 | 85 | — | — | — | 65 | 80 | 90 |
| K1 | 125 | 140 | 150 | 120 | 135 | 140 | — | — | — | 105 | 120 | 125 | 135 | 150 | 155 | — | — | — |
| K2 | 120 | 135 | 140 | 115 | 130 | 135 | — | — | — | 100 | 115 | 120 | 125 | 140 | 150 | — | — | — |
| K3 | 110 | 125 | 135 | 105 | 120 | 130 | — | — | — | 90 | 105 | 115 | 120 | 135 | 145 | — | — | — |
| K4 | 110 | 125 | 130 | 105 | 115 | 125 | — | — | — | 90 | 105 | 110 | 115 | 130 | 140 | — | — | — |
| K5 | 85 | 100 | 105 | 80 | 90 | 100 | — | — | — | 65 | 80 | 85 | 95 | 105 | 115 | — | — | — |
| K6 | 105 | 115 | 125 | 95 | 110 | 120 | — | — | — | 85 | 95 | 105 | 110 | 125 | 135 | — | — | — |
| K7 | 95 | 110 | 120 | 90 | 105 | 115 | — | — | — | 75 | 90 | 100 | 105 | 120 | 130 | — | — | — |
| S1 | — | — | — | — | — | — | 41 | 55 | 65 | 37 | 49 | 60 | — | — | — | 39 | 50 | 60 |
| S2 | — | — | — | — | — | — | 33 | 43 | 50 | 30 | 39 | 47 | — | — | — | 31 | 41 | 49 |
| S3 | — | — | — | — | — | — | 29 | 38 | 45 | 26 | 35 | 41 | — | — | — | 27 | 37 | 43 |
| S11 | — | — | — | — | — | — | 55 | 70 | 80 | 50 | 65 | 75 | — | — | — | 55 | 70 | 75 |
| S12 | — | — | — | — | — | — | 40 | 50 | 60 | 36 | 48 | 55 | — | — | — | 37 | 49 | 60 |
| S13 | — | — | — | — | — | — | 23 | 30 | 36 | 21 | 27 | 33 | — | — | — | 22 | 29 | 34 |
| H11 | 60 | 75 | 80 | 48 | 60 | 70 | 46 | 60 | 70 | 40 | 55 | 60 | — | — | — | — | — | — |

R215220.69-15XH – Insert selection

| SMG | | f_z | | |
|-----|--------------------------|-------|-------|------|
| | | 100% | 30% | 10% |
| P1 | ACET150612TR-ME10 F40M | 0,12 | 0,13 | 0,20 |
| P2 | ACET150612TR-ME10 F40M | 0,12 | 0,13 | 0,20 |
| P3 | ACET150612TR-M14 F40M | 0,16 | 0,18 | 0,28 |
| P4 | ACET150612TR-M14 MP2500 | 0,16 | 0,18 | 0,26 |
| P5 | ACET150612TR-M11 MP2500 | 0,12 | 0,13 | 0,20 |
| P6 | ACET150612TR-M11 MP2500 | 0,12 | 0,13 | 0,20 |
| P7 | ACET150612TR-M11 MP2500 | 0,12 | 0,13 | 0,20 |
| P8 | ACET150612TR-M11 MP2500 | 0,13 | 0,14 | 0,22 |
| P11 | ACMT150612TR-M14 T350M | 0,16 | 0,17 | 0,26 |
| P12 | ACET150612R-M10 MS2050 | 0,070 | 0,075 | 0,12 |
| M1 | ACMT150612TR-M14 F40M | 0,17 | 0,19 | 0,28 |
| M2 | ACMT150612TR-M14 F40M | 0,16 | 0,17 | 0,26 |
| M3 | ACMT150612TR-M14 F40M | 0,13 | 0,14 | 0,22 |
| M4 | ACMT150612TR-M14 F40M | 0,11 | 0,12 | 0,19 |
| M5 | ACMT150612TR-M14 F40M | 0,11 | 0,12 | 0,19 |
| K1 | ACET150612TR-M14 MK1500 | 0,17 | 0,19 | 0,28 |
| K2 | ACET150612TR-M14 MK1500 | 0,16 | 0,17 | 0,26 |
| K3 | ACET150612TR-M14 MK1500 | 0,16 | 0,17 | 0,26 |
| K4 | ACET150612TR-M14 MK1500 | 0,16 | 0,17 | 0,26 |
| K5 | ACET150612TR-MD15 MP1500 | 0,15 | 0,17 | 0,26 |
| K6 | ACET150630TR-MD15 MP1500 | 0,17 | 0,19 | 0,28 |
| K7 | ACET150630TR-MD15 MP1500 | 0,15 | 0,17 | 0,26 |
| S1 | ACMT150612TR-M14 T350M | 0,11 | 0,12 | 0,19 |
| S2 | ACMT150612TR-M14 T350M | 0,11 | 0,12 | 0,19 |
| S3 | ACMT150612TR-M14 T350M | 0,11 | 0,11 | 0,18 |
| S11 | ACET150612TR-M14 MS2050 | 0,13 | 0,14 | 0,22 |
| S12 | ACET150612TR-M14 MS2050 | 0,13 | 0,14 | 0,22 |
| S13 | ACET150612TR-M14 MS2050 | 0,11 | 0,12 | 0,19 |
| H11 | ACMT150612TR-M14 MP2500 | 0,11 | 0,12 | 0,18 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R215/220.69-15XH – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | MP3000 | | | T350M | | | F40M | | | MS2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 180 | 200 | 210 | 170 | 190 | 200 | 160 | 180 | 190 | 160 | 180 | 190 | 150 | 170 | 180 | — | — | — |
| P2 | 175 | 195 | 210 | 165 | 185 | 200 | 155 | 175 | 190 | 155 | 175 | 190 | 145 | 165 | 180 | — | — | — |
| P3 | 165 | 185 | 200 | 155 | 175 | 190 | 145 | 165 | 180 | 145 | 165 | 180 | 135 | 155 | 170 | — | — | — |
| P4 | 155 | 175 | 190 | 145 | 165 | 180 | 135 | 155 | 170 | 135 | 155 | 170 | 125 | 145 | 160 | — | — | — |
| P5 | 155 | 175 | 185 | 145 | 165 | 180 | 135 | 155 | 165 | 135 | 155 | 170 | 125 | 145 | 155 | — | — | — |
| P6 | 160 | 185 | 195 | 155 | 175 | 185 | 140 | 165 | 175 | 145 | 165 | 175 | 135 | 155 | 165 | — | — | — |
| P7 | 160 | 180 | 190 | 150 | 170 | 180 | 140 | 160 | 170 | 140 | 160 | 170 | 130 | 150 | 160 | — | — | — |
| P8 | 150 | 175 | 185 | 145 | 165 | 175 | 130 | 155 | 165 | 135 | 155 | 165 | 120 | 145 | 155 | — | — | — |
| P11 | 155 | 175 | 190 | 145 | 170 | 180 | 135 | 155 | 170 | 135 | 155 | 170 | 125 | 145 | 160 | — | — | — |
| P12 | 125 | 145 | 155 | 115 | 135 | 145 | 105 | 125 | 140 | 105 | 125 | 135 | 95 | 115 | 125 | 95 | 115 | 130 |
| M1 | — | — | — | 140 | 160 | 175 | 135 | 155 | 170 | 135 | 155 | 170 | 130 | 150 | 165 | 130 | 150 | 165 |
| M2 | — | — | — | 130 | 150 | 160 | 120 | 140 | 155 | 125 | 145 | 155 | 115 | 135 | 150 | 115 | 140 | 150 |
| M3 | — | — | — | 110 | 130 | 145 | 105 | 125 | 140 | 105 | 125 | 140 | 100 | 120 | 135 | 100 | 125 | 135 |
| M4 | — | — | — | 95 | 115 | 125 | 85 | 105 | 120 | 90 | 110 | 120 | 80 | 100 | 115 | 85 | 105 | 115 |
| M5 | — | — | — | 80 | 100 | 115 | 75 | 95 | 105 | 75 | 95 | 105 | 70 | 90 | 100 | 70 | 90 | 105 |
| K1 | 155 | 180 | 190 | 150 | 170 | 185 | 140 | 160 | 175 | — | — | — | 125 | 150 | 160 | — | — | — |
| K2 | 150 | 170 | 185 | 140 | 160 | 175 | 130 | 150 | 165 | — | — | — | 120 | 140 | 155 | — | — | — |
| K3 | 135 | 160 | 170 | 130 | 150 | 160 | 115 | 140 | 150 | — | — | — | 105 | 130 | 140 | — | — | — |
| K4 | 135 | 155 | 165 | 125 | 145 | 160 | 115 | 135 | 145 | — | — | — | 105 | 125 | 135 | — | — | — |
| K5 | 95 | 115 | 130 | 90 | 110 | 120 | 75 | 95 | 110 | — | — | — | 65 | 85 | 100 | — | — | — |
| K6 | 125 | 145 | 160 | 115 | 135 | 150 | 105 | 125 | 140 | — | — | — | 95 | 115 | 130 | — | — | — |
| K7 | 115 | 135 | 150 | 105 | 125 | 140 | 95 | 115 | 130 | — | — | — | 85 | 105 | 120 | — | — | — |
| S1 | — | — | — | — | — | — | 41 | 55 | 65 | 42 | 55 | 65 | 38 | 50 | 60 | 40 | 50 | 60 |
| S2 | — | — | — | — | — | — | 33 | 43 | 50 | 34 | 44 | 50 | 31 | 40 | 47 | 32 | 42 | 49 |
| S3 | — | — | — | — | — | — | 29 | 38 | 45 | 30 | 39 | 46 | 27 | 35 | 42 | 28 | 37 | 43 |
| S11 | — | — | — | — | — | — | 55 | 75 | 85 | 60 | 75 | 90 | 55 | 70 | 80 | 55 | 70 | 85 |
| S12 | — | — | — | — | — | — | 39 | 50 | 60 | 40 | 55 | 65 | 37 | 48 | 55 | 38 | 50 | 60 |
| S13 | — | — | — | — | — | — | 23 | 30 | 35 | 24 | 31 | 36 | 22 | 28 | 33 | 22 | 29 | 34 |
| H11 | 60 | 80 | 90 | 49 | 65 | 75 | 45 | 60 | 70 | 47 | 60 | 70 | 41 | 55 | 65 | — | — | — |

R235.15 – Insert selection

| SMG | | f_z |
|-----|----------------------|-------|
| | | 3% |
| P1 | R235.15-xxx-E05 F30M | 0,20 |
| P2 | R235.15-xxx-E05 F30M | 0,22 |
| P3 | R235.15-xxx-E05 F30M | 0,20 |
| P4 | R235.15-xxx-E05 F30M | 0,20 |
| P5 | R235.15-xxx-E05 F30M | 0,19 |
| P6 | R235.15-xxx-E05 F30M | 0,19 |
| P7 | R235.15-xxx-E05 F30M | 0,19 |
| P8 | R235.15-xxx-E05 F30M | 0,20 |
| P11 | R235.15-xxx-E05 F30M | 0,19 |
| P12 | R235.15-032-E05 F30M | 0,13 |
| M1 | R235.15-xxx-E05 F30M | — |
| M2 | R235.15-xxx-E05 F30M | — |
| K1 | R235.15-xxx-E05 F30M | — |
| K2 | R235.15-xxx-E05 F30M | — |
| K3 | R235.15-xxx-E05 F30M | — |
| K4 | R235.15-xxx-E05 F30M | — |
| K5 | R235.15-xxx-E05 F30M | — |
| K6 | R235.15-xxx-E05 F30M | — |
| K7 | R235.15-xxx-E05 F30M | — |
| S1 | R235.15-xxx-E05 F30M | 0,13 |
| S2 | R235.15-xxx-E05 F30M | 0,13 |
| S3 | R235.15-xxx-E05 F30M | 0,13 |
| S11 | R235.15-xxx-E05 F30M | 0,15 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R235.15 – Cutting data v_c = (m/min)

| SMG | F30M |
|-----|------|
| | 100% |
| P1 | 180 |
| P2 | 175 |
| P3 | 150 |
| P4 | 135 |
| P5 | 130 |
| P6 | 145 |
| P7 | 140 |
| P8 | 130 |
| P11 | 135 |
| P12 | 85 |
| M1 | — |
| M2 | — |
| K1 | — |
| K2 | — |
| K3 | — |
| K4 | — |
| K5 | — |
| K6 | — |
| K7 | — |
| S1 | 42 |
| S2 | 34 |
| S3 | 30 |
| S11 | 60 |

Face milling cutters

| Cutter | Insert | a _p max | a _p rec. | Material suitability | | | | | | | | |
|-----------------|--------------|--------------------|---------------------|----------------------|---|---|---|---|---|---|---|-----|
| | | | | P | M | K | N | S | | | | |
| Double Octomill | ON..05 | 3,0 | 2,0 | ■ | ■ | ■ | □ | ▣ | ▣ | ▣ | □ | 40° |
| Double Octomill | ON..09 | 6,0 | 3,0 | ■ | ■ | ■ | □ | ▣ | □ | ■ | □ | 40° |
| Octomill | OF..05 | 3,5 | 2,5 | ▣ | ▣ | ▣ | ▣ | ▣ | ■ | ▣ | ▣ | 42° |
| Octomill | OF..07 | 5,0 | 4,0 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | ■ | ▣ | 42° |
| Quattromill | SE..09T3 | 4,5 | 3,0 | ■ | ■ | ▣ | ■ | ■ | ■ | ▣ | ■ | 45° |
| Quattromill | SE..1204 | 6,0 | 4,5 | ■ | ■ | ▣ | ■ | ■ | ▣ | ■ | ■ | 45° |
| Quattromill | SE..1505 | 7,5 | 6,0 | ■ | ■ | ■ | ■ | ■ | ▣ | ■ | ■ | 45° |

| | | |
|---|--------------------|---|
| a _p max = Maximum depth of cut possible | 1st choice | ■ |
| a _p rec. = Recommended depth of cut for optimal result | Alternative choice | ▣ |
| - = Not recommended | Possible choice | □ |

| | | | |
|--|--|--------------------------------|--|
| High speed machine with low Power/ Torque | | Unstable condition suitability | |
| Strong stable machine with rigid connexion | | | |

Face milling cutters

| Insert | No. of cutting edges | Application | Cutter diameter available with effective number of teeth | | | | | | | | | | | | | | | See page | |
|----------|----------------------|-------------|--|--------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|
| | | | 20 | 24*/25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 | | |
| ON..05 | 16 | | | | | 4 | 4 | 5 | | | | | | | | | | | 171 |
| | | | | 3 | 4 | | 5 | 6 | 6 | 7 | 8 | | | | | | | | 170, 171 |
| | | | | | | 5 | 6 | 8 | 10 | 12 | 14 | | | | | | | | 172 |
| | | | | | | | | | 6 | 8 | 10 | 14 | 18 | | | | | | 172 |
| ON..09 | 16 | | | | | | | 5 | 6 | 7 | 8 | 10 | | | | | | 177 | |
| | | | | | | | | 6 | 7 | 8 | 10 | 12 | 12 | 16 | 20 | | | 177 | |
| | | | | | | | | | 9 | 12 | 15 | 20 | 24 | 30 | 40 | 50 | 60 | | 178, 179 |
| | | | | | | | | | | | 8 | 10 | 12 | 16 | 20 | | | | 180 |
| OF..05 | 8 | | | | 3 | 3 | 4 | 5 | 6 | 7 | 8 | 10 | | | | | | | 161 |
| | | | | | | 4 | 5 | 6 | 8 | | | | | | | | | | 162 |
| | | | | | | | | | | | | 7 | | | | | | | 163 |
| | | | | | | | | | | 6 | 8 | 10 | 12 | 16 | 20 | | | | 163 |
| | | | | | | | | | | | 10 | 14 | 18 | | 28 | | | | 164 |
| OF..07 | 8 | | | | | 4 | 4 | 5 | 6 | 8 | 10 | | | | | | | | 155 |
| | | | | | | | 6 | 9 | 12 | 15 | | | | | | | | | 158 |
| | | | | | | | | | | | | 7 | | | | | | | 156 |
| | | | | | | | | | | 6 | 8 | 10 | 12 | 16 | | | | | 156 |
| | | | | | | | | | | | 10 | 14 | 18 | 22 | 28 | | | | 157 |
| SE..09T3 | 4 | | 2 | 3 | 4 | 4 | 5 | 6 | 6 | 7 | | | | | | | | | 135, 136 |
| | | | | | | 5 | 6 | 7 | 8 | 10 | | | | | | | | | 137 |
| | | | | | | | | | | | | | 8 | 10 | 12 | 16 | 20 | | 138 |
| | | | | | | | | | | 5 | 6 | 8 | 10 | | 16 | 18 | | | 138 |
| | | | | | | | | | | 6 | 8 | 10 | 14 | | | | | | 139 |
| SE..1204 | 4 | | | | | | | | | 5 | 6 | 7 | | | | | | | 142 |
| | | | | | | 3 | 4 | 5 | 6 | 7 | 8 | 10 | | | | | | | 142 |
| | | | | | | 4 | 5 | 6 | 8 | 10 | 12 | | | | | | | | 143 |
| | | | | | | | | | | | | | 7 | 8 | 10 | 12 | 16 | 20 | 145 |
| | | | | | | | | | | 5 | 6 | 8 | 10 | 12 | 16 | 18 | | | 145 |
| | | | | | | | | | | 6 | 8 | 10 | 14 | | | | | | 146 |
| SE..1505 | 4 | | | | | | | 5 | 6 | 7 | 8 | 10 | 12 | | | | | | 149 |
| | | | | | | | | | 7 | 9 | 10 | 14 | | | | | | | 150 |
| | | | | | | | | | | | | | 7 | 8 | 10 | 12 | 16 | 20 | 151 |
| | | | | | | | | | | 5 | 6 | 8 | 10 | 12 | 16 | 18 | | | 151 |
| | | | | | | | | | | 6 | 8 | 10 | 14 | | | | | | 141 |

| | | | |
|---|---|--|--|
| x | Fixed pocket (x indicates number of teeth) | | Troubleshooter for unstable fixturing and/or unstable conditions |
| x | With cassette (x indicates number of teeth) | | Basic choice |
| | | | Productivity |

Face milling cutters

| Cutter | Insert | a_p max | a_p rec. | Material suitability | | | | | | | | |
|---------|--------------|-----------|------------|----------------------|---|---|---|---|---|---|---|-----|
| | | | | P | M | K | N | S | | | | |
| R220.88 | SNMU..12 | 9,0 | 5,0 | ■ | - | ■ | □ | - | ▣ | ■ | □ | 88° |
| R220.88 | SNMU..16 | 13,0 | 7,0 | ■ | - | ■ | □ | - | □ | ■ | □ | 88° |

| | | |
|--|--------------------|---|
| a_p max = Maximum depth of cut possible | 1st choice | ■ |
| a_p rec. = Recommended depth of cut for optimal result | Alternative choice | ▣ |
| - = Not recommended | Possible choice | □ |

| | | | |
|---|--|--------------------------------|--|
| High speed machine with low Power/ Torque | | Unstable condition suitability | |
| | | | |
| Strong stable machine with rigid connection | | | |

Face milling cutters

| Insert | No. of cutting edges | Applica-tion | Cutter diameter available with effective number of teeth | | | | | | | | | | | | | | See page | |
|----------|----------------------|--------------|--|--------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|----------|----------|
| | | | 20 | 24*/25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | | 500 |
| SNMU..12 | 8 | | | | | | 4 | 6 | 7 | 8 | 10 | 12 | | | | | | 170, 171 |
| | | | | | | | 5 | 7 | 9 | 11 | 13 | 16 | | | | | | 172 |
| SNMU..16 | 8 | | | | | | | 4 | 6 | 8 | 10 | 12 | | | | | | 177 |
| | | | | | | | | 5 | 7 | 9 | 11 | 13 | | | | | | 178, 179 |



x Fixed pocket (x indicates number of teeth)

x With cassette (x indicates number of teeth)



Troubleshooter for unstable fixturing and/or



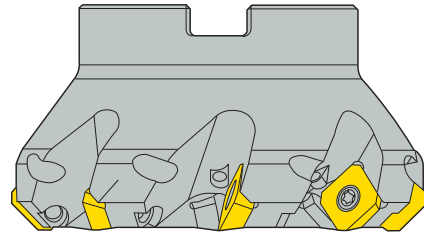
Basic choice



Productivity

Milling cutters

In milling Seco uses product specific designation systems, there is no ISO system available for cutters. See example below.

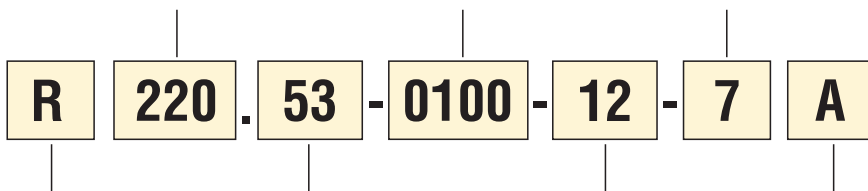


Code key for face milling cutter 217/220.53

217 = With shank
220 = For arbor
Cx = For Seco-Capto

Cutter diameter

Effective No. of teeth (ZEFP)



Right hand rotation

Cutter system

Insert size

A = Holes for internal coolant supply
W = Insert locking with wedge
G = Coarse pitch version for low power machines
T = Close pitch version for high feed rates in powerful machines

Dimensions of mounting

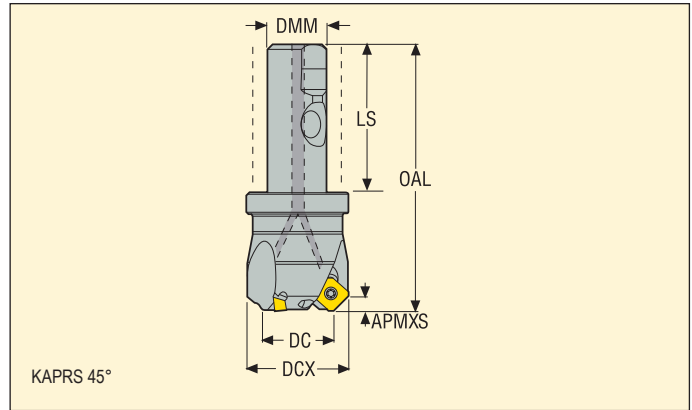
| | Dimensions in mm | | | | | | Spindle-nose |
|---------|------------------|------|-----|-------|-------|--------|--------------|
| | DCSFMS | DCB | KWW | C | DBC1 | DBC2 | |
| 30-35 | 16 | 8,4 | 5,6 | - | - | - | |
| 42-47 | 22 | 10,4 | 6,3 | - | - | - | |
| 48-62 | 27 | 12,4 | 7 | - | - | - | |
| 60-90 | 32 | 14,4 | 8 | - | - | - | |
| 90-130 | 40 | 16,4 | 9 | 66,7 | - | (8xxx) | |
| 130-270 | 60 | 25,7 | 14 | 101,6 | 177,8 | (8xxx) | |
| | | | | | | | |
| | | | | | | | |

For a more exact DCSFMS and DCB measurement, see each product table.

R217.53-09



- For insert selection and cutting data recommendations, see page(s) 140–141
- For complete insert programme, see page(s) 661
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | Flutes | KG | Inserts | Insert |
|-----------------------|------------------|------------------|------|------|------|------|------|--------|-----|---------|----------|
| | | APMXS | DCX | DC | DMM | OAL | LS | | | | |
| R217.53-2020.3S-09-2A | Seco-Weldon | 4,5 | 30,0 | 20,0 | 20,0 | 90,0 | 50,0 | 2 | 0,3 | 25100 | SE..09T3 |
| R217.53-2025.3S-09-3A | Seco-Weldon | 4,5 | 35,0 | 25,0 | 20,0 | 90,0 | 50,0 | 3 | 0,4 | 22400 | SE..09T3 |
| R217.53-2032.3S-09-4A | Seco-Weldon | 4,5 | 42,0 | 32,0 | 20,0 | 90,0 | 50,0 | 4 | 0,4 | 19800 | SE..09T3 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
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Spare Parts

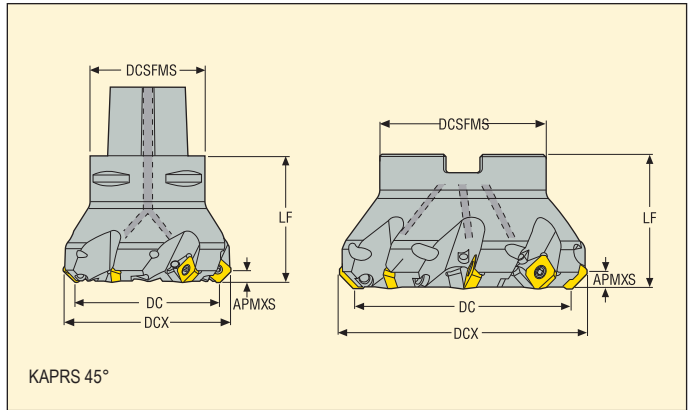
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.53.. | DOUBLE-T | C03008-T09P | H4B-T09P | 2,0 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.53-09



- For insert selection and cutting data recommendations, see page(s) 140–141
- For complete insert programme, see page(s) 661
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|----------------------|------------------|------------------|-------|-------|--------|------|------|---|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.53-0032-09-4A | Arbor | 4,5 | 42,0 | 32,0 | 35,0 | 16,0 | 40,0 | 4 | 0,3 | 19800 | SE..09T3 |
| C5-R217.53-040-09-4A | Seco-Capto | 4,5 | 50,0 | 40,0 | 50,0 | – | 55,0 | 4 | 0,8 | 17700 | SE..09T3 |
| R220.53-0040-09-4A | Arbor | 4,5 | 50,0 | 40,0 | 47,0 | 22,0 | 40,0 | 4 | 0,4 | 17700 | SE..09T3 |
| C5-R217.53-050-09-5A | Seco-Capto | 4,5 | 60,0 | 50,0 | 50,0 | – | 55,0 | 5 | 0,9 | 15800 | SE..09T3 |
| R220.53-0050-09-5A | Arbor | 4,5 | 60,0 | 50,0 | 47,0 | 22,0 | 40,0 | 5 | 0,5 | 15800 | SE..09T3 |
| C5-R217.53-063-09-6A | Seco-Capto | 4,5 | 73,0 | 63,0 | 50,0 | – | 55,0 | 6 | 1,1 | 14100 | SE..09T3 |
| R220.53-0063-09-6A | Arbor | 4,5 | 73,0 | 63,0 | 47,0 | 22,0 | 40,0 | 6 | 0,6 | 14100 | SE..09T3 |
| C5-R217.53-080-09-6A | Seco-Capto | 4,5 | 90,0 | 80,0 | 50,0 | – | 55,0 | 6 | 1,3 | 12500 | SE..09T3 |
| R220.53-0080-09-6A | Arbor | 4,5 | 90,0 | 80,0 | 62,0 | 27,0 | 50,0 | 6 | 1,2 | 12500 | SE..09T3 |
| R220.53-0100-09-7A | Arbor | 4,5 | 110,0 | 100,0 | 77,0 | 32,0 | 50,0 | 7 | 1,8 | 11200 | SE..09T3 |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.53-0032 | DOUBLE-T | C03008-T09P | H4B-T09P | 220.17-690 | 2,0 |
| C5-R217.53-... | DOUBLE-T | C03008-T09P | H4B-T09P | – | 2,0 |
| R220.53-0040-0063 | DOUBLE-T | C03008-T09P | H4B-T09P | 220.17-696 | 2,0 |
| R220.53-0080-0100 | DOUBLE-T | C03008-T09P | H4B-T09P | – | 2,0 |
| | | | | | |

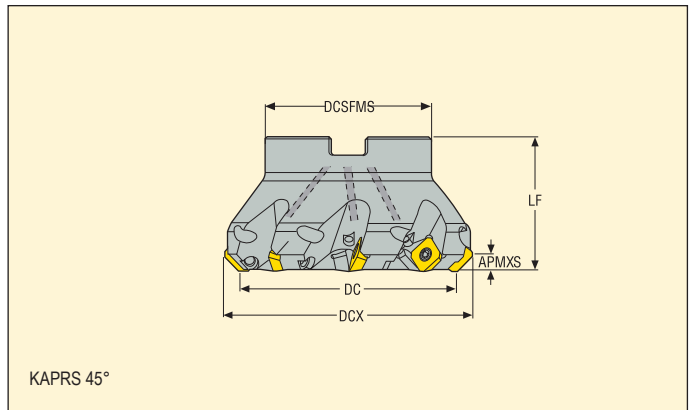
Please check availability in current price and stock-list

Torque keys, see page 732

R220.53-09



- For insert selection and cutting data recommendations, see page(s) 140–141
- For complete insert programme, see page(s) 661
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.53-0040-09-5A | Arbor | 4,5 | 50,0 | 40,0 | 42,0 | 22,0 | 40,0 | 5 | 0,4 | 17700 | SE..09T3 |
| R220.53-0050-09-6A | Arbor | 4,5 | 60,0 | 50,0 | 42,0 | 22,0 | 40,0 | 6 | 0,5 | 15800 | SE..09T3 |
| R220.53-0063-09-7A | Arbor | 4,5 | 73,0 | 63,0 | 47,0 | 22,0 | 40,0 | 7 | 0,6 | 14100 | SE..09T3 |
| R220.53-0080-09-8A | Arbor | 4,5 | 90,0 | 80,0 | 62,0 | 27,0 | 50,0 | 8 | 1,2 | 12500 | SE..09T3 |
| R220.53-0100-09-10A | Arbor | 4,5 | 110,0 | 100,0 | 77,0 | 22,0 | 50,0 | 10 | 1,8 | 11200 | SE..09T3 |
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Spare Parts

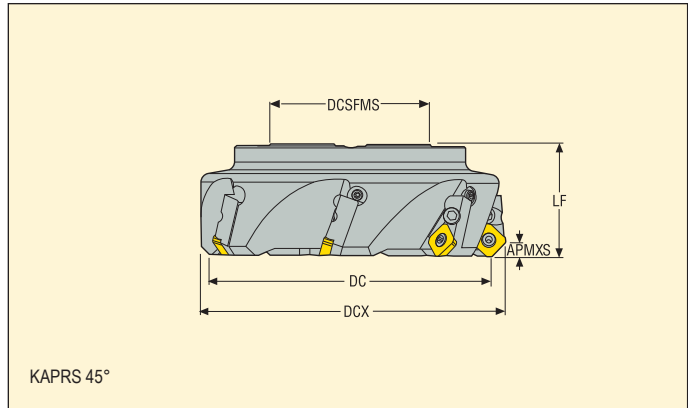
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.53-0040-0063 | DOUBLE-T | C03008-T09P | H4B-T09P | 220.17-696 | 2,0 |
| R220.53-0080-0100 | DOUBLE-T | C03008-T09P | H4B-T09P | - | 2,0 |
| | | | | | |
| | | | | | |
| | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.53-09C



- For insert selection and cutting data recommendations, see page(s) 140–141
- For complete insert programme, see page(s) 661
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|------|------|----|------|------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.53-0080-09-5C | Arbor | 4,5 | 90,0 | 80,0 | 62,0 | 27,0 | 50,0 | 5 | 1,7 | 7400 | SE..09T3 |
| R220.53-0100-09-6C | Arbor | 4,5 | 110,0 | 100,0 | 77,0 | 32,0 | 50,0 | 6 | 2,5 | 6600 | SE..09T3 |
| R220.53-0125-09-8C | Arbor | 4,5 | 135,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 4,2 | 5900 | SE..09T3 |
| R220.53-8160-09-10C | Arbor | 4,5 | 170,0 | 160,0 | 90,0 | 40,0 | 63,0 | 10 | 6,6 | 5200 | SE..09T3 |
| R220.53-8200-09-8C | Arbor | 4,5 | 210,0 | 200,0 | 130,0 | 60,0 | 63,0 | 8 | 9,4 | 4700 | SE..09T3 |
| R220.53-8250-09-10C | Arbor | 4,5 | 260,0 | 250,0 | 130,0 | 60,0 | 63,0 | 10 | 17,1 | 4200 | SE..09T3 |
| R220.53-8250-09-16C | Arbor | 4,5 | 260,0 | 250,0 | 130,0 | 60,0 | 63,0 | 16 | 17,2 | 4200 | SE..09T3 |
| R220.53-8315-09-12C | Arbor | 4,5 | 325,0 | 315,0 | 225,0 | 60,0 | 80,0 | 12 | 32,6 | 3700 | SE..09T3 |
| R220.53-8315-09-18C | Arbor | 4,5 | 325,0 | 315,0 | 225,0 | 60,0 | 80,0 | 18 | 32,8 | 3700 | SE..09T3 |
| R220.53-8400-09-16C | Arbor | 4,5 | 410,0 | 400,0 | 225,0 | 60,0 | 80,0 | 16 | 51,2 | 3300 | SE..09T3 |
| R220.53-8500-09-20C | Arbor | 4,5 | 510,0 | 500,0 | 225,0 | 60,0 | 80,0 | 20 | 80,7 | 2900 | SE..09T3 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

Spare Parts

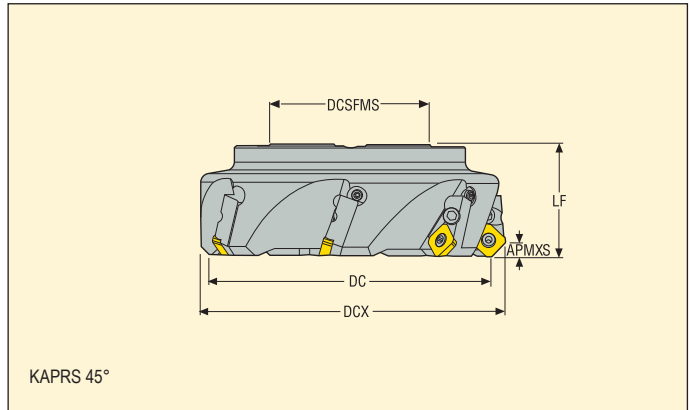
| For cutter | Setting gauge | Key (T-handle) | Insert screw | Insert key | Cassette screw | Cassette | Torque value (Nm) |
|---------------------|---------------|----------------|--------------|------------|----------------|-----------|-------------------|
| | | | | | | | |
| R220.53-0080-0125 | AU1114T-T15P | DOUBLE-T | C03008-T09P | H4B-T09P | FS96018 | SE09AR-53 | 2,0 |
| R220.53-8160-8500 | AU1114T-T15P | DOUBLE-T | C03008-T09P | H4B-T09P | FS96018 | SE09AR-53 | 2,0 |
| R220.53-8315-09-12C | AU1114T-T15P | DOUBLE-T | C03008-T09P | H4B-T09P | FS96018 | SE09AR-53 | 2,0 |
| | | | | | | | |
| | | | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.53-09C



- For insert selection and cutting data recommendations, see page(s) 140–141
- For complete insert programme, see page(s) 661
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.53-0080-09-6C | Arbor | 4,5 | 90,0 | 80,0 | 62,0 | 27,0 | 50,0 | 6 | 1,7 | 7400 | SE..09T3 |
| R220.53-0100-09-8C | Arbor | 4,5 | 110,0 | 100,0 | 77,0 | 32,0 | 50,0 | 8 | 2,6 | 6600 | SE..09T3 |
| R220.53-0125-09-10C | Arbor | 4,5 | 135,0 | 125,0 | 90,0 | 40,0 | 63,0 | 10 | 4,2 | 5900 | SE..09T3 |
| R220.53-8160-09-14C | Arbor | 4,5 | 170,0 | 160,0 | 90,0 | 40,0 | 63,0 | 14 | 6,6 | 5200 | SE..09T3 |
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Spare Parts

| For cutter | Setting gauge | Key (T-handle) | Insert screw | Insert key | Cassette screw | Cassette | Torque value (Nm) |
|-------------------|---------------|----------------|--------------|------------|----------------|-----------|-------------------|
| | | | | | | | |
| R220.53-0080-0125 | AU1114T-T15P | DOUBLE-T | C03008-T09P | H4B-T09P | FS96018 | SE09AR-53 | 2,0 |
| R220.53-8160 | AU1114T-T15P | DOUBLE-T | C03008-T09P | H4B-T09P | FS96018 | SE09AR-53 | 2,0 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.53-09 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|-------|------|
| | | | 100% | 30% | 10% |
| P1 | SEMX09T3AFTN-ME06 MP2500 | 2,5 | 0,12 | 0,13 | 0,20 |
| P2 | SEMX09T3AFTN-ME06 MP2500 | 2,5 | 0,12 | 0,13 | 0,20 |
| P3 | SEMX09T3AFTN-ME06 MP2500 | 2,5 | 0,11 | 0,13 | 0,19 |
| P4 | SEMX09T3AFTN-ME06 MP2500 | 2,5 | 0,11 | 0,12 | 0,19 |
| P5 | SEMX09T3AFTN-ME06 MP2500 | 2,5 | 0,11 | 0,12 | 0,18 |
| P6 | SEMX09T3AFTN-M08 MP2500 | 2,5 | 0,15 | 0,16 | 0,24 |
| P7 | SEMX09T3AFTN-M08 MP2500 | 2,5 | 0,15 | 0,16 | 0,24 |
| P8 | SEMX09T3AFTN-M08 MP2500 | 2,5 | 0,15 | 0,17 | 0,26 |
| P11 | SEEX09T3AFTN-M08 T350M | 2,5 | 0,15 | 0,16 | 0,24 |
| P12 | SEEX09T3AFTN-M08 T350M | 2,0 | 0,10 | 0,11 | 0,17 |
| M1 | SEEX09T3AFTN-ME07 F40M | 2,5 | 0,14 | 0,15 | 0,24 |
| M2 | SEEX09T3AFTN-ME07 F40M | 2,5 | 0,13 | 0,14 | 0,22 |
| M3 | SEMX09T3AFTN-M08 T350M | 2,0 | 0,12 | 0,13 | 0,20 |
| M4 | SEMX09T3AFTN-M08 T350M | 1,6 | 0,10 | 0,11 | 0,17 |
| M5 | SEMX09T3AFTN-M08 MM4500 | 1,6 | 0,10 | 0,11 | 0,17 |
| K1 | SEEX09T3AFTN-M08 MK1500 | 2,5 | 0,16 | 0,18 | 0,28 |
| K2 | SEEX09T3AFTN-M08 MK1500 | 2,5 | 0,15 | 0,16 | 0,24 |
| K3 | SEEX09T3AFTN-M08 MK2050 | 2,5 | 0,15 | 0,16 | 0,24 |
| K4 | SEEX09T3AFTN-M08 MK2050 | 2,5 | 0,15 | 0,16 | 0,24 |
| K5 | SEEX09T3AFTN-M08 MK2050 | 2,5 | 0,13 | 0,14 | 0,22 |
| K6 | SEEX09T3AFTN-M08 MK2050 | 2,5 | 0,15 | 0,16 | 0,24 |
| K7 | SEEX09T3AFTN-M08 MK2050 | 2,5 | 0,13 | 0,14 | 0,22 |
| N1 | SEEX09T3AFN-E04 H15 | 2,5 | 0,10 | 0,11 | 0,17 |
| N2 | SEEX09T3AFN-E04 H15 | 2,5 | 0,10 | 0,11 | 0,17 |
| N3 | SEEX09T3AFN-E04 F40M | 2,5 | 0,10 | 0,11 | 0,17 |
| N11 | SEEX09T3AFN-E04 F40M | 2,5 | 0,10 | 0,11 | 0,17 |
| S1 | SEEX09T3AFTN-ME07 T350M | 1,6 | 0,090 | 0,10 | 0,15 |
| S2 | SEEX09T3AFTN-ME07 T350M | 1,6 | 0,090 | 0,10 | 0,15 |
| S3 | SEEX09T3AFTN-ME07 T350M | 1,6 | 0,085 | 0,090 | 0,14 |
| S11 | SEEX09T3AFN-M05 MS2050 | 1,9 | 0,075 | 0,080 | 0,12 |
| S12 | SEEX09T3AFN-M05 MS2050 | 1,9 | 0,075 | 0,080 | 0,12 |
| S13 | SEEX09T3AFN-M05 MS2050 | 1,6 | 0,065 | 0,070 | 0,11 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R220.53-09 – Cutting data $v_c =$ (m/min)

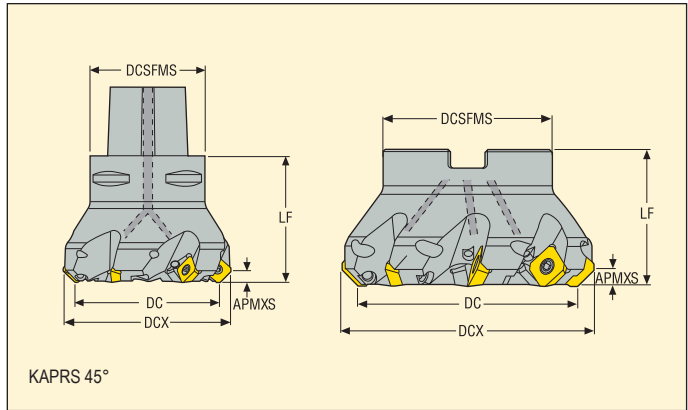
| SMG | MP1500 | | | MP2500 | | | MP3000 | | | T350M | | | F15M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|------|------|-------|-----|-----|------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 335 | 450 | 530 | 305 | 415 | 490 | 330 | 435 | 510 | 320 | 430 | 500 | — | — | — | 230 | 315 | 370 |
| P2 | 325 | 435 | 520 | 300 | 400 | 470 | 320 | 425 | 500 | 310 | 420 | 490 | — | — | — | 225 | 300 | 355 |
| P3 | 285 | 380 | 455 | 260 | 345 | 410 | 280 | 375 | 435 | 275 | 360 | 430 | — | — | — | 200 | 265 | 310 |
| P4 | 250 | 340 | 400 | 230 | 310 | 360 | 245 | 330 | 385 | 240 | 325 | 380 | — | — | — | 175 | 235 | 275 |
| P5 | 240 | 325 | 385 | 220 | 295 | 355 | 235 | 315 | 370 | 230 | 310 | 365 | — | — | — | 165 | 225 | 265 |
| P6 | 275 | 365 | 430 | 245 | 335 | 395 | 265 | 355 | 420 | 260 | 345 | 405 | — | — | — | 185 | 250 | 300 |
| P7 | 260 | 345 | 405 | 235 | 315 | 375 | 250 | 335 | 395 | 245 | 325 | 385 | — | — | — | 175 | 240 | 285 |
| P8 | 240 | 320 | 385 | 220 | 290 | 345 | 235 | 315 | 365 | 230 | 305 | 365 | — | — | — | 165 | 220 | 260 |
| P11 | 250 | 335 | 395 | 225 | 305 | 365 | 245 | 325 | 385 | 235 | 320 | 375 | — | — | — | 170 | 230 | 275 |
| P12 | 165 | 215 | 255 | 145 | 195 | 230 | 155 | 205 | 245 | 150 | 205 | 240 | 180 | 240 | 285 | 110 | 150 | 175 |
| M1 | — | — | — | 215 | 285 | 340 | 240 | 320 | 375 | 240 | 325 | 380 | — | — | — | 180 | 245 | 285 |
| M2 | — | — | — | 175 | 240 | 285 | 195 | 260 | 310 | 200 | 265 | 310 | — | — | — | 150 | 200 | 240 |
| M3 | — | — | — | 140 | 190 | 225 | 155 | 210 | 245 | 160 | 215 | 250 | — | — | — | 120 | 160 | 190 |
| M4 | — | — | — | 110 | 145 | 175 | 120 | 160 | 190 | 125 | 160 | 195 | — | — | — | 95 | 125 | 150 |
| M5 | — | — | — | 95 | 125 | 145 | 100 | 130 | 155 | 100 | 135 | 160 | — | — | — | 80 | 105 | 125 |
| K1 | 260 | 345 | 410 | 235 | 315 | 370 | 255 | 335 | 395 | — | — | — | 300 | 395 | 465 | 180 | 240 | 280 |
| K2 | 225 | 310 | 365 | 210 | 280 | 335 | 225 | 300 | 355 | — | — | — | 265 | 355 | 415 | 160 | 215 | 255 |
| K3 | 190 | 260 | 310 | 175 | 240 | 285 | 190 | 250 | 300 | — | — | — | 225 | 300 | 355 | 135 | 180 | 215 |
| K4 | 185 | 250 | 295 | 170 | 225 | 270 | 180 | 240 | 285 | — | — | — | 215 | 285 | 335 | 130 | 170 | 205 |
| K5 | 115 | 155 | 180 | 105 | 140 | 165 | 110 | 145 | 170 | — | — | — | 130 | 175 | 205 | 80 | 105 | 125 |
| K6 | 160 | 220 | 260 | 150 | 200 | 240 | 160 | 210 | 250 | — | — | — | 190 | 250 | 295 | 110 | 150 | 180 |
| K7 | 145 | 195 | 235 | 135 | 180 | 210 | 140 | 190 | 220 | — | — | — | 165 | 225 | 260 | 100 | 135 | 160 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1325 | 1775 | 2125 |
| N2 | — | — | — | — | — | — | 760 | 1025 | 1200 | — | — | — | — | — | — | 540 | 720 | 850 |
| N3 | — | — | — | — | — | — | 500 | 680 | 800 | — | — | — | — | — | — | 360 | 480 | 570 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 410 | 550 | 650 |
| S1 | — | — | — | — | — | — | 55 | 75 | 90 | 55 | 75 | 90 | — | — | — | 44 | 60 | 70 |
| S2 | — | — | — | — | — | — | 45 | 60 | 70 | 46 | 60 | 75 | — | — | — | 35 | 47 | 55 |
| S3 | — | — | — | — | — | — | 40 | 50 | 60 | 40 | 50 | 65 | — | — | — | 31 | 41 | 49 |
| S11 | — | — | — | — | — | — | 80 | 105 | 125 | 80 | 105 | 130 | — | — | — | 60 | 80 | 95 |
| S12 | — | — | — | — | — | — | 55 | 70 | 85 | 55 | 75 | 90 | — | — | — | 42 | 55 | 65 |
| S13 | — | — | — | — | — | — | 31 | 42 | 50 | 32 | 42 | 50 | — | — | — | 25 | 33 | 39 |
| H5 | 55 | 70 | 85 | 44 | 60 | 70 | 48 | 65 | 75 | 50 | 70 | 80 | — | — | — | 37 | 49 | 60 |
| H8 | 55 | 75 | 90 | 47 | 60 | 75 | 50 | 65 | 80 | 55 | 70 | 85 | — | — | — | 39 | 50 | 60 |
| H11 | 70 | 90 | 110 | 55 | 75 | 90 | 60 | 80 | 95 | 65 | 85 | 100 | — | — | — | 47 | 65 | 75 |
| H12 | 105 | 135 | 165 | 95 | 125 | 145 | 95 | 130 | 150 | 95 | 125 | 150 | — | — | — | 70 | 95 | 110 |
| H21 | 55 | 75 | 90 | 47 | 60 | 75 | 50 | 65 | 80 | 55 | 70 | 85 | — | — | — | 39 | 50 | 60 |

| SMG | MK1500 | | | MK2050 | | | MM4500 | | | MS2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | 300 | 410 | 485 | 190 | 255 | 300 | — | — | — |
| P2 | — | — | — | 295 | 390 | 460 | 185 | 245 | 290 | — | — | — |
| P3 | — | — | — | 255 | 340 | 405 | 160 | 215 | 255 | — | — | — |
| P4 | — | — | — | 225 | 305 | 355 | 140 | 190 | 220 | — | — | — |
| P5 | — | — | — | 215 | 290 | 350 | 135 | 180 | 215 | — | — | — |
| P6 | — | — | — | 245 | 330 | 390 | 150 | 205 | 245 | — | — | — |
| P7 | — | — | — | 230 | 310 | 370 | 145 | 195 | 230 | — | — | — |
| P8 | — | — | — | 215 | 290 | 340 | 135 | 180 | 210 | — | — | — |
| P11 | — | — | — | 225 | 300 | 360 | 140 | 185 | 225 | — | — | — |
| P12 | — | — | — | 145 | 195 | 230 | 90 | 120 | 145 | 135 | 180 | 215 |
| M1 | — | — | — | — | — | — | 155 | 210 | 245 | 225 | 300 | 355 |
| M2 | — | — | — | — | — | — | 130 | 175 | 210 | 185 | 250 | 295 |
| M3 | — | — | — | — | — | — | 105 | 140 | 165 | 150 | 195 | 235 |
| M4 | — | — | — | — | — | — | 80 | 110 | 130 | 115 | 150 | 180 |
| M5 | — | — | — | — | — | — | 70 | 90 | 105 | 95 | 125 | 150 |
| K1 | 335 | 445 | 530 | 315 | 425 | 500 | — | — | — | — | — | — |
| K2 | 295 | 400 | 475 | 280 | 380 | 450 | — | — | — | — | — | — |
| K3 | 250 | 340 | 400 | 235 | 320 | 380 | — | — | — | — | — | — |
| K4 | 240 | 320 | 385 | 225 | 305 | 365 | — | — | — | — | — | — |
| K5 | 150 | 200 | 235 | 140 | 190 | 220 | — | — | — | — | — | — |
| K6 | 210 | 285 | 340 | 200 | 270 | 320 | — | — | — | — | — | — |
| K7 | 190 | 255 | 300 | 180 | 240 | 280 | — | — | — | — | — | — |
| S1 | — | — | — | — | — | — | 25 | 33 | 39 | 55 | 70 | 85 |
| S2 | — | — | — | — | — | — | 20 | 27 | 32 | 43 | 55 | 65 |
| S3 | — | — | — | — | — | — | 17 | 23 | 28 | 37 | 49 | 60 |
| S11 | — | — | — | — | — | — | 34 | 46 | 55 | 75 | 100 | 120 |
| S12 | — | — | — | — | — | — | 32 | 42 | 50 | 50 | 70 | 80 |
| S13 | — | — | — | — | — | — | 19 | 25 | 29 | 30 | 40 | 47 |

R217/220.53-12



- For insert selection and cutting data recommendations, see page(s) 147–148
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|----------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| C5-R217.53-040-12-3A | Seco-Capto | 6,0 | 52,0 | 40,0 | 50,0 | – | 55,0 | 3 | 0,8 | 16500 | SE.X1204 |
| C6-R217.53-040-12-3A | Seco-Capto | 6,0 | 52,0 | 40,0 | 63,0 | – | 63,0 | 3 | 1,3 | 16500 | SE.X1204 |
| R220.53-0040-12-3A | Arbor | 6,0 | 52,0 | 40,0 | 47,0 | 22,0 | 40,0 | 3 | 0,4 | 16500 | SE.X1204 |
| C5-R217.53-050-12-4A | Seco-Capto | 6,0 | 62,0 | 50,0 | 50,0 | – | 55,0 | 4 | 0,9 | 14800 | SE.X1204 |
| C6-R217.53-050-12-4A | Seco-Capto | 6,0 | 62,0 | 50,0 | 63,0 | – | 63,0 | 4 | 1,3 | 14800 | SE.X1204 |
| R220.53-0050-12-4A | Arbor | 6,0 | 62,0 | 50,0 | 47,0 | 22,0 | 40,0 | 4 | 0,5 | 14800 | SE.X1204 |
| C5-R217.53-063-12-5A | Seco-Capto | 6,0 | 75,0 | 63,0 | 50,0 | – | 55,0 | 5 | 1,1 | 13200 | SE.X1204 |
| C6-R217.53-063-12-5A | Seco-Capto | 6,0 | 75,0 | 63,0 | 63,0 | – | 63,0 | 5 | 1,6 | 13200 | SE.X1204 |
| R220.53-0063-12-5A | Arbor | 6,0 | 75,0 | 63,0 | 47,0 | 22,0 | 40,0 | 5 | 0,6 | 13200 | SE.X1204 |
| C5-R217.53-080-12-6A | Seco-Capto | 6,0 | 92,0 | 80,0 | 50,0 | – | 55,0 | 6 | 1,2 | 11700 | SE.X1204 |
| C6-R217.53-080-12-6A | Seco-Capto | 6,0 | 92,0 | 80,0 | 63,0 | – | 63,0 | 6 | 1,9 | 11700 | SE.X1204 |
| R220.53-0080-12-6A | Arbor | 6,0 | 92,0 | 80,0 | 62,0 | 27,0 | 50,0 | 6 | 1,1 | 11700 | SE.X1204 |
| R220.53-0100-12-5A | Arbor | 6,0 | 112,0 | 100,0 | 77,0 | 32,0 | 50,0 | 5 | 1,8 | 10500 | SE.X1204 |
| R220.53-0100-12-7A | Arbor | 6,0 | 112,0 | 100,0 | 77,0 | 32,0 | 50,0 | 7 | 1,8 | 10500 | SE.X1204 |
| R220.53-0125-12-6A | Arbor | 6,0 | 137,0 | 125,0 | 90,0 | 40,0 | 63,0 | 6 | 3,1 | 9400 | SE.X1204 |
| R220.53-0125-12-8A | Arbor | 6,0 | 137,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 1,4 | 9400 | SE.X1204 |
| R220.53-8160-12-7 | Arbor | 6,0 | 172,0 | 160,0 | 90,0 | 40,0 | 63,0 | 7 | 4,6 | 8300 | SE.X1204 |
| R220.53-8160-12-10 | Arbor | 6,0 | 172,0 | 160,0 | 90,0 | 40,0 | 63,0 | 10 | 4,6 | 8300 | SE.X1204 |

Spare Parts

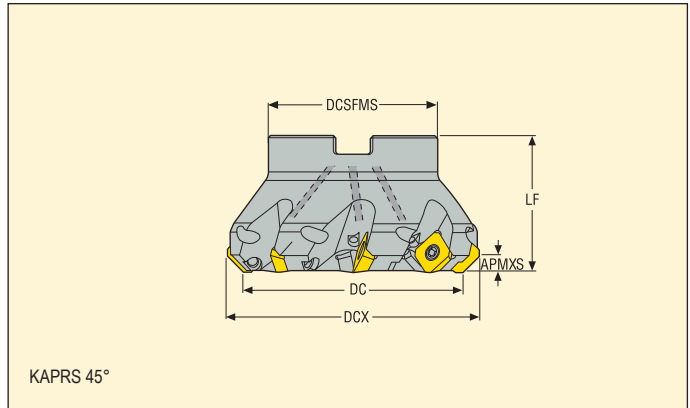
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.53-12 | DOUBLE-T | C04011-T15P | H4B-T15P | – | 3,5 |
| R220.53-0040-0063 | DOUBLE-T | C04011-T15P | H4B-T15P | 220.17-696 | 3,5 |
| R220.53-0080 | DOUBLE-T | C04011-T15P | H4B-T15P | – | 3,5 |
| R220.53-0100-8160 | DOUBLE-T | C04011-T15P | H4B-T15PL | – | 3,5 |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.53-12



- For insert selection and cutting data recommendations, see page(s) 147–148
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.53-0040-12-4A | Arbor | 6,0 | 52,0 | 40,0 | 47,0 | 22,0 | 40,0 | 4 | 0,4 | 16500 | SE.X1204 |
| R220.53-0050-12-5A | Arbor | 6,0 | 62,0 | 50,0 | 47,0 | 22,0 | 40,0 | 5 | 0,4 | 14800 | SE.X1204 |
| R220.53-0063-12-6A | Arbor | 6,0 | 75,0 | 63,0 | 47,0 | 22,0 | 40,0 | 6 | 0,6 | 13200 | SE.X1204 |
| R220.53-0080-12-8A | Arbor | 6,0 | 92,0 | 80,0 | 62,0 | 27,0 | 50,0 | 8 | 1,1 | 11700 | SE.X1204 |
| R220.53-0100-12-10A | Arbor | 6,0 | 112,0 | 100,0 | 77,0 | 32,0 | 50,0 | 10 | 1,7 | 10500 | SE.X1204 |
| R220.53-0125-12-12A | Arbor | 6,0 | 137,0 | 125,0 | 90,0 | 40,0 | 63,0 | 12 | 3,1 | 9400 | SE.X1204 |
| | | | | | | | | | | | |
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Spare Parts

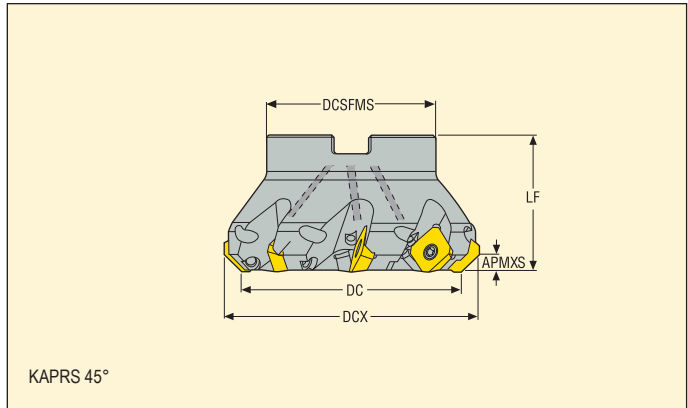
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.53-0040-0063 | DOUBLE-T | C04011-T15P | H4B-T15P | 220.17-696 | 3,5 |
| R220.53-0080 | DOUBLE-T | C04011-T15P | H4B-T15P | - | 3,5 |
| R220.53-0100-0125 | DOUBLE-T | C04011-T15P | H4B-T15PL | - | 3,5 |
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Please check availability in current price and stock-list
Torque keys, see page 732

R220.53-12



- For insert selection and cutting data recommendations, see page(s) 147–148
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.53-0063-12-9A | Arbor | 6,0 | 75,0 | 63,0 | 47,0 | 22,0 | 40,0 | 9 | 0,6 | 13200 | SE.X1204 |
| R220.53-0080-12-11A | Arbor | 6,0 | 92,0 | 80,0 | 62,0 | 27,0 | 50,0 | 11 | 1,1 | 11700 | SE.X1204 |
| R220.53-0100-12-12A | Arbor | 6,0 | 112,0 | 100,0 | 77,0 | 32,0 | 50,0 | 12 | 1,7 | 10500 | SE.X1204 |
| R220.53-0125-12-14A | Arbor | 6,0 | 137,0 | 125,0 | 90,0 | 40,0 | 63,0 | 14 | 3,1 | 9400 | SE.X1204 |
| R220.53-0160-12-17 | Arbor | 6,0 | 172,0 | 160,0 | 130,0 | 40,0 | 63,0 | 17 | 5,3 | 8300 | SE.X1204 |
| R220.53-0200-12-20 | Arbor | 6,0 | 212,0 | 200,0 | 160,0 | 60,0 | 63,0 | 20 | 7,2 | 7400 | SE.X1204 |
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Spare Parts

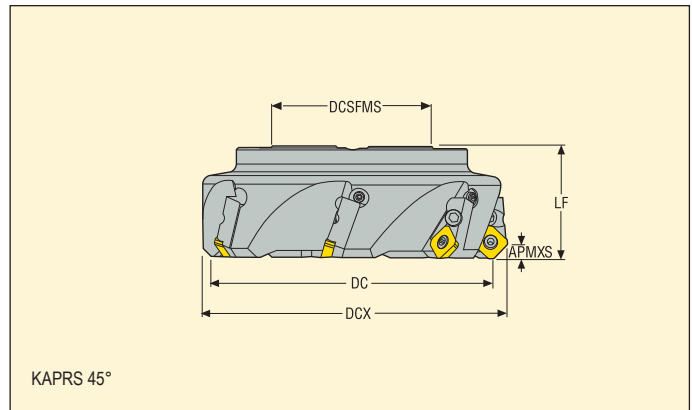
| For cutter | Key (T-handle) | Insert screw | Insert key | Front insert key | Torque value (Nm) |
|-------------------|----------------|--------------|------------|------------------|-------------------|
| | | | | | |
| R220.53-0063 | DOUBLE-T | C04008-H3 | H6B-H3.0 | T15P-E8 | 3,5 |
| R220.53-0080-8160 | DOUBLE-T | C04008-H3 | H6B-H3.0 | T15P-E8 | 3,5 |
| R220.53-8200 | DOUBLE-T | C04008-H3 | H6B-H3.0 | T15P-E8 | 3,5 |
| | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

R220.53-12C



- For insert selection and cutting data recommendations, see page(s) 147–148
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|------|------|----|------|------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.53-0080-12-5C | Arbor | 6,0 | 90,0 | 80,0 | 62,0 | 27,0 | 50,0 | 5 | 1,7 | 7400 | SE.X1204 |
| R220.53-0100-12-6C | Arbor | 6,0 | 112,0 | 100,0 | 77,0 | 32,0 | 50,0 | 6 | 2,6 | 6600 | SE.X1204 |
| R220.53-0125-12-8C | Arbor | 6,0 | 137,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 4,2 | 5900 | SE.X1204 |
| R220.53-8160-12-7C | Arbor | 6,0 | 172,0 | 160,0 | 90,0 | 40,0 | 63,0 | 7 | 6,5 | 5200 | SE.X1204 |
| R220.53-8160-12-10C | Arbor | 6,0 | 172,0 | 160,0 | 90,0 | 40,0 | 63,0 | 10 | 6,6 | 5200 | SE.X1204 |
| R220.53-8200-12-8C | Arbor | 6,0 | 212,0 | 200,0 | 130,0 | 60,0 | 63,0 | 8 | 9,4 | 4700 | SE.X1204 |
| R220.53-8200-12-12C | Arbor | 6,0 | 212,0 | 200,0 | 130,0 | 60,0 | 63,0 | 12 | 9,3 | 4700 | SE.X1204 |
| R220.53-8250-12-10C | Arbor | 6,0 | 262,0 | 250,0 | 130,0 | 60,0 | 63,0 | 10 | 17,0 | 4200 | SE.X1204 |
| R220.53-8250-12-16C | Arbor | 6,0 | 262,0 | 250,0 | 130,0 | 60,0 | 63,0 | 16 | 16,0 | 4200 | SE.X1204 |
| R220.53-8315-12-12C | Arbor | 6,0 | 327,0 | 315,0 | 225,0 | 60,0 | 80,0 | 12 | 32,9 | 3700 | SE.X1204 |
| R220.53-8315-12-18C | Arbor | 6,0 | 327,0 | 315,0 | 225,0 | 60,0 | 80,0 | 18 | 32,8 | 3700 | SE.X1204 |
| R220.53-8400-12-16C | Arbor | 6,0 | 412,0 | 400,0 | 225,0 | 60,0 | 80,0 | 16 | 51,0 | 3300 | SE.X1204 |
| R220.53-8500-12-20C | Arbor | 6,0 | 512,0 | 500,0 | 225,0 | 60,0 | 80,0 | 20 | 80,2 | 2900 | SE.X1204 |

Spare Parts

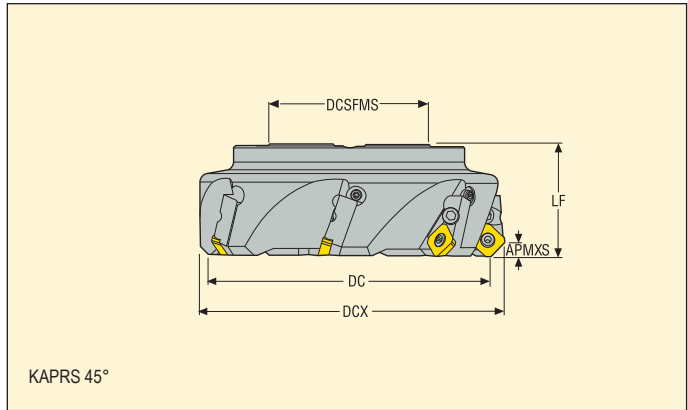
| For cutter | Setting gauge | Key (T-handle) | Insert screw | Insert key | Cassette screw | Cassette | Torque value (Nm) |
|-------------------|---------------|----------------|--------------|------------|----------------|-----------|-------------------|
| | | | | | | | |
| R220.53-0080 | AU1114T-T15P | DOUBLE-T | C04011-T15P | H4B-T15P | FS96018 | SE12AR-53 | 3,5 |
| R220.53-0100-8500 | AU1114T-T15P | DOUBLE-T | C04011-T15P | H4B-T15PL | FS96018 | SE12AR-53 | 3,5 |
| | | | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

R220.53-12C



- For insert selection and cutting data recommendations, see page(s) 147–148
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.53-0080-12-6C | Arbor | 6,0 | 92,0 | 80,0 | 62,0 | 27,0 | 50,0 | 6 | 1,7 | 7400 | SE.X1204 |
| R220.53-0100-12-8C | Arbor | 6,0 | 112,0 | 100,0 | 77,0 | 32,0 | 50,0 | 8 | 2,6 | 6600 | SE.X1204 |
| R220.53-0125-12-10C | Arbor | 6,0 | 137,0 | 125,0 | 90,0 | 40,0 | 63,0 | 10 | 4,2 | 5900 | SE.X1204 |
| R220.53-8160-12-14C | Arbor | 6,0 | 172,0 | 160,0 | 90,0 | 40,0 | 63,0 | 14 | 6,6 | 5200 | SE.X1204 |
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Spare Parts

| For cutter | Setting gauge | Key (T-handle) | Insert screw | Insert key | Cassette screw | Cassette | Torque value (Nm) |
|-------------------|---------------|----------------|--------------|------------|----------------|-----------|-------------------|
| | | | | | | | |
| R220.53-0080 | AU1114T-T15P | DOUBLE-T | C04011-T15P | H4B-T15P | FS96018 | SE12AR-53 | 3,5 |
| R220.53-0100-8160 | AU1114T-T15P | DOUBLE-T | C04011-T15P | H4B-T15PL | FS96018 | SE12AR-53 | 3,5 |
| | | | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

R220.53-12 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|------|------|
| | | | 100% | 30% | 10% |
| P1 | SEMX1204AFTN-M15 MP2500 | 3,5 | 0,30 | 0,32 | 0,50 |
| P2 | SEMX1204AFTN-M15 MP2500 | 3,5 | 0,30 | 0,34 | 0,50 |
| P3 | SEMX1204AFTN-M15 MP2500 | 3,5 | 0,28 | 0,32 | 0,48 |
| P4 | SEMX1204AFTN-M15 MP2500 | 3,5 | 0,28 | 0,30 | 0,48 |
| P5 | SEMX1204AFTN-M15 MP2500 | 3,5 | 0,28 | 0,30 | 0,46 |
| P6 | SEMX1204AFTN-M15 MP2500 | 3,5 | 0,28 | 0,30 | 0,46 |
| P7 | SEMX1204AFTN-M15 T350M | 3,5 | 0,28 | 0,30 | 0,46 |
| P8 | SEMX1204AFTN-M15 T350M | 3,5 | 0,28 | 0,32 | 0,48 |
| P11 | SEMX1204AFTN-M15 T350M | 3,5 | 0,28 | 0,30 | 0,46 |
| P12 | SEMX1204AFTN-M15 T350M | 3,0 | 0,19 | 0,20 | 0,32 |
| M1 | SEEX1204AFN-M10 F40M | 3,5 | 0,20 | 0,22 | 0,34 |
| M2 | SEEX1204AFN-M10 F40M | 3,5 | 0,18 | 0,20 | 0,30 |
| M3 | SEEX1204AFN-M10 F40M | 3,0 | 0,15 | 0,16 | 0,24 |
| M4 | SEEX1204AFN-M10 T350M | 2,0 | 0,13 | 0,14 | 0,22 |
| M5 | SEEX1204AFN-M14 MM4500 | 2,0 | 0,18 | 0,20 | 0,30 |
| K1 | SEMX1204AFTN-M15 MK2050 | 3,5 | 0,30 | 0,34 | 0,50 |
| K2 | SEMX1204AFTN-M15 MK2050 | 3,5 | 0,28 | 0,30 | 0,46 |
| K3 | SEMX1204AFTN-M15 MK2050 | 3,5 | 0,28 | 0,30 | 0,46 |
| K4 | SEMX1204AFTN-M15 MK2050 | 3,5 | 0,28 | 0,30 | 0,46 |
| K5 | SEMX1204AFTN-M15 MK2050 | 3,5 | 0,24 | 0,28 | 0,42 |
| K6 | SEMX1204AFTN-M15 MK2050 | 3,5 | 0,28 | 0,30 | 0,46 |
| K7 | SEMX1204AFTN-M15 MK2050 | 3,5 | 0,24 | 0,28 | 0,42 |
| N1 | SEEX1204AFN-E08 H25 | 3,5 | 0,20 | 0,22 | 0,34 |
| N2 | SEEX1204AFN-E08 H25 | 3,5 | 0,20 | 0,22 | 0,34 |
| N3 | SEEX1204AFN-E08 H25 | 3,5 | 0,20 | 0,22 | 0,34 |
| N11 | SEEX1204AFN-E08 H25 | 3,5 | 0,20 | 0,22 | 0,34 |
| S1 | SEEX1204AFTN-ME11 T350M | 2,0 | 0,14 | 0,15 | 0,24 |
| S2 | SEEX1204AFTN-ME11 T350M | 2,0 | 0,14 | 0,15 | 0,24 |
| S3 | SEEX1204AFTN-ME11 T350M | 2,0 | 0,13 | 0,14 | 0,22 |
| S11 | SEEX1204AFN-M10 MS2050 | 2,5 | 0,15 | 0,16 | 0,24 |
| S12 | SEEX1204AFN-M10 MS2050 | 2,5 | 0,15 | 0,16 | 0,24 |
| S13 | SEEX1204AFN-M10 MS2050 | 2,0 | 0,13 | 0,14 | 0,22 |
| H5 | SEMX1204AFTN-MD19 MP1500 | 3,0 | 0,24 | 0,26 | 0,40 |
| H8 | SEMX1204AFTN-MD19 MP1500 | 2,5 | 0,18 | 0,20 | 0,30 |
| H11 | SEMX1204AFTN-MD19 MP1500 | 3,0 | 0,24 | 0,26 | 0,40 |
| H12 | SEMX1204AFTN-MD19 MP1500 | 2,5 | 0,18 | 0,20 | 0,30 |
| H21 | SEMX1204AFTN-MD19 MP1500 | 2,5 | 0,18 | 0,20 | 0,30 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R220.53-12 – Cutting data $v_c =$ (m/min)

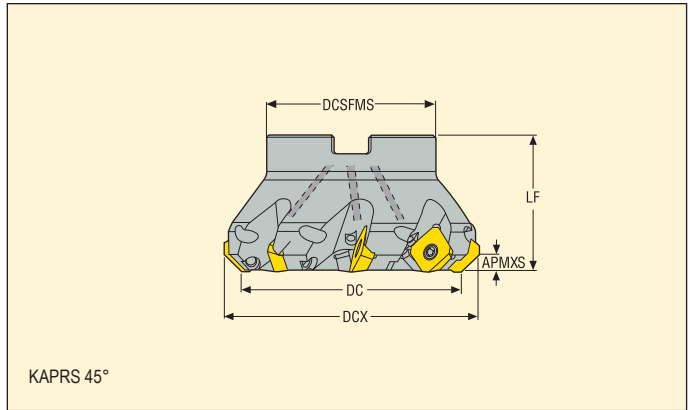
| SMG | MP1020 | | | MP1500 | | | MP2500 | | | MP3000 | | | T350M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 230 | 310 | 360 | 300 | 410 | 485 | 265 | 365 | 430 | 220 | 300 | 355 | 230 | 315 | 375 | 200 | 275 | 325 |
| P2 | 220 | 305 | 340 | 295 | 390 | 470 | 260 | 345 | 420 | 215 | 290 | 345 | 225 | 300 | 365 | 195 | 265 | 315 |
| P3 | 210 | 260 | 315 | 260 | 345 | 410 | 230 | 305 | 365 | 190 | 255 | 305 | 200 | 265 | 320 | 175 | 230 | 275 |
| P4 | 185 | 245 | 275 | 225 | 310 | 360 | 200 | 275 | 320 | 165 | 230 | 270 | 175 | 240 | 280 | 150 | 205 | 245 |
| P5 | 175 | 235 | 265 | 215 | 295 | 350 | 190 | 260 | 310 | 160 | 220 | 260 | 165 | 230 | 270 | 145 | 200 | 235 |
| P6 | 195 | 265 | 305 | 245 | 330 | 395 | 215 | 295 | 350 | 180 | 245 | 290 | 190 | 255 | 305 | 165 | 220 | 265 |
| P7 | 185 | 250 | 290 | 230 | 310 | 370 | 205 | 275 | 330 | 170 | 230 | 275 | 175 | 240 | 285 | 155 | 210 | 250 |
| P8 | 175 | 220 | 265 | 215 | 290 | 345 | 190 | 255 | 305 | 160 | 215 | 260 | 165 | 225 | 265 | 145 | 195 | 230 |
| P11 | 180 | 240 | 280 | 225 | 305 | 360 | 195 | 270 | 320 | 165 | 225 | 265 | 170 | 235 | 280 | 150 | 205 | 240 |
| P12 | 150 | 185 | 200 | 150 | 200 | 235 | 130 | 175 | 210 | 110 | 150 | 175 | 115 | 155 | 180 | 100 | 135 | 160 |
| M1 | — | — | — | — | — | — | 185 | 250 | 300 | 160 | 220 | 260 | 175 | 235 | 280 | 160 | 210 | 255 |
| M2 | — | — | — | — | — | — | 155 | 210 | 250 | 135 | 185 | 215 | 145 | 195 | 235 | 130 | 180 | 210 |
| M3 | — | — | — | — | — | — | 125 | 170 | 205 | 110 | 150 | 175 | 120 | 160 | 190 | 105 | 145 | 175 |
| M4 | — | — | — | — | — | — | 100 | 130 | 160 | 85 | 115 | 135 | 90 | 120 | 150 | 85 | 110 | 135 |
| M5 | — | — | — | — | — | — | 80 | 110 | 130 | 70 | 95 | 115 | 75 | 100 | 125 | 70 | 90 | 110 |
| K1 | — | — | — | 230 | 310 | 375 | 205 | 275 | 330 | 170 | 230 | 275 | — | — | — | 155 | 210 | 250 |
| K2 | — | — | — | 205 | 280 | 335 | 180 | 250 | 295 | 155 | 210 | 245 | — | — | — | 140 | 190 | 225 |
| K3 | — | — | — | 175 | 235 | 280 | 155 | 210 | 250 | 130 | 175 | 205 | — | — | — | 115 | 160 | 190 |
| K4 | — | — | — | 165 | 225 | 270 | 145 | 200 | 240 | 125 | 170 | 200 | — | — | — | 110 | 150 | 180 |
| K5 | — | — | — | 105 | 135 | 165 | 90 | 120 | 145 | 75 | 105 | 120 | — | — | — | 70 | 90 | 110 |
| K6 | — | — | — | 145 | 200 | 235 | 130 | 175 | 210 | 110 | 150 | 175 | — | — | — | 100 | 135 | 160 |
| K7 | — | — | — | 135 | 175 | 210 | 120 | 155 | 185 | 95 | 130 | 155 | — | — | — | 90 | 120 | 140 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1125 | 1550 | 1825 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 460 | 620 | 740 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 305 | 415 | 490 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 350 | 475 | 560 |
| S1 | — | — | — | — | — | — | — | — | — | 40 | 55 | 65 | 43 | 55 | 70 | 39 | 50 | 65 |
| S2 | — | — | — | — | — | — | — | — | — | 32 | 43 | 50 | 35 | 45 | 55 | 31 | 41 | 50 |
| S3 | — | — | — | — | — | — | — | — | — | 29 | 38 | 45 | 30 | 40 | 49 | 27 | 37 | 44 |
| S11 | — | — | — | — | — | — | — | — | — | 55 | 75 | 90 | 60 | 80 | 95 | 55 | 75 | 90 |
| S12 | — | — | — | — | — | — | — | — | — | 38 | 50 | 60 | 41 | 55 | 65 | 37 | 50 | 60 |
| S13 | — | — | — | — | — | — | — | — | — | 23 | 30 | 36 | 24 | 32 | 39 | 22 | 29 | 35 |
| H5 | — | — | — | 49 | 65 | 80 | 39 | 55 | 65 | 34 | 46 | 55 | 38 | 50 | 60 | 33 | 44 | 55 |
| H8 | — | — | — | 55 | 70 | 85 | 43 | 55 | 70 | 37 | 49 | 60 | 41 | 55 | 65 | 36 | 47 | 55 |
| H11 | — | — | — | 60 | 85 | 100 | 50 | 70 | 80 | 44 | 60 | 70 | 48 | 65 | 75 | 42 | 55 | 65 |
| H12 | — | — | — | 95 | 125 | 150 | 85 | 110 | 135 | 70 | 95 | 115 | 75 | 95 | 115 | 65 | 85 | 100 |
| H21 | — | — | — | 55 | 70 | 85 | 43 | 55 | 70 | 37 | 49 | 60 | 41 | 55 | 65 | 36 | 47 | 55 |

| SMG | MK1500 | | | MK2050 | | | MM4500 | | | MS2050 | | | H25 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | 260 | 360 | 425 | 165 | 225 | 265 | — | — | — | — | — | — |
| P2 | — | — | — | 255 | 340 | 410 | 160 | 215 | 255 | — | — | — | — | — | — |
| P3 | — | — | — | 225 | 300 | 360 | 140 | 185 | 225 | — | — | — | — | — | — |
| P4 | — | — | — | 200 | 270 | 315 | 125 | 170 | 195 | — | — | — | — | — | — |
| P5 | — | — | — | 190 | 255 | 305 | 120 | 160 | 190 | — | — | — | — | — | — |
| P6 | — | — | — | 210 | 290 | 345 | 130 | 180 | 215 | — | — | — | — | — | — |
| P7 | — | — | — | 200 | 275 | 325 | 125 | 170 | 200 | — | — | — | — | — | — |
| P8 | — | — | — | 190 | 250 | 300 | 120 | 155 | 190 | — | — | — | — | — | — |
| P11 | — | — | — | 195 | 265 | 315 | 120 | 165 | 195 | — | — | — | — | — | — |
| P12 | — | — | — | 130 | 175 | 205 | 80 | 110 | 130 | 120 | 160 | 195 | — | — | — |
| M1 | — | — | — | — | — | — | 135 | 185 | 220 | 200 | 265 | 315 | — | — | — |
| M2 | — | — | — | — | — | — | 115 | 155 | 185 | 165 | 220 | 265 | — | — | — |
| M3 | — | — | — | — | — | — | 90 | 125 | 150 | 130 | 175 | 210 | — | — | — |
| M4 | — | — | — | — | — | — | 70 | 95 | 115 | 100 | 135 | 165 | — | — | — |
| M5 | — | — | — | — | — | — | 60 | 80 | 95 | 85 | 115 | 135 | — | — | — |
| K1 | 290 | 390 | 470 | 275 | 370 | 445 | — | — | — | — | — | — | — | — | — |
| K2 | 260 | 350 | 415 | 245 | 335 | 395 | — | — | — | — | — | — | — | — | — |
| K3 | 220 | 295 | 355 | 205 | 280 | 335 | — | — | — | — | — | — | — | — | — |
| K4 | 210 | 285 | 335 | 195 | 270 | 320 | — | — | — | — | — | — | — | — | — |
| K5 | 130 | 170 | 205 | 125 | 165 | 195 | — | — | — | — | — | — | — | — | — |
| K6 | 185 | 250 | 295 | 175 | 235 | 280 | — | — | — | — | — | — | — | — | — |
| K7 | 165 | 220 | 265 | 160 | 210 | 250 | — | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1500 | 2000 | 2375 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 600 | 810 | 960 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 400 | 540 | 640 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 460 | 620 | 730 |
| S1 | — | — | — | — | — | — | 22 | 29 | 35 | 48 | 65 | 75 | — | — | — |
| S2 | — | — | — | — | — | — | 18 | 23 | 29 | 38 | 50 | 60 | — | — | — |
| S3 | — | — | — | — | — | — | 16 | 21 | 25 | 34 | 45 | 55 | — | — | — |
| S11 | — | — | — | — | — | — | 31 | 41 | 50 | 65 | 90 | 105 | — | — | — |
| S12 | — | — | — | — | — | — | 28 | 38 | 46 | 46 | 60 | 75 | — | — | — |
| S13 | — | — | — | — | — | — | 17 | 22 | 27 | 27 | 36 | 43 | — | — | — |

R220.53-15



- For insert selection and cutting data recommendations, see page(s) 153–154
- For complete insert programme, see page(s) 663
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.53-0080-15-7A | Arbor | 7,5 | 96,0 | 80,0 | 62,0 | 27,0 | 50,0 | 7 | 1,2 | 7400 | SE.X1505 |
| R220.53-0100-15-9A | Arbor | 7,5 | 116,0 | 100,0 | 77,0 | 32,0 | 50,0 | 9 | 1,8 | 6600 | SE.X1505 |
| R220.53-0125-15-10A | Arbor | 7,5 | 141,0 | 125,0 | 90,0 | 40,0 | 63,0 | 10 | 3,2 | 5900 | SE.X1505 |
| R220.53-8160-15-14 | Arbor | 7,5 | 176,0 | 160,0 | 90,0 | 40,0 | 63,0 | 14 | 4,7 | 5200 | SE.X1505 |
| | | | | | | | | | | | |
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Spare Parts

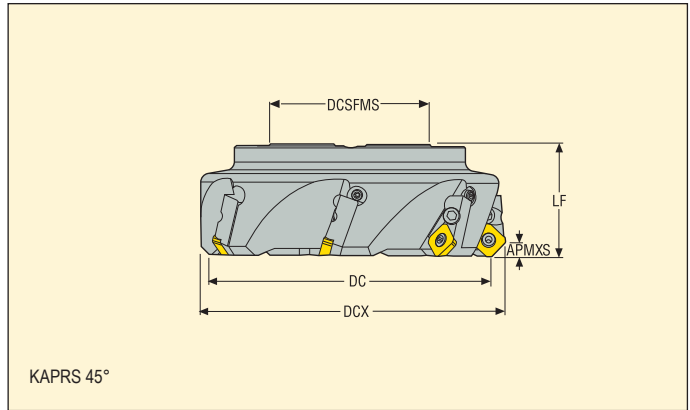
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------------|
| | | | | |
| R220.53-0080 | DOUBLE-T | C05013-T20P | H6B-T20P | 5,0 |
| R220.53-0100-8160 | DOUBLE-T | C05013-T20P | H6B-T20PL | 5,0 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.53-15C



- For insert selection and cutting data recommendations, see page(s) 153–154
- For complete insert programme, see page(s) 663
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|------|------|----|------|------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.53-0080-15-5C | Arbor | 7,5 | 96,0 | 80,0 | 62,0 | 27,0 | 50,0 | 5 | 1,7 | 7400 | SE.X1505 |
| R220.53-0100-15-6C | Arbor | 7,5 | 116,0 | 100,0 | 77,0 | 32,0 | 50,0 | 6 | 2,6 | 6600 | SE.X1505 |
| R220.53-0125-15-8C | Arbor | 7,5 | 141,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 4,2 | 5900 | SE.X1505 |
| R220.53-8160-15-7C | Arbor | 7,5 | 176,0 | 160,0 | 90,0 | 40,0 | 63,0 | 7 | 6,5 | 5200 | SE.X1505 |
| R220.53-8160-15-10C | Arbor | 7,5 | 176,0 | 160,0 | 90,0 | 40,0 | 63,0 | 10 | 6,6 | 5200 | SE.X1505 |
| R220.53-8200-15-8C | Arbor | 7,5 | 216,0 | 200,0 | 130,0 | 60,0 | 63,0 | 8 | 9,4 | 4700 | SE.X1505 |
| R220.53-8200-15-12C | Arbor | 7,5 | 216,0 | 200,0 | 130,0 | 60,0 | 63,0 | 12 | 9,8 | 4700 | SE.X1505 |
| R220.53-8250-15-10C | Arbor | 7,5 | 266,0 | 250,0 | 130,0 | 60,0 | 63,0 | 10 | 17,0 | 4200 | SE.X1505 |
| R220.53-8250-15-16C | Arbor | 7,5 | 260,0 | 250,0 | 130,0 | 60,0 | 63,0 | 16 | 17,1 | 4200 | SE.X1505 |
| R220.53-8315-15-12C | Arbor | 7,5 | 331,0 | 315,0 | 225,0 | 60,0 | 80,0 | 12 | 32,6 | 3700 | SE.X1505 |
| R220.53-8315-15-18C | Arbor | 7,5 | 331,0 | 315,0 | 225,0 | 60,0 | 80,0 | 18 | 38,0 | 3700 | SE.X1505 |
| R220.53-8400-15-16C | Arbor | 7,5 | 416,0 | 400,0 | 225,0 | 60,0 | 80,0 | 16 | 58,0 | 3300 | SE.X1505 |
| R220.53-8500-15-20C | Arbor | 7,5 | 516,0 | 500,0 | 225,0 | 60,0 | 80,0 | 20 | 91,0 | 2900 | SE.X1505 |

Spare Parts

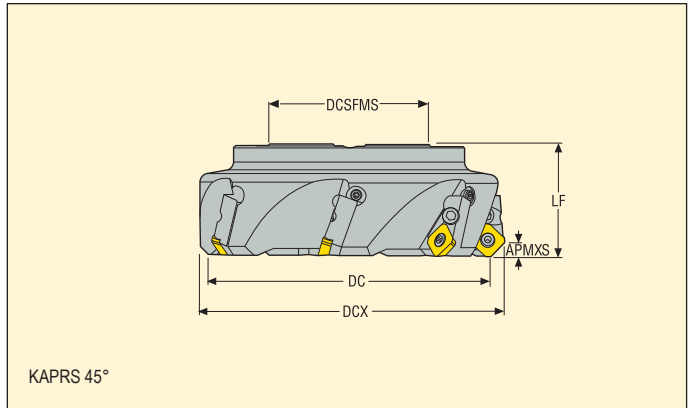
| For cutter | Setting gauge | Key (T-handle) | Insert screw | Insert key | Cassette screw | Cassette | Torque value (Nm) |
|-------------------|---------------|----------------|--------------|------------|----------------|-----------|-------------------|
| | | | | | | | |
| R220.53-0080 | AU1114T-T15P | DOUBLE-T | C05010-T20P | H6B-T20P | FS96018 | SE15AR-53 | 5,0 |
| R220.53-0100-8500 | AU1114T-T15P | DOUBLE-T | C05010-T20P | H6B-T20PL | FS96018 | SE15AR-53 | 5,0 |
| | | | | | | | |
| | | | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.53-15C



- For insert selection and cutting data recommendations, see page(s) 153–154
- For complete insert programme, see page(s) 663



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.53-0080-15-6C | Arbor | 7,5 | 96,0 | 80,0 | 62,0 | 27,0 | 50,0 | 6 | 1,7 | 7400 | SE.X1505 |
| R220.53-0100-15-8C | Arbor | 7,5 | 116,0 | 100,0 | 77,0 | 27,0 | 50,0 | 8 | 2,5 | 6600 | SE.X1505 |
| R220.53-0125-15-10C | Arbor | 7,5 | 141,0 | 125,0 | 90,0 | 40,0 | 63,0 | 10 | 4,2 | 5900 | SE.X1505 |
| R220.53-8160-15-14C | Arbor | 7,5 | 176,0 | 160,0 | 90,0 | 40,0 | 63,0 | 14 | 6,6 | 5200 | SE.X1505 |
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Spare Parts

| For cutter | Setting gauge | Key (T-handle) | Insert screw | Insert key | Cassette screw | Cassette | Torque value (Nm) |
|-------------------|---------------|----------------|--------------|------------|----------------|-----------|-------------------|
| | | | | | | | |
| R220.53-0080 | AU1114T-T15P | DOUBLE-T | C05010-T20P | H6B-T20P | FS96018 | SE15AR-53 | 5,0 |
| R220.53-0100-8160 | AU1114T-T15P | DOUBLE-T | C05010-T20P | H6B-T20PL | FS96018 | SE15AR-53 | 5,0 |
| | | | | | | | |
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| | | | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.53-15 – Insert selection

| SMG | | a_p | f_z | | |
|-----|-------------------------|-------|-------|------|------|
| | | | 100% | 30% | 10% |
| P1 | SEM1505AFTN-M18 MP2500 | 4,5 | 0,36 | 0,40 | 0,60 |
| P2 | SEM1505AFTN-M18 MP2500 | 4,5 | 0,36 | 0,40 | 0,60 |
| P3 | SEM1505AFTN-M18 MP2500 | 4,5 | 0,34 | 0,38 | 0,60 |
| P4 | SEM1505AFTN-M18 MP2500 | 4,5 | 0,34 | 0,36 | 0,55 |
| P5 | SEM1505AFTN-M18 MP2500 | 4,5 | 0,34 | 0,36 | 0,55 |
| P6 | SEM1505AFTN-M18 MP2500 | 4,5 | 0,32 | 0,36 | 0,55 |
| P7 | SEM1505AFTN-M18 T350M | 4,5 | 0,32 | 0,36 | 0,55 |
| P8 | SEM1505AFTN-M18 T350M | 4,5 | 0,34 | 0,38 | 0,60 |
| P11 | SEM1505AFTN-M18 T350M | 4,5 | 0,32 | 0,36 | 0,55 |
| P12 | SEM1505AFTN-M18 T350M | 3,5 | 0,22 | 0,24 | 0,38 |
| M1 | SEEX1505AFN-M12 F40M | 4,5 | 0,24 | 0,26 | 0,40 |
| M2 | SEEX1505AFN-M12 F40M | 4,5 | 0,22 | 0,24 | 0,36 |
| M3 | SEEX1505AFN-M12 F40M | 3,5 | 0,18 | 0,19 | 0,30 |
| M4 | SEEX1505AFTN-M17 T350M | 2,5 | 0,22 | 0,24 | 0,36 |
| M5 | SEEX1505AFTN-M17 T350M | 2,5 | 0,22 | 0,24 | 0,36 |
| K1 | SEM1505AFTN-M18 MK2050 | 4,5 | 0,36 | 0,40 | 0,60 |
| K2 | SEM1505AFTN-M18 MK2050 | 4,5 | 0,34 | 0,36 | 0,55 |
| K3 | SEM1505AFTN-M18 MK2050 | 4,5 | 0,34 | 0,36 | 0,55 |
| K4 | SEM1505AFTN-M18 MK2050 | 4,5 | 0,34 | 0,36 | 0,55 |
| K5 | SEM1505AFTN-M18 MK2050 | 4,5 | 0,30 | 0,32 | 0,50 |
| K6 | SEM1505AFTN-M18 MK2050 | 4,5 | 0,34 | 0,36 | 0,55 |
| K7 | SEM1505AFTN-M18 MK2050 | 4,5 | 0,30 | 0,32 | 0,50 |
| N1 | SEEX1505AFN-E10 H25 | 4,5 | 0,26 | 0,28 | 0,44 |
| N2 | SEEX1505AFN-E10 H25 | 4,5 | 0,26 | 0,28 | 0,44 |
| N3 | SEEX1505AFN-E10 H25 | 4,5 | 0,26 | 0,28 | 0,44 |
| N11 | SEEX1505AFN-E10 H25 | 4,5 | 0,26 | 0,28 | 0,44 |
| S1 | SEEX1505AFN-M12 T350M | 2,5 | 0,15 | 0,17 | 0,26 |
| S2 | SEEX1505AFN-M12 T350M | 2,5 | 0,15 | 0,17 | 0,26 |
| S3 | SEEX1505AFN-M12 T350M | 2,5 | 0,14 | 0,16 | 0,24 |
| S11 | SEEX1505AFN-M12 MS2050 | 3,0 | 0,18 | 0,19 | 0,30 |
| S12 | SEEX1505AFN-M12 MS2050 | 3,0 | 0,18 | 0,19 | 0,30 |
| S13 | SEEX1505AFN-M12 MS2050 | 2,5 | 0,15 | 0,17 | 0,26 |
| H5 | SEM1505AFTN-MD20 MP1500 | 3,5 | 0,26 | 0,28 | 0,42 |
| H8 | SEM1505AFTN-MD20 MP1500 | 3,0 | 0,19 | 0,20 | 0,32 |
| H11 | SEM1505AFTN-MD20 MP1500 | 3,5 | 0,26 | 0,28 | 0,42 |
| H12 | SEM1505AFTN-MD20 MP1500 | 3,0 | 0,19 | 0,20 | 0,32 |
| H21 | SEM1505AFTN-MD20 MP1500 | 3,0 | 0,19 | 0,20 | 0,32 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R220.53-15 – Cutting data $v_c =$ (m/min)

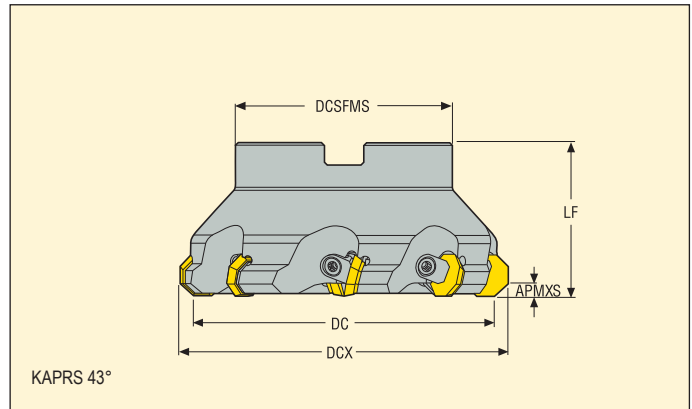
| SMG | MP1500 | | | MP2500 | | | MP3000 | | | T350M | | | F40M | | | MK1500 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|------|------|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 275 | 375 | 445 | 245 | 330 | 395 | 215 | 295 | 355 | 215 | 290 | 345 | 185 | 250 | 300 | — | — | — |
| P2 | 270 | 365 | 435 | 240 | 320 | 385 | 210 | 285 | 335 | 205 | 280 | 335 | 180 | 245 | 290 | — | — | — |
| P3 | 235 | 320 | 375 | 210 | 280 | 330 | 185 | 250 | 295 | 180 | 245 | 290 | 160 | 215 | 250 | — | — | — |
| P4 | 210 | 285 | 340 | 185 | 250 | 300 | 160 | 225 | 260 | 160 | 220 | 260 | 140 | 190 | 230 | — | — | — |
| P5 | 200 | 270 | 325 | 175 | 240 | 285 | 160 | 215 | 255 | 155 | 210 | 250 | 135 | 180 | 215 | — | — | — |
| P6 | 225 | 305 | 365 | 200 | 270 | 320 | 175 | 240 | 285 | 175 | 235 | 280 | 150 | 205 | 245 | — | — | — |
| P7 | 215 | 290 | 345 | 190 | 255 | 305 | 165 | 225 | 270 | 165 | 220 | 265 | 145 | 195 | 230 | — | — | — |
| P8 | 200 | 265 | 315 | 175 | 235 | 280 | 155 | 210 | 250 | 155 | 205 | 245 | 135 | 180 | 210 | — | — | — |
| P11 | 210 | 280 | 335 | 185 | 250 | 295 | 160 | 220 | 265 | 160 | 215 | 255 | 140 | 190 | 225 | — | — | — |
| P12 | 140 | 185 | 220 | 120 | 165 | 195 | 105 | 145 | 170 | 105 | 145 | 170 | 90 | 125 | 145 | — | — | — |
| M1 | — | — | — | 170 | 230 | 280 | 155 | 215 | 250 | 160 | 215 | 260 | 145 | 195 | 235 | — | — | — |
| M2 | — | — | — | 140 | 195 | 230 | 130 | 180 | 215 | 130 | 180 | 215 | 120 | 165 | 195 | — | — | — |
| M3 | — | — | — | 115 | 160 | 185 | 105 | 145 | 170 | 110 | 145 | 175 | 100 | 135 | 160 | — | — | — |
| M4 | — | — | — | 90 | 120 | 145 | 85 | 110 | 130 | 85 | 110 | 135 | 75 | 100 | 125 | — | — | — |
| M5 | — | — | — | 75 | 100 | 120 | 70 | 95 | 110 | 70 | 95 | 115 | 65 | 85 | 100 | — | — | — |
| K1 | 215 | 285 | 345 | 190 | 255 | 305 | 165 | 225 | 265 | — | — | — | 145 | 195 | 230 | 265 | 360 | 435 |
| K2 | 190 | 260 | 305 | 165 | 230 | 270 | 150 | 200 | 240 | — | — | — | 125 | 175 | 205 | 235 | 325 | 385 |
| K3 | 160 | 220 | 260 | 140 | 195 | 230 | 125 | 170 | 205 | — | — | — | 105 | 145 | 175 | 200 | 275 | 325 |
| K4 | 150 | 210 | 250 | 135 | 185 | 220 | 120 | 165 | 195 | — | — | — | 100 | 140 | 165 | 190 | 260 | 310 |
| K5 | 95 | 130 | 150 | 85 | 115 | 135 | 75 | 100 | 120 | — | — | — | 65 | 85 | 100 | 120 | 160 | 190 |
| K6 | 135 | 185 | 220 | 120 | 165 | 195 | 105 | 145 | 170 | — | — | — | 90 | 125 | 145 | 170 | 230 | 275 |
| K7 | 120 | 165 | 195 | 105 | 145 | 175 | 95 | 130 | 155 | — | — | — | 80 | 110 | 130 | 150 | 205 | 245 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1025 | 1425 | 1650 | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 420 | 570 | 670 | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 280 | 380 | 450 | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 320 | 435 | 510 | — | — | — |
| S1 | — | — | — | — | — | — | 39 | 50 | 60 | 39 | 50 | 65 | 35 | 47 | 55 | — | — | — |
| S2 | — | — | — | — | — | — | 31 | 42 | 50 | 31 | 42 | 50 | 29 | 38 | 46 | — | — | — |
| S3 | — | — | — | — | — | — | 28 | 37 | 44 | 28 | 37 | 44 | 25 | 34 | 40 | — | — | — |
| S11 | — | — | — | — | — | — | 55 | 70 | 85 | 55 | 75 | 90 | 50 | 65 | 80 | — | — | — |
| S12 | — | — | — | — | — | — | 37 | 50 | 60 | 38 | 50 | 60 | 35 | 47 | 55 | — | — | — |
| S13 | — | — | — | — | — | — | 22 | 29 | 35 | 22 | 29 | 35 | 20 | 27 | 32 | — | — | — |
| H5 | 46 | 60 | 70 | 37 | 49 | 60 | 33 | 44 | 55 | 35 | 47 | 55 | 31 | 41 | 49 | — | — | — |
| H8 | 49 | 65 | 80 | 40 | 55 | 65 | 36 | 49 | 55 | 38 | 50 | 60 | 33 | 44 | 55 | — | — | — |
| H11 | 60 | 80 | 90 | 47 | 65 | 75 | 42 | 55 | 70 | 45 | 60 | 70 | 39 | 50 | 60 | — | — | — |
| H12 | 90 | 115 | 140 | 80 | 105 | 125 | 70 | 95 | 110 | 70 | 90 | 110 | 60 | 80 | 95 | — | — | — |
| H21 | 49 | 65 | 80 | 40 | 55 | 65 | 36 | 49 | 55 | 38 | 50 | 60 | 33 | 44 | 55 | — | — | — |

| SMG | MK1500 | | | MK2050 | | | MS2050 | | | H25 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | 240 | 325 | 390 | — | — | — | — | — | — |
| P2 | — | — | — | 235 | 315 | 380 | — | — | — | — | — | — |
| P3 | — | — | — | 205 | 275 | 325 | — | — | — | — | — | — |
| P4 | — | — | — | 180 | 250 | 295 | — | — | — | — | — | — |
| P5 | — | — | — | 175 | 235 | 280 | — | — | — | — | — | — |
| P6 | — | — | — | 200 | 265 | 315 | — | — | — | — | — | — |
| P7 | — | — | — | 185 | 250 | 300 | — | — | — | — | — | — |
| P8 | — | — | — | 175 | 235 | 275 | — | — | — | — | — | — |
| P11 | — | — | — | 180 | 245 | 290 | — | — | — | — | — | — |
| P12 | — | — | — | 120 | 160 | 190 | 115 | 155 | 180 | — | — | — |
| M1 | — | — | — | — | — | — | 185 | 245 | 295 | — | — | — |
| M2 | — | — | — | — | — | — | 150 | 205 | 245 | — | — | — |
| M3 | — | — | — | — | — | — | 120 | 165 | 195 | — | — | — |
| M4 | — | — | — | — | — | — | 95 | 125 | 150 | — | — | — |
| M5 | — | — | — | — | — | — | 80 | 105 | 125 | — | — | — |
| K1 | 265 | 360 | 435 | 255 | 340 | 410 | — | — | — | — | — | — |
| K2 | 235 | 325 | 385 | 225 | 305 | 365 | — | — | — | — | — | — |
| K3 | 200 | 275 | 325 | 190 | 260 | 310 | — | — | — | — | — | — |
| K4 | 190 | 260 | 310 | 180 | 250 | 295 | — | — | — | — | — | — |
| K5 | 120 | 160 | 190 | 110 | 155 | 180 | — | — | — | — | — | — |
| K6 | 170 | 230 | 275 | 160 | 220 | 260 | — | — | — | — | — | — |
| K7 | 150 | 205 | 245 | 145 | 195 | 230 | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | 1350 | 1850 | 2175 |
| N2 | — | — | — | — | — | — | — | — | — | 550 | 750 | 880 |
| N3 | — | — | — | — | — | — | — | — | — | 365 | 495 | 590 |
| N11 | — | — | — | — | — | — | — | — | — | 420 | 570 | 670 |
| S1 | — | — | — | — | — | — | 45 | 60 | 70 | — | — | — |
| S2 | — | — | — | — | — | — | 36 | 48 | 55 | — | — | — |
| S3 | — | — | — | — | — | — | 32 | 42 | 50 | — | — | — |
| S11 | — | — | — | — | — | — | 60 | 85 | 100 | — | — | — |
| S12 | — | — | — | — | — | — | 43 | 60 | 70 | — | — | — |
| S13 | — | — | — | — | — | — | 25 | 33 | 40 | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | — | — | — | — | — | — | — | — | — | — | — | — |

Octomill 220.43-07W



- For insert selection and cutting data recommendations, see page(s) 159–160
- For complete insert programme, see page(s) 652
- For ISO attribute explanation, see page 15



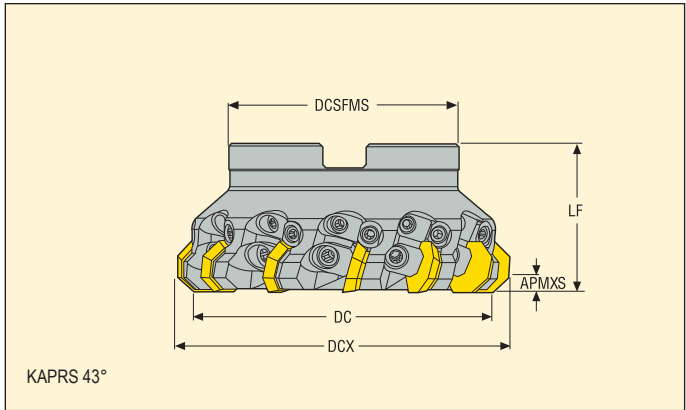
| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|------|------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.43-0050-07W | Arbor | 5,0 | 62,0 | 50,0 | 47,0 | 22,0 | 60,0 | 4 | 0,4 | 6300 | OFE.070405 |
| R220.43-0063-07W | Arbor | 5,0 | 75,0 | 63,0 | 47,0 | 22,0 | 40,0 | 4 | 0,6 | 5600 | OFE.070405 |
| R220.43-0080-07W | Arbor | 5,0 | 92,0 | 80,0 | 62,0 | 27,0 | 50,0 | 5 | 1,3 | 5000 | OFE.070405 |
| R220.43-0100-07W | Arbor | 5,0 | 112,0 | 100,0 | 77,0 | 32,0 | 50,0 | 6 | 1,8 | 4400 | OFE.070405 |
| R220.43-0125-07W | Arbor | 5,0 | 137,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 3,2 | 4000 | OFE.070405 |
| R220.43-8160-07W | Arbor | 5,0 | 172,0 | 160,0 | 90,0 | 40,0 | 63,0 | 10 | 5,1 | 3500 | OFE.070405 |
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Spare Parts

| For cutter | Wedge screw | Wedge key | Key (T-handle) | Insert wedge | Arbor screw | Torque value (Nm) |
|-------------------|-------------|-----------|----------------|--------------|-------------|-------------------|
| | | | | | | |
| R220.43-0050 | LD8018-T25P | H6B-T25P | DOUBLE-T | 334.5-640 | 220.17-696 | 6,0 |
| R220.43-0063 | LD8018-T25P | H6B-T25P | DOUBLE-T | CW0810 | MF6S10X40 | 6,0 |
| R220.43-0080 | LD8018-T25P | H6B-T25P | DOUBLE-T | CW0810 | MC6S12X35 | 6,0 |
| R220.43-0100-8160 | LD8018-T25P | H6B-T25PL | DOUBLE-T | CW0810 | - | 6,0 |
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Please check availability in current price and stock-list
Torque keys, see page 732

Octomill 220.43-07T



- For insert selection and cutting data recommendations, see page(s) 159–160
- For complete insert programme, see page(s) 652
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|------|------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.43-0063-07-6T | Arbor | 5,0 | 75,0 | 63,0 | 47,0 | 22,0 | 50,0 | 6 | 0,8 | 5600 | OFE.070405 |
| R220.43-0080-07-9T | Arbor | 5,0 | 92,0 | 80,0 | 62,0 | 27,0 | 50,0 | 9 | 1,2 | 5000 | OFE.070405 |
| R220.43-0100-07-12T | Arbor | 5,0 | 112,0 | 100,0 | 77,0 | 32,0 | 50,0 | 12 | 1,6 | 4400 | OFE.070405 |
| R220.43-0125-07-15T | Arbor | 5,0 | 137,0 | 125,0 | 90,0 | 40,0 | 63,0 | 15 | 3,0 | 4000 | OFE.070405 |
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Spare Parts

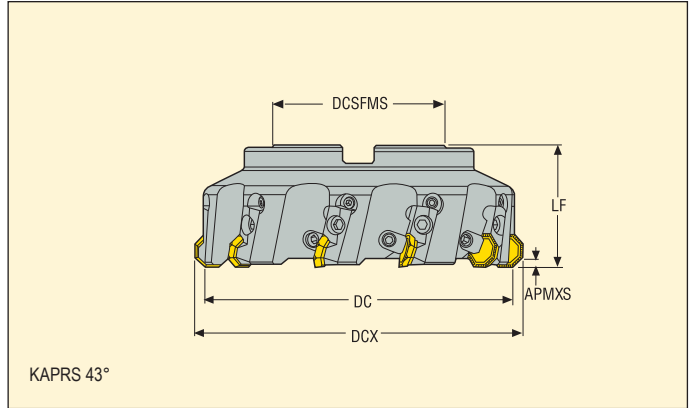
| For cutter | Wedge screw | Wedge clamp axial adj. | Setting screw (axial) | Setting key | Key (T-handle) | Insert wedge | Insert/ Clamp key | Axial setting unit | Arbor screw | Torque value (Nm) |
|-------------------|-------------|------------------------|-----------------------|-------------|----------------|--------------|-------------------|--------------------|-------------|-------------------|
| R220.43-0063 | | | | | | | | | | 6.0 |
| R220.43-0080 | LD8020-T25P | CW0608 | LD6019-T15P | T15P-4ST | DOUBLE-T | 334.5-640 | H6B-T25P | AS6011 | MF6S10X40 | 6.0 |
| R220.43-0100-0125 | LD8020-T25P | CW0608 | LD6019-T15P | T15P-4ST | DOUBLE-T | 334.5-640 | H6B-T25P | AS6011 | MC6S12X35 | 6.0 |
| R220.43-0100-0125 | LD8020-T25P | CW0608 | LD6019-T15P | T15P-4ST | DOUBLE-T | 334.5-640 | H6B-T25PL | AS6011 | – | 6.0 |
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Please check availability in current price and stock-list
Torque keys, see page 732

Octomill 220.43-07C/CG



- For insert selection and cutting data recommendations, see page(s) 159–160
- For complete insert programme, see page(s) 652
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|-------------------|------------------|------------------|-------|-------|--------|------|------|----|------|------|------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.43-0100-07C | Arbor | 5,0 | 112,0 | 100,0 | 77,0 | 32,0 | 50,0 | 6 | 2,3 | 4300 | OFE.070405 |
| R220.43-0125-07C | Arbor | 5,0 | 137,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 3,6 | 3800 | OFE.070405 |
| R220.43-8160-07C | Arbor | 5,0 | 172,0 | 160,0 | 90,0 | 40,0 | 63,0 | 10 | 5,7 | 3300 | OFE.070405 |
| R220.43-8160-07CG | Arbor | 5,0 | 172,0 | 160,0 | 90,0 | 40,0 | 63,0 | 7 | 5,8 | 3300 | OFE.070405 |
| R220.43-8200-07C | Arbor | 5,0 | 212,0 | 200,0 | 130,0 | 60,0 | 63,0 | 12 | 8,3 | 3000 | OFE.070405 |
| R220.43-8250-07C | Arbor | 5,0 | 262,0 | 250,0 | 130,0 | 60,0 | 63,0 | 16 | 14,3 | 2700 | OFE.070405 |
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Spare Parts

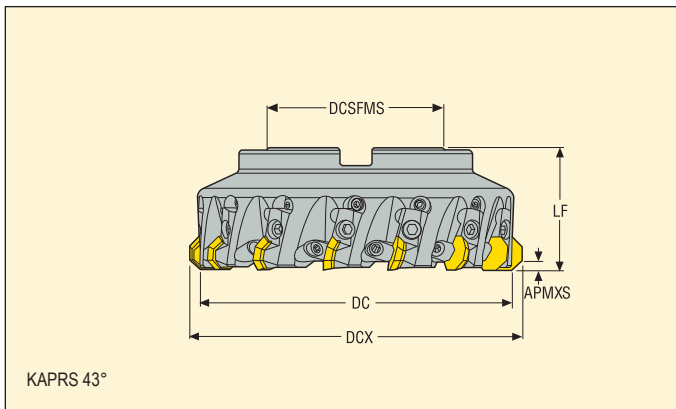
| For cutter | Wedge screw | Wedge key | Setting gauge | Key (T-handle) | Insert wedge | Cassette screw | Cassette | Arbor screw | Torque value (Nm) |
|-------------------|-------------|-----------|---------------|----------------|--------------|----------------|----------|-------------|-------------------|
| R220.43-0100 | | | | | | | | | |
| R220.43-0125-8500 | LD8020-T25P | H6B-T25PL | AU1114T-T15P | DOUBLE-T | CW0810 | FS96018 | OF07AR | 220.17-694 | 6,0 |
| R220.43-8160-07CG | LD8020-T25P | - | AU1114T-T15P | - | CW0810 | FS96018 | OF07AR | - | 6,0 |
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Please check availability in current price and stock-list
Torque keys, see page 732

Octomill 220.43-07T



- For insert selection and cutting data recommendations, see page(s) 159–160
- For complete insert programme, see page(s) 652
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|-------------------|------------------|------------------|-------|-------|--------|------|------|----|------|------|------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.43-0125-07CT | Arbor | 5,0 | 137,0 | 125,0 | 90,0 | 40,0 | 63,0 | 10 | 3,5 | 3800 | OFE.070405 |
| R220.43-8160-07CT | Arbor | 5,0 | 172,0 | 160,0 | 90,0 | 40,0 | 63,0 | 14 | 5,6 | 3300 | OFE.070405 |
| R220.43-8200-07CT | Arbor | 5,0 | 212,0 | 200,0 | 130,0 | 60,0 | 63,0 | 18 | 8,1 | 3000 | OFE.070405 |
| R220.43-8250-07CT | Arbor | 5,0 | 262,0 | 250,0 | 130,0 | 60,0 | 63,0 | 22 | 16,9 | 2700 | OFE.070405 |
| R220.43-8315-07CT | Arbor | 5,0 | 327,0 | 315,0 | 225,0 | 60,0 | 80,0 | 28 | 28,0 | 2400 | OFE.070405 |
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Spare Parts

| For cutter | Wedge screw | Wedge key | Setting gauge | Key (T-handle) | Insert wedge | Cassette screw | Cassette | Torque value (Nm) |
|-------------------|-------------|-----------|---------------|----------------|--------------|----------------|----------|-------------------|
| | | | | | | | | |
| R220.43-0125-8315 | LD8020-T25P | H6B-T25PL | AU1114T-T15P | DOUBLE-T | 334.5-640 | FS96018 | OF07AR | 6,0 |
| | | | | | | | | |
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| | | | | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.43-07 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|------|------|
| | | | 100% | 30% | 10% |
| P1 | OFMR070405TR-ME13 MP2500 | 3,0 | 0,26 | 0,30 | 0,44 |
| P2 | OFMR070405TR-ME13 MP2500 | 3,0 | 0,28 | 0,30 | 0,46 |
| P3 | OFMR070405TR-ME13 MP2500 | 3,0 | 0,26 | 0,28 | 0,44 |
| P4 | OFMR070405TR-M15 MP2500 | 3,0 | 0,30 | 0,32 | 0,48 |
| P5 | OFMR070405TR-M15 MP2500 | 3,0 | 0,28 | 0,32 | 0,48 |
| P6 | OFMR070405TR-M15 MP2500 | 3,0 | 0,28 | 0,30 | 0,48 |
| P7 | OFMR070405TR-M15 T350M | 3,0 | 0,28 | 0,30 | 0,48 |
| P8 | OFMR070405TR-M15 T350M | 3,0 | 0,30 | 0,32 | 0,50 |
| P11 | OFMR070405TR-M15 T350M | 3,0 | 0,28 | 0,30 | 0,48 |
| P12 | OFMR070405TR-M15 T350M | 2,5 | 0,19 | 0,22 | 0,32 |
| M1 | OFMR070405TR-ME13 F40M | 3,0 | 0,28 | 0,30 | 0,46 |
| M2 | OFMR070405TR-ME13 F40M | 3,0 | 0,24 | 0,28 | 0,42 |
| M3 | OFMR070405TR-ME13 F40M | 2,5 | 0,20 | 0,22 | 0,34 |
| M4 | OFMR070405TR-ME13 T350M | 1,8 | 0,17 | 0,19 | 0,28 |
| M5 | OFER070405TN-M16 MM4500 | 1,8 | 0,22 | 0,24 | 0,36 |
| K1 | OFER070405TN-M16 MK2050 | 3,0 | 0,34 | 0,36 | 0,55 |
| K2 | OFER070405TN-M16 MK2050 | 3,0 | 0,30 | 0,34 | 0,50 |
| K3 | OFER070405TN-M16 MK2050 | 3,0 | 0,30 | 0,34 | 0,50 |
| K4 | OFER070405TN-M16 MK2050 | 3,0 | 0,30 | 0,34 | 0,50 |
| K5 | OFMR070405TR-M15 MK1500 | 3,0 | 0,26 | 0,28 | 0,44 |
| K6 | OFMR070405TR-M15 MK1500 | 3,0 | 0,28 | 0,32 | 0,48 |
| K7 | OFMR070405TR-M15 MK1500 | 3,0 | 0,26 | 0,28 | 0,44 |
| N1 | OFER070405N-E07 H15 | 3,0 | 0,19 | 0,20 | 0,32 |
| N2 | OFER070405N-E07 H15 | 3,0 | 0,19 | 0,20 | 0,32 |
| N3 | OFER070405N-E07 H15 | 3,0 | 0,19 | 0,20 | 0,32 |
| N11 | OFER070405N-E07 H15 | 3,0 | 0,19 | 0,20 | 0,32 |
| S1 | OFMR070405TR-ME13 T350M | 1,8 | 0,17 | 0,19 | 0,28 |
| S2 | OFMR070405TR-ME13 T350M | 1,8 | 0,17 | 0,19 | 0,28 |
| S3 | OFMR070405TR-ME13 T350M | 1,8 | 0,16 | 0,18 | 0,26 |
| S11 | OFMR070405TR-ME13 F40M | 2,0 | 0,20 | 0,22 | 0,34 |
| S12 | OFMR070405TR-ME13 F40M | 2,0 | 0,20 | 0,22 | 0,34 |
| S13 | OFMR070405TR-ME13 F40M | 1,8 | 0,17 | 0,19 | 0,28 |
| H5 | OFEN070405TN-D18 MP1500 | 2,5 | 0,24 | 0,26 | 0,40 |
| H8 | OFEN070405TN-D18 MP1500 | 2,0 | 0,18 | 0,19 | 0,30 |
| H11 | OFEN070405TN-D18 MP1500 | 2,5 | 0,24 | 0,26 | 0,40 |
| H12 | OFEN070405TN-D18 MP1500 | 2,0 | 0,18 | 0,19 | 0,30 |
| H21 | OFEN070405TN-D18 MP1500 | 2,0 | 0,18 | 0,19 | 0,30 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R220.43-07 – Cutting data $v_c =$ (m/min)

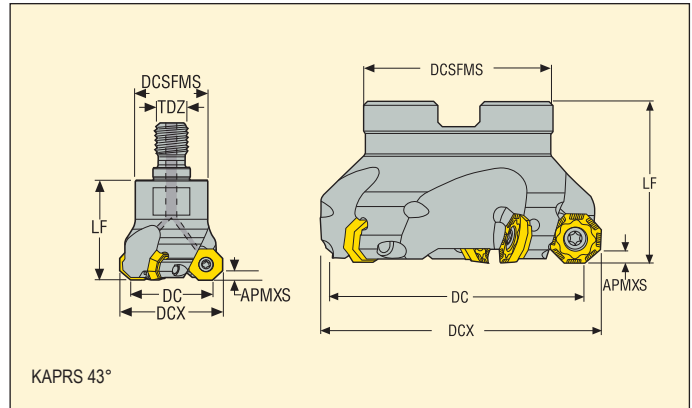
| SMG | MP1020 | | | MP1500 | | | MP2500 | | | MP3000 | | | T25M | | | T350M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|-----|-----|-------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 200 | 260 | 310 | 280 | 375 | 450 | 250 | 335 | 395 | 275 | 365 | 435 | 210 | 275 | 330 | 230 | 310 | 370 |
| P2 | 180 | 255 | 300 | 270 | 365 | 435 | 240 | 325 | 385 | 265 | 355 | 415 | 200 | 270 | 320 | 220 | 300 | 350 |
| P3 | 165 | 235 | 260 | 235 | 320 | 375 | 210 | 285 | 330 | 230 | 305 | 360 | 175 | 235 | 275 | 195 | 265 | 310 |
| P4 | 145 | 205 | 250 | 210 | 280 | 340 | 185 | 250 | 300 | 205 | 270 | 325 | 155 | 210 | 250 | 170 | 230 | 275 |
| P5 | 155 | 195 | 240 | 205 | 270 | 325 | 180 | 240 | 290 | 195 | 265 | 310 | 150 | 200 | 240 | 165 | 220 | 265 |
| P6 | 170 | 235 | 270 | 230 | 310 | 365 | 200 | 275 | 325 | 220 | 295 | 350 | 170 | 230 | 270 | 185 | 255 | 295 |
| P7 | 160 | 220 | 255 | 215 | 290 | 345 | 190 | 260 | 305 | 205 | 280 | 330 | 160 | 215 | 255 | 175 | 240 | 280 |
| P8 | 140 | 195 | 215 | 200 | 270 | 315 | 175 | 240 | 280 | 195 | 255 | 305 | 145 | 200 | 235 | 165 | 220 | 260 |
| P11 | 160 | 215 | 245 | 210 | 285 | 335 | 185 | 250 | 295 | 200 | 270 | 320 | 155 | 210 | 245 | 170 | 230 | 270 |
| P12 | 145 | 170 | 190 | 140 | 185 | 220 | 125 | 165 | 195 | 130 | 175 | 205 | 105 | 135 | 160 | 115 | 150 | 180 |
| M1 | — | — | — | — | — | — | 170 | 235 | 280 | 200 | 265 | 310 | 160 | 220 | 260 | 170 | 230 | 270 |
| M2 | — | — | — | — | — | — | 145 | 190 | 230 | 165 | 220 | 260 | 135 | 180 | 215 | 145 | 190 | 225 |
| M3 | — | — | — | — | — | — | 120 | 160 | 190 | 135 | 175 | 210 | 110 | 145 | 175 | 115 | 155 | 185 |
| M4 | — | — | — | — | — | — | 90 | 120 | 145 | 105 | 135 | 165 | 85 | 115 | 135 | 90 | 120 | 145 |
| M5 | — | — | — | — | — | — | 75 | 100 | 120 | 85 | 110 | 135 | 70 | 95 | 110 | 75 | 100 | 120 |
| K1 | — | — | — | 215 | 290 | 345 | 190 | 255 | 305 | 210 | 280 | 330 | 155 | 215 | 255 | — | — | — |
| K2 | — | — | — | 190 | 255 | 310 | 170 | 225 | 275 | 185 | 250 | 295 | 140 | 190 | 225 | — | — | — |
| K3 | — | — | — | 165 | 215 | 260 | 145 | 190 | 230 | 155 | 210 | 250 | 120 | 160 | 190 | — | — | — |
| K4 | — | — | — | 155 | 205 | 250 | 140 | 185 | 220 | 150 | 205 | 235 | 115 | 155 | 185 | — | — | — |
| K5 | — | — | — | 95 | 130 | 150 | 85 | 115 | 135 | 90 | 120 | 145 | 70 | 95 | 110 | — | — | — |
| K6 | — | — | — | 135 | 180 | 220 | 120 | 160 | 195 | 130 | 180 | 210 | 100 | 135 | 160 | — | — | — |
| K7 | — | — | — | 120 | 165 | 195 | 105 | 145 | 170 | 120 | 155 | 185 | 90 | 120 | 145 | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | 620 | 820 | 990 | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | 415 | 550 | 660 | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | — | — | — | — | — | — | 48 | 65 | 75 | — | — | — | 42 | 55 | 65 |
| S2 | — | — | — | — | — | — | — | — | — | 39 | 50 | 60 | — | — | — | 34 | 45 | 55 |
| S3 | — | — | — | — | — | — | — | — | — | 34 | 44 | 55 | — | — | — | 30 | 40 | 47 |
| S11 | — | — | — | — | — | — | — | — | — | 65 | 90 | 105 | — | — | — | 60 | 80 | 95 |
| S12 | — | — | — | — | — | — | — | — | — | 46 | 60 | 75 | — | — | — | 41 | 55 | 65 |
| S13 | — | — | — | — | — | — | — | — | — | 27 | 35 | 43 | — | — | — | 24 | 32 | 38 |
| H5 | — | — | — | 46 | 60 | 75 | 37 | 50 | 60 | 41 | 55 | 65 | — | — | — | 38 | 50 | 60 |
| H8 | — | — | — | 49 | 65 | 80 | 40 | 55 | 65 | 43 | 55 | 70 | — | — | — | 40 | 55 | 65 |
| H11 | — | — | — | 60 | 80 | 95 | 47 | 65 | 75 | 50 | 70 | 80 | — | — | — | 48 | 65 | 75 |
| H12 | — | — | — | 90 | 120 | 140 | 80 | 105 | 125 | 85 | 110 | 130 | — | — | — | 70 | 95 | 115 |
| H21 | — | — | — | 49 | 65 | 80 | 40 | 55 | 65 | 43 | 55 | 70 | — | — | — | 40 | 55 | 65 |

| SMG | F15M | | | F40M | | | MK1500 | | | MK2050 | | | MM4500 | | | H15 | | |
|-----|------|------|------|------|------|------|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | 190 | 250 | 300 | — | — | — | 245 | 330 | 390 | 155 | 205 | 245 | — | — | — |
| P2 | — | — | — | 180 | 245 | 290 | — | — | — | 235 | 320 | 380 | 145 | 200 | 235 | — | — | — |
| P3 | — | — | — | 160 | 215 | 250 | — | — | — | 205 | 280 | 325 | 130 | 175 | 205 | — | — | — |
| P4 | — | — | — | 140 | 190 | 230 | — | — | — | 180 | 245 | 295 | 115 | 155 | 185 | — | — | — |
| P5 | — | — | — | 135 | 180 | 220 | — | — | — | 175 | 235 | 285 | 110 | 145 | 175 | — | — | — |
| P6 | — | — | — | 155 | 205 | 245 | — | — | — | 200 | 270 | 320 | 125 | 170 | 200 | — | — | — |
| P7 | — | — | — | 145 | 195 | 230 | — | — | — | 185 | 255 | 300 | 115 | 160 | 185 | — | — | — |
| P8 | — | — | — | 135 | 180 | 210 | — | — | — | 175 | 235 | 275 | 110 | 145 | 170 | — | — | — |
| P11 | — | — | — | 140 | 190 | 225 | — | — | — | 180 | 245 | 290 | 115 | 155 | 180 | — | — | — |
| P12 | — | — | — | 95 | 125 | 145 | — | — | — | 120 | 160 | 190 | 75 | 100 | 120 | — | — | — |
| M1 | — | — | — | 145 | 200 | 235 | — | — | — | — | — | — | 125 | 170 | 205 | — | — | — |
| M2 | — | — | — | 120 | 165 | 195 | — | — | — | — | — | — | 105 | 140 | 170 | — | — | — |
| M3 | — | — | — | 100 | 135 | 160 | — | — | — | — | — | — | 85 | 115 | 135 | — | — | — |
| M4 | — | — | — | 75 | 100 | 120 | — | — | — | — | — | — | 65 | 90 | 105 | — | — | — |
| M5 | — | — | — | 65 | 85 | 100 | — | — | — | — | — | — | 55 | 75 | 90 | — | — | — |
| K1 | 250 | 335 | 400 | 145 | 195 | 230 | 265 | 365 | 435 | 255 | 345 | 410 | — | — | — | — | — | — |
| K2 | 225 | 295 | 355 | 130 | 170 | 205 | 240 | 320 | 385 | 230 | 305 | 365 | — | — | — | — | — | — |
| K3 | 190 | 250 | 300 | 110 | 145 | 175 | 205 | 270 | 325 | 195 | 255 | 310 | — | — | — | — | — | — |
| K4 | 180 | 240 | 285 | 105 | 140 | 165 | 195 | 260 | 310 | 185 | 245 | 295 | — | — | — | — | — | — |
| K5 | 110 | 145 | 175 | 65 | 85 | 100 | 120 | 160 | 190 | 110 | 150 | 180 | — | — | — | — | — | — |
| K6 | 160 | 210 | 250 | 90 | 120 | 145 | 170 | 230 | 275 | 165 | 215 | 260 | — | — | — | — | — | — |
| K7 | 140 | 190 | 220 | 80 | 110 | 130 | 150 | 205 | 245 | 145 | 195 | 230 | — | — | — | — | — | — |
| N1 | 1850 | 2500 | 2925 | 1050 | 1425 | 1700 | — | — | — | — | — | — | — | — | — | 1475 | 1975 | 2325 |
| N2 | 750 | 1000 | 1175 | 425 | 570 | 680 | — | — | — | — | — | — | — | — | — | 590 | 800 | 940 |
| N3 | 500 | 670 | 790 | 285 | 380 | 455 | — | — | — | — | — | — | — | — | — | 395 | 530 | 620 |
| N11 | 570 | 770 | 900 | 325 | 435 | 520 | — | — | — | — | — | — | — | — | — | 450 | 610 | 710 |
| S1 | — | — | — | 36 | 48 | 55 | — | — | — | — | — | — | 20 | 27 | 32 | — | — | — |
| S2 | — | — | — | 29 | 39 | 46 | — | — | — | — | — | — | 16 | 22 | 26 | — | — | — |
| S3 | — | — | — | 26 | 34 | 40 | — | — | — | — | — | — | 14 | 19 | 23 | — | — | — |
| S11 | — | — | — | 50 | 70 | 80 | — | — | — | — | — | — | 29 | 38 | 45 | — | — | — |
| S12 | — | — | — | 35 | 47 | 55 | — | — | — | — | — | — | 26 | 35 | 42 | — | — | — |
| S13 | — | — | — | 20 | 27 | 32 | — | — | — | — | — | — | 15 | 20 | 24 | — | — | — |
| H5 | — | — | — | 31 | 41 | 49 | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | — | — | — | 33 | 44 | 50 | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | — | — | — | 39 | 55 | 60 | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | — | — | — | 60 | 80 | 95 | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | — | — | — | 33 | 44 | 50 | — | — | — | — | — | — | — | — | — | — | — | — |

Octomill 220.43-05



- For insert selection and cutting data recommendations, see page(s) 165 - 166
- For complete insert programme, see page(s) 651
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|-----------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|-------|-------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R217.43-1632.RE-05.3A | Combimaster | 3,5 | 40,0 | 32,0 | 30,0 | – | 40,0 | 3 | 0,3 | 14800 | OFEX/OFMT05 |
| R217.43-1642.RE-05.3A | Combimaster | 3,5 | 50,0 | 42,0 | 30,0 | – | 40,0 | 3 | 0,3 | 13000 | OFEX/OFMT05 |
| R220.43-0032-05 | Arbor | 3,5 | 41,0 | 32,0 | 35,0 | 16,0 | 40,0 | 3 | 0,2 | 14800 | OFEX/OFMT05 |
| R220.43-0040-05 | Arbor | 3,5 | 49,0 | 40,0 | 35,0 | 16,0 | 40,0 | 3 | 0,3 | 13200 | OFEX/OFMT05 |
| R220.43-0050-05 | Arbor | 3,5 | 59,0 | 50,0 | 47,0 | 22,0 | 40,0 | 4 | 0,4 | 11900 | OFEX/OFMT05 |
| R220.43-0063-05 | Arbor | 3,5 | 72,0 | 63,0 | 47,0 | 22,0 | 40,0 | 5 | 0,6 | 10600 | OFEX/OFMT05 |
| R220.43-0080-05 | Arbor | 3,5 | 89,0 | 80,0 | 62,0 | 27,0 | 50,0 | 6 | 1,1 | 9400 | OFEX/OFMT05 |
| R220.43-0100-05 | Arbor | 3,5 | 109,0 | 100,0 | 77,0 | 32,0 | 50,0 | 7 | 1,8 | 8400 | OFEX/OFMT05 |
| R220.43-0125-05 | Arbor | 3,5 | 134,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 3,3 | 7500 | OFEX/OFMT05 |
| R220.43-8160-05 | Arbor | 3,5 | 169,0 | 160,0 | 90,0 | 40,0 | 63,0 | 10 | 5,1 | 6600 | OFEX/OFMT05 |
| | | | | | | | | | | | |
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Spare Parts

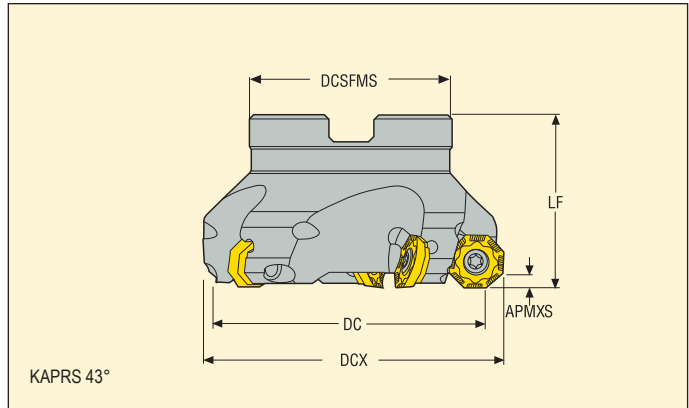
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.43-... | DOUBLE-T | C04008-T15P | H4B-T15P | – | 3,5 |
| R220.43-0032 | DOUBLE-T | C04008-T15P | H4B-T15P | 220.17-690 | 3,5 |
| R220.43-0040 | DOUBLE-T | C04008-T15P | H4B-T15P | TCEI0825 | 3,5 |
| R220.43-0050-0063 | DOUBLE-T | C04008-T15P | H4B-T15P | 220.17-692 | 3,5 |
| R220.43-0080 | DOUBLE-T | C04008-T15P | H4B-T15P | – | 3,5 |
| R220.43-0100-0160 | DOUBLE-T | C04008-T15P | H4B-T15PL | – | 3,5 |

Please check availability in current price and stock-list
Torque keys, see page 732

Octomill 220.43-05



- For insert selection and cutting data recommendations, see page(s) 165 - 166
- For complete insert programme, see page(s) 651
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|--------------------|------------------|------------------|------|------|--------|------|------|---|-----|-------|-------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.43-0040-05-4A | Arbor | 3,5 | 49,0 | 40,0 | 35,0 | 16,0 | 40,0 | 4 | 0,3 | 13200 | OFEX/OFMT05 |
| R220.43-0050-05-5A | Arbor | 3,5 | 59,0 | 50,0 | 47,0 | 22,0 | 40,0 | 5 | 0,4 | 11900 | OFEX/OFMT05 |
| R220.43-0063-05-6A | Arbor | 3,5 | 72,0 | 63,0 | 47,0 | 22,0 | 40,0 | 6 | 0,5 | 10600 | OFEX/OFMT05 |
| R220.43-0080-05-8A | Arbor | 3,5 | 89,0 | 80,0 | 62,0 | 27,0 | 50,0 | 8 | 1,1 | 9400 | OFEX/OFMT05 |
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Spare Parts

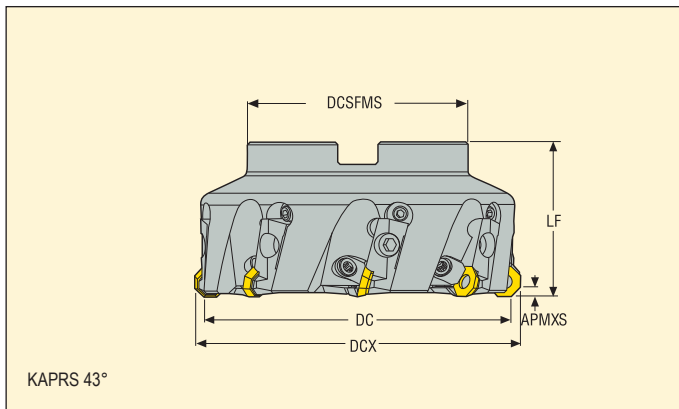
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.43-0040 | DOUBLE-T | C04008-T15P | H4B-T15P | TCEI0825 | 3,5 |
| R220.43-0050-0063 | DOUBLE-T | C04008-T15P | H4B-T15P | 220.17-692 | 3,5 |
| R220.43-0080-0160 | DOUBLE-T | C04008-T15P | H4B-T15P | - | 3,5 |
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Please check availability in current price and stock-list
Torque keys, see page 732

Octomill 220.43-05C



- For insert selection and cutting data recommendations, see page(s) 165 - 166
- For complete insert programme, see page(s) 651
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|-------------------|------------------|------------------|-------|-------|--------|------|------|----|------|------|------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.43-0100-05C | Arbor | 3,5 | 109,0 | 100,0 | 77,0 | 32,0 | 50,0 | 6 | 2,5 | 4300 | OFEX05T305 |
| R220.43-0125-05C | Arbor | 3,5 | 134,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 3,7 | 3800 | OFEX05T305 |
| R220.43-8160-05C | Arbor | 3,5 | 169,0 | 160,0 | 90,0 | 40,0 | 63,0 | 10 | 5,8 | 3300 | OFEX05T305 |
| R220.43-8200-05C | Arbor | 3,5 | 209,0 | 200,0 | 130,0 | 60,0 | 63,0 | 12 | 8,4 | 3000 | OFEX05T305 |
| R220.43-8250-05C | Arbor | 3,5 | 259,0 | 250,0 | 130,0 | 60,0 | 63,0 | 16 | 14,3 | 2700 | OFEX05T305 |
| R220.43-8315-05C | Arbor | 3,5 | 324,0 | 315,0 | 225,0 | 60,0 | 80,0 | 20 | 28,0 | 2400 | OFEX05T305 |
| R220.43-8160-05CG | Arbor | 3,5 | 169,0 | 160,0 | 90,0 | 40,0 | 63,0 | 7 | 5,9 | 3300 | OFEX05T305 |
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Spare Parts

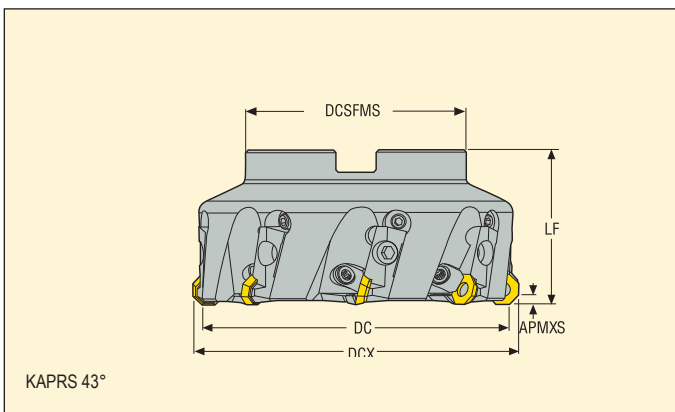
| For cutter | Wedge screw | Setting gauge | Key (T-handle) | Insert wedge | Insert key | Cassette screw | Cassette | Arbor screw | Torque value (Nm) |
|-----------------------|-------------|---------------|----------------|--------------|------------|----------------|----------|-------------|-------------------|
| R220.43-0100 | LD8020-T25P | AU1114T-T15P | DOUBLE-T | CW0810 | H6B-T25PL | FS96018 | OF05AR | 220.17-694 | 3,5 |
| R220.43-0125-8160C/CG | LD8020-T25P | AU1114T-T15P | DOUBLE-T | CW0810 | H6B-T25PL | FS96018 | OF05AR | - | 3,5 |
| R220.43-8315-05C | LD8020-T25P | AU1114T-T15P | DOUBLE-T | CW0810 | H6B-T25PL | FS96018 | OF05AR | - | 3,5 |
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Please check availability in current price and stock-list
Torque keys, see page 732

Octomill 220.43-05CT



- For insert selection and cutting data recommendations, see page(s) 165 - 166
- For complete insert programme, see page(s) 651
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|-------------------|------------------|------------------|-------|-------|--------|------|------|----|------|------|------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.43-0125-05CT | Arbor | 3,5 | 134,0 | 125,0 | 90,0 | 40,0 | 63,0 | 10 | 4,0 | 3800 | OFEX05T305 |
| R220.43-8160-05CT | Arbor | 3,5 | 169,0 | 160,0 | 90,0 | 40,0 | 63,0 | 14 | 5,8 | 3300 | OFEX05T305 |
| R220.43-8200-05CT | Arbor | 3,5 | 209,0 | 200,0 | 130,0 | 60,0 | 63,0 | 18 | 7,4 | 3000 | OFEX05T305 |
| R220.43-8315-05CT | Arbor | 3,5 | 324,0 | 315,0 | 225,0 | 60,0 | 80,0 | 28 | 27,5 | 2400 | OFEX05T305 |
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Spare Parts

| For cutter | Wedge screw | Setting gauge | Key (T-handle) | Insert wedge | Insert key | Cassette screw | Cassette | Torque value (Nm) |
|---------------------|-------------|---------------|----------------|--------------|------------|----------------|----------|-------------------|
| | | | | | | | | |
| R220.43-0125-8315CT | LD8020-T25P | AU1114T-T15P | DOUBLE-T | 334.5-640 | H6B-T25PL | FS96018 | OF05AR | 3,5 |
| R220.43-8315-05CT | LD8020-T25P | AU1114T-T15P | DOUBLE-T | 334.5-640 | H6B-T25PL | FS96018 | OF05AR | 3,5 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.43-05 – Insert selection

| SMG | | a_p | f_z | | |
|-----|-------------------------|-------|-------|-------|------|
| | | | 100% | 30% | 10% |
| P1 | OFEX05T305TN-M08 F40M | 2,0 | 0,16 | 0,18 | 0,28 |
| P2 | OFEX05T305TN-ME07 F40M | 2,0 | 0,15 | 0,16 | 0,24 |
| P3 | OFEX05T305TN-ME07 F40M | 2,0 | 0,14 | 0,15 | 0,24 |
| P4 | OFEX05T305TN-M08 F40M | 2,0 | 0,16 | 0,17 | 0,26 |
| P5 | OFEX05T305TN-M08 F40M | 2,0 | 0,15 | 0,17 | 0,26 |
| P6 | OFEX05T305TN-M08 F40M | 2,0 | 0,15 | 0,16 | 0,26 |
| P7 | OFEX05T305TN-M08 MP2500 | 2,0 | 0,15 | 0,16 | 0,26 |
| P8 | OFEX05T305TN-M08 MP2500 | 2,0 | 0,16 | 0,17 | 0,26 |
| P11 | OFEX05T305TN-M08 T350M | 2,0 | 0,15 | 0,16 | 0,26 |
| P12 | OFEX05T305TN-M08 T350M | 1,6 | 0,10 | 0,11 | 0,17 |
| M1 | OFEX05T305TN-ME07 T350M | 2,0 | 0,15 | 0,16 | 0,24 |
| M2 | OFEX05T305TN-ME07 T350M | 2,0 | 0,13 | 0,15 | 0,22 |
| M3 | OFEX05T305TN-ME07 T350M | 1,6 | 0,11 | 0,12 | 0,18 |
| M4 | OFEX05T305TN-ME07 T350M | 1,3 | 0,095 | 0,10 | 0,16 |
| M5 | OFEX05T305TN-ME07 T350M | 1,3 | 0,095 | 0,10 | 0,16 |
| K1 | OFEX05T305TN-M08 MK1500 | 2,0 | 0,17 | 0,18 | 0,28 |
| K2 | OFEX05T305TN-M08 MK1500 | 2,0 | 0,15 | 0,17 | 0,26 |
| K3 | OFEX05T305TN-M08 MK1500 | 2,0 | 0,15 | 0,17 | 0,26 |
| K4 | OFEX05T305TN-M08 MK1500 | 2,0 | 0,15 | 0,17 | 0,26 |
| K5 | OFEX05T305TN-D09 MP1500 | 2,0 | 0,15 | 0,17 | 0,26 |
| K6 | OFEX05T305TN-D09 MP1500 | 2,0 | 0,17 | 0,19 | 0,28 |
| K7 | OFEX05T305TN-D09 MP1500 | 2,0 | 0,15 | 0,17 | 0,26 |
| N1 | OFEX05T305N-E04 H15 | 2,0 | 0,11 | 0,12 | 0,18 |
| N2 | OFEX05T305N-E04 H15 | 2,0 | 0,11 | 0,12 | 0,18 |
| N3 | OFEX05T305N-E04 H15 | 2,0 | 0,11 | 0,12 | 0,18 |
| N11 | OFEX05T305N-E04 H15 | 2,0 | 0,11 | 0,12 | 0,18 |
| S1 | OFEX05T305TN-ME07 F40M | 1,3 | 0,095 | 0,10 | 0,16 |
| S2 | OFEX05T305TN-ME07 F40M | 1,3 | 0,095 | 0,10 | 0,16 |
| S3 | OFEX05T305TN-ME07 F40M | 1,3 | 0,085 | 0,095 | 0,14 |
| S11 | OFEX05T305TN-ME07 F40M | 1,4 | 0,11 | 0,12 | 0,18 |
| S12 | OFEX05T305TN-ME07 F40M | 1,4 | 0,11 | 0,12 | 0,18 |
| S13 | OFEX05T305TN-ME07 F40M | 1,3 | 0,095 | 0,10 | 0,16 |
| H5 | OFEX05T305TN-D09 MP1500 | 1,6 | 0,12 | 0,13 | 0,19 |
| H8 | OFEX05T305TN-D09 MP1500 | 1,4 | 0,090 | 0,095 | 0,15 |
| H11 | OFEX05T305TN-D09 MP1500 | 1,6 | 0,12 | 0,13 | 0,19 |
| H12 | OFEX05T305TN-D09 MP1500 | 1,4 | 0,090 | 0,095 | 0,15 |
| H21 | OFEX05T305TN-D09 MP1500 | 1,4 | 0,090 | 0,095 | 0,15 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R220.43-05 – Cutting data $v_c =$ (m/min)

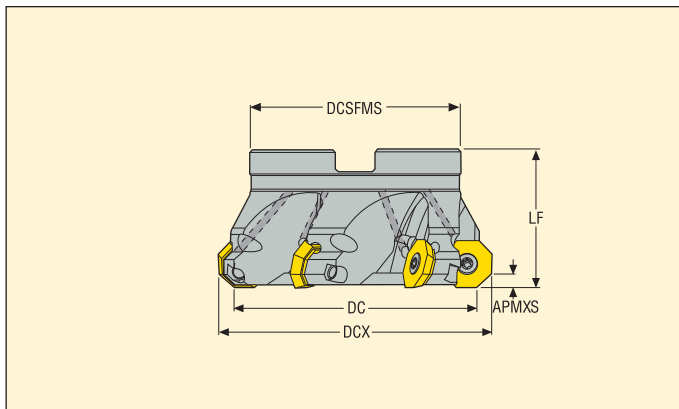
| SMG | MP1020 | | | MP1500 | | | MP2500 | | | T25M | | | T350M | | | F15M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|-----|-----|-------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 395 | 450 | 485 | 330 | 445 | 530 | 305 | 405 | 480 | 295 | 390 | 465 | 265 | 355 | 415 | — | — | — |
| P2 | 370 | 440 | 470 | 320 | 435 | 510 | 295 | 395 | 465 | 285 | 380 | 455 | 255 | 345 | 405 | — | — | — |
| P3 | 330 | 385 | 410 | 280 | 380 | 445 | 255 | 345 | 410 | 250 | 335 | 390 | 225 | 300 | 355 | — | — | — |
| P4 | 290 | 340 | 360 | 250 | 330 | 390 | 225 | 305 | 360 | 220 | 295 | 350 | 195 | 265 | 315 | — | — | — |
| P5 | 285 | 325 | 345 | 240 | 315 | 380 | 220 | 290 | 345 | 215 | 280 | 335 | 190 | 250 | 300 | — | — | — |
| P6 | 320 | 370 | 390 | 270 | 355 | 425 | 245 | 330 | 385 | 240 | 320 | 375 | 215 | 290 | 335 | — | — | — |
| P7 | 305 | 345 | 365 | 255 | 335 | 400 | 235 | 310 | 365 | 225 | 300 | 355 | 205 | 270 | 315 | — | — | — |
| P8 | 275 | 325 | 345 | 235 | 315 | 375 | 215 | 290 | 345 | 210 | 280 | 330 | 190 | 250 | 300 | — | — | — |
| P11 | 295 | 335 | 355 | 245 | 325 | 390 | 225 | 305 | 355 | 220 | 295 | 345 | 195 | 265 | 305 | — | — | — |
| P12 | 185 | 195 | 200 | 160 | 210 | 255 | 145 | 195 | 230 | 140 | 185 | 220 | 130 | 170 | 200 | — | — | — |
| M1 | — | — | — | — | — | — | 210 | 285 | 335 | 230 | 305 | 365 | 195 | 265 | 310 | — | — | — |
| M2 | — | — | — | — | — | — | 175 | 235 | 275 | 190 | 250 | 300 | 165 | 215 | 255 | — | — | — |
| M3 | — | — | — | — | — | — | 140 | 190 | 225 | 150 | 200 | 240 | 135 | 175 | 210 | — | — | — |
| M4 | — | — | — | — | — | — | 110 | 145 | 170 | 120 | 155 | 185 | 100 | 135 | 160 | — | — | — |
| M5 | — | — | — | — | — | — | 90 | 120 | 145 | 100 | 130 | 155 | 85 | 110 | 135 | — | — | — |
| K1 | — | — | — | 255 | 345 | 400 | 230 | 310 | 370 | — | — | — | 205 | 270 | 320 | 285 | 380 | 445 |
| K2 | — | — | — | 225 | 300 | 360 | 210 | 275 | 325 | — | — | — | 180 | 240 | 285 | 255 | 335 | 395 |
| K3 | — | — | — | 190 | 255 | 305 | 175 | 235 | 275 | — | — | — | 155 | 205 | 240 | 215 | 280 | 330 |
| K4 | — | — | — | 185 | 245 | 290 | 170 | 220 | 265 | — | — | — | 145 | 195 | 230 | 205 | 270 | 315 |
| K5 | — | — | — | 115 | 150 | 175 | 100 | 135 | 165 | — | — | — | 90 | 120 | 140 | 125 | 165 | 195 |
| K6 | — | — | — | 160 | 215 | 255 | 150 | 195 | 230 | — | — | — | 130 | 170 | 200 | 180 | 235 | 280 |
| K7 | — | — | — | 145 | 190 | 225 | 130 | 175 | 210 | — | — | — | 115 | 150 | 180 | 160 | 210 | 250 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 2125 | 2825 | 3350 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 860 | 1150 | 1350 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 570 | 760 | 900 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 660 | 870 | 1025 |
| S1 | — | — | — | — | — | — | — | — | — | — | — | — | 47 | 65 | 75 | — | — | — |
| S2 | — | — | — | — | — | — | — | — | — | — | — | — | 38 | 50 | 60 | — | — | — |
| S3 | — | — | — | — | — | — | — | — | — | — | — | — | 34 | 44 | 55 | — | — | — |
| S11 | — | — | — | — | — | — | — | — | — | — | — | — | 65 | 90 | 105 | — | — | — |
| S12 | — | — | — | — | — | — | — | — | — | — | — | — | 46 | 60 | 75 | — | — | — |
| S13 | — | — | — | — | — | — | — | — | — | — | — | — | 27 | 35 | 42 | — | — | — |
| H5 | — | — | — | 55 | 70 | 85 | 44 | 60 | 70 | — | — | — | 43 | 55 | 65 | — | — | — |
| H8 | — | — | — | 55 | 75 | 90 | 47 | 60 | 75 | — | — | — | 45 | 60 | 70 | — | — | — |
| H11 | — | — | — | 65 | 90 | 105 | 55 | 75 | 90 | — | — | — | 55 | 70 | 85 | — | — | — |
| H12 | — | — | — | 100 | 135 | 160 | 90 | 120 | 145 | — | — | — | 80 | 105 | 125 | — | — | — |
| H21 | — | — | — | 55 | 75 | 90 | 47 | 60 | 75 | — | — | — | 45 | 60 | 70 | — | — | — |

| SMG | F30M | | | F40M | | | MK1500 | | | H15 | | |
|-----|------|------|------|------|------|------|--------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 275 | 365 | 430 | 270 | 355 | 425 | — | — | — | — | — | — |
| P2 | 265 | 355 | 415 | 260 | 345 | 410 | — | — | — | — | — | — |
| P3 | 230 | 305 | 360 | 225 | 305 | 355 | — | — | — | — | — | — |
| P4 | 205 | 270 | 320 | 200 | 265 | 320 | — | — | — | — | — | — |
| P5 | 195 | 260 | 305 | 195 | 255 | 305 | — | — | — | — | — | — |
| P6 | 220 | 295 | 345 | 220 | 290 | 340 | — | — | — | — | — | — |
| P7 | 205 | 275 | 325 | 205 | 275 | 320 | — | — | — | — | — | — |
| P8 | 195 | 255 | 300 | 190 | 255 | 300 | — | — | — | — | — | — |
| P11 | 200 | 270 | 315 | 200 | 265 | 315 | — | — | — | — | — | — |
| P12 | 130 | 170 | 200 | 130 | 170 | 200 | — | — | — | — | — | — |
| M1 | 215 | 285 | 335 | 210 | 280 | 330 | — | — | — | — | — | — |
| M2 | 175 | 235 | 275 | 175 | 230 | 275 | — | — | — | — | — | — |
| M3 | 140 | 185 | 220 | 140 | 185 | 220 | — | — | — | — | — | — |
| M4 | 110 | 140 | 170 | 105 | 145 | 170 | — | — | — | — | — | — |
| M5 | 90 | 120 | 140 | 90 | 120 | 140 | — | — | — | — | — | — |
| K1 | 210 | 280 | 330 | 205 | 275 | 325 | 330 | 445 | 520 | — | — | — |
| K2 | 185 | 250 | 290 | 185 | 240 | 290 | 295 | 390 | 460 | — | — | — |
| K3 | 155 | 210 | 245 | 155 | 205 | 245 | 250 | 330 | 390 | — | — | — |
| K4 | 150 | 200 | 235 | 150 | 195 | 235 | 240 | 315 | 370 | — | — | — |
| K5 | 90 | 120 | 145 | 90 | 120 | 140 | 145 | 195 | 230 | — | — | — |
| K6 | 130 | 175 | 205 | 130 | 170 | 205 | 210 | 275 | 330 | — | — | — |
| K7 | 115 | 155 | 185 | 115 | 155 | 180 | 185 | 245 | 295 | — | — | — |
| N1 | 1575 | 2050 | 2450 | 1525 | 2050 | 2400 | — | — | — | 1675 | 2225 | 2650 |
| N2 | 630 | 830 | 990 | 610 | 830 | 970 | — | — | — | 680 | 900 | 1075 |
| N3 | 425 | 550 | 660 | 410 | 550 | 650 | — | — | — | 455 | 600 | 710 |
| N11 | 485 | 630 | 760 | 465 | 630 | 740 | — | — | — | 520 | 690 | 820 |
| S1 | 50 | 65 | 80 | 50 | 65 | 80 | — | — | — | — | — | — |
| S2 | 41 | 55 | 65 | 40 | 55 | 65 | — | — | — | — | — | — |
| S3 | 36 | 46 | 55 | 36 | 47 | 55 | — | — | — | — | — | — |
| S11 | 70 | 95 | 110 | 70 | 95 | 110 | — | — | — | — | — | — |
| S12 | 41 | 55 | 65 | 48 | 65 | 75 | — | — | — | — | — | — |
| S13 | 24 | 31 | 37 | 28 | 38 | 44 | — | — | — | — | — | — |
| H5 | 43 | 55 | 65 | 43 | 55 | 65 | — | — | — | — | — | — |
| H8 | 45 | 60 | 70 | 45 | 60 | 70 | — | — | — | — | — | — |
| H11 | 55 | 70 | 85 | 55 | 70 | 85 | — | — | — | — | — | — |
| H12 | 80 | 105 | 125 | 80 | 105 | 125 | — | — | — | — | — | — |
| H21 | 45 | 60 | 70 | 45 | 60 | 70 | — | — | — | — | — | — |

Octomill 220.43-07S



- For insert selection and cutting data recommendations, see page(s) 168 - 169
- For complete insert programme, see page(s) N/A
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|-------------------|------------------|------------------|-------|-------|--------|------|------|---|-----|------|--------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.43-0051-07S | Arbor | 5,0 | 63,0 | 51,0 | 47,0 | 22,0 | 40,0 | 4 | 0,4 | 7300 | OF.T/W070405 |
| R220.43-0063-07SA | Arbor | 5,0 | 75,0 | 63,0 | 47,0 | 22,0 | 40,0 | 4 | 0,5 | 6800 | OF.T/W070405 |
| R220.43-0080-07SA | Arbor | 5,0 | 92,0 | 80,0 | 62,0 | 27,0 | 50,0 | 5 | 1,0 | 6200 | OF.T/W070405 |
| R220.43-0100-07SA | Arbor | 5,0 | 112,0 | 100,0 | 77,0 | 32,0 | 50,0 | 6 | 1,7 | 5600 | OF.T/W070405 |
| R220.43-0125-07S | Arbor | 5,0 | 137,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 3,0 | 5100 | OF.T/W070405 |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.43-0051-0063 | DOUBLE-T | C05013-T20P | H6B-T20P | 220.17-692 | 5,0 |
| R220.43-0080 | DOUBLE-T | C05013-T20P | H6B-T20P | - | 5,0 |
| R220.43-0100 | DOUBLE-T | C05013-T20P | H6B-T20PL | - | 5,0 |
| R220.43-0125 | DOUBLE-T | C05013-T20P | H6B-T20PL | - | 5,0 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.43-07S – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|------|------|
| | | | 100% | 30% | 10% |
| P1 | OFMT070405TN-ME13 MP2500 | 3,0 | 0,26 | 0,30 | 0,44 |
| P2 | OFMT070405TN-ME13 MP2500 | 3,0 | 0,28 | 0,30 | 0,46 |
| P3 | OFMT070405TN-M15 MP2500 | 3,0 | 0,30 | 0,32 | 0,50 |
| P4 | OFMT070405TN-M15 MP2500 | 3,0 | 0,30 | 0,32 | 0,48 |
| P5 | OFMT070405TN-M15 MP2500 | 3,0 | 0,28 | 0,32 | 0,48 |
| P6 | OFMT070405TN-M15 MP2500 | 3,0 | 0,28 | 0,30 | 0,48 |
| P7 | OFMT070405TN-M15 MP2500 | 3,0 | 0,28 | 0,30 | 0,48 |
| P8 | OFMT070405TN-M15 MP2500 | 3,0 | 0,30 | 0,32 | 0,50 |
| P11 | OFMT070405TN-M15 MP2500 | 3,0 | 0,28 | 0,30 | 0,48 |
| P12 | OFMT070405TN-M15 MP2500 | 2,5 | 0,19 | 0,22 | 0,32 |
| M1 | OFMT070405TN-ME13 F40M | 3,0 | 0,28 | 0,30 | 0,46 |
| M2 | OFMT070405TN-ME13 F40M | 3,0 | 0,24 | 0,28 | 0,42 |
| M3 | OFMT070405TN-ME13 F40M | 2,5 | 0,20 | 0,22 | 0,34 |
| M4 | OFMT070405TN-ME13 MM4500 | 1,8 | 0,17 | 0,19 | 0,30 |
| M5 | OFMT070405TN-ME13 MM4500 | 1,8 | 0,17 | 0,19 | 0,30 |
| K1 | OFET070405TN-M16 MK1500 | 3,0 | 0,34 | 0,36 | 0,55 |
| K2 | OFET070405TN-M16 MK1500 | 3,0 | 0,30 | 0,34 | 0,50 |
| K3 | OFET070405TN-M16 MK1500 | 3,0 | 0,30 | 0,34 | 0,50 |
| K4 | OFET070405TN-M16 MK1500 | 3,0 | 0,30 | 0,34 | 0,50 |
| K5 | OFEW070405TN-D18 MP1500 | 3,0 | 0,30 | 0,34 | 0,50 |
| K6 | OFEW070405TN-D18 MP1500 | 3,0 | 0,34 | 0,38 | 0,60 |
| K7 | OFEW070405TN-D18 MP1500 | 3,0 | 0,30 | 0,34 | 0,50 |
| N1 | OFMT070405TN-ME13 F40M | 3,0 | 0,34 | 0,38 | 0,60 |
| N2 | OFMT070405TN-ME13 F40M | 3,0 | 0,34 | 0,38 | 0,60 |
| N3 | OFMT070405TN-ME13 F40M | 3,0 | 0,34 | 0,38 | 0,60 |
| N11 | OFMT070405TN-ME13 F40M | 3,0 | 0,34 | 0,38 | 0,60 |
| S1 | OFMT070405TN-ME13 F40M | 1,8 | 0,17 | 0,19 | 0,30 |
| S2 | OFMT070405TN-ME13 F40M | 1,8 | 0,17 | 0,19 | 0,30 |
| S3 | OFMT070405TR-ME13 T350M | 1,8 | 0,16 | 0,18 | 0,26 |
| S11 | OFMT070405TN-ME13 F40M | 2,0 | 0,20 | 0,22 | 0,34 |
| S12 | OFMT070405TN-ME13 F40M | 2,0 | 0,20 | 0,22 | 0,34 |
| S13 | OFMT070405TN-ME13 F40M | 1,8 | 0,17 | 0,19 | 0,30 |
| H5 | OFEW070405TN-D18 MP1500 | 2,5 | 0,24 | 0,26 | 0,40 |
| H8 | OFEW070405TN-D18 MP1500 | 2,0 | 0,18 | 0,19 | 0,30 |
| H11 | OFEW070405TN-D18 MP1500 | 2,5 | 0,24 | 0,26 | 0,40 |
| H12 | OFEW070405TN-D18 MP1500 | 2,0 | 0,18 | 0,19 | 0,30 |
| H21 | OFEW070405TN-D18 MP1500 | 2,0 | 0,18 | 0,19 | 0,30 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

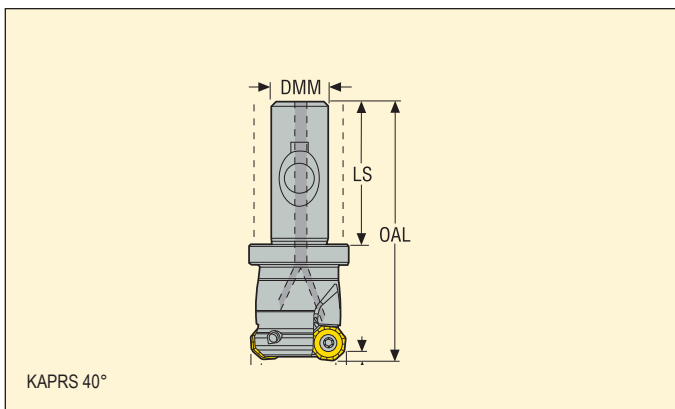
R220.43-07S – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | T350M | | | F40M | | | MK1500 | | |
|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|------|------|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 275 | 375 | 445 | 260 | 350 | 420 | 270 | 355 | 425 | 250 | 340 | 400 | — | — | — |
| P2 | 265 | 355 | 425 | 250 | 340 | 395 | 255 | 345 | 410 | 245 | 330 | 385 | — | — | — |
| P3 | 235 | 320 | 375 | 220 | 295 | 350 | 225 | 305 | 355 | 210 | 285 | 335 | — | — | — |
| P4 | 210 | 280 | 330 | 195 | 260 | 315 | 195 | 265 | 320 | 190 | 250 | 300 | — | — | — |
| P5 | 200 | 265 | 315 | 190 | 250 | 300 | 195 | 255 | 305 | 180 | 245 | 285 | — | — | — |
| P6 | 225 | 300 | 365 | 210 | 285 | 335 | 215 | 295 | 340 | 200 | 275 | 320 | — | — | — |
| P7 | 210 | 285 | 345 | 200 | 270 | 315 | 205 | 275 | 325 | 190 | 260 | 305 | — | — | — |
| P8 | 195 | 265 | 315 | 185 | 250 | 295 | 190 | 255 | 300 | 175 | 240 | 280 | — | — | — |
| P11 | 205 | 275 | 335 | 195 | 260 | 310 | 200 | 270 | 315 | 185 | 250 | 295 | — | — | — |
| P12 | 135 | 180 | 215 | 130 | 170 | 205 | 130 | 175 | 205 | 120 | 160 | 190 | — | — | — |
| M1 | — | — | — | 180 | 245 | 285 | 195 | 265 | 315 | 200 | 265 | 310 | — | — | — |
| M2 | — | — | — | 150 | 200 | 240 | 165 | 220 | 260 | 160 | 220 | 255 | — | — | — |
| M3 | — | — | — | 125 | 165 | 195 | 135 | 180 | 210 | 130 | 175 | 205 | — | — | — |
| M4 | — | — | — | 95 | 125 | 150 | 105 | 140 | 165 | 100 | 135 | 160 | — | — | — |
| M5 | — | — | — | 80 | 105 | 125 | 85 | 115 | 135 | 85 | 110 | 135 | — | — | — |
| K1 | 210 | 285 | 335 | 195 | 270 | 315 | — | — | — | 195 | 260 | 305 | 275 | 375 | 445 |
| K2 | 190 | 255 | 300 | 180 | 235 | 285 | — | — | — | 170 | 230 | 270 | 245 | 330 | 395 |
| K3 | 160 | 215 | 255 | 150 | 200 | 240 | — | — | — | 145 | 195 | 230 | 210 | 280 | 335 |
| K4 | 155 | 205 | 240 | 145 | 190 | 230 | — | — | — | 140 | 185 | 220 | 200 | 265 | 320 |
| K5 | 95 | 125 | 150 | 90 | 120 | 140 | — | — | — | 85 | 115 | 135 | 120 | 165 | 195 |
| K6 | 135 | 180 | 215 | 125 | 170 | 200 | — | — | — | 120 | 165 | 195 | 175 | 235 | 285 |
| K7 | 120 | 160 | 195 | 110 | 150 | 180 | — | — | — | 110 | 145 | 175 | 155 | 210 | 250 |
| N1 | — | — | — | — | — | — | — | — | — | 1425 | 1875 | 2275 | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | 570 | 760 | 910 | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | 385 | 510 | 610 | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | 435 | 580 | 700 | — | — | — |
| S1 | — | — | — | — | — | — | 49 | 65 | 75 | 48 | 60 | 75 | — | — | — |
| S2 | — | — | — | — | — | — | 39 | 50 | 60 | 38 | 50 | 60 | — | — | — |
| S3 | — | — | — | — | — | — | 34 | 45 | 55 | 34 | 44 | 55 | — | — | — |
| S11 | — | — | — | — | — | — | 65 | 90 | 105 | 65 | 90 | 105 | — | — | — |
| S12 | — | — | — | — | — | — | 47 | 60 | 75 | 46 | 60 | 70 | — | — | — |
| S13 | — | — | — | — | — | — | 27 | 36 | 43 | 27 | 35 | 42 | — | — | — |
| H5 | 45 | 60 | 70 | 39 | 50 | 60 | 43 | 60 | 70 | 40 | 55 | 65 | — | — | — |
| H8 | 49 | 65 | 75 | 41 | 55 | 65 | 46 | 60 | 75 | 43 | 55 | 65 | — | — | — |
| H11 | 55 | 75 | 90 | 49 | 65 | 80 | 55 | 75 | 85 | 50 | 70 | 80 | — | — | — |
| H12 | 85 | 120 | 140 | 80 | 110 | 130 | 85 | 110 | 130 | 75 | 100 | 120 | — | — | — |
| H21 | 49 | 65 | 75 | 41 | 55 | 65 | 46 | 60 | 75 | 43 | 55 | 65 | — | — | — |

Double Octomill™ 217.48-05



- For insert selection and cutting data recommendations, see page(s) 174 - 175
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | ZEFP | kg | Insert | | |
|------------------------|------------------|------------------|------|------|------|------|------|------|----|------|----|--------|-------|--------|
| | | APMXS | DC | DMM | LS | LF | OAL | LUX | LC | | | | | |
| R217.48-2025.3S-05-3SA | Seco-Weldon | 3,0 | 25,0 | 20,0 | 50,0 | 40,0 | 90,0 | 33,0 | 50 | 3 | 3 | 0,3 | 20400 | ON.U05 |
| R217.48-2532.3S-05-4SA | Seco-Weldon | 3,0 | 32,0 | 25,0 | 50,0 | 40,0 | 90,0 | 33,0 | 50 | 4 | 4 | 0,5 | 18000 | ON.U05 |
| | | | | | | | | | | | | | | |
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Spare Parts

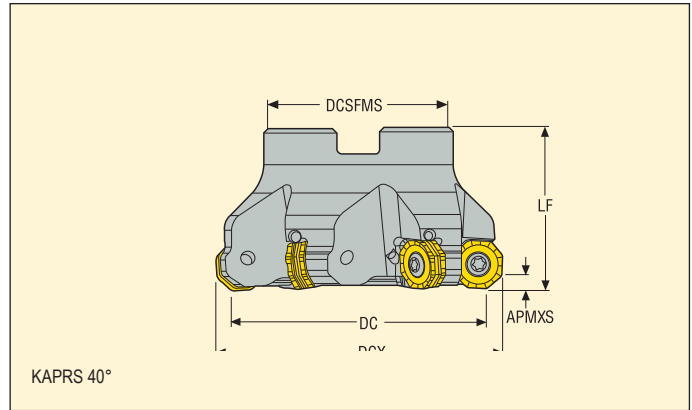
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.48-.. | DOUBLE-T | C04009-T15P | H4B-T15P | 3,5 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

Double Octomill™ 220.48-05



- For insert selection and cutting data recommendations, see page(s) 174 - 175
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|----------------------|------------------|------------------|--------|-------|--------|------|------|---|-----|-------|--------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.48-0040-05-04SA | Arbor | 3,0 | 48,35 | 40,0 | 35,0 | 16,0 | 40,0 | 4 | 0,3 | 16100 | ON.U05 |
| R220.48-0050-05-04SA | Arbor | 3,0 | 58,35 | 50,0 | 47,0 | 22,0 | 40,0 | 4 | 0,4 | 14400 | ON.U05 |
| R220.48-0050-05-05SA | Arbor | 3,0 | 58,35 | 50,0 | 47,0 | 22,0 | 40,0 | 5 | 0,4 | 14400 | ON.U05 |
| R220.48-0063-05-05SA | Arbor | 3,0 | 71,35 | 63,0 | 47,0 | 22,0 | 40,0 | 5 | 0,6 | 12800 | ON.U05 |
| R220.48-0063-05-06SA | Arbor | 3,0 | 71,35 | 63,0 | 47,0 | 22,0 | 40,0 | 6 | 0,6 | 12800 | ON.U05 |
| R220.48-0080-05-06SA | Arbor | 3,0 | 88,35 | 80,0 | 62,0 | 27,0 | 50,0 | 6 | 1,2 | 11400 | ON.U05 |
| R220.48-0100-05-07SA | Arbor | 3,0 | 108,35 | 100,0 | 77,0 | 32,0 | 50,0 | 7 | 1,8 | 10200 | ON.U05 |
| R220.48-0125-05-08SA | Arbor | 3,0 | 133,35 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 3,4 | 9100 | ON.U05 |
| | | | | | | | | | | | |
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Spare Parts

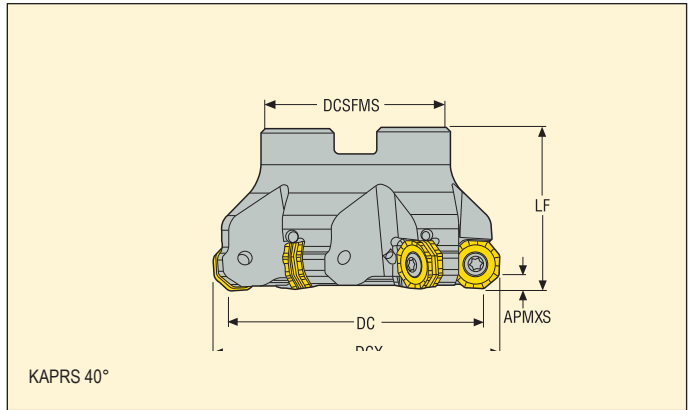
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.48-0040 | DOUBLE-T | C04009-T15P | H4B-T15P | TCEI0825 | 3,5 |
| R220.48-0050-0063 | DOUBLE-T | C04009-T15P | H4B-T15P | 220.17-692 | 3,5 |
| R220.48-0080 | DOUBLE-T | C04009-T15P | H4B-T15P | - | 3,5 |
| R220.48-0100-0125 | DOUBLE-T | C04009-T15P | H4B-T15PL | - | 3,5 |
| | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

Double Octomill™ 220.48-05



- For insert selection and cutting data recommendations, see page(s) 174 - 175
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|----------------------|------------------|------------------|--------|-------|--------|------|------|----|-----|-------|--------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.48-0040-05-05SA | Arbor | 3,0 | 48,35 | 40,0 | 35,0 | 16,0 | 40,0 | 5 | 0,3 | 16100 | ON.U05 |
| R220.48-0050-05-06SA | Arbor | 3,0 | 58,35 | 50,0 | 47,0 | 22,0 | 40,0 | 6 | 0,4 | 14400 | ON.U05 |
| R220.48-0063-05-08SA | Arbor | 3,0 | 71,35 | 63,0 | 47,0 | 22,0 | 40,0 | 8 | 0,6 | 12800 | ON.U05 |
| R220.48-0080-05-10SA | Arbor | 3,0 | 88,35 | 80,0 | 62,0 | 27,0 | 50,0 | 10 | 1,1 | 11400 | ON.U05 |
| R220.48-0100-05-12SA | Arbor | 3,0 | 108,35 | 100,0 | 77,0 | 32,0 | 50,0 | 12 | 1,8 | 10200 | ON.U05 |
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Spare Parts

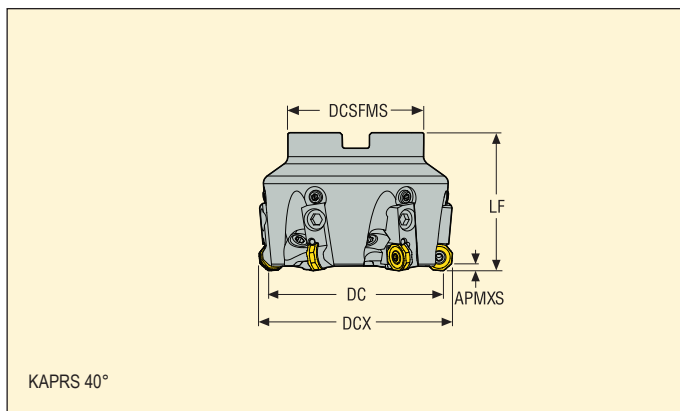
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.48-0040 | DOUBLE-T | C04009-T15P | H4B-T15P | TCEI0825 | 3,5 |
| R220.48-0050-0063 | DOUBLE-T | C04009-T15P | H4B-T15P | 220.17-692 | 3,5 |
| R220.48-0080 | DOUBLE-T | C04009-T15P | H4B-T15P | – | 3,5 |
| R220.48-0100 | DOUBLE-T | C04009-T15P | H4B-T15PL | – | 3,5 |
| | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

Double Octomill™ 220.48-05



- For insert selection and cutting data recommendations, see page(s) 174 - 175
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|----------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|-------|--------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.48-0080-05-6CS | Arbor | 3,0 | 88,0 | 80,0 | 62,0 | 27,0 | 63,0 | 6 | 1,7 | 11400 | ON..05 |
| R220.48-0100-05-8CS | Arbor | 3,0 | 108,0 | 100,0 | 77,0 | 32,0 | 63,0 | 8 | 3,0 | 10200 | ON..05 |
| R220.48-0125-05-10CS | Arbor | 3,0 | 133,0 | 125,0 | 90,0 | 40,0 | 63,0 | 10 | 4,0 | 9100 | ON..05 |
| R220.48-8160-05-14CS | Arbor | 3,0 | 168,0 | 160,0 | 140,0 | 40,0 | 63,0 | 14 | 6,5 | 8000 | ON..05 |
| R220.48-8200-05-18CS | Arbor | 3,0 | 208,0 | 200,0 | 160,0 | 60,0 | 63,0 | 18 | 9,0 | 7200 | ON..05 |
| | | | | | | | | | | | |
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Spare Parts

| For cutter | Wedge screw | Wedge clamp axial adj. | Wedge clamp | Key (T-handle) | Insert screw | Insert key | Cassette screw | Cassette | Torque value (Nm) |
|------------|-------------|------------------------|-------------|----------------|--------------|------------|----------------|----------|-------------------|
| R220.48-.. | LD8020-T25P | AU1114T-T15P | CW0810 | DOUBLE-T | C04009-T15P | H4B-T15P | FS96018 | ON05AR | 3,5 |
| | | | | | | | | | |
| | | | | | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

R220.48-05 – Insert selection

| SMG | | a_p | f_z | | |
|-----|----------------------------|-------|-------|------|------|
| | | | 100% | 30% | 10% |
| P1 | ONMU050410ANTN-M10 MP2500 | 1,8 | 0,22 | 0,24 | 0,36 |
| P2 | ONMU050410ANTN-M10 MP2500 | 1,8 | 0,22 | 0,24 | 0,38 |
| P3 | ONMU050410ANTN-M10 MP2500 | 1,8 | 0,22 | 0,22 | 0,36 |
| P4 | ONMU050410ANTN-M10 MP2500 | 1,8 | 0,20 | 0,22 | 0,34 |
| P5 | ONMU050410ANTN-M10 MP2500 | 1,8 | 0,20 | 0,22 | 0,34 |
| P6 | ONMU050410ANTN-M10 MP2500 | 1,8 | 0,20 | 0,22 | 0,34 |
| P7 | ONMU050410ANTN-M10 MP2500 | 1,8 | 0,20 | 0,22 | 0,34 |
| P8 | ONMU050410ANTN-M10 MP1500 | 1,8 | 0,22 | 0,22 | 0,36 |
| P11 | ONMU050410ANTN-M10 T350M | 1,8 | 0,20 | 0,22 | 0,34 |
| P12 | ONMU050410ANTN-M10 T350M | 1,4 | 0,14 | 0,15 | 0,22 |
| M1 | ONMU050410ANTN-ME10 F40M | 1,8 | 0,22 | 0,24 | 0,38 |
| M2 | ONMU050410ANTN-ME10 F40M | 1,8 | 0,20 | 0,22 | 0,34 |
| M3 | ONMU050410ANTN-ME10 F40M | 1,4 | 0,16 | 0,18 | 0,28 |
| M4 | ONMU050410ANTN-M10 T350M | 1,1 | 0,14 | 0,15 | 0,24 |
| M5 | ONMU050410ANTN-M10 MM4500 | 1,1 | 0,14 | 0,15 | 0,24 |
| K1 | ONMU050410ANTN-M10 MK2050 | 1,8 | 0,22 | 0,24 | 0,38 |
| K2 | ONMU050410ANTN-M10 MK2050 | 1,8 | 0,20 | 0,22 | 0,34 |
| K3 | ONMU050410ANTN-M10 MK2050 | 1,8 | 0,20 | 0,22 | 0,34 |
| K4 | ONMU050410ANTN-M10 MK2050 | 1,8 | 0,20 | 0,22 | 0,34 |
| K5 | ONMU050410ANTN-M10 MK2050 | 1,8 | 0,18 | 0,20 | 0,30 |
| K6 | ONMU050410ANTN-M10 MK2050 | 1,8 | 0,20 | 0,22 | 0,34 |
| K7 | ONMU050410ANTN-M10 MK2050 | 1,8 | 0,18 | 0,20 | 0,30 |
| N1 | ONMU050410ANTN-ME10 F40M | 1,8 | 0,28 | 0,30 | 0,48 |
| N2 | ONMU050410ANTN-ME10 F40M | 1,8 | 0,28 | 0,30 | 0,48 |
| N3 | ONMU050410ANTN-ME10 F40M | 1,8 | 0,28 | 0,30 | 0,48 |
| N11 | ONMU050410ANTN-ME10 F40M | 1,8 | 0,28 | 0,30 | 0,48 |
| S1 | ONMU050410ANTN-ME10 F40M | 1,1 | 0,14 | 0,15 | 0,24 |
| S2 | ONMU050410ANTN-ME10 F40M | 1,1 | 0,14 | 0,15 | 0,24 |
| S3 | ONMU050410ANTN-ME10 F40M | 1,1 | 0,13 | 0,14 | 0,22 |
| S11 | ONMU050410ANTN-ME10 MS2050 | 1,3 | 0,16 | 0,18 | 0,28 |
| S12 | ONMU050410ANTN-ME10 MS2050 | 1,3 | 0,16 | 0,18 | 0,28 |
| S13 | ONMU050410ANTN-ME10 MS2050 | 1,1 | 0,14 | 0,15 | 0,24 |
| H5 | ONMU050410ANTN-M10 MP1500 | 1,4 | 0,14 | 0,15 | 0,22 |
| H8 | ONMU050410ANTN-M10 MP1500 | 1,3 | 0,11 | 0,11 | 0,18 |
| H11 | ONMU050410ANTN-M10 MP1500 | 1,4 | 0,14 | 0,15 | 0,22 |
| H12 | ONMU050410ANTN-M10 MP1500 | 1,3 | 0,11 | 0,11 | 0,18 |
| H21 | ONMU050410ANTN-M10 MP1500 | 1,3 | 0,11 | 0,11 | 0,18 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R220.48-05 – Cutting data $v_c =$ (m/min)

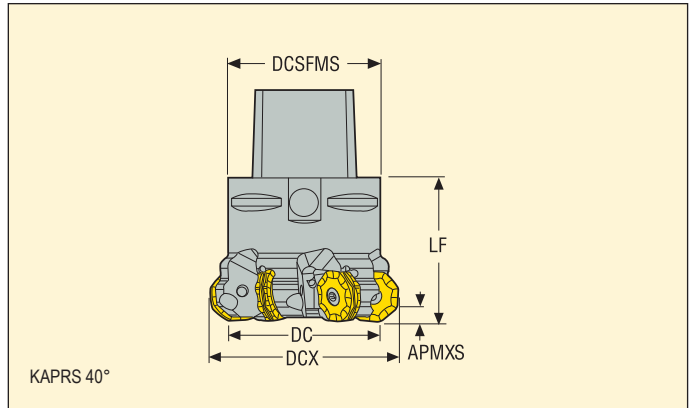
| SMG | MP1500 | | | MP2500 | | | MP3000 | | | T350M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 320 | 425 | 510 | 280 | 375 | 450 | 265 | 355 | 425 | 245 | 330 | 390 | 215 | 285 | 340 |
| P2 | 310 | 415 | 485 | 275 | 365 | 430 | 260 | 350 | 410 | 240 | 320 | 375 | 210 | 280 | 325 |
| P3 | 265 | 365 | 425 | 235 | 325 | 375 | 225 | 305 | 355 | 205 | 280 | 330 | 180 | 245 | 285 |
| P4 | 240 | 320 | 380 | 215 | 285 | 335 | 200 | 270 | 320 | 185 | 250 | 295 | 160 | 215 | 255 |
| P5 | 230 | 305 | 365 | 205 | 270 | 320 | 195 | 260 | 305 | 180 | 235 | 280 | 155 | 205 | 245 |
| P6 | 260 | 345 | 410 | 230 | 305 | 360 | 215 | 290 | 340 | 200 | 265 | 315 | 175 | 230 | 275 |
| P7 | 245 | 325 | 385 | 215 | 290 | 340 | 205 | 275 | 325 | 190 | 250 | 295 | 165 | 220 | 260 |
| P8 | 225 | 305 | 360 | 200 | 270 | 315 | 190 | 260 | 300 | 175 | 235 | 275 | 150 | 205 | 240 |
| P11 | 235 | 315 | 375 | 210 | 280 | 330 | 200 | 265 | 315 | 185 | 245 | 290 | 160 | 210 | 250 |
| P12 | 155 | 205 | 245 | 135 | 180 | 220 | 130 | 170 | 205 | 120 | 160 | 190 | 105 | 135 | 165 |
| M1 | — | — | — | 200 | 265 | 310 | 195 | 260 | 305 | 185 | 245 | 290 | 165 | 225 | 265 |
| M2 | — | — | — | 165 | 220 | 260 | 160 | 215 | 255 | 155 | 205 | 240 | 140 | 185 | 220 |
| M3 | — | — | — | 135 | 175 | 210 | 130 | 170 | 205 | 125 | 165 | 195 | 110 | 150 | 175 |
| M4 | — | — | — | 105 | 135 | 160 | 100 | 135 | 160 | 95 | 130 | 150 | 85 | 115 | 135 |
| M5 | — | — | — | 85 | 115 | 135 | 85 | 110 | 130 | 80 | 105 | 125 | 75 | 95 | 115 |
| K1 | 245 | 330 | 385 | 215 | 290 | 340 | 205 | 275 | 325 | — | — | — | 165 | 220 | 260 |
| K2 | 220 | 290 | 345 | 195 | 260 | 305 | 185 | 245 | 290 | — | — | — | 145 | 195 | 230 |
| K3 | 185 | 245 | 290 | 165 | 220 | 260 | 155 | 205 | 245 | — | — | — | 125 | 165 | 195 |
| K4 | 175 | 235 | 280 | 155 | 210 | 245 | 150 | 200 | 235 | — | — | — | 120 | 160 | 185 |
| K5 | 110 | 145 | 170 | 95 | 125 | 150 | 90 | 120 | 145 | — | — | — | 75 | 95 | 115 |
| K6 | 155 | 210 | 245 | 140 | 185 | 215 | 130 | 175 | 205 | — | — | — | 105 | 140 | 165 |
| K7 | 140 | 185 | 220 | 125 | 165 | 195 | 115 | 155 | 185 | — | — | — | 95 | 125 | 145 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1200 | 1625 | 1925 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 490 | 660 | 770 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 325 | 440 | 520 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 375 | 500 | 590 |
| S1 | — | — | — | — | — | — | 47 | 65 | 75 | 45 | 60 | 70 | 41 | 55 | 65 |
| S2 | — | — | — | — | — | — | 38 | 50 | 60 | 36 | 48 | 55 | 33 | 44 | 50 |
| S3 | — | — | — | — | — | — | 33 | 44 | 55 | 32 | 42 | 50 | 29 | 38 | 45 |
| S11 | — | — | — | — | — | — | 65 | 85 | 105 | 60 | 80 | 100 | 55 | 75 | 90 |
| S12 | — | — | — | — | — | — | 46 | 60 | 70 | 43 | 55 | 70 | 39 | 50 | 60 |
| S13 | — | — | — | — | — | — | 27 | 35 | 42 | 25 | 34 | 40 | 23 | 30 | 36 |
| H5 | 50 | 70 | 80 | 41 | 55 | 65 | 40 | 55 | 65 | 39 | 50 | 65 | 34 | 46 | 55 |
| H8 | 55 | 75 | 85 | 43 | 60 | 70 | 42 | 55 | 65 | 42 | 55 | 65 | 36 | 49 | 55 |
| H11 | 65 | 85 | 105 | 50 | 70 | 85 | 50 | 70 | 80 | 50 | 65 | 80 | 44 | 60 | 70 |
| H12 | 95 | 130 | 155 | 85 | 115 | 135 | 80 | 110 | 130 | 75 | 100 | 120 | 65 | 90 | 105 |
| H21 | 55 | 75 | 85 | 43 | 60 | 70 | 42 | 55 | 65 | 42 | 55 | 65 | 36 | 49 | 55 |

| SMG | MK1500 | | | MK2050 | | | MM4500 | | | MS2050 | | | MP2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | — | — | — | 275 | 370 | 445 | 175 | 230 | 275 | 235 | 315 | 375 | 275 | 370 | 440 |
| P2 | — | — | — | 270 | 360 | 425 | 170 | 225 | 265 | 230 | 305 | 360 | 270 | 360 | 425 |
| P3 | — | — | — | 230 | 320 | 370 | 145 | 200 | 230 | 195 | 270 | 315 | 230 | 320 | 370 |
| P4 | — | — | — | 210 | 280 | 330 | 130 | 175 | 205 | 180 | 240 | 280 | 210 | 280 | 330 |
| P5 | — | — | — | 200 | 270 | 315 | 125 | 165 | 200 | 170 | 225 | 270 | 200 | 265 | 315 |
| P6 | — | — | — | 225 | 300 | 355 | 140 | 190 | 220 | 190 | 255 | 300 | 225 | 300 | 355 |
| P7 | — | — | — | 215 | 285 | 335 | 135 | 175 | 210 | 180 | 240 | 285 | 210 | 285 | 335 |
| P8 | — | — | — | 195 | 270 | 310 | 120 | 165 | 195 | 165 | 225 | 265 | 195 | 265 | 310 |
| P11 | — | — | — | 205 | 275 | 325 | 130 | 170 | 205 | 175 | 235 | 275 | 205 | 275 | 325 |
| P12 | — | — | — | 135 | 180 | 215 | 85 | 110 | 135 | 115 | 150 | 180 | 135 | 180 | 215 |
| M1 | — | — | — | — | — | — | 145 | 195 | 225 | 185 | 245 | 290 | 195 | 260 | 305 |
| M2 | — | — | — | — | — | — | 120 | 160 | 190 | 155 | 205 | 240 | 160 | 215 | 255 |
| M3 | — | — | — | — | — | — | 95 | 130 | 150 | 125 | 165 | 195 | 130 | 170 | 205 |
| M4 | — | — | — | — | — | — | 75 | 100 | 120 | 95 | 130 | 150 | 100 | 135 | 160 |
| M5 | — | — | — | — | — | — | 65 | 85 | 100 | 80 | 105 | 125 | 85 | 110 | 130 |
| K1 | 310 | 410 | 485 | 290 | 390 | 460 | — | — | — | — | — | — | 215 | 285 | 335 |
| K2 | 275 | 365 | 435 | 260 | 345 | 410 | — | — | — | — | — | — | 190 | 255 | 300 |
| K3 | 230 | 310 | 365 | 220 | 295 | 345 | — | — | — | — | — | — | 160 | 215 | 255 |
| K4 | 220 | 295 | 350 | 210 | 280 | 330 | — | — | — | — | — | — | 155 | 205 | 240 |
| K5 | 135 | 180 | 215 | 130 | 170 | 205 | — | — | — | — | — | — | 95 | 125 | 150 |
| K6 | 195 | 260 | 310 | 185 | 245 | 290 | — | — | — | — | — | — | 135 | 180 | 215 |
| K7 | 175 | 230 | 275 | 165 | 220 | 260 | — | — | — | — | — | — | 120 | 160 | 190 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | — | — | — | 23 | 31 | 36 | 45 | 60 | 70 | 49 | 65 | 75 |
| S2 | — | — | — | — | — | — | 19 | 25 | 29 | 36 | 48 | 55 | 39 | 55 | 60 |
| S3 | — | — | — | — | — | — | 16 | 22 | 26 | 32 | 42 | 50 | 35 | 46 | 55 |
| S11 | — | — | — | — | — | — | 32 | 42 | 50 | 60 | 80 | 100 | 70 | 90 | 105 |
| S12 | — | — | — | — | — | — | 30 | 39 | 46 | 43 | 55 | 70 | 47 | 65 | 75 |
| S13 | — | — | — | — | — | — | 17 | 23 | 27 | 25 | 34 | 40 | 28 | 37 | 43 |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — | 40 | 55 | 65 |
| H8 | — | — | — | — | — | — | — | — | — | — | — | — | 42 | 55 | 65 |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — | 50 | 70 | 80 |
| H12 | — | — | — | — | — | — | — | — | — | — | — | — | 85 | 115 | 135 |
| H21 | — | — | — | — | — | — | — | — | — | — | — | — | 42 | 55 | 65 |

Double Octomill™ 217.48-09



- For insert selection and cutting data recommendations, see page(s) 181 - 182
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | Number of inserts | KG | Insert length | Insert |
|------------------------|------------------|------------------|-------|-------|--------|------|-------------------|-----|---------------|--------|
| | | APMXS | DCX | DC | DCSFMS | LF | | | | |
| C6-R217.48-063-09-05SA | Seco-Capto | 6,0 | 78,0 | 63,0 | 63,0 | 63,0 | 5 | 1,5 | 4900 | ON.U09 |
| C6-R217.48-063-09-06SA | Seco-Capto | 6,0 | 78,0 | 63,0 | 63,0 | 63,0 | 6 | 1,5 | 4900 | ON.U09 |
| C6-R217.48-080-09-06SA | Seco-Capto | 6,0 | 95,0 | 80,0 | 63,0 | 63,0 | 6 | 1,7 | 4400 | ON.U09 |
| C6-R217.48-080-09-07SA | Seco-Capto | 6,0 | 95,0 | 80,0 | 63,0 | 63,0 | 7 | 1,8 | 4400 | ON.U09 |
| C6-R217.48-100-09-07SA | Seco-Capto | 6,0 | 115,0 | 100,0 | 63,0 | 80,0 | 7 | 3,0 | 3900 | ON.U09 |
| C8-R217.48-100-09-07SA | Seco-Capto | 6,0 | 115,0 | 100,0 | 80,0 | 80,0 | 7 | 3,7 | 3900 | ON.U09 |
| C8-R217.48-100-09-08SA | Seco-Capto | 6,0 | 115,0 | 100,0 | 80,0 | 80,0 | 8 | 3,7 | 3900 | ON.U09 |
| | | | | | | | | | | |
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Spare Parts

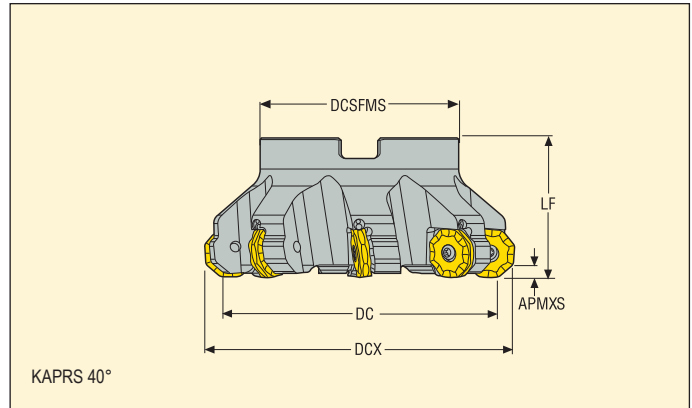
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------------|
| | | | | |
| C6-217.48-063-080 | DOUBLE-T | C05013-T20P | H6B-T20P | 6,0 |
| C6-C8-217.48-100 | DOUBLE-T | C05013-T20P | H6B-T20PL | 6,0 |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

Double Octomill™ 220.48-09



- For insert selection and cutting data recommendations, see page(s) 181 - 182
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|----------------------|------------------|------------------|-------|-------|--------|------|------|----|------|------|--------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.48-0063-09-05SA | Arbor | 6,0 | 78,0 | 63,0 | 47,0 | 22,0 | 40,0 | 5 | 0,5 | 4900 | ON.U09 |
| R220.48-0063-09-06SA | Arbor | 6,0 | 78,0 | 63,0 | 47,0 | 22,0 | 40,0 | 6 | 0,5 | 4900 | ON.U09 |
| R220.48-0080-09-06SA | Arbor | 6,0 | 95,0 | 80,0 | 62,0 | 27,0 | 50,0 | 6 | 1,0 | 4400 | ON.U09 |
| R220.48-0080-09-07SA | Arbor | 6,0 | 95,0 | 80,0 | 62,0 | 27,0 | 50,0 | 7 | 1,0 | 4400 | ON.U09 |
| R220.48-0100-09-08SA | Arbor | 6,0 | 115,0 | 100,0 | 77,0 | 32,0 | 50,0 | 8 | 1,6 | 3900 | ON.U09 |
| R220.48-0100-09-07SA | Arbor | 6,0 | 115,0 | 100,0 | 77,0 | 32,0 | 50,0 | 7 | 1,6 | 3900 | ON.U09 |
| R220.48-0125-09-08SA | Arbor | 6,0 | 140,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 2,9 | 3500 | ON.U09 |
| R220.48-0125-09-10SA | Arbor | 6,0 | 140,0 | 125,0 | 90,0 | 40,0 | 63,0 | 10 | 3,0 | 3500 | ON.U09 |
| R220.48-8160-09-12S | Arbor | 6,0 | 175,0 | 160,0 | 90,0 | 40,0 | 63,0 | 12 | 4,4 | 3100 | ON.U09 |
| R220.48-8160-09-10S | Arbor | 6,0 | 175,0 | 160,0 | 90,0 | 40,0 | 63,0 | 10 | 4,2 | 3100 | ON.U09 |
| R220.48-8200-09-12S | Arbor | 6,0 | 215,0 | 200,0 | 130,0 | 60,0 | 63,0 | 12 | 5,4 | 2700 | ON.U09 |
| R220.48-8250-09-16S | Arbor | 6,0 | 265,0 | 250,0 | 130,0 | 60,0 | 63,0 | 16 | 13,0 | 2500 | ON.U09 |
| R220.48-8315-09-20S | Arbor | 6,0 | 330,0 | 315,0 | 225,0 | 60,0 | 80,0 | 20 | 27,0 | 2200 | ON.U09 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

Spare Parts

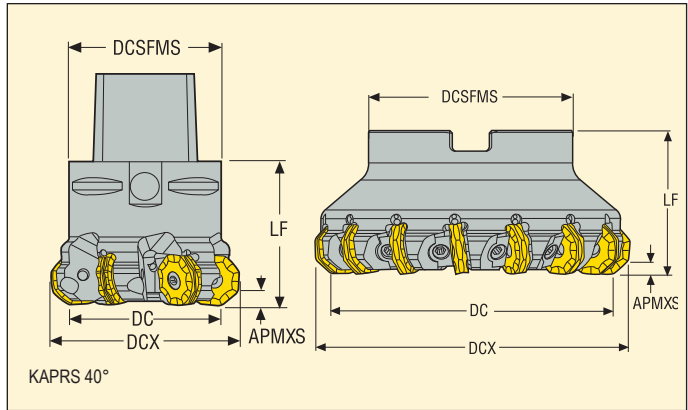
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.48-0063 | DOUBLE-T | C05013-T20P | H6B-T20P | 220.17-692 | 6,0 |
| R220.48-0080 | DOUBLE-T | C05013-T20P | H6B-T20P | - | 6,0 |
| R220.48-0100-8315 | DOUBLE-T | C05013-T20P | H6B-T20PL | - | 6,0 |
| | | | | | |
| | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

Double Octomill™ 217.48-09



- For insert selection and cutting data recommendations, see page(s) 181 - 182
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|-----------------------|------------------|------------------|-------|-------|--------|------|------|----|------|------|--------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| C6-R217.48-080-09-09M | Seco-Capto | 6,0 | 95,0 | 80,0 | 63,0 | – | 63,0 | 9 | 2,3 | 4400 | ON.U09 |
| R220.48-0080-09-09M | Arbor | 6,0 | 95,0 | 80,0 | 62,0 | 27,0 | 50,0 | 9 | 1,2 | 4400 | ON.U09 |
| C8-R217.48-100-09-12M | Seco-Capto | 6,0 | 115,0 | 100,0 | 80,0 | – | 80,0 | 12 | 4,5 | 3900 | ON.U09 |
| R220.48-0100-09-12M | Arbor | 6,0 | 115,0 | 100,0 | 77,0 | 32,0 | 50,0 | 12 | 1,9 | 3900 | ON.U09 |
| R220.48-0125-09-15M | Arbor | 6,0 | 140,0 | 125,0 | 90,0 | 40,0 | 63,0 | 15 | 3,4 | 3500 | ON.U09 |
| R220.48-8160-09-20M | Arbor | 6,0 | 175,0 | 160,0 | 90,0 | 40,0 | 63,0 | 20 | 4,8 | 3100 | ON.U09 |
| R220.48-8200-09-24M | Arbor | 6,0 | 215,0 | 200,0 | 130,0 | 60,0 | 63,0 | 24 | 6,0 | 2700 | ON.U09 |
| R220.48-8200-09-28M | Arbor | 6,0 | 215,0 | 200,0 | 130,0 | 60,0 | 63,0 | 28 | 5,9 | 2700 | ON.U09 |
| R220.48-8250-09-30M | Arbor | 6,0 | 265,0 | 250,0 | 130,0 | 60,0 | 63,0 | 30 | 14,1 | 2500 | ON.U09 |
| R220.48-8315-09-40M | Arbor | 6,0 | 330,0 | 315,0 | 225,0 | 60,0 | 80,0 | 40 | 28,6 | 2200 | ON.U09 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
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Spare Parts

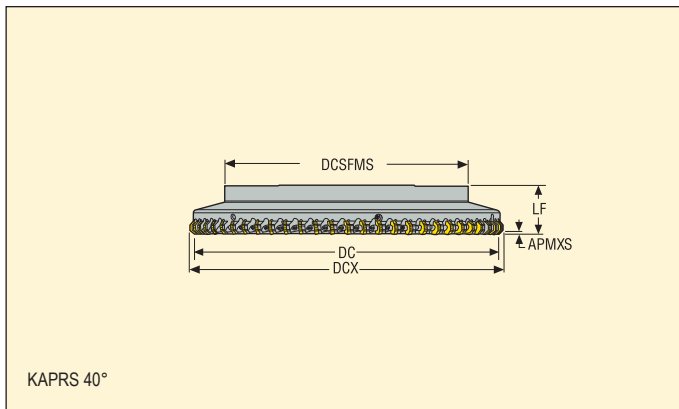
| For cutter | Wedge kit | Key (T-handle) | Insert key | Torque value (Nm) |
|-----------------|------------|----------------|------------|-------------------|
| | | | | |
| C6-C8-217.48..M | CW0816-RHA | DOUBLE-T | H6B-T20P | 6,0 |
| R220.48-09M | CW0816-RHA | DOUBLE-T | H6B-T20P | 6,0 |
| C6-C8-217.48..M | CW0816-RHA | DOUBLE-T | H6B-T20PL | 6,0 |
| R220.48-09M | CW0816-RHA | DOUBLE-T | H6B-T20PL | 6,0 |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

Double Octomill™ 220.48-09 CAP



- For insert selection and cutting data recommendations, see page(s) 181 - 182
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | Support body Part no. | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|------|-----------------------|----|------|------|----------|
| | | APMXS | DCX | DC | DCSFMS | LF | | | | | |
| R220.48-9250-09-30M | Arbor | 6,0 | 265,0 | 250,0 | 220,0 | 63,0 | 260-425M-1 | 30 | 9,2 | 2500 | ON.U09.. |
| R220.48-9315-09-40M | Arbor | 6,0 | 330,0 | 315,0 | 285,0 | 63,0 | 260-431M-1 | 40 | 13,2 | 2200 | ON.U09.. |
| R220.48-9315-09-50M | Arbor | 6,0 | 330,0 | 315,0 | 285,0 | 63,0 | 260-431M-1 | 50 | 17,7 | 2200 | ON.U09.. |
| R220.48-9355-09-50M | Arbor | 6,0 | 370,0 | 355,0 | 285,0 | 63,0 | 260-435M-1 | 50 | 15,1 | 2000 | ON.U09.. |
| R220.48-9400-09-50M | Arbor | 6,0 | 415,0 | 400,0 | 370,0 | 63,0 | 260-440M-1 | 50 | 18,6 | 1900 | ON.U09.. |
| R220.48-9500-09-60M | Arbor | 6,0 | 515,0 | 500,0 | 470,0 | 63,0 | 260-450M-1 | 60 | 33,7 | 1700 | ON.U09.. |
| | | | | | | | | | | | |
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Spare Parts

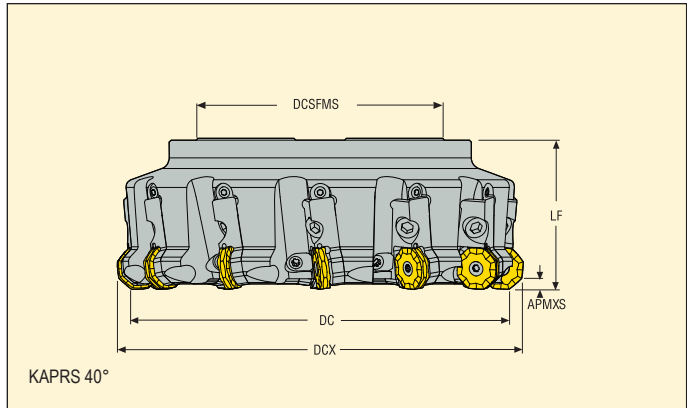
| For cutter | Wedge kit | Key (T-handle) | Insert key | Torque value (Nm) |
|-------------|------------|----------------|------------|-------------------|
| | | | | |
| R220.48-... | CW0816-RHA | DOUBLE-T | H6B-T20P | 6,0 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

Double Octomill™ 220.48-09CS



- For insert selection and cutting data recommendations, see page(s) 181 - 182
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|----------------------|------------------|------------------|-------|-------|--------|------|------|----|------|------|--------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.48-0125-09-08CS | Arbor | 6,0 | 140,0 | 125,0 | 90,0 | 40,0 | 80,0 | 8 | 4,9 | 3500 | ON.U09 |
| L220.48-0125-09-08CS | Arbor | 6,0 | 140,0 | 125,0 | 90,0 | 40,0 | 80,0 | 8 | 4,9 | 3500 | ON.U09 |
| R220.48-8160-09-10CS | Arbor | 6,0 | 175,0 | 160,0 | 130,0 | 40,0 | 80,0 | 10 | 7,6 | 3100 | ON.U09 |
| L220.48-8160-09-10CS | Arbor | 6,0 | 175,0 | 160,0 | 130,0 | 40,0 | 80,0 | 10 | 7,6 | 3100 | ON.U09 |
| R220.48-8200-09-12CS | Arbor | 6,0 | 215,0 | 200,0 | 160,0 | 60,0 | 80,0 | 12 | 10,5 | 2700 | ON.U09 |
| L220.48-8200-09-12CS | Arbor | 6,0 | 215,0 | 200,0 | 160,0 | 60,0 | 80,0 | 12 | 10,5 | 2700 | ON.U09 |
| R220.48-8250-09-16CS | Arbor | 6,0 | 265,0 | 250,0 | 200,0 | 60,0 | 80,0 | 16 | 19,6 | 2500 | ON.U09 |
| L220.48-8250-09-16CS | Arbor | 6,0 | 265,0 | 250,0 | 200,0 | 60,0 | 80,0 | 16 | 19,6 | 2500 | ON.U09 |
| R220.48-8315-09-20CS | Arbor | 6,0 | 330,0 | 315,0 | 270,0 | 60,0 | 80,0 | 20 | 35,5 | 2200 | ON.U09 |

Spare Parts

| For cutter | Wedge screw | Wedge clamp | Setting gauge | Key (T-handle) | Insert screw | Insert key | Cassette screw | Cassette (R) | Cassette (L) | Torque value (Nm) |
|------------|-------------|-------------|---------------|----------------|--------------|------------|----------------|--------------|--------------|-------------------|
| R220.48 | LD8020-T25P | CW0810 | AU1114T-T15P | DOUBLE-T | C05013-T20P | H6B-T20PL | FS98030 | ON09AR | - | 6,0 |
| L220.48 | LD8020-T25P | CW0810 | AU1114T-T15P | DOUBLE-T | C05013-T20P | H6B-T20PL | FS98030 | - | ON09AL | 6,0 |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.48-09 – Insert selection

| SMG | | a_p | f_z | | |
|-----|----------------------------|-------|-------|------|------|
| | | | 100% | 30% | 10% |
| P1 | ONMU090520ANTN-M12 MP2500 | 3,5 | 0,26 | 0,28 | 0,44 |
| P2 | ONMU090520ANTN-M12 MP2500 | 3,5 | 0,26 | 0,30 | 0,44 |
| P3 | ONMU090520ANTN-M12 MP2500 | 3,5 | 0,26 | 0,28 | 0,42 |
| P4 | ONMU090520ANTN-M12 MP2500 | 3,5 | 0,24 | 0,28 | 0,42 |
| P5 | ONMU090520ANTN-M12 MP2500 | 3,5 | 0,24 | 0,26 | 0,40 |
| P6 | ONMU090520ANTN-M12 MP2500 | 3,5 | 0,24 | 0,26 | 0,40 |
| P7 | ONMU090520ANTN-M12 MP2500 | 3,5 | 0,24 | 0,26 | 0,40 |
| P8 | ONMU090520ANTN-M12 T350M | 3,5 | 0,26 | 0,28 | 0,42 |
| P11 | ONMU090520ANTN-M12 T350M | 3,5 | 0,24 | 0,26 | 0,40 |
| P12 | ONMU090520ANTN-M12 T350M | 3,0 | 0,17 | 0,18 | 0,28 |
| M1 | ONMU090520ANTN-ME12 F40M | 3,5 | 0,26 | 0,30 | 0,44 |
| M2 | ONMU090520ANTN-ME12 F40M | 3,5 | 0,24 | 0,26 | 0,40 |
| M3 | ONMU090520ANTN-ME12 F40M | 3,0 | 0,19 | 0,22 | 0,32 |
| M4 | ONMU090520ANTN-ME12 T350M | 2,0 | 0,17 | 0,19 | 0,28 |
| M5 | ONMU090520ANTN-ME12 MM4500 | 2,0 | 0,17 | 0,19 | 0,28 |
| K1 | ONMU090520ANTN-M14 MK2050 | 3,5 | 0,32 | 0,34 | 0,50 |
| K2 | ONMU090520ANTN-M14 MK2050 | 3,5 | 0,28 | 0,30 | 0,48 |
| K3 | ONMU090520ANTN-M14 MK2050 | 3,5 | 0,28 | 0,30 | 0,48 |
| K4 | ONMU090520ANTN-M14 MK2050 | 3,5 | 0,28 | 0,30 | 0,48 |
| K5 | ONMU090520ANTN-M14 MK2050 | 3,5 | 0,26 | 0,28 | 0,42 |
| K6 | ONMU090520ANTN-M14 MK2050 | 3,5 | 0,28 | 0,30 | 0,48 |
| K7 | ONMU090520ANTN-M14 MK2050 | 3,5 | 0,26 | 0,28 | 0,42 |
| N1 | ONMU090520ANTN-ME12 F40M | 3,5 | 0,34 | 0,38 | 0,55 |
| N2 | ONMU090520ANTN-ME12 F40M | 3,5 | 0,34 | 0,38 | 0,55 |
| N3 | ONMU090520ANTN-ME12 F40M | 3,5 | 0,34 | 0,38 | 0,55 |
| N11 | ONMU090520ANTN-ME12 F40M | 3,5 | 0,34 | 0,38 | 0,55 |
| S1 | ONMU090520ANTN-ME12 MS2500 | 2,0 | 0,17 | 0,19 | 0,28 |
| S2 | ONMU090520ANTN-ME12 MS2500 | 2,0 | 0,17 | 0,19 | 0,28 |
| S3 | ONMU090520ANTN-ME12 MS2500 | 2,0 | 0,16 | 0,17 | 0,26 |
| S11 | ONMU090520ANTN-ME12 MS2050 | 2,5 | 0,19 | 0,22 | 0,32 |
| S12 | ONMU090520ANTN-ME12 MS2050 | 2,5 | 0,19 | 0,22 | 0,32 |
| S13 | ONMU090520ANTN-ME12 MS2050 | 2,0 | 0,17 | 0,19 | 0,28 |
| H5 | ONMU090520ANTN-MD16 MP1500 | 3,0 | 0,22 | 0,24 | 0,36 |
| H8 | ONMU090520ANTN-MD16 MP1500 | 2,5 | 0,17 | 0,18 | 0,28 |
| H11 | ONMU090520ANTN-MD16 MP1500 | 3,0 | 0,22 | 0,24 | 0,36 |
| H12 | ONMU090520ANTN-MD16 MP1500 | 2,5 | 0,17 | 0,18 | 0,28 |
| H21 | ONMU090520ANTN-MD16 MP1500 | 2,5 | 0,17 | 0,18 | 0,28 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

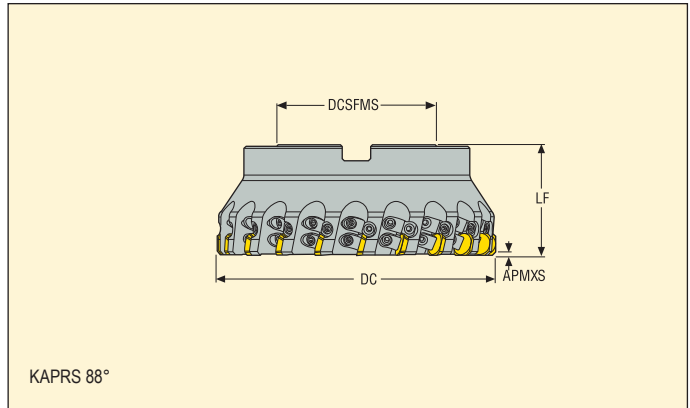
All cutting data are start values

R220.48-09 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | MP3000 | | | F40M | | | MK1500 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|------|------|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 280 | 380 | 455 | 250 | 335 | 405 | 235 | 315 | 380 | 185 | 250 | 295 | — | — | — |
| P2 | 270 | 370 | 445 | 240 | 325 | 390 | 225 | 310 | 370 | 175 | 245 | 290 | — | — | — |
| P3 | 235 | 325 | 380 | 210 | 285 | 340 | 200 | 270 | 320 | 155 | 215 | 250 | — | — | — |
| P4 | 210 | 285 | 340 | 190 | 250 | 300 | 180 | 240 | 285 | 140 | 185 | 225 | — | — | — |
| P5 | 205 | 275 | 325 | 180 | 245 | 285 | 170 | 230 | 270 | 135 | 180 | 215 | — | — | — |
| P6 | 230 | 310 | 365 | 200 | 275 | 325 | 190 | 260 | 305 | 150 | 205 | 240 | — | — | — |
| P7 | 215 | 295 | 345 | 190 | 260 | 305 | 180 | 245 | 290 | 140 | 195 | 230 | — | — | — |
| P8 | 200 | 270 | 320 | 175 | 240 | 285 | 165 | 230 | 270 | 130 | 180 | 210 | — | — | — |
| P11 | 210 | 285 | 335 | 185 | 250 | 295 | 175 | 240 | 280 | 135 | 185 | 220 | — | — | — |
| P12 | 140 | 180 | 220 | 120 | 160 | 195 | 115 | 150 | 185 | 90 | 120 | 145 | — | — | — |
| M1 | — | — | — | 170 | 235 | 285 | 170 | 230 | 280 | 140 | 195 | 235 | — | — | — |
| M2 | — | — | — | 145 | 195 | 230 | 140 | 195 | 225 | 120 | 160 | 195 | — | — | — |
| M3 | — | — | — | 120 | 160 | 190 | 115 | 155 | 185 | 100 | 130 | 155 | — | — | — |
| M4 | — | — | — | 90 | 120 | 145 | 90 | 120 | 145 | 75 | 100 | 120 | — | — | — |
| M5 | — | — | — | 75 | 100 | 120 | 75 | 100 | 120 | 60 | 85 | 100 | — | — | — |
| K1 | 215 | 290 | 350 | 190 | 260 | 310 | 180 | 245 | 295 | 140 | 190 | 230 | 265 | 365 | 440 |
| K2 | 195 | 265 | 310 | 170 | 235 | 275 | 160 | 220 | 260 | 125 | 170 | 205 | 240 | 330 | 385 |
| K3 | 165 | 220 | 260 | 145 | 195 | 230 | 135 | 185 | 220 | 105 | 145 | 175 | 205 | 280 | 325 |
| K4 | 155 | 210 | 250 | 140 | 190 | 220 | 130 | 180 | 210 | 100 | 135 | 165 | 195 | 265 | 310 |
| K5 | 95 | 130 | 155 | 85 | 115 | 135 | 80 | 110 | 130 | 60 | 85 | 100 | 120 | 160 | 195 |
| K6 | 135 | 185 | 220 | 120 | 165 | 195 | 115 | 155 | 185 | 90 | 120 | 145 | 170 | 235 | 275 |
| K7 | 120 | 165 | 195 | 105 | 145 | 175 | 100 | 140 | 165 | 80 | 110 | 130 | 150 | 205 | 245 |
| N1 | — | — | — | — | — | — | — | — | — | 1025 | 1400 | 1675 | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | 415 | 570 | 680 | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | 280 | 380 | 450 | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | 315 | 430 | 520 | — | — | — |
| S1 | — | — | — | — | — | — | 41 | 55 | 65 | 35 | 47 | 55 | — | — | — |
| S2 | — | — | — | — | — | — | 33 | 45 | 55 | 28 | 38 | 46 | — | — | — |
| S3 | — | — | — | — | — | — | 30 | 39 | 48 | 25 | 33 | 40 | — | — | — |
| S11 | — | — | — | — | — | — | 60 | 80 | 95 | 49 | 65 | 80 | — | — | — |
| S12 | — | — | — | — | — | — | 40 | 55 | 65 | 34 | 46 | 55 | — | — | — |
| S13 | — | — | — | — | — | — | 23 | 31 | 38 | 20 | 26 | 32 | — | — | — |
| H5 | 46 | 60 | 75 | 37 | 49 | 60 | 36 | 47 | 60 | 30 | 40 | 48 | — | — | — |
| H8 | 49 | 65 | 80 | 39 | 55 | 65 | 38 | 50 | 60 | 32 | 43 | 50 | — | — | — |
| H11 | 60 | 75 | 95 | 47 | 60 | 75 | 46 | 60 | 75 | 39 | 50 | 60 | — | — | — |
| H12 | 85 | 120 | 140 | 75 | 105 | 125 | 75 | 100 | 120 | 60 | 80 | 95 | — | — | — |
| H21 | 49 | 65 | 80 | 39 | 55 | 65 | 38 | 50 | 60 | 32 | 43 | 50 | — | — | — |

| SMG | MK2050 | | | MM4500 | | | MS2050 | | | MS2500 | | | MP2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 245 | 330 | 395 | 165 | 225 | 265 | 225 | 305 | 360 | 290 | 385 | 460 | 265 | 360 | 425 |
| P2 | 235 | 320 | 385 | 160 | 215 | 260 | 220 | 295 | 350 | 280 | 375 | 450 | 260 | 345 | 415 |
| P3 | 205 | 280 | 335 | 140 | 190 | 225 | 190 | 255 | 305 | 240 | 330 | 390 | 225 | 305 | 360 |
| P4 | 185 | 250 | 295 | 125 | 165 | 200 | 170 | 225 | 270 | 220 | 290 | 350 | 200 | 265 | 320 |
| P5 | 175 | 240 | 285 | 120 | 165 | 195 | 165 | 220 | 260 | 210 | 285 | 335 | 190 | 260 | 310 |
| P6 | 200 | 270 | 320 | 135 | 185 | 215 | 185 | 250 | 295 | 235 | 320 | 375 | 215 | 290 | 345 |
| P7 | 185 | 255 | 300 | 125 | 170 | 205 | 175 | 235 | 275 | 220 | 300 | 355 | 205 | 275 | 325 |
| P8 | 175 | 235 | 280 | 115 | 160 | 190 | 160 | 215 | 260 | 205 | 275 | 330 | 185 | 255 | 305 |
| P11 | 180 | 250 | 290 | 125 | 170 | 200 | 170 | 225 | 270 | 215 | 290 | 345 | 195 | 270 | 320 |
| P12 | 120 | 160 | 195 | 80 | 110 | 130 | 110 | 145 | 175 | 140 | 185 | 225 | 130 | 175 | 205 |
| M1 | — | — | — | 140 | 185 | 225 | 175 | 235 | 285 | 200 | 270 | 320 | 185 | 245 | 295 |
| M2 | — | — | — | 115 | 155 | 185 | 145 | 200 | 235 | 165 | 225 | 265 | 155 | 210 | 245 |
| M3 | — | — | — | 95 | 125 | 150 | 120 | 155 | 190 | 135 | 185 | 215 | 125 | 165 | 200 |
| M4 | — | — | — | 70 | 95 | 115 | 90 | 120 | 150 | 105 | 140 | 170 | 95 | 125 | 155 |
| M5 | — | — | — | 60 | 80 | 95 | 75 | 100 | 125 | 85 | 115 | 140 | 80 | 105 | 130 |
| K1 | 255 | 345 | 415 | — | — | — | — | — | — | — | — | — | 205 | 275 | 330 |
| K2 | 230 | 310 | 365 | — | — | — | — | — | — | — | — | — | 180 | 245 | 295 |
| K3 | 195 | 265 | 310 | — | — | — | — | — | — | — | — | — | 155 | 210 | 250 |
| K4 | 185 | 250 | 295 | — | — | — | — | — | — | — | — | — | 145 | 200 | 235 |
| K5 | 115 | 155 | 185 | — | — | — | — | — | — | — | — | — | 90 | 120 | 145 |
| K6 | 165 | 220 | 260 | — | — | — | — | — | — | — | — | — | 130 | 175 | 210 |
| K7 | 145 | 195 | 235 | — | — | — | — | — | — | — | — | — | 115 | 155 | 185 |
| S1 | — | — | — | 22 | 29 | 36 | 43 | 55 | 70 | 50 | 70 | 85 | 47 | 60 | 75 |
| S2 | — | — | — | 18 | 23 | 29 | 34 | 46 | 55 | 41 | 55 | 65 | 38 | 50 | 60 |
| S3 | — | — | — | 15 | 21 | 25 | 30 | 41 | 49 | 36 | 48 | 60 | 33 | 44 | 55 |
| S11 | — | — | — | 31 | 41 | 50 | 60 | 80 | 95 | 70 | 95 | 115 | 65 | 85 | 105 |
| S12 | — | — | — | 28 | 38 | 46 | 42 | 55 | 65 | 49 | 65 | 80 | 46 | 60 | 75 |
| S13 | — | — | — | 16 | 22 | 27 | 24 | 32 | 39 | 29 | 38 | 47 | 26 | 35 | 43 |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — | 38 | 50 | 60 |
| H8 | — | — | — | — | — | — | — | — | — | — | — | — | 41 | 55 | 65 |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — | 49 | 65 | 80 |
| H12 | — | — | — | — | — | — | — | — | — | — | — | — | 80 | 110 | 130 |
| H21 | — | — | — | — | — | — | — | — | — | — | — | — | 41 | 55 | 65 |

220.30-12ST



- For insert selection and cutting data recommendations, see page(s) 187
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | Insert |
|-------------------|------------------|------------------|-------|--------|------|------|----|-----|------|------------|
| | | APMXS | DC | DCSFMS | DCB | LF | | | | |
| R220.30-0080-12ST | Arbor | 1,0 | 80,0 | 56,0 | 27,0 | 50,0 | 9 | 1,2 | 5300 | SEEX1203.. |
| R220.30-8160-12ST | Arbor | 1,0 | 160,0 | 90,0 | 40,0 | 63,0 | 20 | 5,1 | 3800 | SEEX1203.. |
| R220.30-8200-12ST | Arbor | 1,0 | 200,0 | 130,0 | 60,0 | 63,0 | 25 | 7,2 | 3300 | SEEX1203.. |
| | | | | | | | | | | |
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Spare Parts

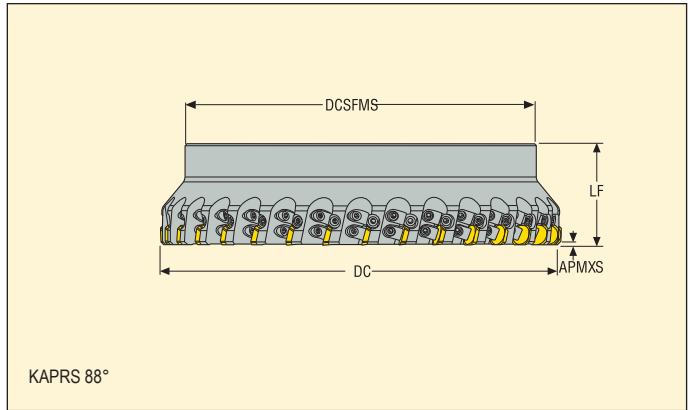
| For cutter | Wedge screw | Setting screw | Setting gauge | Key | Insert wedge | Arbor screw | Torque value (Nm) |
|-------------------|--------------|---------------|---------------|----------|--------------|-------------|-------------------|
| | | | | | | | |
| R220.30-0080 | LD6018T-T15P | LD6019-T15P | AS6011 | T15P-4ST | CW0608 | MC6S12X40 | 3,5 |
| R220.30-8160-8200 | LD6018T-T15P | LD6019-T15P | AS6011 | T15P-4ST | CW0608 | - | 3,5 |
| | | | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

220.30-12ST CAP



- For insert selection and cutting data recommendations, see page(s) 187
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | Support body Part no. | | | | Insert |
|-------------------|------------------|------------------|-------|--------|------|-----------------------|----|------|------|------------|
| | | APMXS | DC | DCSFMS | LF | | | | | |
| R220.30-9250-12ST | Arbor | 1,0 | 250,0 | 220,0 | 63,0 | 260-425M-1 | 32 | 9,2 | 3000 | SEEX1203.. |
| R220.30-9355-12ST | Arbor | 1,0 | 355,0 | 285,0 | 63,0 | 260-435M-1 | 44 | 15,9 | 2500 | SEEX1203.. |
| | | | | | | | | | | |
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Spare Parts

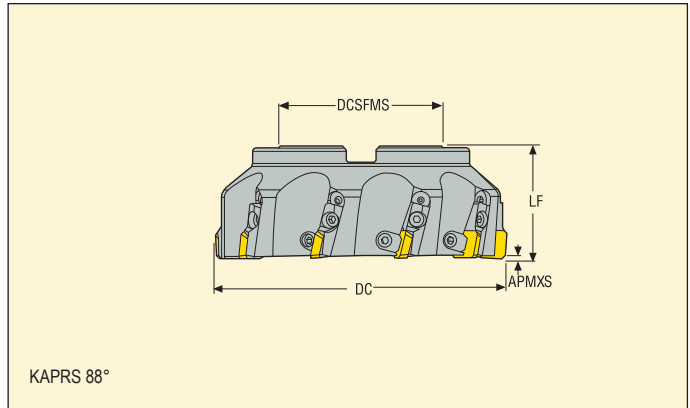
| For cutter | Wedge screw | Setting screw | Setting gauge | Key | Insert wedge | Torque value (Nm) |
|-------------------|--------------|---------------|---------------|----------|--------------|-------------------|
| | | | | | | |
| R220.30-9250-9355 | LD6018T-T15P | LD6019-T15P | AS6011 | T15P-4ST | CW0608 | 3,5 |
| | | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

220.30-12C



- For insert selection and cutting data recommendations, see page(s) 187
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | Insert |
|------------------|------------------|------------------|-------|--------|------|------|----|-----|------|--------------|
| | | APMX | DC | DCSFMS | DCB | LF | | | | |
| R220.30-0080-12C | Arbor | 1,0 | 80,0 | 56,0 | 27,0 | 50,0 | 5 | 1,1 | 4800 | SEEX1203AFTN |
| R220.30-0100-12C | Arbor | 1,0 | 100,0 | 77,0 | 32,0 | 50,0 | 6 | 1,8 | 4300 | SEEX1203AFTN |
| R220.30-0125-12C | Arbor | 1,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 3,0 | 3800 | SEEX1203AFTN |
| R220.30-8160-12C | Arbor | 1,0 | 160,0 | 90,0 | 40,0 | 63,0 | 10 | 5,5 | 3300 | SEEX1203AFTN |
| R220.30-8200-12C | Arbor | 1,0 | 200,0 | 130,0 | 60,0 | 63,0 | 12 | 8,0 | 3000 | SEEX1203AFTN |
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Spare Parts

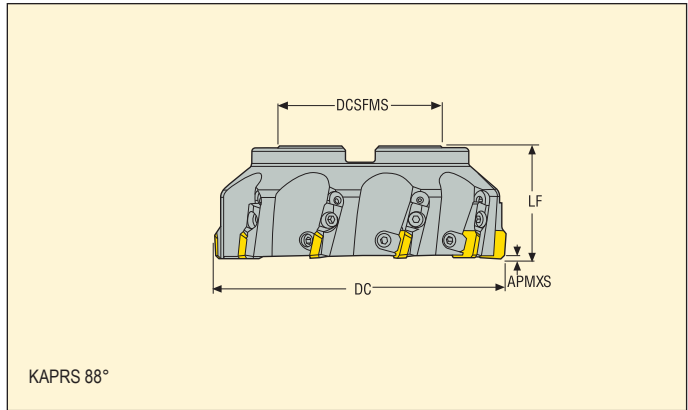
| For cutter | Wedge screw | Setting gauge | Key | Insert wedge | Cassette screw | Cassette | Arbor screw | Torque value (Nm) |
|-------------------|-------------|---------------|-------|--------------|----------------|----------|-------------|-------------------|
| | | | | | | | | |
| R220.30-0080 | 268-650 | AU1114T-T15P | H04-4 | CW0810 | FS95018 | SE12PRC | MF6S12X45 | 3,5 |
| R220.30-0100 | 268-650 | AU1114T-T15P | H04-4 | CW0810 | FS95018 | SE12PRC | 220.17-694 | 3,5 |
| R220.30-0125-8250 | 268-650 | AU1114T-T15P | H04-4 | CW0810 | FS95018 | SE12PRC | - | 3,5 |
| | | | | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

220.30-12C



- For insert selection and cutting data recommendations, see page(s) 187
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | Holes | KG | Inserts | Insert |
|-------------------|------------------|------------------|-------|--------|------|------|-------|------|---------|--------------|
| | | APMX | DC | DCSFMS | DCB | LF | | | | |
| R220.30-0080-12CT | Arbor | 1,0 | 80,0 | 56,0 | 27,0 | 50,0 | 6 | 1,1 | 4800 | SEEX1203AFTN |
| R220.30-0100-12CT | Arbor | 1,0 | 100,0 | 77,0 | 32,0 | 50,0 | 8 | 1,8 | 4300 | SEEX1203AFTN |
| R220.30-0125-12CT | Arbor | 1,0 | 125,0 | 90,0 | 40,0 | 63,0 | 10 | 3,3 | 3800 | SEEX1203AFTN |
| R220.30-8250-12CT | Arbor | 1,0 | 250,0 | 130,0 | 60,0 | 63,0 | 22 | 16,5 | 2700 | SEEX1203AFTN |
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Spare Parts

| For cutter | Wedge screw | Setting gauge | Key | Insert wedge | Cassette screw | Cassette | Arbor screw | Torque value (Nm) |
|-------------------|-------------|---------------|-------|--------------|----------------|----------|-------------|-------------------|
| | | | | | | | | |
| R220.30-0080 | 268-650 | AU1114T-T15P | H04-4 | 334.5-640 | FS95018 | SE12PRC | MF6S12X45 | 3,5 |
| R220.30-0100 | 268-650 | AU1114T-T15P | H04-4 | 334.5-640 | FS95018 | SE12PRC | 220.17-694 | 3,5 |
| R220.30-0125-8250 | 268-650 | AU1114T-T15P | H04-4 | 334.5-640 | FS95018 | SE12PRC | - | 3,5 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Please check availability in current price and stock-list

Torque keys, see page 732

220.30-12 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|------|------|
| | | | 100% | 30% | 10% |
| P1 | SEEX1203AFTN-M13 T350M | 0,60 | 0,18 | 0,20 | 0,30 |
| P2 | SEEX1203AFTN-M13 T350M | 0,60 | 0,19 | 0,20 | 0,32 |
| P3 | SEEX1203AFTN-M13 T350M | 0,60 | 0,18 | 0,19 | 0,30 |
| P4 | SEEX1203AFTN-M13 T350M | 0,60 | 0,17 | 0,19 | 0,28 |
| P5 | SEEX1203AFTN-M13 T350M | 0,60 | 0,17 | 0,18 | 0,28 |
| P6 | SEEX1203AFTN-M13 T350M | 0,60 | 0,17 | 0,18 | 0,28 |
| P7 | SEEX1203AFTN-M13 T350M | 0,60 | 0,17 | 0,18 | 0,28 |
| P8 | SEEX1203AFTN-M13 T350M | 0,60 | 0,18 | 0,19 | 0,30 |
| P11 | SEEX1203AFTN-M13 T350M | 0,60 | 0,17 | 0,18 | 0,28 |
| P12 | SEEX1203AFTN-M13 T350M | 0,48 | 0,11 | 0,13 | 0,19 |
| M1 | SEEX1203AFTN-M13 T350M | 0,60 | 0,19 | 0,20 | 0,32 |
| M2 | SEEX1203AFTN-M13 T350M | 0,60 | 0,17 | 0,18 | 0,28 |
| M3 | SEEX1203AFTN-M13 T350M | 0,48 | 0,14 | 0,15 | 0,22 |
| M4 | SEEX1203AFTN-M13 T350M | 0,36 | 0,12 | 0,13 | 0,20 |
| M5 | SEEX1203AFTN-M13 T350M | 0,36 | 0,12 | 0,13 | 0,20 |
| K1 | SEEX1203AFTN-MD14 MH1000 | 0,60 | 0,20 | 0,22 | 0,34 |
| K2 | SEEX1203AFTN-MD14 MH1000 | 0,60 | 0,18 | 0,20 | 0,30 |
| K3 | SEEX1203AFTN-MD14 MH1000 | 0,60 | 0,18 | 0,20 | 0,30 |
| K4 | SEEX1203AFTN-MD14 MH1000 | 0,60 | 0,18 | 0,20 | 0,30 |
| K5 | SEEX1203AFTN-MD14 MH1000 | 0,60 | 0,16 | 0,18 | 0,28 |
| K6 | SEEX1203AFTN-MD14 MH1000 | 0,60 | 0,18 | 0,20 | 0,30 |
| K7 | SEEX1203AFTN-MD14 MH1000 | 0,60 | 0,16 | 0,18 | 0,28 |
| H5 | SEEX1203AFTN-MD14 F15M | 0,48 | 0,12 | 0,14 | 0,20 |
| H8 | SEEX1203AFTN-MD14 F15M | 0,42 | 0,095 | 0,10 | 0,16 |
| H11 | SEEX1203AFTN-MD14 F15M | 0,48 | 0,12 | 0,14 | 0,20 |
| H12 | SEEX1203AFTN-MD14 F15M | 0,42 | 0,095 | 0,10 | 0,16 |
| H21 | SEEX1203AFTN-MD14 F15M | 0,42 | 0,095 | 0,10 | 0,16 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

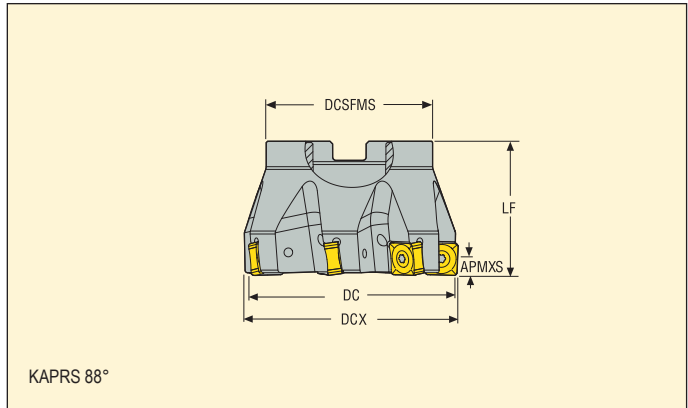
220.30-12 – Cutting data v_c = (m/min)

| SMG | T350M | | | F15M | | | MK1500 | | | MH1000 | | | H15 | | |
|-----|-------|-----|-----|------|-----|-----|--------|-----|-----|--------|-----|-----|------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 210 | 275 | 330 | — | — | — | — | — | — | — | — | — | — | — | — |
| P2 | 200 | 270 | 315 | — | — | — | — | — | — | — | — | — | — | — | — |
| P3 | 175 | 235 | 275 | — | — | — | — | — | — | — | — | — | — | — | — |
| P4 | 155 | 205 | 250 | — | — | — | — | — | — | — | — | — | — | — | — |
| P5 | 150 | 200 | 235 | — | — | — | — | — | — | — | — | — | — | — | — |
| P6 | 170 | 225 | 265 | — | — | — | — | — | — | — | — | — | — | — | — |
| P7 | 160 | 215 | 250 | — | — | — | — | — | — | — | — | — | — | — | — |
| P8 | 150 | 200 | 235 | — | — | — | — | — | — | — | — | — | — | — | — |
| P11 | 155 | 205 | 245 | — | — | — | — | — | — | — | — | — | — | — | — |
| P12 | 105 | 135 | 160 | 105 | 135 | 165 | — | — | — | 125 | 165 | 200 | — | — | — |
| M1 | 155 | 210 | 245 | — | — | — | — | — | — | — | — | — | — | — | — |
| M2 | 130 | 175 | 205 | — | — | — | — | — | — | — | — | — | — | — | — |
| M3 | 105 | 140 | 165 | — | — | — | — | — | — | — | — | — | — | — | — |
| M4 | 80 | 110 | 125 | — | — | — | — | — | — | — | — | — | — | — | — |
| M5 | 70 | 90 | 105 | — | — | — | — | — | — | — | — | — | — | — | — |
| K1 | — | — | — | 165 | 215 | 255 | 255 | 340 | 400 | 200 | 260 | 310 | 130 | 170 | 205 |
| K2 | — | — | — | 145 | 195 | 230 | 230 | 300 | 360 | 175 | 235 | 280 | 115 | 155 | 180 |
| K3 | — | — | — | 125 | 165 | 195 | 195 | 255 | 305 | 150 | 200 | 235 | 100 | 130 | 155 |
| K4 | — | — | — | 120 | 155 | 185 | 185 | 245 | 290 | 145 | 190 | 225 | 95 | 125 | 145 |
| K5 | — | — | — | 75 | 95 | 115 | 115 | 150 | 175 | 90 | 115 | 135 | 60 | 75 | 90 |
| K6 | — | — | — | 105 | 140 | 165 | 160 | 215 | 255 | 125 | 165 | 200 | 80 | 110 | 130 |
| K7 | — | — | — | 95 | 120 | 145 | 145 | 190 | 225 | 115 | 150 | 175 | 75 | 95 | 115 |
| H5 | 34 | 44 | 55 | 35 | 45 | 55 | — | — | — | 42 | 55 | 65 | — | — | — |
| H8 | 36 | 48 | 55 | 37 | 49 | 60 | — | — | — | 45 | 60 | 70 | — | — | — |
| H11 | 44 | 55 | 65 | 44 | 60 | 70 | — | — | — | 55 | 70 | 85 | — | — | — |
| H12 | 65 | 85 | 100 | 65 | 90 | 105 | — | — | — | 80 | 105 | 125 | — | — | — |
| H21 | 36 | 48 | 55 | 37 | 49 | 60 | — | — | — | 45 | 60 | 70 | — | — | — |

R220.88-12



- For insert selection and cutting data recommendations, see page(s) 189
- For complete insert programme, see page(s) 673
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | | | | Insert |
|----------------------|------------------|------------------|-------|-------|--------|------|------|-------|----|-----|-------|------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | | |
| R220.88-0050-12-4SA | Arbor | 9,0 | 51,0 | 50,0 | 47,0 | 22,0 | 40,0 | 1,0 | 4 | 0,4 | 12600 | SNMU1204.. |
| R220.88-0050-12-5SA | Arbor | 9,0 | 51,0 | 50,0 | 47,0 | 22,0 | 40,0 | 1,0 | 5 | 0,4 | 12600 | SNMU1204.. |
| R220.88-0063-12-6SA | Arbor | 9,0 | 64,0 | 63,0 | 47,0 | 22,0 | 40,0 | 0,8 | 6 | 0,5 | 11200 | SNMU1204.. |
| R220.88-0063-12-7SA | Arbor | 9,0 | 64,0 | 63,0 | 47,0 | 22,0 | 40,0 | 0,8 | 7 | 0,5 | 11200 | SNMU1204.. |
| R220.88-0080-12-7SA | Arbor | 9,0 | 81,0 | 80,0 | 62,0 | 27,0 | 50,0 | 0,6 | 7 | 1,0 | 9900 | SNMU1204.. |
| R220.88-0080-12-9SA | Arbor | 9,0 | 81,0 | 80,0 | 62,0 | 27,0 | 50,0 | 0,6 | 9 | 1,0 | 9900 | SNMU1204.. |
| R220.88-0100-12-8SA | Arbor | 9,0 | 101,0 | 100,0 | 77,0 | 32,0 | 50,0 | 0,4 | 8 | 1,6 | 8900 | SNMU1204.. |
| R220.88-0100-12-11SA | Arbor | 9,0 | 101,0 | 100,0 | 77,0 | 32,0 | 50,0 | 0,4 | 11 | 1,6 | 8900 | SNMU1204.. |
| R220.88-0125-12-10SA | Arbor | 9,0 | 126,0 | 125,0 | 90,0 | 40,0 | 63,0 | 0,4 | 10 | 3,0 | 7900 | SNMU1204.. |
| R220.88-0125-12-13SA | Arbor | 9,0 | 126,0 | 125,0 | 90,0 | 40,0 | 63,0 | 0,4 | 13 | 3,0 | 7900 | SNMU1204.. |
| R220.88-8160-12-12S | Arbor | 9,0 | 161,0 | 160,0 | 90,0 | 40,0 | 63,0 | 0,3 | 12 | 5,2 | 7000 | SNMU1204.. |
| R220.88-8160-12-16S | Arbor | 9,0 | 161,0 | 160,0 | 90,0 | 40,0 | 63,0 | 0,3 | 16 | 5,2 | 7000 | SNMU1204.. |
| | | | | | | | | | | | | |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.88-0050-0063 | DOUBLE-T | C04011-T15P | H4B-T15PL | 220.17-692 | 3,5 |
| R220.88-0080-8160 | DOUBLE-T | C04011-T15P | H4B-T15PL | - | 3,5 |
| | | | | | |
| | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 672 MN2015 Milling

R220.88-12 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|-------|------|
| | | | 100% | 30% | 10% |
| P1 | SNMU120410TN-M10 F40M | 5,0 | 0,14 | 0,15 | 0,24 |
| P2 | SNMU120410TN-M10 F40M | 5,0 | 0,14 | 0,16 | 0,24 |
| P3 | SNMU120410TN-M10 MP2500 | 5,0 | 0,14 | 0,15 | 0,22 |
| P4 | SNMU120410TN-M10 MP2500 | 5,0 | 0,13 | 0,14 | 0,22 |
| P5 | SNMU120410TN-M10 MP2500 | 5,0 | 0,13 | 0,14 | 0,22 |
| P6 | SNMU120410TN-M10 MP2500 | 5,0 | 0,13 | 0,14 | 0,22 |
| P7 | SNMU120410TN-M10 MP2500 | 5,0 | 0,13 | 0,14 | 0,22 |
| P8 | SNMU120410TN-M10 MP2500 | 5,0 | 0,14 | 0,15 | 0,22 |
| P11 | SNMU120410TN-M10 MP1500 | 5,0 | 0,13 | 0,14 | 0,22 |
| P12 | SNMU120410TN-M10 MS2500 | 4,5 | 0,090 | 0,095 | 0,15 |
| K1 | SNMU120410TN-M10 MK2050 | 5,0 | 0,14 | 0,16 | 0,24 |
| K2 | SNMU120410TN-M10 MK2050 | 5,0 | 0,13 | 0,14 | 0,22 |
| K3 | SNMU120410TN-M10 MK2050 | 5,0 | 0,13 | 0,14 | 0,22 |
| K4 | SNMU120410TN-M10 MK2050 | 5,0 | 0,13 | 0,14 | 0,22 |
| K5 | SNMU120410TN-MD13 MK2050 | 5,0 | 0,15 | 0,17 | 0,26 |
| K6 | SNMU120410TN-MD13 MK2050 | 5,0 | 0,17 | 0,18 | 0,28 |
| K7 | SNMU120410TN-MD13 MK2050 | 5,0 | 0,15 | 0,17 | 0,26 |
| H5 | SNMU120410TN-MD13 MP1500 | 4,5 | 0,11 | 0,13 | 0,19 |
| H11 | SNMU120410TN-MD13 MP1500 | 4,5 | 0,11 | 0,13 | 0,19 |
| H12 | SNMU120410TN-MD13 MP1500 | 3,5 | 0,090 | 0,095 | 0,15 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

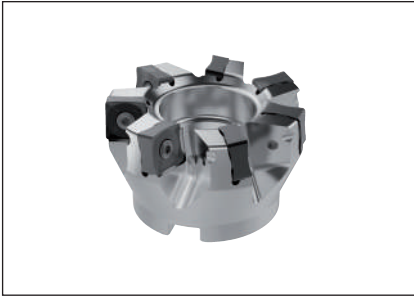
a_e/DC = %

All cutting data are start values

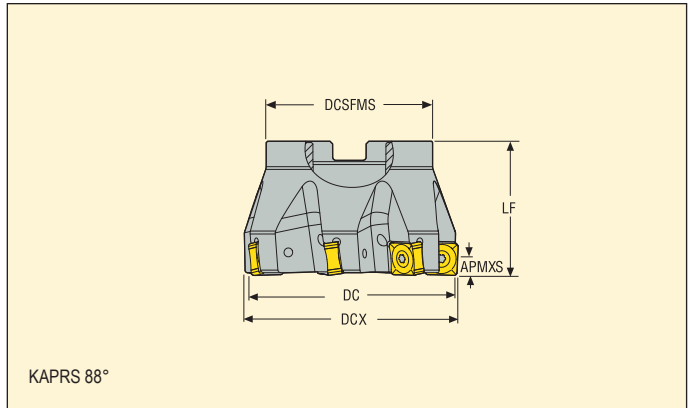
R220.88-12 – Cutting data v_c = (m/min)

| SMG | MP1500 | | | MP2500 | | | F40M | | | MK1500 | | | MK2050 | | | MS2500 | | |
|-----|--------|-----|-----|--------|-----|-----|------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 315 | 420 | 495 | 280 | 375 | 440 | 210 | 285 | 330 | — | — | — | 275 | 370 | 430 | 305 | 410 | 480 |
| P2 | 305 | 405 | 480 | 270 | 355 | 425 | 205 | 270 | 325 | — | — | — | 270 | 350 | 420 | 295 | 390 | 465 |
| P3 | 265 | 355 | 425 | 235 | 315 | 375 | 180 | 235 | 285 | — | — | — | 230 | 310 | 370 | 255 | 340 | 410 |
| P4 | 240 | 315 | 375 | 210 | 280 | 330 | 160 | 215 | 250 | — | — | — | 210 | 275 | 325 | 230 | 305 | 360 |
| P5 | 225 | 305 | 355 | 200 | 270 | 315 | 155 | 205 | 240 | — | — | — | 200 | 265 | 310 | 220 | 295 | 345 |
| P6 | 255 | 340 | 400 | 225 | 300 | 355 | 170 | 230 | 270 | — | — | — | 225 | 295 | 350 | 245 | 330 | 385 |
| P7 | 240 | 320 | 380 | 215 | 285 | 335 | 160 | 215 | 255 | — | — | — | 210 | 280 | 330 | 235 | 310 | 365 |
| P8 | 220 | 295 | 355 | 195 | 265 | 315 | 150 | 200 | 240 | — | — | — | 195 | 260 | 310 | 215 | 285 | 345 |
| P11 | 235 | 310 | 365 | 205 | 275 | 325 | 155 | 210 | 245 | — | — | — | 205 | 270 | 320 | 225 | 300 | 355 |
| P12 | 155 | 205 | 240 | 135 | 180 | 210 | 100 | 135 | 160 | — | — | — | 135 | 180 | 210 | 150 | 195 | 230 |
| K1 | 245 | 320 | 380 | 215 | 285 | 340 | 165 | 215 | 255 | 305 | 400 | 480 | 290 | 380 | 455 | — | — | — |
| K2 | 215 | 290 | 340 | 190 | 255 | 300 | 145 | 195 | 225 | 270 | 360 | 425 | 255 | 340 | 400 | — | — | — |
| K3 | 185 | 245 | 285 | 160 | 215 | 255 | 120 | 165 | 190 | 230 | 305 | 360 | 215 | 290 | 340 | — | — | — |
| K4 | 175 | 230 | 275 | 155 | 205 | 240 | 115 | 155 | 185 | 220 | 290 | 345 | 205 | 275 | 325 | — | — | — |
| K5 | 105 | 140 | 165 | 95 | 125 | 150 | 70 | 95 | 110 | 135 | 175 | 210 | 125 | 170 | 200 | — | — | — |
| K6 | 155 | 205 | 240 | 135 | 180 | 215 | 105 | 135 | 160 | 195 | 255 | 300 | 180 | 245 | 285 | — | — | — |
| K7 | 135 | 180 | 215 | 120 | 160 | 190 | 90 | 120 | 145 | 170 | 225 | 270 | 160 | 215 | 255 | — | — | — |
| H5 | 50 | 70 | 80 | 41 | 55 | 65 | 34 | 45 | 55 | — | — | — | — | — | — | — | — | — |
| H8 | 55 | 70 | 85 | 43 | 60 | 70 | 36 | 48 | 55 | — | — | — | — | — | — | — | — | — |
| H11 | 65 | 85 | 100 | 50 | 70 | 80 | 43 | 60 | 70 | — | — | — | — | — | — | — | — | — |
| H12 | 95 | 130 | 155 | 85 | 115 | 135 | 65 | 85 | 105 | — | — | — | — | — | — | — | — | — |

R220.88-16



- For insert selection and cutting data recommendations, see page(s) 191
- For complete insert programme, see page(s) 673
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | | | | Insert |
|----------------------|------------------|------------------|-------|-------|--------|------|------|-------|----|-----|------|------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | | |
| R220.88-0063-16-4SA | Arbor | 13,0 | 64,0 | 63,0 | 47,0 | 22,0 | 40,0 | 1,0 | 4 | 0,5 | 7100 | SNMU1606.. |
| R220.88-0063-16-5SA | Arbor | 13,0 | 64,0 | 63,0 | 47,0 | 22,0 | 40,0 | 1,0 | 5 | 0,5 | 7100 | SNMU1606.. |
| R220.88-0080-16-6SA | Arbor | 13,0 | 81,0 | 80,0 | 62,0 | 27,0 | 50,0 | 0,8 | 6 | 1,0 | 6300 | SNMU1606.. |
| R220.88-0080-16-7SA | Arbor | 13,0 | 81,0 | 80,0 | 62,0 | 27,0 | 50,0 | 0,8 | 7 | 1,0 | 6300 | SNMU1606.. |
| R220.88-0100-16-8SA | Arbor | 13,0 | 101,0 | 100,0 | 77,0 | 32,0 | 50,0 | 0,7 | 8 | 1,6 | 5600 | SNMU1606.. |
| R220.88-0100-16-9SA | Arbor | 13,0 | 101,0 | 100,0 | 77,0 | 32,0 | 50,0 | 0,7 | 9 | 1,6 | 5600 | SNMU1606.. |
| R220.88-0125-16-10SA | Arbor | 13,0 | 126,0 | 125,0 | 90,0 | 40,0 | 63,0 | 0,5 | 10 | 3,0 | 5000 | SNMU1606.. |
| R220.88-0125-16-11SA | Arbor | 13,0 | 126,0 | 125,0 | 90,0 | 40,0 | 63,0 | 0,5 | 11 | 3,0 | 5000 | SNMU1606.. |
| R220.88-8160-16-12S | Arbor | 13,0 | 161,0 | 160,0 | 90,0 | 40,0 | 63,0 | 0,5 | 12 | 5,1 | 4400 | SNMU1606.. |
| R220.88-8160-16-13S | Arbor | 13,0 | 161,0 | 160,0 | 90,0 | 40,0 | 63,0 | 0,5 | 13 | 5,0 | 4400 | SNMU1606.. |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.88-0050-0063 | DOUBLE-T | C05012-T15P | H4B-T15PL | 220.17-692 | 3,5 |
| R220.88-0080-8160 | DOUBLE-T | C05012-T15P | H4B-T15PL | - | 3,5 |
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Please check availability in current price and stock-list
Torque keys, see page 672 MN2015 Milling

R220.88-16 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|-------|------|
| | | | 100% | 30% | 10% |
| P1 | SNMU160612TN-M10 F40M | 8,0 | 0,14 | 0,15 | 0,24 |
| P2 | SNMU160612TN-M10 F40M | 8,0 | 0,14 | 0,16 | 0,24 |
| P3 | SNMU160612TN-M10 MP2500 | 8,0 | 0,14 | 0,15 | 0,22 |
| P4 | SNMU160612TN-M10 MP2500 | 8,0 | 0,13 | 0,14 | 0,22 |
| P5 | SNMU160612TN-M10 MP2500 | 8,0 | 0,13 | 0,14 | 0,22 |
| P6 | SNMU160612TN-M10 MP2500 | 8,0 | 0,13 | 0,14 | 0,22 |
| P7 | SNMU160612TN-M10 MP2500 | 8,0 | 0,13 | 0,14 | 0,22 |
| P8 | SNMU160612TN-M10 MP2500 | 8,0 | 0,14 | 0,15 | 0,22 |
| P11 | SNMU160612TN-M10 MP1500 | 8,0 | 0,13 | 0,14 | 0,22 |
| P12 | SNMU160612TN-M10 MS2500 | 6,0 | 0,090 | 0,095 | 0,15 |
| K1 | SNMU160612TN-M10 MK2050 | 8,0 | 0,14 | 0,16 | 0,24 |
| K2 | SNMU160612TN-M10 MK2050 | 8,0 | 0,13 | 0,14 | 0,22 |
| K3 | SNMU160612TN-M10 MK2050 | 8,0 | 0,13 | 0,14 | 0,22 |
| K4 | SNMU160612TN-M10 MK2050 | 8,0 | 0,13 | 0,14 | 0,22 |
| K5 | SNMU160612TN-MD16 MK2050 | 8,0 | 0,19 | 0,20 | 0,32 |
| K6 | SNMU160612TN-MD16 MK2050 | 8,0 | 0,20 | 0,22 | 0,34 |
| K7 | SNMU160612TN-MD16 MK2050 | 8,0 | 0,19 | 0,20 | 0,32 |
| H5 | SNMU160612TN-MD16 MP1500 | 6,0 | 0,14 | 0,15 | 0,24 |
| H11 | SNMU160612TN-MD16 MP1500 | 6,0 | 0,14 | 0,15 | 0,24 |
| H12 | SNMU160612TN-MD16 MP1500 | 5,0 | 0,11 | 0,12 | 0,18 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

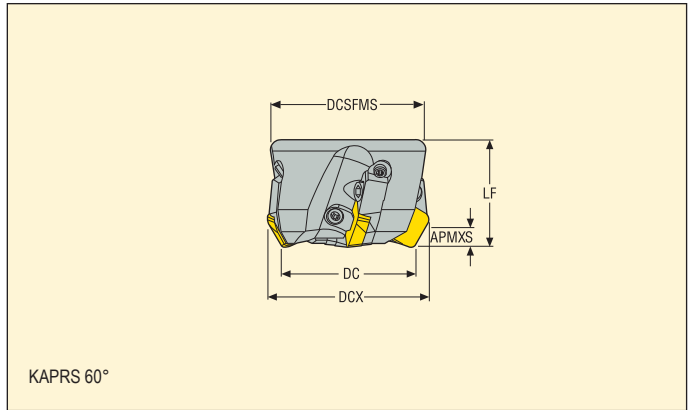
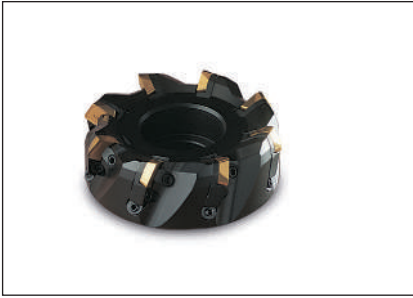
a_e/DC = %

All cutting data are start values

R220.88-16 – Cutting data v_c = (m/min)

| SMG | MP1500 | | | MP2500 | | | F40M | | | MK1500 | | | MK2050 | | | MS2500 | | |
|-----|--------|-----|-----|--------|-----|-----|------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 315 | 420 | 495 | 280 | 375 | 440 | 210 | 285 | 330 | — | — | — | 275 | 370 | 430 | 305 | 410 | 480 |
| P2 | 305 | 405 | 480 | 270 | 355 | 425 | 205 | 270 | 325 | — | — | — | 270 | 350 | 420 | 295 | 390 | 465 |
| P3 | 265 | 355 | 425 | 235 | 315 | 375 | 180 | 235 | 285 | — | — | — | 230 | 310 | 370 | 255 | 340 | 410 |
| P4 | 240 | 315 | 375 | 210 | 280 | 330 | 160 | 215 | 250 | — | — | — | 210 | 275 | 325 | 230 | 305 | 360 |
| P5 | 225 | 305 | 355 | 200 | 270 | 315 | 155 | 205 | 240 | — | — | — | 200 | 265 | 310 | 220 | 295 | 345 |
| P6 | 255 | 340 | 400 | 225 | 300 | 355 | 170 | 230 | 270 | — | — | — | 225 | 295 | 350 | 245 | 330 | 385 |
| P7 | 240 | 320 | 380 | 215 | 285 | 335 | 160 | 215 | 255 | — | — | — | 210 | 280 | 330 | 235 | 310 | 365 |
| P8 | 220 | 295 | 355 | 195 | 265 | 315 | 150 | 200 | 240 | — | — | — | 195 | 260 | 310 | 215 | 285 | 345 |
| P11 | 235 | 310 | 365 | 205 | 275 | 325 | 155 | 210 | 245 | — | — | — | 205 | 270 | 320 | 225 | 300 | 355 |
| P12 | 155 | 205 | 240 | 135 | 180 | 210 | 100 | 135 | 160 | — | — | — | 135 | 180 | 210 | 150 | 195 | 230 |
| K1 | 245 | 320 | 380 | 215 | 285 | 340 | 165 | 215 | 255 | 305 | 400 | 480 | 290 | 380 | 455 | — | — | — |
| K2 | 215 | 290 | 340 | 190 | 255 | 300 | 145 | 195 | 225 | 270 | 360 | 425 | 255 | 340 | 400 | — | — | — |
| K3 | 185 | 245 | 285 | 160 | 215 | 255 | 120 | 165 | 190 | 230 | 305 | 360 | 215 | 290 | 340 | — | — | — |
| K4 | 175 | 230 | 275 | 155 | 205 | 240 | 115 | 155 | 185 | 220 | 290 | 345 | 205 | 275 | 325 | — | — | — |
| K5 | 105 | 140 | 165 | 95 | 125 | 150 | 70 | 95 | 110 | 135 | 175 | 210 | 125 | 170 | 200 | — | — | — |
| K6 | 155 | 205 | 240 | 135 | 180 | 215 | 105 | 135 | 160 | 195 | 255 | 300 | 180 | 245 | 285 | — | — | — |
| K7 | 135 | 180 | 215 | 120 | 160 | 190 | 90 | 120 | 145 | 170 | 225 | 270 | 160 | 215 | 255 | — | — | — |
| H5 | 50 | 70 | 80 | 41 | 55 | 65 | 34 | 45 | 55 | — | — | — | — | — | — | — | — | — |
| H11 | 65 | 85 | 100 | 50 | 70 | 80 | 43 | 60 | 70 | — | — | — | — | — | — | — | — | — |
| H12 | 95 | 130 | 155 | 85 | 115 | 135 | 65 | 85 | 105 | — | — | — | — | — | — | — | — | — |

R220.60-19CM



- For insert selection and cutting data recommendations, see page(s) 193
- For complete insert programme, see page(s) 675
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|----------------------|------------------|------------------|-------|-------|--------|------|------|----|------|------|--------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.60-0063-19-4CM | Arbor | 12,0 | 78,0 | 63,0 | 47,0 | 22,0 | 50,0 | 4 | 1,1 | 3700 | SP..1906ZETR |
| R220.60-0080-19-5CM | Arbor | 12,0 | 95,0 | 80,0 | 62,0 | 27,0 | 50,0 | 5 | 1,7 | 3300 | SP..1906ZETR |
| R220.60-0100-19-6CM | Arbor | 12,0 | 115,0 | 100,0 | 77,0 | 32,0 | 50,0 | 6 | 2,4 | 2900 | SP..1906ZETR |
| R220.60-0125-19-8CM | Arbor | 12,0 | 140,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 4,0 | 2600 | SP..1906ZETR |
| R220.60-8160-19-10CM | Arbor | 12,0 | 175,0 | 160,0 | 128,0 | 40,0 | 63,0 | 10 | 6,3 | 2300 | SP..1906ZETR |
| R220.60-8200-19-12CM | Arbor | 12,0 | 175,0 | 200,0 | 168,0 | 60,0 | 63,0 | 12 | 9,0 | 2000 | SP..1906ZETR |
| R220.60-8250-19-16CM | Arbor | 12,0 | 175,0 | 250,0 | 218,0 | 60,0 | 63,0 | 16 | 20,0 | 1800 | SP..1906ZETR |
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Spare Parts

| For cutter | Wedge screw | Wedge key | Setting gauge | Key (T-handle) | Insert wedge | Cassette screw | Cassette | Arbor screw | Torque value (Nm) |
|-------------------|-------------|-----------|---------------|----------------|--------------|----------------|----------|-------------|-------------------|
| | | | | | | | | | |
| R220.66-0063 | LD8020-T25P | H6B-T25P | AU1114T-T15P | DOUBLE-T | CW0813 | FS96018 | SP19DRM | 220.17-692 | 1,2 |
| R220.66-0080 | LD8020-T25P | H6B-T25P | AU1114T-T15P | DOUBLE-T | CW0813 | FS96018 | SP19DRM | MC6S12X35 | 1,2 |
| R220.66-0100-8250 | LD8020-T25P | H6B-T25PL | AU1114T-T15P | DOUBLE-T | CW0813 | FS96018 | SP19DRM | - | 1,2 |
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Please check availability in current price and stock-list
Torque keys, see page 732

220.69 – Insert selection

| SMG | | a_p | f_z | | |
|-----|-------------------------|-------|-------|------|------|
| | | | 100% | 30% | 10% |
| P1 | SPER1906ZETR-M17 T350M | 7,0 | 0,28 | 0,30 | 0,46 |
| P2 | SPER1906ZETR-M17 T350M | 7,0 | 0,28 | 0,30 | 0,48 |
| P3 | SPER1906ZETR-M17 T350M | 7,0 | 0,26 | 0,28 | 0,44 |
| P4 | SPER1906ZETR-M17 T350M | 7,0 | 0,26 | 0,28 | 0,44 |
| P5 | SPER1906ZETR-M17 T350M | 7,0 | 0,26 | 0,28 | 0,42 |
| P6 | SPER1906ZETR-M17 T350M | 7,0 | 0,26 | 0,28 | 0,42 |
| P7 | SPER1906ZETR-M17 T350M | 7,0 | 0,26 | 0,28 | 0,42 |
| P8 | SPER1906ZETR-M17 T350M | 7,0 | 0,26 | 0,28 | 0,44 |
| P11 | SPER1906ZETR-M17 T350M | 7,0 | 0,26 | 0,28 | 0,42 |
| P12 | SPER1906ZETR-M17 T350M | 6,0 | 0,17 | 0,19 | 0,30 |
| M1 | SPER1906ZETR-M17 T350M | 7,0 | 0,28 | 0,30 | 0,48 |
| M2 | SPER1906ZETR-M17 T350M | 7,0 | 0,26 | 0,28 | 0,42 |
| M3 | SPER1906ZETR-M17 T350M | 6,0 | 0,20 | 0,22 | 0,34 |
| M4 | SPER1906ZETR-M17 T350M | 4,5 | 0,18 | 0,19 | 0,30 |
| M5 | SPER1906ZETR-M17 T350M | 4,5 | 0,18 | 0,19 | 0,30 |
| K1 | SPEN1906ZETR-D25 MP1500 | 7,0 | 0,42 | 0,46 | 0,70 |
| K2 | SPEN1906ZETR-D25 MP1500 | 7,0 | 0,38 | 0,40 | 0,65 |
| K3 | SPEN1906ZETR-D25 MP1500 | 7,0 | 0,38 | 0,40 | 0,65 |
| K4 | SPEN1906ZETR-D25 MP1500 | 7,0 | 0,38 | 0,40 | 0,65 |
| K5 | SPEN1906ZETR-D25 MP1500 | 7,0 | 0,34 | 0,36 | 0,55 |
| K6 | SPEN1906ZETR-D25 MP1500 | 7,0 | 0,38 | 0,40 | 0,65 |
| K7 | SPEN1906ZETR-D25 MP1500 | 7,0 | 0,34 | 0,36 | 0,55 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

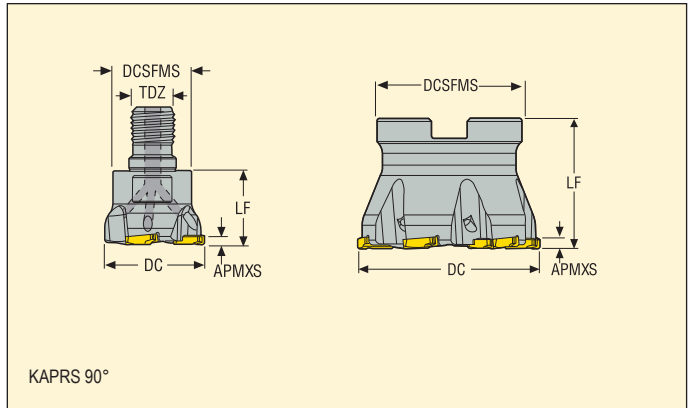
a_e/DC = %

All cutting data are start values

R220.60 – Cutting data v_c (m/min)

| SMG | MP1500 | | | MP2500 | | | T350M | | | MK1500 | | |
|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 215 | 295 | 345 | 190 | 260 | 310 | — | — | — | — | — | — |
| P2 | 210 | 280 | 340 | 185 | 250 | 300 | — | — | — | — | — | — |
| P3 | 180 | 250 | 300 | 160 | 220 | 265 | — | — | — | — | — | — |
| P4 | 165 | 220 | 265 | 145 | 195 | 235 | — | — | — | — | — | — |
| P5 | 155 | 215 | 250 | 140 | 190 | 220 | — | — | — | — | — | — |
| P6 | 175 | 240 | 290 | 155 | 215 | 255 | — | — | — | — | — | — |
| P7 | 165 | 230 | 275 | 145 | 200 | 240 | — | — | — | — | — | — |
| P8 | 155 | 210 | 250 | 135 | 185 | 220 | — | — | — | — | — | — |
| P11 | 160 | 220 | 265 | 140 | 195 | 235 | — | — | — | — | — | — |
| P12 | 110 | 145 | 175 | 95 | 130 | 155 | 90 | 120 | 145 | — | — | — |
| M1 | — | — | — | 130 | 180 | 215 | 135 | 185 | 220 | — | — | — |
| M2 | — | — | — | 110 | 155 | 180 | 115 | 155 | 180 | — | — | — |
| M3 | — | — | — | 90 | 125 | 150 | 90 | 125 | 150 | — | — | — |
| M4 | — | — | — | 70 | 95 | 115 | 70 | 95 | 115 | — | — | — |
| M5 | — | — | — | 60 | 80 | 95 | 60 | 80 | 95 | — | — | — |
| K1 | 165 | 225 | 270 | 145 | 200 | 235 | — | — | — | 225 | 305 | 365 |
| K2 | 150 | 205 | 240 | 130 | 180 | 210 | — | — | — | 200 | 275 | 325 |
| K3 | 125 | 170 | 200 | 110 | 155 | 180 | — | — | — | 170 | 235 | 275 |
| K4 | 120 | 165 | 190 | 105 | 145 | 170 | — | — | — | 165 | 225 | 265 |
| K5 | 75 | 100 | 120 | 65 | 90 | 105 | — | — | — | 100 | 135 | 160 |
| K6 | 105 | 145 | 170 | 95 | 130 | 150 | — | — | — | 145 | 195 | 235 |
| K7 | 95 | 130 | 155 | 85 | 115 | 140 | — | — | — | 125 | 175 | 205 |

230.19



- For insert selection and cutting data recommendations, see page(s) 195 - 196
- For complete insert programme, see page(s) 668
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | Insert |
|---------------------------|------------------|------------------|-------|--------|------|------|----|-----|-------|-------------|
| | | APMX | DC | DCSFMS | DCB | LF | | | | |
| R230.19-1030.RE-SN1103-3A | Combimaster | 2,6 | 30,0 | 18,5 | – | 20,0 | 3 | 0,1 | 18900 | SNHQ1103xxR |
| R230.19-1640.RE-SN1203-3A | Combimaster | 3,1 | 40,0 | 30,0 | – | 28,0 | 3 | 0,2 | 16700 | SNHQ1203xxR |
| R230.19-0050-SN1203-5A | Arbor | 3,1 | 50,0 | 42,0 | 22,0 | 40,0 | 5 | 0,3 | 12300 | SNHQ1203xxR |
| R230.19-0063-SN1203-6A | Arbor | 3,1 | 63,0 | 50,0 | 27,0 | 45,0 | 6 | 0,6 | 10900 | SNHQ1203xxR |
| R230.19-0080-SN1203-8A | Arbor | 3,1 | 80,0 | 62,0 | 27,0 | 45,0 | 8 | 1,0 | 9700 | SNHQ1203xxR |
| R230.19-0100-SN1203-10A | Arbor | 3,1 | 100,0 | 77,0 | 32,0 | 50,0 | 10 | 1,7 | 8700 | SNHQ1203xxR |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|---------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R230.19-1103 | DOUBLE-T | C93505-T09P | H4B-T09P | – | 2,0 |
| R230.19-1203 | DOUBLE-T | C94006-T15P | H4B-T15P | – | 3,5 |
| R230.19-1203 ø50 | DOUBLE-T | C94006-T15P | H4B-T15P | – | 3,5 |
| R230.19-1203 ø63-80 | DOUBLE-T | C94006-T15P | H4B-T15P | MC6S12X35 | 3,5 |
| R230.19-1203 ø100 | DOUBLE-T | C94006-T15P | H4B-T15PL | MC6S16X40 | 3,5 |

Please check availability in current price and stock-list
Torque keys, see page 732

R230.19 – Insert selection

| SMG | | a_p | f_z | | |
|-----|-------------------|-------|-------|-------|------|
| | | | 100% | 30% | 10% |
| P1 | SNHQ....-M07 F40M | 1,3 | 0,13 | 0,14 | 0,22 |
| P2 | SNHQ....-M07 F40M | 1,3 | 0,13 | 0,14 | 0,22 |
| P3 | SNHQ....-M07 F40M | 1,3 | 0,13 | 0,14 | 0,20 |
| P4 | SNHQ....-M07 F40M | 1,3 | 0,12 | 0,13 | 0,20 |
| P5 | SNHQ....-M07 F40M | 1,3 | 0,12 | 0,13 | 0,20 |
| P6 | SNHQ....-M07 F40M | 1,3 | 0,12 | 0,13 | 0,20 |
| P7 | SNHQ....-M07 F40M | 1,3 | 0,12 | 0,13 | 0,20 |
| P8 | SNHQ....-M07 F40M | 1,3 | 0,13 | 0,14 | 0,20 |
| P11 | SNHQ....-M07 F40M | 1,3 | 0,12 | 0,13 | 0,20 |
| P12 | SNHQ....-M07 F40M | 1,0 | 0,070 | 0,080 | 0,12 |
| M1 | SNHQ....-M07 F40M | 1,3 | 0,13 | 0,14 | 0,22 |
| M2 | SNHQ....-M07 F40M | 1,3 | 0,12 | 0,13 | 0,20 |
| M3 | SNHQ....-M07 F40M | 1,0 | 0,11 | 0,11 | 0,18 |
| M4 | SNHQ....-M07 F40M | 0,80 | 0,10 | 0,11 | 0,17 |
| M5 | SNHQ....-M07 F40M | 0,80 | 0,10 | 0,11 | 0,17 |
| K1 | SNHQ....-M07 F40M | 1,3 | 0,13 | 0,14 | 0,22 |
| K2 | SNHQ....-M07 F40M | 1,3 | 0,12 | 0,13 | 0,20 |
| K3 | SNHQ....-M07 F40M | 1,3 | 0,12 | 0,13 | 0,20 |
| K4 | SNHQ....-M07 F40M | 1,3 | 0,12 | 0,13 | 0,20 |
| K5 | SNHQ....-M07 F40M | 1,3 | 0,11 | 0,12 | 0,18 |
| K6 | SNHQ....-M07 F40M | 1,3 | 0,12 | 0,13 | 0,20 |
| K7 | SNHQ....-M07 F40M | 1,3 | 0,11 | 0,12 | 0,18 |
| N1 | SNHQ....-E05 H25 | 1,3 | 0,13 | 0,14 | 0,22 |
| N2 | SNHQ....-E05 H25 | 1,3 | 0,13 | 0,14 | 0,22 |
| N3 | SNHQ....-E05 H25 | 1,3 | 0,13 | 0,14 | 0,22 |
| N11 | SNHQ....-E05 H25 | 1,3 | 0,13 | 0,14 | 0,22 |
| S1 | SNHQ....-M07 F40M | 0,80 | 0,10 | 0,11 | 0,17 |
| S2 | SNHQ....-M07 F40M | 0,80 | 0,10 | 0,11 | 0,17 |
| S3 | SNHQ....-M07 F40M | 0,80 | 0,095 | 0,10 | 0,16 |
| S11 | SNHQ....-M07 F40M | 0,90 | 0,11 | 0,12 | 0,18 |
| S12 | SNHQ....-M07 F40M | 0,90 | 0,11 | 0,12 | 0,18 |
| S13 | SNHQ....-M07 F40M | 0,80 | 0,10 | 0,11 | 0,17 |
| H5 | SNHQ....-M07 F40M | 1,0 | 0,090 | 0,095 | 0,15 |
| H8 | SNHQ....-M07 F40M | 0,90 | 0,070 | 0,080 | 0,12 |
| H11 | SNHQ....-M07 F40M | 1,0 | 0,090 | 0,095 | 0,15 |
| H12 | SNHQ....-M07 F40M | 0,90 | 0,070 | 0,080 | 0,12 |
| H21 | SNHQ....-M07 F40M | 0,90 | 0,070 | 0,080 | 0,12 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

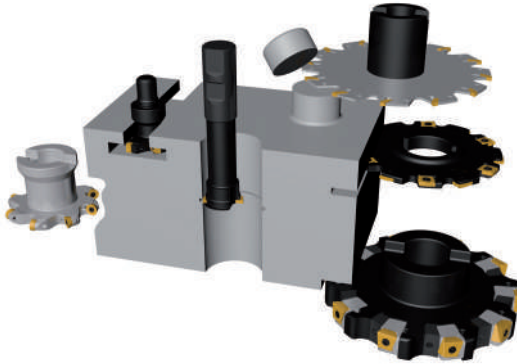
R230.19 – Cutting data $v_c =$ (m/min)

| SMG | MP2500 | | | F30M | | | F40M | | | MM4500 | | | H25 | | |
|-----|--------|-----|-----|------|------|------|------|------|------|--------|-----|-----|------|------|------|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 290 | 385 | 450 | 230 | 305 | 360 | 220 | 290 | 340 | 175 | 235 | 275 | — | — | — |
| P2 | 280 | 365 | 440 | 225 | 290 | 350 | 210 | 275 | 330 | 170 | 225 | 270 | — | — | — |
| P3 | 245 | 320 | 380 | 195 | 255 | 305 | 185 | 245 | 290 | 150 | 195 | 235 | — | — | — |
| P4 | 215 | 285 | 335 | 175 | 225 | 270 | 165 | 215 | 255 | 135 | 175 | 205 | — | — | — |
| P5 | 205 | 275 | 320 | 165 | 220 | 255 | 155 | 210 | 245 | 125 | 170 | 195 | — | — | — |
| P6 | 235 | 310 | 365 | 185 | 245 | 290 | 175 | 235 | 275 | 145 | 190 | 225 | — | — | — |
| P7 | 220 | 295 | 345 | 175 | 235 | 275 | 165 | 220 | 260 | 135 | 180 | 210 | — | — | — |
| P8 | 205 | 270 | 320 | 165 | 215 | 255 | 155 | 205 | 245 | 125 | 165 | 195 | — | — | — |
| P11 | 215 | 285 | 335 | 170 | 225 | 265 | 160 | 215 | 255 | 130 | 175 | 205 | — | — | — |
| P12 | 140 | 180 | 215 | 110 | 145 | 170 | 105 | 140 | 160 | 85 | 110 | 130 | — | — | — |
| M1 | 200 | 265 | 315 | 180 | 235 | 280 | 170 | 225 | 270 | 145 | 195 | 230 | — | — | — |
| M2 | 165 | 220 | 260 | 150 | 200 | 230 | 140 | 190 | 220 | 120 | 160 | 190 | — | — | — |
| M3 | 135 | 175 | 210 | 120 | 155 | 185 | 115 | 150 | 175 | 100 | 130 | 155 | — | — | — |
| M4 | 105 | 140 | 160 | 95 | 125 | 145 | 90 | 115 | 135 | 75 | 100 | 120 | — | — | — |
| M5 | 90 | 115 | 135 | 80 | 105 | 120 | 75 | 100 | 115 | 65 | 85 | 100 | — | — | — |
| K1 | 220 | 290 | 345 | 175 | 230 | 275 | 170 | 220 | 265 | — | — | — | — | — | — |
| K2 | 195 | 260 | 305 | 155 | 210 | 245 | 150 | 200 | 230 | — | — | — | — | — | — |
| K3 | 165 | 220 | 260 | 130 | 175 | 205 | 125 | 170 | 195 | — | — | — | — | — | — |
| K4 | 160 | 210 | 245 | 125 | 170 | 195 | 120 | 160 | 185 | — | — | — | — | — | — |
| K5 | 100 | 130 | 150 | 80 | 105 | 120 | 75 | 100 | 115 | — | — | — | — | — | — |
| K6 | 140 | 185 | 215 | 110 | 150 | 175 | 105 | 140 | 165 | — | — | — | — | — | — |
| K7 | 125 | 165 | 195 | 100 | 130 | 155 | 95 | 125 | 145 | — | — | — | — | — | — |
| N1 | — | — | — | 1325 | 1725 | 2050 | 1250 | 1650 | 1950 | — | — | — | 1200 | 1600 | 1875 |
| N2 | — | — | — | 530 | 700 | 830 | 510 | 660 | 790 | — | — | — | 490 | 650 | 760 |
| N3 | — | — | — | 355 | 465 | 550 | 335 | 445 | 530 | — | — | — | 325 | 430 | 510 |
| N11 | — | — | — | 405 | 530 | 630 | 385 | 510 | 600 | — | — | — | 375 | 490 | 580 |
| S1 | — | — | — | 44 | 55 | 65 | 42 | 55 | 65 | 24 | 31 | 36 | — | — | — |
| S2 | — | — | — | 35 | 46 | 55 | 34 | 44 | 50 | 19 | 25 | 29 | — | — | — |
| S3 | — | — | — | 31 | 40 | 48 | 29 | 38 | 45 | 17 | 22 | 26 | — | — | — |
| S11 | — | — | — | 60 | 80 | 95 | 60 | 75 | 90 | 33 | 43 | 50 | — | — | — |
| S12 | — | — | — | 35 | 46 | 55 | 40 | 55 | 60 | 30 | 40 | 47 | — | — | — |
| S13 | — | — | — | 21 | 27 | 32 | 23 | 31 | 36 | 18 | 23 | 27 | — | — | — |
| H5 | 42 | 55 | 65 | 37 | 48 | 55 | 35 | 46 | 55 | — | — | — | — | — | — |
| H8 | 44 | 60 | 70 | 39 | 50 | 60 | 37 | 49 | 55 | — | — | — | — | — | — |
| H11 | 55 | 70 | 80 | 47 | 60 | 70 | 45 | 60 | 70 | — | — | — | — | — | — |
| H12 | 90 | 115 | 135 | 70 | 90 | 105 | 65 | 90 | 100 | — | — | — | — | — | — |
| H21 | 44 | 60 | 70 | 39 | 50 | 60 | 37 | 49 | 55 | — | — | — | — | — | — |



A full range of cutters for all kinds of disc Milling operations

Seco's disc mills, available from 0,7 to 32 mm in width, offer a wide range of cutter diameters and connection types suitable for all relevant machine tools and disc milling applications.



-The core of the range consists of 4 main cutter families



Min



Max



335.10 for narrow slotting and sawing
Width 2,25-4,1mm
Page: 222



335.19 for small width of cut and sawing
Fixed pockets
Width 4-12mm
Page: 223

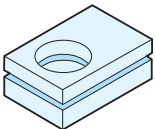


335.18 for medium width of cut
Fixed and adjustable width
Width 8-20mm
Page: 223



335.25 for large width of cut
Fixed and adjustable width
Width 13,5 -32mm
Page: 224

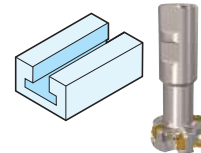
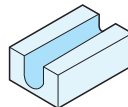
- And 4 other families dedicated to specific disc milling operation



335.14 and 335.15 for circlips groove and narrow slotting
Width 0,7-5,15mm
Page: 199 (335.14) 222 (335.15)



335.29 equipped with round insert - full radius profile and copy milling
Width 5 - 16 mm
Page: 224



335.16 for T-slots
Width 11 - 22 mm
Page: 304

Disc milling cutters exchangeable heads

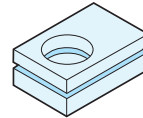
Disc Milling cutter 335.14

Disc milling cutter with exchangeable carbide head from diameter 9.7 mm



- A broad range of heads and shanks available for all your disc milling operation by circular interpolation or linear slotting.
- Strong, Reliable and precise connection between the head and the cutter body
- Cover all type of material with universal M geometry and F32M grade

- **Grooving:** head from dia 9.7 to 34.7 mm for bore with minimum dia 10mm
Width from 1 to 4 mm



- **Circlip groove:** head from dia 9.7 to 21.7 mm and width from 0.7 to 5.15 mm



- **Full radius profile:** head from dia 11.7 to 21.7 and width from 1 to 4 mm



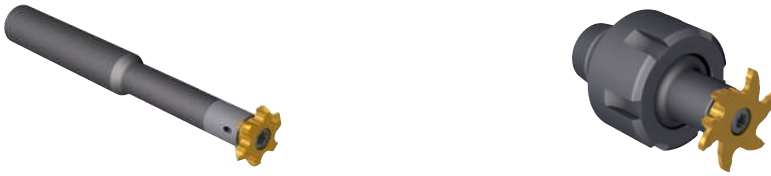
- **Top & bottom Chamfering profile:** head from dia 11.7 to 21.7 and width from 1 to 4 mm



- **Threading:** Head from dia 11,7 to 27,7 mm for partial metric threads with pitch 1-6 mm and full profile whitworth threads with pitch 19 to 11 tpi and UN threads with pitch 24 to 6 tpi.

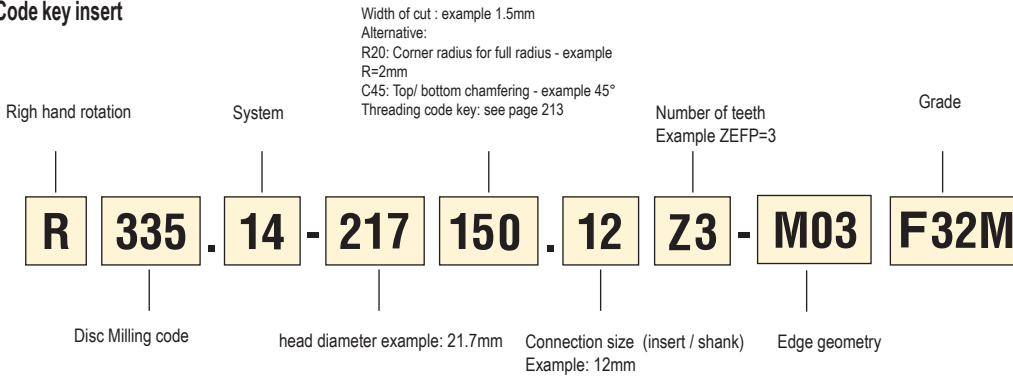


Disc Milling cutter 335.14

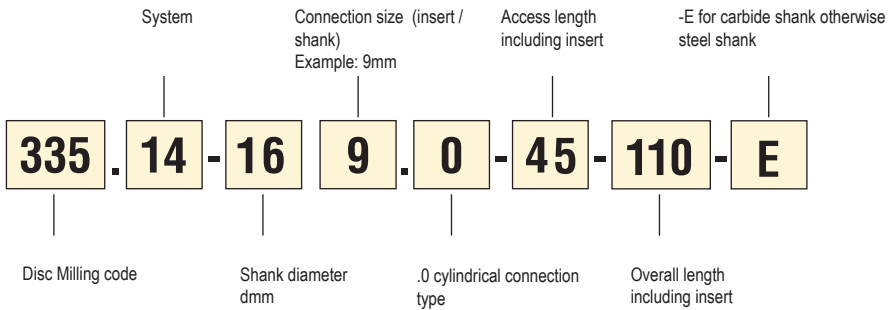


2 types of shanks available: cylindrical available both in steel and carbide, or ER collet chuck system

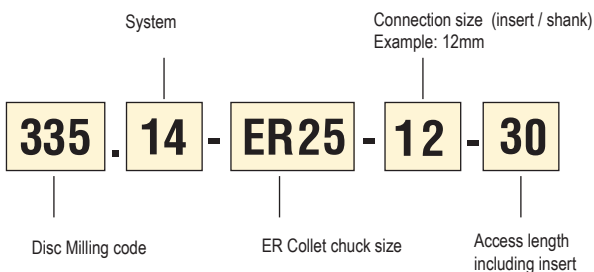
Code key insert



Code key cylindrical shank



Code key collet chuck

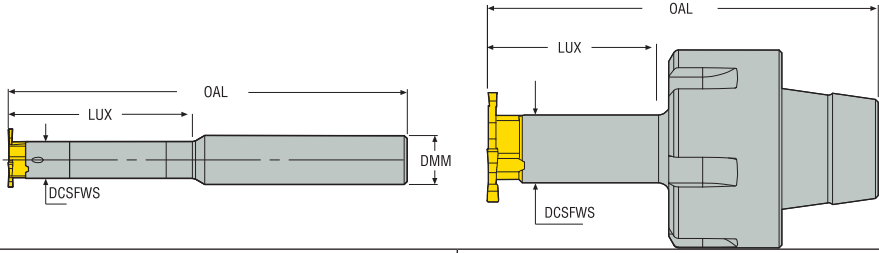


Selection – heads

| | | Cutter diameter in mm (min bore diameter in mm) | | | | | | | | | | | | See page | | |
|----------------------------|--------------------------------|---|-----------|-----------|--------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|----------|-----|-----|
| | | 9.7 (10) | 11.7 (12) | 13.7 (14) | 15.7 | 17.7 (20) | 21.7 (22) | 27.7 (28) | 34.7 (35) | | | | | | | |
| | | Connection size DCSFMS in mm | | | | | | | | | | | | | | |
| | | 6 | 6 | 8 | 8 | 9 | 12 | 14 | 14 | | | | | | | |
| | | Number of teeth ZEPF | | | | | | | | | | | | | | |
| | | ZEPF=3 | ZEPF=6 | ZEPF=3 | ZEPF=3 | ZEPF=3 | ZEPF=3 | ZEPF=6 | ZEPF=3 | ZEPF=6 | ZEPF=3 | ZEPF=6 | ZEPF=6 | | | |
| Grooving | Width of cut in mm | 1 | x | | x | | | | | | | | | | | 203 |
| | | 1.5 | x | | x | | x | | x | x | x | x | x | | | |
| | | 2 | x | | x | | x | | x | x | x | x | x | | | |
| | | 2.5 | x | | x | | x | | x | x | x | x | x | | | |
| | | 3 | | | | | x | | x | x | x | x | x | | | |
| | | 3.5 | | | | | | | | | | x | | | | |
| | | 4 | | | | | | | x | x | x | x | | | | |
| *CDX (mm)= | | 1.5 | | 2.5 | | 3.5 | | 4.5 | | 6.5 | | 10 | | | | |
| Circlips Groove | Nominal width of cut in mm | 0.7 | x | | | | | | | | | | | | 204 | |
| | | 0.8 | x | | | | | | | | | | | | | |
| | | 0.9 | x | | | | | | | | | | | | | |
| | | 1.10 | x | | | | x | | | | | | | | | |
| | | 1.30 | x | | | | x | | | | | | | | | |
| | | 1.6 | | | | | x | | x | | | | | | | |
| | | 1.85 | | | | | | | x | | | | | | | |
| | | 2.15 | | | | | | | x | | | | | | | |
| | | 2.65 | | | | | | | x | | | | | | | |
| | | 3.15 | | | | | | | x | | | | | | | |
| | | 4.15 | | | | | | | x | | | | | | | |
| 5.15 | | | | | | | x | | | | | | | | | |
| *CDX (mm)= | | 1.5 | | | | 3.5 | | 4.5 | | | | | | | | |
| Full radius | Width of cut and (Radius) - mm | 1 (R0.5) | | | | | | x | | | | | | 205 | | |
| | | 2 (R1) | | | | | | x | | | | | | | | |
| | | 2.2 (R1.1) | | x | | | x | | | | | | | | | |
| | | 3 (R1.5) | | | | | | | x | | | | | | | |
| | | 4 (R2) | | | | | | | x | | | | | | | |
| *CDX (mm)= | | | 2.5 | | | 3.5 | | 4.5 | | | | | | | | |
| Chamfering | Width of cut in mm x angle° | 1.2 x45° | x | | | | | | | | | | | 206 | | |
| | | 2.2x45° | | | | | x | | | | | | | | | |
| | | 1.9x45° | | | | | | | x | | | | | | | |
| Threading | Type of thread | Metric | | x | | x | x | | x | | | | | 206 | | |
| | | Withworth | | x | | x | x | | | | | | | | | |
| | | UN | | | | | x | | | | | | | | | |

X Solution available - grade F32M

Selection – shanks

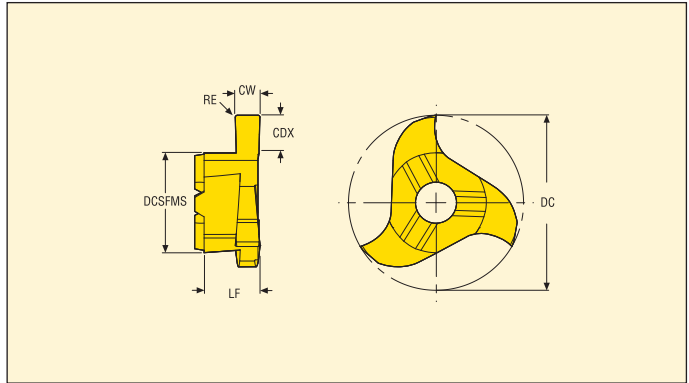


| | | Shank diameter | | | | | | | | ER collect chuck size | | | |
|--------------------------|----|----------------|-----|--------|-----|----------|-----|----------|-----|-----------------------|------|------|------|
| | | DMM=10 | | DMM=12 | | DMM = 16 | | DMM = 20 | | ER11 | ER16 | ER25 | ER32 |
| | | OAL | LUX | OAL | LUX | OAL | LUX | OAL | LUX | LUX | | | |
| Connection size (DCSFWS) | 6 | 60 | 15 | 80 | 21 | | | | | 16 | | | |
| | | | | 90 | 30 | | | | | | | | |
| | | | | 100 | 42 | | | | | | | | |
| | 8 | 60 | 17 | 95 | 29 | | | | | 16 | 22 | | |
| | | | | 110 | 42 | | | | | | | | |
| | | | | 120 | 56 | | | | | | | | |
| | 9 | | | | | 80 | 18 | | | 22 | 22 | 22 | |
| | | | | | | 100 | 32 | | | | | | |
| | | | | | | 110 | 45 | | | | | | |
| | 12 | | | | | 130 | 64 | | | | | | |
| | | | | | | 80 | 24 | | | 30 | 30 | 30 | |
| | | | | | | 100 | 42 | | | | | | |
| | 14 | | | | | 130 | 60 | | | | | | 19 |
| | | | | | | 160 | 85 | | | | | | 35 |
| | | | | | | 100 | 42 | | | | | | 19 |
| | | | | | 130 | 60 | | | | | | 35 | 35 |
| | | | | 160 | 85 | | | 100 | 35 | | | | |
| See page | | 210 | | | | | | | | 211 | | | |

All dimension in mm. The dimensions OAL and LUX are indicated for a tool with 3 teeth.

| |
|------------------|
| Shank in steel |
| Shank in carbide |

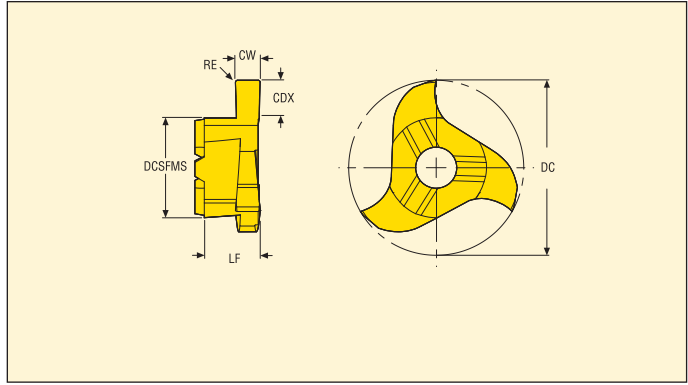
335.14 insert: general grooving



- Suitable shank, see page 202
- Cutting data, see page(s) 214 - 217
- Technical information, see page 212
- For ISO attribute explanation, see page 15

| Designation | Dimensions in mm | | | | | | ZEFP | Coated | | | | |
|-------------------------|------------------|------|------|--------|------|-----|------|--------|--|--|--|--|
| | CW | DC | CDX | DCSFMS | LF | RE | | Grades | | | | |
| | | | | | | | | F32M | | | | |
| R335.14-097100.06Z3-M01 | 1,0 | 9,7 | 1,5 | 6,0 | 3,35 | 0,1 | 3 | ■ | | | | |
| R335.14-097150.06Z3-M01 | 1,5 | 9,7 | 1,5 | 6,0 | 3,5 | 0,2 | 3 | ■ | | | | |
| R335.14-097200.06Z3-M01 | 2,0 | 9,7 | 1,5 | 6,0 | 3,5 | 0,2 | 3 | ■ | | | | |
| R335.14-097250.06Z3-M01 | 2,5 | 9,7 | 1,5 | 6,0 | 3,5 | 0,2 | 3 | ■ | | | | |
| R335.14-137100.08Z3-M01 | 1,0 | 13,7 | 2,5 | 8,0 | 4,35 | 0,1 | 3 | ■ | | | | |
| R335.14-137150.08Z3-M01 | 1,5 | 13,7 | 2,5 | 8,0 | 4,5 | 0,2 | 3 | ■ | | | | |
| R335.14-137200.08Z3-M01 | 2,0 | 13,7 | 2,5 | 8,0 | 4,5 | 0,2 | 3 | ■ | | | | |
| R335.14-137250.08Z3-M01 | 2,5 | 13,7 | 2,5 | 8,0 | 4,5 | 0,2 | 3 | ■ | | | | |
| R335.14-177150.09Z3-M02 | 1,5 | 17,7 | 3,5 | 9,0 | 5,75 | 0,2 | 3 | ■ | | | | |
| R335.14-177200.09Z3-M02 | 2,0 | 17,7 | 3,5 | 9,0 | 5,75 | 0,2 | 3 | ■ | | | | |
| R335.14-177250.09Z3-M02 | 2,5 | 17,7 | 3,5 | 9,0 | 5,75 | 0,2 | 3 | ■ | | | | |
| R335.14-177300.09Z3-M02 | 3,0 | 17,7 | 3,5 | 9,0 | 5,75 | 0,2 | 3 | ■ | | | | |
| R335.14-217150.12Z3-M03 | 1,5 | 21,7 | 4,5 | 12,0 | 5,7 | 0,2 | 3 | ■ | | | | |
| R335.14-217150.12Z6-M03 | 1,5 | 21,7 | 4,5 | 12,0 | 6,25 | 0,1 | 6 | ■ | | | | |
| R335.14-217200.12Z3-M03 | 2,0 | 21,7 | 4,5 | 12,0 | 5,7 | 0,2 | 3 | ■ | | | | |
| R335.14-217200.12Z6-M03 | 2,0 | 21,7 | 4,5 | 12,0 | 6,25 | 0,2 | 6 | ■ | | | | |
| R335.14-217250.12Z3-M03 | 2,5 | 21,7 | 4,5 | 12,0 | 5,7 | 0,2 | 3 | ■ | | | | |
| R335.14-217250.12Z6-M03 | 2,5 | 21,7 | 4,5 | 12,0 | 6,25 | 0,2 | 6 | ■ | | | | |
| R335.14-217300.12Z3-M03 | 3,0 | 21,7 | 4,5 | 12,0 | 5,7 | 0,2 | 3 | ■ | | | | |
| R335.14-217300.12Z6-M03 | 3,0 | 21,7 | 4,5 | 12,0 | 6,25 | 0,2 | 6 | ■ | | | | |
| R335.14-217400.12Z3-M03 | 4,0 | 21,7 | 4,5 | 12,0 | 5,7 | 0,2 | 3 | ■ | | | | |
| R335.14-217400.12Z6-M03 | 4,0 | 21,7 | 4,5 | 12,0 | 6,25 | 0,2 | 6 | ■ | | | | |
| R335.14-277150.14Z3-M03 | 1,5 | 27,7 | 6,5 | 14,0 | 6,5 | 0,2 | 3 | ■ | | | | |
| R335.14-277150.14Z6-M03 | 1,5 | 27,7 | 6,5 | 14,0 | 6,45 | 0,1 | 6 | ■ | | | | |
| R335.14-277200.14Z3-M03 | 2,0 | 27,7 | 6,5 | 14,0 | 6,5 | 0,2 | 3 | ■ | | | | |
| R335.14-277200.14Z6-M03 | 2,0 | 27,7 | 6,5 | 14,0 | 6,4 | 0,2 | 6 | ■ | | | | |
| R335.14-277250.14Z3-M03 | 2,5 | 27,7 | 6,5 | 14,0 | 6,5 | 0,2 | 3 | ■ | | | | |
| R335.14-277250.14Z6-M03 | 2,5 | 27,7 | 6,5 | 14,0 | 6,4 | 0,2 | 6 | ■ | | | | |
| R335.14-277300.14Z3-M03 | 3,0 | 27,7 | 6,5 | 14,0 | 6,5 | 0,2 | 3 | ■ | | | | |
| R335.14-277300.14Z6-M03 | 3,0 | 27,7 | 6,5 | 14,0 | 6,4 | 0,2 | 6 | ■ | | | | |
| R335.14-277350.14Z3-M03 | 3,5 | 27,7 | 6,5 | 14,0 | 6,5 | 0,2 | 3 | ■ | | | | |
| R335.14-277400.14Z3-M03 | 4,0 | 27,7 | 6,5 | 14,0 | 6,5 | 0,2 | 3 | ■ | | | | |
| R335.14-277400.14Z6-M03 | 4,0 | 27,7 | 6,5 | 14,0 | 6,4 | 0,2 | 6 | ■ | | | | |
| R335.14-347150.14Z6-M03 | 1,5 | 34,7 | 10,0 | 14,0 | 6,25 | 0,1 | 6 | ■ | | | | |
| R335.14-347200.14Z6-M03 | 2,0 | 34,7 | 10,0 | 14,0 | 6,25 | 0,2 | 6 | ■ | | | | |
| R335.14-347250.14Z6-M03 | 2,5 | 34,7 | 10,0 | 14,0 | 6,25 | 0,2 | 6 | ■ | | | | |
| R335.14-347300.14Z6-M03 | 3,0 | 34,7 | 10,0 | 14,0 | 6,25 | 0,2 | 6 | ■ | | | | |

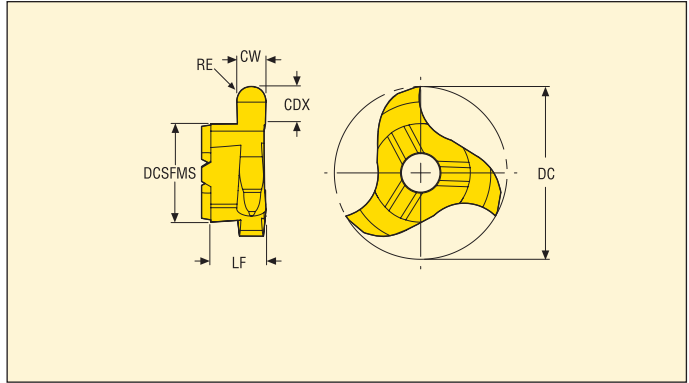
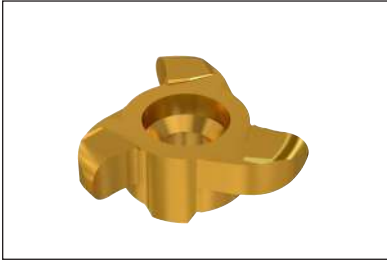
335.14 insert: For circlips groove



- Suitable shank, see page 202
- Cutting data, see page(s) 214 - 217
- Technical information, see page 212
- For ISO attribute explanation, see page 15

| Designation | Dimensions in mm | | | | | | ZEFP | Coated | | | | | | | |
|-------------------------|------------------|------|-----|--------|------|------|------|--------|--|--|--|--|--|--|--|
| | CW | DC | CDX | DCSFMS | LF | RE | | Grades | | | | | | | |
| | | | | | | | | F32M | | | | | | | |
| R335.14-097070.06Z3-M01 | 0,74 | 9,7 | 1,5 | 6,0 | 3,35 | 0,0 | 3 | ■ | | | | | | | |
| R335.14-097080.06Z3-M01 | 0,84 | 9,7 | 1,5 | 6,0 | 3,35 | 0,0 | 3 | ■ | | | | | | | |
| R335.14-097090.06Z3-M01 | 0,94 | 9,7 | 1,5 | 6,0 | 3,35 | 0,0 | 3 | ■ | | | | | | | |
| R335.14-097110.06Z3-M01 | 1,21 | 9,7 | 1,5 | 6,0 | 3,5 | 0,0 | 3 | ■ | | | | | | | |
| R335.14-097130.06Z3-M01 | 1,41 | 9,7 | 1,5 | 6,0 | 3,5 | 0,1 | 3 | ■ | | | | | | | |
| R335.14-177110.09Z3-M02 | 1,21 | 17,7 | 3,5 | 9,0 | 5,75 | 0,0 | 3 | ■ | | | | | | | |
| R335.14-177130.09Z3-M02 | 1,41 | 17,7 | 3,5 | 9,0 | 5,75 | 0,1 | 3 | ■ | | | | | | | |
| R335.14-177160.09Z3-M02 | 1,71 | 17,7 | 3,5 | 9,0 | 5,75 | 0,1 | 3 | ■ | | | | | | | |
| R335.14-217160.12Z3-M03 | 1,71 | 21,7 | 4,5 | 12,0 | 5,7 | 0,1 | 3 | ■ | | | | | | | |
| R335.14-217185.12Z3-M03 | 1,96 | 21,7 | 4,5 | 12,0 | 5,7 | 0,15 | 3 | ■ | | | | | | | |
| R335.14-217215.12Z3-M03 | 2,26 | 21,7 | 4,5 | 12,0 | 5,7 | 0,15 | 3 | ■ | | | | | | | |
| R335.14-217265.12Z3-M03 | 2,76 | 21,7 | 4,5 | 12,0 | 5,7 | 0,15 | 3 | ■ | | | | | | | |
| R335.14-217315.12Z3-M03 | 3,26 | 21,7 | 4,5 | 12,0 | 5,7 | 0,15 | 3 | ■ | | | | | | | |
| R335.14-217415.12Z3-M03 | 4,26 | 21,7 | 4,5 | 12,0 | 5,7 | 0,15 | 3 | ■ | | | | | | | |
| R335.14-217515.12Z3-M03 | 5,26 | 21,7 | 4,5 | 12,0 | 5,7 | 0,15 | 3 | ■ | | | | | | | |
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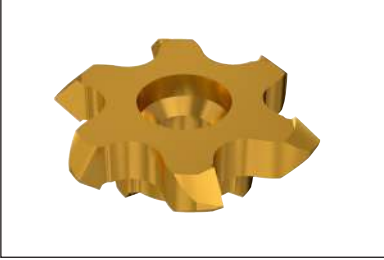
335.14 insert: Full radius profile



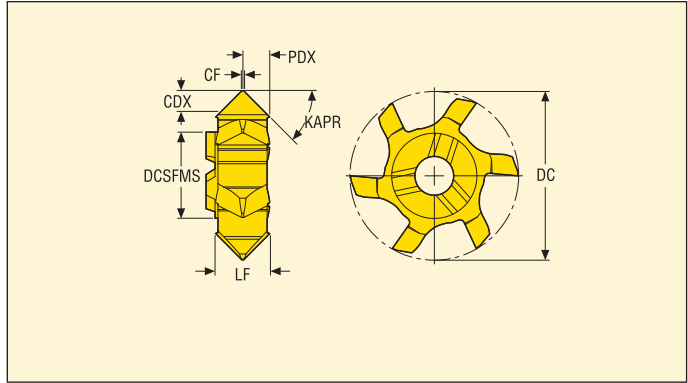
- Suitable shank, see page 202
- Cutting data, see page(s) 214 - 217
- Technical information, see page 212
- For ISO attribute explanation, see page 15

| Designation | Dimensions in mm | | | | | | ZEFP | Coated | | | | | | |
|-------------------------|------------------|------|-----|--------|------|-----|------|--------|--|--|--|--|--|--|
| | CW | DC | CDX | DCSFMS | LF | RE | | Grades | | | | | | |
| | | | | | | | | F32M | | | | | | |
| R335.14-117R11.06Z3-M01 | 2,2 | 11,7 | 2,5 | 6,0 | 3,5 | 1,1 | 3 | ■ | | | | | | |
| R335.14-177R11.09Z3-M02 | 2,2 | 17,7 | 3,5 | 9,0 | 5,75 | 1,1 | 3 | ■ | | | | | | |
| R335.14-217R05.12Z3-M03 | 1,0 | 21,7 | 4,5 | 12,0 | 5,6 | 0,5 | 3 | ■ | | | | | | |
| R335.14-217R10.12Z3-M03 | 2,0 | 21,7 | 4,5 | 12,0 | 5,75 | 1,0 | 3 | ■ | | | | | | |
| R335.14-217R15.12Z3-M03 | 3,0 | 21,7 | 4,5 | 12,0 | 5,75 | 1,5 | 3 | ■ | | | | | | |
| R335.14-217R20.12Z3-M03 | 4,0 | 21,7 | 4,5 | 12,0 | 5,75 | 2,0 | 3 | ■ | | | | | | |
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335.14 insert: Top and Bottom chamfering



- Suitable shank, see page 202
- Cutting data, see page(s) 214 - 217
- Technical information, see page 212
- For ISO attribute explanation, see page 15



| Designation | Dimensions in mm | | | | | | | | ZEFP | Coated | | | |
|-------------------------|------------------|------|-----|--------|------|-----|-----|--------|------|--------|--|--|--|
| | KAPR° | DC | CDX | DCSFMS | LF | PDX | CF | Grades | | | | | |
| | | | | | | | | F32M | | | | | |
| R335.14-097C45.06Z6-M01 | 45,0 | 9,7 | 1,2 | 6,0 | 3,4 | 1,5 | 0,2 | 6 | ■ | | | | |
| R335.14-177C45.09Z6-M02 | 45,0 | 17,7 | 2,2 | 9,0 | 5,8 | 2,8 | 0,2 | 6 | ■ | | | | |
| R335.14-217C45.12Z6-M03 | 45,0 | 21,7 | 1,9 | 12,0 | 6,35 | 2,1 | 0,2 | 6 | ■ | | | | |
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Technical information

Locking screw / key

| Connection size (DCSFWS) | Assembly screw | Key (T-handle) | Replaceable end | Torque value (Nm) |
|--------------------------|----------------|----------------|-----------------|-------------------|
| 6 | C92608-T08P | DOUBLE-T | H4B-T08P | 2 |
| 8 | C93510-T10P | DOUBLE-T | H6B-T10P | 3,5 |
| 9 | C94012-T15P | DOUBLE-T | H6B-T15P | 5 |
| 12 & 14 | C95012-T20P | DOUBLE-T | H6B-T20P | 7 |

Recommendation for circular interpolation

To avoid vibration and insert damage when working with internal circular interpolation, we recommend a progressive entrance into the material. The circular arc angle for the progressive immersion should be between 45° and 180°

When calculating cutting datas for circular interpolation please be aware of the real radial depth of cut and the feed speed related to the centre of the cutter- See page 725 for more info



Milling insert with 6 cutting edges



If vibrations appear when working with milling insert with 6 cutting edges please reduce the radial depth of cut to reduce the number of teeth into contact with the material , an alternative is to choose an insert with 3 cutting edges instead.

Holder recommendation

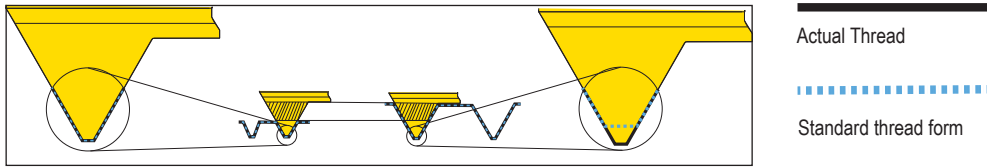
For best result in terms of stability, precision and reliability, it is recommended to use the following SECO-EPB holders

- High precision collet chucks EPB 5672
- Shrink fit Holder EPB 5603, EPB5600 and EPB 5801
- ER Collet chuck EPB5675

Please see SECO Tooling System catalogue for more information.



Pitch (as of/up to)



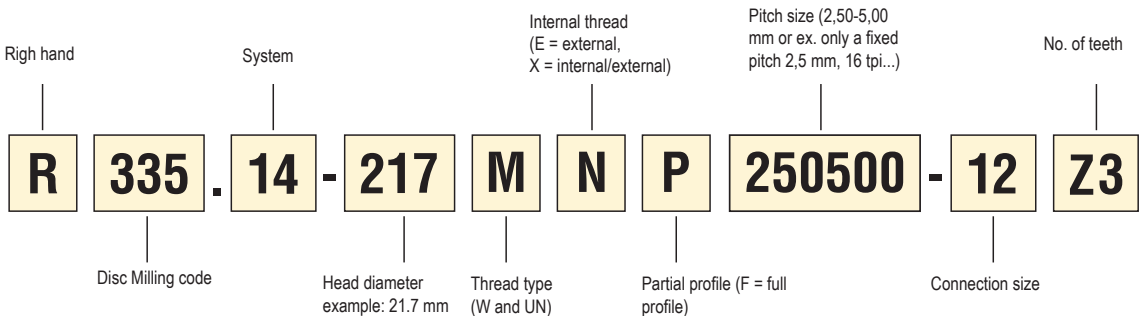
Thread milling by circular interpolation can cause thread profile violation when using insert for partial thread. Keep this in mind during the process of selecting tool. The tool diameter need to be small enough compare to the hole diameter. The pitch also needs to be considered.

Insert with partial profile for Metric ISO-Threads are multi tools. That means that each insert could machine different pitches. The insert is designed to meet the minimum pitch size (TPN); Machining this pitch will result in a standard conform thread form.

The given maximum pitch size (TPX) can be machined also with this insert at the expense of standard conformity: The result will be a slightly deeper thread than the standard. The deeper thread is normally accepted, but the application and use needs to be evaluated.

Following table is a recommendation over maximum tool diameter in relation to the thread size and pitch:

| ISO-Thread, partial profile | | | | | | | | | | | |
|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pitch | M12 | M16 | M20 | M24 | M27 | M30 | M36 | M42 | M48 | M56 | M60 |
| 1 | 10 | 14 | 18 | 22 | 25 | 28 | 34 | 40 | 45 | 53 | 57 |
| 1,5 | 8 | 12 | 16 | 20 | 24 | 26 | 32 | 37 | 43 | 51 | 55 |
| 2 | 7 | 10 | 14 | 18 | 22 | 24 | 30 | 35 | 40 | 48 | 52 |
| 2,5 | 6 | 8 | 12 | 16 | 20 | 22 | 28 | 32 | 37 | 45 | 48 |
| 3 | | 6 | 10 | 14 | 18 | 20 | 26 | 30 | 36 | 43 | 47 |
| 3,5 | | | | 12 | 16 | 18 | 24 | 29 | 35 | 42 | 46 |
| 4 | | | | | | | 22 | 27 | 32 | 39 | 43 |
| 4,5 | | | | | | | | 24 | 30 | 37 | 40 |
| 5 | | | | | | | | 22 | 27 | 34 | 37 |
| 5,5 | | | | | | | | 20 | 25 | 31 | 35 |
| 6 | | | | | | | | 19 | 23 | 29 | 32 |



335.14 -Grooving and Chamfering - Insert selection

| SMG | | f_z | | |
|-----|---------------------|-------|-------|-------|
| | | 15% | 10% | 5% |
| P1 | R335.14...-M01 F32M | 0,036 | 0,042 | 0,060 |
| P2 | R335.14...-M01 F32M | 0,036 | 0,042 | 0,060 |
| P3 | R335.14...-M01 F32M | 0,034 | 0,040 | 0,055 |
| P4 | R335.14...-M01 F32M | 0,034 | 0,040 | 0,055 |
| P5 | R335.14...-M01 F32M | 0,032 | 0,038 | 0,055 |
| P6 | R335.14...-M01 F32M | 0,032 | 0,038 | 0,055 |
| P7 | R335.14...-M01 F32M | 0,032 | 0,038 | 0,055 |
| P8 | R335.14...-M01 F32M | 0,034 | 0,040 | 0,055 |
| P11 | R335.14...-M01 F32M | 0,032 | 0,038 | 0,055 |
| P12 | R335.14...-M01 F32M | 0,020 | 0,024 | 0,032 |
| M1 | R335.14...-M01 F32M | 0,036 | 0,042 | 0,060 |
| M2 | R335.14...-M01 F32M | 0,032 | 0,038 | 0,055 |
| M3 | R335.14...-M01 F32M | 0,026 | 0,030 | 0,042 |
| M4 | R335.14...-M01 F32M | 0,020 | 0,024 | 0,034 |
| M5 | R335.14...-M01 F32M | 0,020 | 0,024 | 0,034 |
| K1 | R335.14...-M01 F32M | 0,036 | 0,042 | 0,060 |
| K2 | R335.14...-M01 F32M | 0,032 | 0,038 | 0,055 |
| K3 | R335.14...-M01 F32M | 0,032 | 0,038 | 0,055 |
| K4 | R335.14...-M01 F32M | 0,032 | 0,038 | 0,055 |
| K5 | R335.14...-M01 F32M | 0,030 | 0,034 | 0,048 |
| K6 | R335.14...-M01 F32M | 0,032 | 0,038 | 0,055 |
| K7 | R335.14...-M01 F32M | 0,030 | 0,034 | 0,048 |
| N1 | R335.14...-M01 F32M | 0,046 | 0,055 | 0,075 |
| N2 | R335.14...-M01 F32M | 0,046 | 0,055 | 0,075 |
| N3 | R335.14...-M01 F32M | 0,046 | 0,055 | 0,075 |
| N11 | R335.14...-M01 F32M | 0,046 | 0,055 | 0,075 |
| S1 | R335.14...-M01 F32M | 0,020 | 0,024 | 0,034 |
| S2 | R335.14...-M01 F32M | 0,020 | 0,024 | 0,034 |
| S3 | R335.14...-M01 F32M | 0,018 | 0,022 | 0,030 |
| S11 | R335.14...-M01 F32M | 0,026 | 0,030 | 0,042 |
| S12 | R335.14...-M01 F32M | 0,026 | 0,030 | 0,042 |
| S13 | R335.14...-M01 F32M | 0,020 | 0,024 | 0,034 |
| H5 | R335.14...-M01 F32M | 0,020 | 0,024 | 0,032 |
| H8 | R335.14...-M01 F32M | 0,011 | 0,014 | 0,019 |
| H11 | R335.14...-M01 F32M | 0,020 | 0,024 | 0,032 |
| H12 | R335.14...-M01 F32M | 0,011 | 0,014 | 0,019 |
| H21 | R335.14...-M01 F32M | 0,011 | 0,014 | 0,019 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

335.14 - Grooving and Chamfering - Insert selection

| SMG | | f _z | | |
|-----|---------------------|----------------|-------|-------|
| | | 15% | 10% | 5% |
| P1 | R335.14...-M02 F32M | 0,060 | 0,070 | 0,095 |
| P2 | R335.14...-M02 F32M | 0,060 | 0,070 | 0,10 |
| P3 | R335.14...-M02 F32M | 0,055 | 0,065 | 0,095 |
| P4 | R335.14...-M02 F32M | 0,055 | 0,065 | 0,090 |
| P5 | R335.14...-M02 F32M | 0,055 | 0,065 | 0,090 |
| P6 | R335.14...-M02 F32M | 0,055 | 0,065 | 0,090 |
| P7 | R335.14...-M02 F32M | 0,055 | 0,065 | 0,090 |
| P8 | R335.14...-M02 F32M | 0,055 | 0,065 | 0,095 |
| P11 | R335.14...-M02 F32M | 0,055 | 0,065 | 0,090 |
| P12 | R335.14...-M02 F32M | 0,032 | 0,038 | 0,055 |
| M1 | R335.14...-M02 F32M | 0,060 | 0,070 | 0,10 |
| M2 | R335.14...-M02 F32M | 0,055 | 0,065 | 0,090 |
| M3 | R335.14...-M02 F32M | 0,044 | 0,050 | 0,070 |
| M4 | R335.14...-M02 F32M | 0,034 | 0,042 | 0,055 |
| M5 | R335.14...-M02 F32M | 0,034 | 0,042 | 0,055 |
| K1 | R335.14...-M02 F32M | 0,060 | 0,070 | 0,10 |
| K2 | R335.14...-M02 F32M | 0,055 | 0,065 | 0,090 |
| K3 | R335.14...-M02 F32M | 0,055 | 0,065 | 0,090 |
| K4 | R335.14...-M02 F32M | 0,055 | 0,065 | 0,090 |
| K5 | R335.14...-M02 F32M | 0,048 | 0,060 | 0,080 |
| K6 | R335.14...-M02 F32M | 0,055 | 0,065 | 0,090 |
| K7 | R335.14...-M02 F32M | 0,048 | 0,060 | 0,080 |
| N1 | R335.14...-M02 F32M | 0,075 | 0,090 | 0,13 |
| N2 | R335.14...-M02 F32M | 0,075 | 0,090 | 0,13 |
| N3 | R335.14...-M02 F32M | 0,075 | 0,090 | 0,13 |
| N11 | R335.14...-M02 F32M | 0,075 | 0,090 | 0,13 |
| S1 | R335.14...-M02 F32M | 0,034 | 0,042 | 0,055 |
| S2 | R335.14...-M02 F32M | 0,034 | 0,042 | 0,055 |
| S3 | R335.14...-M02 F32M | 0,030 | 0,036 | 0,048 |
| S11 | R335.14...-M02 F32M | 0,044 | 0,050 | 0,070 |
| S12 | R335.14...-M02 F32M | 0,044 | 0,050 | 0,070 |
| S13 | R335.14...-M02 F32M | 0,034 | 0,042 | 0,055 |
| H5 | R335.14...-M02 F32M | 0,032 | 0,038 | 0,055 |
| H8 | R335.14...-M02 F32M | 0,019 | 0,022 | 0,032 |
| H11 | R335.14...-M02 F32M | 0,032 | 0,038 | 0,055 |
| H12 | R335.14...-M02 F32M | 0,019 | 0,022 | 0,032 |
| H21 | R335.14...-M02 F32M | 0,019 | 0,022 | 0,032 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

335.14 - Grooving and Chamfering - Insert selection

| SMG | | f_z | | | |
|-----|---------------------|-------|-------|-------|-------|
| | | 20% | 15% | 10% | 5% |
| P1 | R335.14...-M03 F32M | 0,065 | 0,070 | 0,085 | 0,12 |
| P2 | R335.14...-M03 F32M | 0,065 | 0,070 | 0,085 | 0,12 |
| P3 | R335.14...-M03 F32M | 0,060 | 0,070 | 0,080 | 0,11 |
| P4 | R335.14...-M03 F32M | 0,060 | 0,065 | 0,080 | 0,11 |
| P5 | R335.14...-M03 F32M | 0,060 | 0,065 | 0,080 | 0,11 |
| P6 | R335.14...-M03 F32M | 0,060 | 0,065 | 0,075 | 0,11 |
| P7 | R335.14...-M03 F32M | 0,060 | 0,065 | 0,075 | 0,11 |
| P8 | R335.14...-M03 F32M | 0,060 | 0,070 | 0,080 | 0,11 |
| P11 | R335.14...-M03 F32M | 0,060 | 0,065 | 0,075 | 0,11 |
| P12 | R335.14...-M03 F32M | 0,036 | 0,040 | 0,046 | 0,065 |
| M1 | R335.14...-M03 F32M | 0,065 | 0,070 | 0,085 | 0,12 |
| M2 | R335.14...-M03 F32M | 0,060 | 0,065 | 0,080 | 0,11 |
| M3 | R335.14...-M03 F32M | 0,046 | 0,050 | 0,065 | 0,085 |
| M4 | R335.14...-M03 F32M | 0,038 | 0,042 | 0,050 | 0,070 |
| M5 | R335.14...-M03 F32M | 0,038 | 0,042 | 0,050 | 0,070 |
| K1 | R335.14...-M03 F32M | 0,065 | 0,070 | 0,085 | 0,12 |
| K2 | R335.14...-M03 F32M | 0,060 | 0,065 | 0,080 | 0,11 |
| K3 | R335.14...-M03 F32M | 0,060 | 0,065 | 0,080 | 0,11 |
| K4 | R335.14...-M03 F32M | 0,060 | 0,065 | 0,080 | 0,11 |
| K5 | R335.14...-M03 F32M | 0,055 | 0,060 | 0,070 | 0,095 |
| K6 | R335.14...-M03 F32M | 0,060 | 0,065 | 0,080 | 0,11 |
| K7 | R335.14...-M03 F32M | 0,055 | 0,060 | 0,070 | 0,095 |
| N1 | R335.14...-M03 F32M | 0,080 | 0,090 | 0,11 | 0,15 |
| N2 | R335.14...-M03 F32M | 0,080 | 0,090 | 0,11 | 0,15 |
| N3 | R335.14...-M03 F32M | 0,080 | 0,090 | 0,11 | 0,15 |
| N11 | R335.14...-M03 F32M | 0,080 | 0,090 | 0,11 | 0,15 |
| S1 | R335.14...-M03 F32M | 0,038 | 0,042 | 0,050 | 0,070 |
| S2 | R335.14...-M03 F32M | 0,038 | 0,042 | 0,050 | 0,070 |
| S3 | R335.14...-M03 F32M | 0,032 | 0,036 | 0,042 | 0,060 |
| S11 | R335.14...-M03 F32M | 0,046 | 0,050 | 0,065 | 0,085 |
| S12 | R335.14...-M03 F32M | 0,046 | 0,050 | 0,065 | 0,085 |
| S13 | R335.14...-M03 F32M | 0,038 | 0,042 | 0,050 | 0,070 |
| H5 | R335.14...-M03 F32M | 0,036 | 0,040 | 0,046 | 0,065 |
| H8 | R335.14...-M03 F32M | 0,020 | 0,024 | 0,028 | 0,038 |
| H11 | R335.14...-M03 F32M | 0,036 | 0,040 | 0,046 | 0,065 |
| H12 | R335.14...-M03 F32M | 0,020 | 0,024 | 0,028 | 0,038 |
| H21 | R335.14...-M03 F32M | 0,020 | 0,024 | 0,028 | 0,038 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

335.14 - Grooving and Chamfering - Cutting data $v_c =$ (m/min)

| SMG | 335.14 | | | |
|-----|--------|------|------|------|
| | 20% | 15% | 10% | 5% |
| P1 | 230 | 240 | 255 | 275 |
| P2 | 225 | 235 | 245 | 265 |
| P3 | 195 | 200 | 215 | 230 |
| P4 | 170 | 180 | 190 | 205 |
| P5 | 165 | 170 | 180 | 195 |
| P6 | 185 | 190 | 205 | 220 |
| P7 | 175 | 180 | 195 | 205 |
| P8 | 165 | 170 | 180 | 195 |
| P11 | 170 | 175 | 190 | 200 |
| P12 | 105 | 110 | 120 | 130 |
| M1 | 195 | 205 | 215 | 235 |
| M2 | 160 | 165 | 175 | 190 |
| M3 | 125 | 135 | 140 | 150 |
| M4 | 100 | 100 | 110 | 115 |
| M5 | 80 | 85 | 90 | 95 |
| K1 | 225 | 235 | 250 | 270 |
| K2 | 200 | 205 | 220 | 235 |
| K3 | 165 | 175 | 185 | 200 |
| K4 | 160 | 165 | 175 | 190 |
| K5 | 95 | 100 | 105 | 115 |
| K6 | 140 | 145 | 155 | 170 |
| K7 | 125 | 130 | 135 | 150 |
| N1 | 1000 | 1050 | 1100 | 1200 |
| N2 | 325 | 340 | 355 | 385 |
| N3 | 215 | 225 | 235 | 260 |
| N11 | 290 | 300 | 315 | 345 |
| S1 | 29 | 31 | 32 | 35 |
| S2 | 24 | 25 | 26 | 28 |
| S3 | 21 | 22 | 23 | 25 |
| S11 | 41 | 43 | 45 | 49 |
| S12 | 38 | 40 | 42 | 45 |
| S13 | 22 | 23 | 24 | 26 |
| H5 | 55 | 55 | 60 | 65 |
| H8 | 60 | 60 | 65 | 70 |
| H11 | 70 | 75 | 80 | 85 |
| H12 | 70 | 70 | 75 | 80 |
| H21 | 60 | 60 | 65 | 70 |

Cutting data $v_c =$ (m/min) Thread milling 335.14

| SMG | R335.14_THREAD | |
|-----|----------------|-------|
| | f_z | v_c |
| P1 | 0,070 | 275 |
| P2 | 0,070 | 270 |
| P3 | 0,070 | 230 |
| P4 | 0,065 | 205 |
| P5 | 0,065 | 195 |
| P6 | 0,065 | 220 |
| P7 | 0,065 | 205 |
| P8 | 0,070 | 195 |
| P11 | 0,065 | 200 |
| P12 | 0,044 | 120 |
| M1 | 0,070 | 215 |
| M2 | 0,065 | 175 |
| M3 | 0,055 | 130 |
| M4 | 0,046 | 100 |
| M5 | 0,046 | 85 |
| K1 | 0,070 | 210 |
| K2 | 0,065 | 185 |
| K3 | 0,065 | 155 |
| K4 | 0,065 | 150 |
| K5 | 0,060 | 90 |
| K6 | 0,065 | 130 |
| K7 | 0,060 | 115 |
| N1 | 0,090 | 970 |
| N2 | 0,090 | 620 |
| N3 | 0,090 | 415 |
| N11 | 0,090 | 475 |
| S1 | 0,046 | 50 |
| S2 | 0,046 | 41 |
| S3 | 0,042 | 35 |
| S11 | 0,055 | 65 |
| S12 | 0,055 | 50 |
| S13 | 0,046 | 39 |
| H5 | 0,044 | 43 |
| H8 | 0,034 | 45 |
| H11 | 0,044 | 60 |
| H12 | 0,034 | 55 |
| H21 | 0,034 | 45 |

SMG = Seco material group

f_z = mm/tooth (mm/flute)

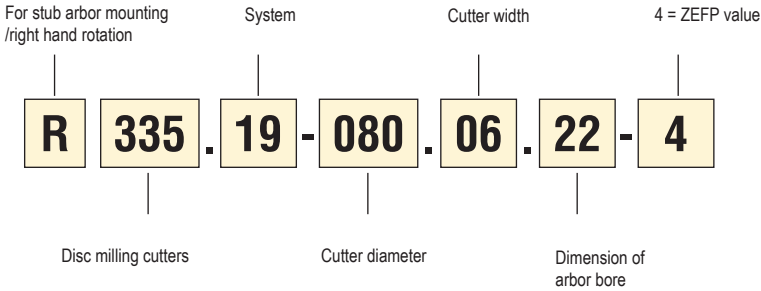
v_c = m/min

All cutting data are start values

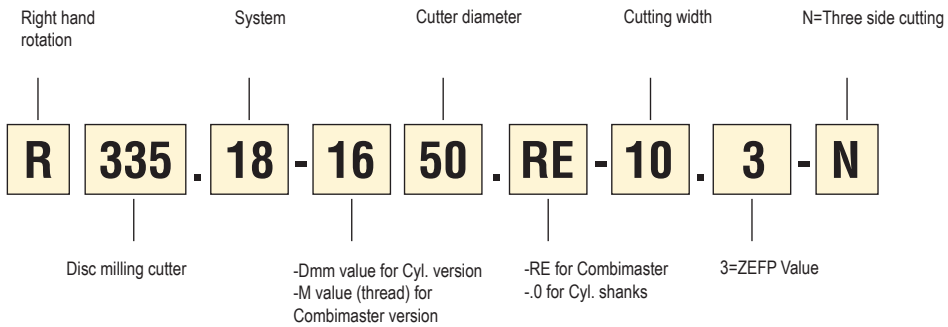
Code keys

For fixed pocket disc milling cutters

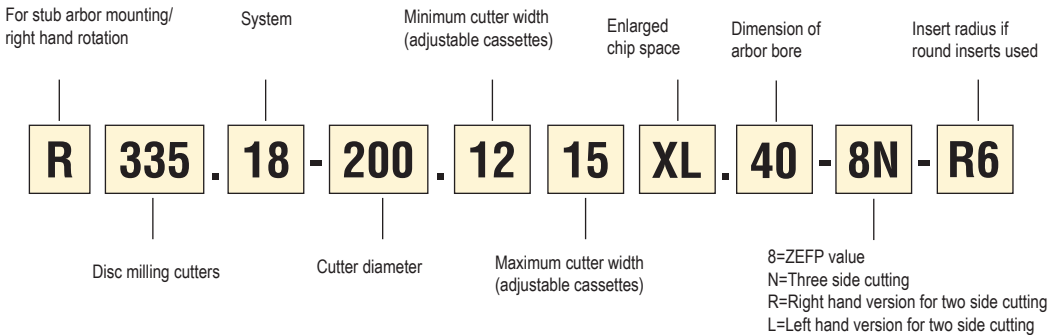
-Arbor type (A or B-type)



-Shank type (Cylindrical or Combimaster type)



For adjustable disc milling cutters



Full side and face - fixed pocket design

| System | Insert | ap | Application | Diameters (mm) available and max depth of cut (mm) | | | | | | | | | | | | Max no. of cutting edges | Radii available (mm) | See page | |
|------------|-------------------|-------------|-------------|--|----|----|----|----|----|-----|-----|-----|-----|-----|-----|--------------------------|---|--|---------|
| | | | | 24 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 315 | | | | |
| 335.15 | | 1,1 - 2,65 | | 3 | 3 | | | 3 | | | | | | | | | 2 | - | 226 |
| | | 3,15 - 5,15 | | | | | 5 | | | | | | | | | | | | |
| 335.10 | | 2,25/2,5 | | | | 12 | 15 | 15 | 24 | 30 | 34 | 39 | | | | | 1 | R0,15/R0,3 | 229-231 |
| | | 3,1 | | | | 12 | 15 | 15 | 24 | 30 | 34 | 39 | 59 | 84 | 117 | | | | |
| | | 4,1 | | | | | | 16 | 22 | 29 | 34 | 39 | 59 | 84 | 117 | | | | |
| 335.19 | SNHQ / 335.19 | 4 | | | | 11 | 13 | 13 | 22 | 24 | 30 | 42 | | | | | 4 | R0,2/R0,4/ R0,8/ R1,2/R1,6/R2,0/ R2,4/ R3,0 /R3,1/ R3,5/ R4,0/R5,0/ R6,0 | 236-240 |
| | | 5 | | | | 11 | 13 | 13 | 22 | 25 | 31 | 43 | | | | | | | |
| | | 6 | | | | | 13 | 14 | 22 | 25 | 31 | 43 | 61 | 86 | | | | | |
| | | 7/8 | | | | | | 13 | 22 | 26 | 32 | 44 | 62 | 87 | | | | | |
| | | 10 | | | | | | | | 27 | 33 | 46 | 63 | 88 | | | | | |
| | | 12 | | | | | | | | 27 | 29 | 45 | 64 | 89 | | | | | |
| 335.18 LNK | LNKT | 8 | | | 9 | 12 | 15 | 15 | 23 | 27 | 33 | | | | | | 4 | R04/R0,8/R1,6/R2,0/ R2,4/ R3,1/ R4,0 | 247-249 |
| | | 10 | | | 9 | 12 | 15 | 15 | 24 | 28 | 34 | | | | | | | | |
| | | 12 | | | | | 15 | 15 | 24 | 28 | 34 | | | | | | | | |
| | | 14 | | | | | | 15 | 23 | 26 | 34 | 51 | | | | | | | |
| | | 17 | | | | | | | 24 | 26 | 33 | 50 | | | | | | | |
| | | 20 | | | | | | | 24 | 26 | 34 | 51 | | | | | | | |
| 335.25 | XNHQ | 15 | | | | | | 22 | 25 | 32 | 51 | 64 | | | | 4 | R04,/R0,8/R1,2/R1,6/ R2,0/R2,4/ R3,1/ R4,0 /R5,0/R6,0 | 252 | |
| | | 20 | | | | | | 25 | 32 | 51 | 64 | 88 | | | | | | | |
| | | 25 | | | | | | | 33 | 50 | 62 | 87 | | | | | | | |

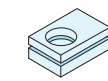
Full radius profile – fixed pocket design

| System | Insert | ap | Application | Diameters (mm) available and max ZEFP (no. of teeth) | | | | | | | | | | | | Max no. of cutting edges | Radii available (mm) | See page |
|--------|-------------------|-----|-------------|--|----|----|----|----|----|-----|-----|-----|-----|-----|-----|--------------------------|------------------------------------|----------|
| | | | | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 315 | | | |
| 335.19 | SNHQ / 335.19 | 4 | | | | 11 | 13 | 13 | 22 | 24 | 30 | 42 | | | | 4 | R2,0/R3,0/ R3,5 - R4,0/ R5,0/ R6,0 | 236-240 |
| | | 6 | | | | 13 | 14 | 22 | 25 | 31 | 43 | 61 | 86 | | | | | |
| | | 7/8 | | | | | 13 | 22 | 26 | 32 | 44 | 62 | 87 | | | | | |
| | | 10 | | | | | | | 27 | 33 | 46 | 63 | 88 | | | | | |
| | | 12 | | | | | | | 27 | 29 | 45 | 64 | 89 | | | | | |
| 335.29 | Round insert | 5 | | 6 | 8 | 10 | 12 | | | | | | | | | 4 | R2,5/R3,0/ R4,0/ R5,0/R6,0 | 255 |
| | | 6 | | 6 | 8 | 10 | 12 | 15 | | | | | | | | | | |
| | | 8 | | | 8 | 10 | 12 | 15 | 20 | | | | | | | | | |
| | | 10 | | | | | 12 | 15 | 20 | | | | | | | | | |
| | | 12 | | Full radius | | | 12 | 15 | 20 | | | | | | | | | |

Basic choice (X indicates the maximum radial depth of cut "CDX" in slotting in mm)



Alternative choice (X indicates the maximum radial depth of cut "CDX" in slotting in mm)



Circlip groove and shallow slotting



Sawing










Full side and face










Full radius profile

Full side and and face - adjustable in width

| System | Insert |  | Applica-tion | Diameters (mm) available and max depth of cut (mm) | | | | | | | Max no. of cutting edges | Radii available (mm) | See page |
|---------------|---|---|--|--|-----|-----|-----|-----|-----|-----|--------------------------|---|----------|
| | | | | 80 | 100 | 125 | 160 | 200 | 250 | 315 | | | |
| 335.18 LNK | LNK  | 8 - 10 |  | 14 | 27 | 32 | 50 | 63 | 88 | 121 | 4 | R0,4 - R0,8 - R1,6 - R2,0 - R2,4 - R3,1 - R4 | 250-251 |
| | | 10 - 12 | | 14 | 27 | 32 | 50 | 63 | 88 | 121 | | | |
| | | 12 - 15 | | 14 | 27 | 32 | 50 | 63 | 88 | 121 | | | |
| 335.25 | XNHQ  | 13.5 - 17 |  | | 24 | 32 | 50 | 63 | 88 | 121 | 4 | R0,4 - R0,8 - R1,2 - R1,6 - R2,0 - R2,4 - R3,1 - R4 - R5 - R6 | 253-254 |
| | | 17 - 21 | | | 24 | 32 | 50 | 63 | 88 | 121 | | | |
| | | 21 - 26 | | | | 32 | 50 | 63 | 88 | 113 | | | |
| | | 26 - 32 | | | | | 50 | 63 | 88 | 113 | | | |
| 335.18/335.25 | Round insert  | 8 - 10 | Full radius  | 15 | 28 | 33 | 51 | 63 | 88 | 121 | 4 | R4 R5 R6 R8 R10 | 256-258 |
| | | 10 - 12 | | 15 | 28 | 33 | 51 | 63 | 88 | 121 | | | |
| | | 12 - 15 | | 15 | 28 | 33 | 51 | 63 | 88 | 121 | | | |
| | | 16 - 17 | | | 28 | 36 | 54 | 67 | 92 | 124 | | | |
| | | | | | | | | | 92 | 124 | | | |
| | | 20 - 21 | | | | | | | | | | | |

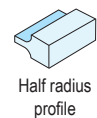
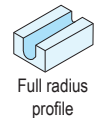
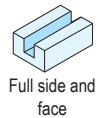
Half side and face

| System | Insert |  | Applica-tion | Diameters (mm) available and max ZEFP (no. of teeth) | | | | | | | Max no. of cutting edges | Radii available (mm) | See page |
|------------|---|---|--|--|-----|-----|-----|-----|-----|-----|--------------------------|---|------------------|
| | | | | 80 | 100 | 125 | 160 | 200 | 250 | 315 | | | |
| 335.18 LNK | LNK  | ≤5 |  | 14 | 27 | 32 | 50 | 63 | 88 | 121 | 2+2 | R0,4 - R0,8 - R1,6 - R2,0 - R2,4 - R3,1 - R4 | 259-260, 265-266 |
| | | ≤6 | | 14 | 27 | 32 | 50 | 63 | 88 | 121 | | | |
| | | ≤7.5 | | 14 | 27 | 32 | 50 | 63 | 88 | 121 | | | |
| 335.25 | XNHQ  | ≤8,5 |  | | 24 | 32 | 50 | 63 | 88 | 121 | 2+2 | R0,4 - R0,8 - R1,2 - R1,6 - R2,0 - R2,4 - R3,1 - R4 - R5 - R6 | 261-262, 267-268 |
| | | ≤11 | | | 24 | 32 | 50 | 63 | 88 | 121 | | | |
| | | ≤13 | | | | 32 | 50 | 63 | 88 | 113 | | | |
| | | ≤16 | | | | | 50 | 63 | 88 | 113 | | | |
| 335.18 | Round insert  | ≤4 | Full radius  | 15 | 28 | 33 | 51 | 63 | 88 | 121 | 4 | R4 R5 R6 R8 R10 | 263-264, 269-270 |
| | | ≤5 | | 15 | 28 | 33 | 51 | 63 | 88 | 121 | | | |
| | | ≤6 | | 15 | 28 | 33 | 51 | 63 | 88 | 121 | | | |
| | | ≤8 | | | 28 | 36 | 54 | 67 | 92 | 124 | | | |
| | | ≤10 | | | | | | | 92 | 124 | | | |

Basic choice (X indicates the maximum radial depth of cut "CDX" in slotting in mm)





Alternative choice (X indicates the maximum radial depth of cut "CDX" in slotting in mm)




335.15... First choice for circlip grooves and narrow slotting – Width of cut from 1,1 to 5,15 mm

Applications






Width of cut 1.1 to 5.15 mm



Cylindrical: 24 and 34 mm




B Type: 63 mm

Basic choice for grooving.

Dia 24-63 mm

2 cutting edges per insert.
 $a_p = 1,1-5,15$ mm.

Insert designation:
 R335.15-13..
 R335.15-18..





Edge form: Chamfer


Product pages: 226
 Insert page: 694-695
 Cutting data: 227-228
 Add. information: 226
 For ISO attribute explanation, see page 15

335.10... First choice for cutting-off and slim slotting – Width of cut from 2,25 to 4,1 mm


Applications









Width of cut 2.25 to 4.1 mm




Cylindrical:
63-80 mm



A Type:
80-315 mm



B Type:
63-160 mm




Combimaster with
internal coolant:
40-100 mm

Basic choice for grooving, sawing, full side and face

Dia 40-315 mm
 Internal coolant up to dia 100mm
 Available with normal and close pitch version

1 cutting edge per insert.
 $a_p = 2,25/2,5/3,1/4,1$ mm

Insert designation: 150.10






Edge form: Corner radius 0,15/0,20


Product pages: 229-231
 Insert page: 687
 Cutting data: 234-235
 Add. information: 232-233
 For ISO attribute explanation, see page 15

335.19... Fixed pocket - small width of cut 4 to 12mm


Applications


Combimaster
Ø 40/50/63 mm



Cylindrical
Ø 50/63/80 mm




A Type
Ø 63-250 mm



B Type:
Ø 63-160 mm

Note: In full side and face operation, use left and right hand inserts.




Width of cut 4 to 12 mm

Basic choice for sawing and slotting

Can be used for full radius profile with radii inserts.

Dia 40-250 mm
2 or 4 cutting edges per insert depending on radii.
 $a_p = 4-12$ mm.

Insert designation:
SNHQ inserts are the first choice.
335.19 inserts are alternative choice.






Edge form: Corner radii 0,2-6 mm


Product pages: 236-240
Insert page: 609-613, 630
Cutting data: 243-246
Add. information: 241-242
For ISO attribute explanation, see page 15

335.18 LNK... Fixed pocket and adjustable design - Medium width of cut : 8 to 20mm


Applications


Combimaster:
Dia 50 mm
Fixed pocket




Cylindrical:
Dia 32-80 mm
Fixed pocket



A Type:
Dia 80-315 mm
Fixed and adjustable pocket



A Type:
Dia 63-250 mm
Fixed and adjustable pocket




Width of cut 8 to 20 mm

Fixed pocket and adjustable version
For full side and half side and face

Dia 32-315 mm

1 to 4 cutting edges per insert depending on radii.
 $a_p = 8-20$ mm

Insert designation:
LNK..05..
LNK..06..
LNK..08..

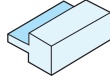
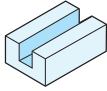


Edge form: Corner radii 0,4-4,0 mm

Product pages: 247-251, 259-260, 265-266
Insert page: 587-588
Cutting data: 278-279
Add. information: 271-277
For ISO attribute explanation, see page 15

335.25 Fixed pocket and adjustable design - Large width of cut: 13,5 to 32 mm

Applications



Width of cut 21 to 32 mm



A type dia 125-315 mm
Fixed pocket and adjustable



B type dia 80-315 mm
Fixed pocket and adjustable

Fixed pocket and adjustable version. For full side and half side and face

Dia 80-315 mm
4 cutting edges per insert depending on radii.

$a_p = 13,5-32$ mm.

Insert designation:
XNHQ and LNHQ

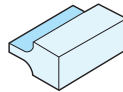
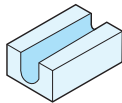


Product pages: 252-254, 261-262, 267-268
Insert page: 620, 589
Cutting data: 280-287
Add. information: 271-
For ISO attribute explanation, see page 15

Edge form: Corner radii 0,8-6,0 mm

335.29/335.18/335.25 Equipped with round inserts

Applications



Cylindrical and Combimaster
Dia 25-50 mm
Fixed pocket



B Type:
Dia 63-250 mm
Fixed and adjustable pocket



A Type:
Dia 80-315 mm
Adjustable pocket

Basic choice for full radius profiling, half radius profile and grooving.

Dia 25-320 mm

$a_p = 5-20$ mm

Insert designation:

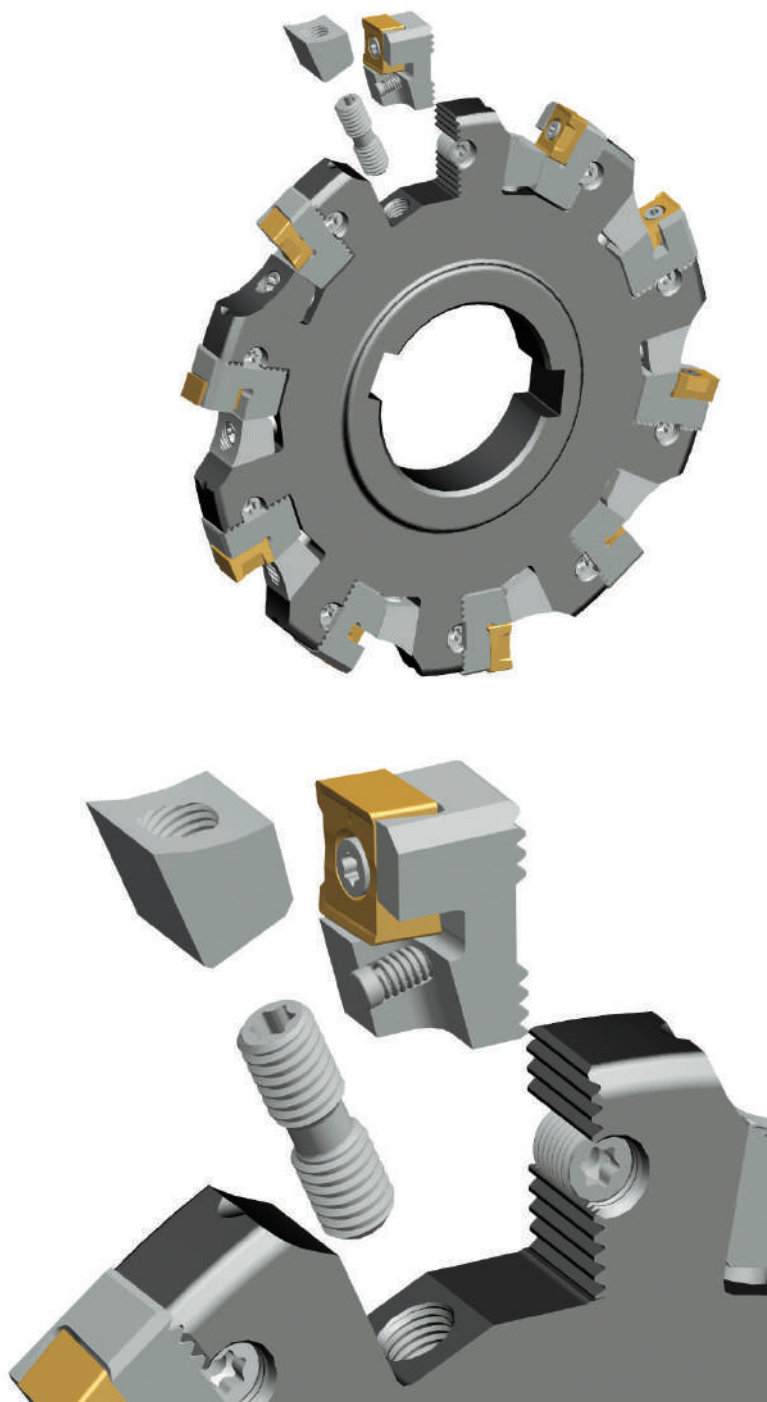
RD..05..
RD..06..
RD..07..
RD..08..
RD..10..
RP..12..
RP..16..
RP..20..



Product pages: 256-258, 263-264, 269-270
Insert page: 597-598
Cutting data: 288-303
Add. information: 271-277
For ISO attribute explanation, see page 15

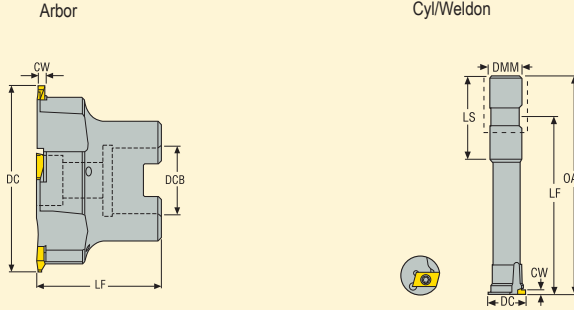
Edge form: Corner radii 2,5-10 mm

335.18 and 335.25 - Adjustable disc milling cutter in width - Cassette version



For circlip grooves milling cutter R335.15

Width 1,1-5,15 mm



- For insert selection and cutting data recommendations, see page(s) 227 - 228
- For complete insert programme, see page(s) 694-695

| Designation | Type of mounting | Dimensions in mm | | | | | | | Spindle speed (rpm) | Weight (KG) | Insert quantity | Insert 150.10 |
|----------------------|------------------|------------------|------|------|------|------|-------|--------|---------------------|-------------|-----------------|---------------|
| | | CW min-max | DC | DMM | DCB | LS | OAL | LF | | | | |
| R335.15-20024.3-03-1 | Cyl.-Weldon | 1,1-2,65 | 24,0 | 20,0 | - | 50,0 | 130,0 | 105,05 | 1 | 0,3 | 28200 | R335.15-13.. |
| R335.15-25034.3-03-2 | Cyl.-Weldon | 1,1-2,65 | 34,0 | 25,0 | - | 56,0 | 130,0 | 98,05 | 2 | 0,5 | 23600 | R335.15-13.. |
| R335.15-063-03.22-5 | Arbor | 1,1-2,65 | 63,0 | - | 22,0 | - | - | 40,0 | 5 | 0,5 | 17300 | R335.15-13.. |
| R335.15-063-05.22-5 | Arbor | 3,15-5,15 | 63,0 | - | 22,0 | - | - | 40,0 | 5 | 0,4 | 17300 | R335.15-18.. |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

CW depends on the insert width

For groove depth (CDX), please see insert pages 694-695

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|----------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R335.15-20024 | DOUBLE-T | C03509-T15P | H4B-T15P | - | 3,0 |
| R335.15-25034 | DOUBLE-T | C03509-T15P | H4B-T15P | - | 3,0 |
| R335.15-063-.. | DOUBLE-T | C03509-T15P | H4B-T15P | 220.17-692 | 3,0 |
| | | | | | |
| | | | | | |

Torque keys, see page 732

Dimensions of mounting

| | For cutter | Dimensions in mm | | |
|--|----------------|------------------|------|-----|
| | | DCSFMS | KWW | C |
| | R335.15-063-.. | 40,0 | 10,4 | 6,3 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list

335.15 - Insert selection

| SMG | | | f_z | | |
|-----|-------------------------|-------------------------|-------|------|------|
| | | | 10% | 5% | 2% |
| P1 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,19 | 0,26 | 0,42 |
| P2 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,19 | 0,26 | 0,42 |
| P3 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,18 | 0,26 | 0,40 |
| P4 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,18 | 0,24 | 0,40 |
| P5 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,17 | 0,24 | 0,38 |
| P6 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,17 | 0,24 | 0,38 |
| P7 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,17 | 0,24 | 0,38 |
| P8 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,18 | 0,26 | 0,40 |
| P11 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,17 | 0,24 | 0,38 |
| P12 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,12 | 0,16 | 0,26 |
| M1 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,19 | 0,26 | 0,42 |
| M2 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,17 | 0,24 | 0,38 |
| M3 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,14 | 0,19 | 0,30 |
| M4 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,12 | 0,17 | 0,26 |
| M5 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,12 | 0,17 | 0,26 |
| K1 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,19 | 0,26 | 0,42 |
| K2 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,17 | 0,24 | 0,38 |
| K3 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,17 | 0,24 | 0,38 |
| K4 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,17 | 0,24 | 0,38 |
| K5 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,16 | 0,22 | 0,34 |
| K6 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,17 | 0,24 | 0,38 |
| K7 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,16 | 0,22 | 0,34 |
| N1 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,24 | 0,34 | 0,55 |
| N2 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,24 | 0,34 | 0,55 |
| N3 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,24 | 0,34 | 0,55 |
| N11 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,24 | 0,34 | 0,55 |
| S1 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,12 | 0,17 | 0,26 |
| S2 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,12 | 0,17 | 0,26 |
| S3 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,11 | 0,16 | 0,24 |
| S11 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,14 | 0,19 | 0,30 |
| S12 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,14 | 0,19 | 0,30 |
| S13 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,12 | 0,17 | 0,26 |
| H5 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,12 | 0,16 | 0,26 |
| H8 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,090 | 0,12 | 0,20 |
| H11 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,12 | 0,16 | 0,26 |
| H12 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,090 | 0,12 | 0,20 |
| H21 | R335.15-13..FG-E08 F40M | R335.15-18..FG-M12 F40M | 0,090 | 0,12 | 0,20 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

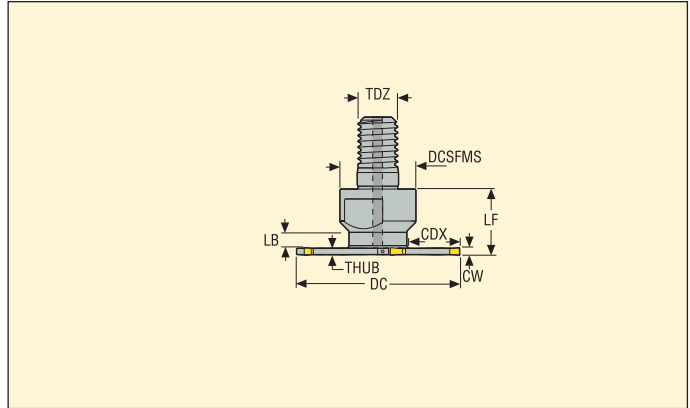
All cutting data are start values

335.15 - Cutting data $v_c =$ (m/min)

| SMG | F40M | | |
|-----|------|------|------|
| | 10% | 5% | 2% |
| P1 | 260 | 285 | 280 |
| P2 | 255 | 275 | 275 |
| P3 | 220 | 240 | 240 |
| P4 | 195 | 215 | 210 |
| P5 | 190 | 205 | 205 |
| P6 | 210 | 230 | 230 |
| P7 | 200 | 215 | 215 |
| P8 | 185 | 200 | 200 |
| P11 | 195 | 210 | 210 |
| P12 | 125 | 135 | 135 |
| M1 | 205 | 225 | 220 |
| M2 | 170 | 185 | 185 |
| M3 | 135 | 150 | 150 |
| M4 | 105 | 115 | 115 |
| M5 | 90 | 95 | 95 |
| K1 | 200 | 220 | 220 |
| K2 | 180 | 195 | 195 |
| K3 | 150 | 165 | 165 |
| K4 | 145 | 155 | 155 |
| K5 | 90 | 95 | 95 |
| K6 | 130 | 140 | 140 |
| K7 | 110 | 120 | 120 |
| N1 | 1500 | 1625 | 1600 |
| N2 | 600 | 650 | 650 |
| N3 | 405 | 435 | 430 |
| N11 | 460 | 495 | 495 |
| S1 | 49 | 55 | 55 |
| S2 | 40 | 43 | 43 |
| S3 | 35 | 37 | 38 |
| S11 | 70 | 75 | 75 |
| S12 | 60 | 65 | 65 |
| S13 | 34 | 36 | 36 |
| H5 | 41 | 45 | 45 |
| H8 | 44 | 48 | 47 |
| H11 | 55 | 60 | 55 |
| H12 | 50 | 55 | 55 |
| H21 | 44 | 48 | 47 |

Cutter 335.10 - Insert 150.10

Width 2,25/2,5/3,1 mm – full side – close pitch design with internal coolant



- For insert selection and cutting data recommendations, see page(s) 234-235
- For complete insert programme, see page(s) 687

| Designation | Type of mounting | Dimensions in mm | | | | | | | | Coolant | Chip | Weight (Kg) | Insert | Insert 150.10 |
|-------------------------|------------------|------------------|-------|------|--------|-----|------|-----|------|---------|------|-------------|--------|---------------|
| | | CW min-max | DC | CDX | DCSFMS | LB | LF | TDZ | THUB | | | | | |
| R335.10-1040.RE-02-4A | Combimaster | 2,25-2,5 | 40,0 | 12,7 | 18,5 | 5,3 | 20,0 | M10 | 1,9 | ✓ | 4 | 0,1 | 3970 | -2.25N/2.5N |
| R335.10-1250.RE-02-5A | Combimaster | 2,25-2,5 | 50,0 | 15,4 | 23,0 | 5,3 | 20,0 | M12 | 1,9 | ✓ | 5 | 0,1 | 3180 | -2.25N/2.5N |
| R335.10-1663.RE-02-7A | Combimaster | 2,25-2,5 | 63,0 | 15,7 | 30,0 | 0,0 | 23,0 | M16 | 1,9 | ✓ | 7 | 0,2 | 2520 | -2.25N/2.5N |
| R335.10-1680.RE-02-9A | Combimaster | 2,25-2,5 | 80,0 | 24,1 | 30,0 | 0,0 | 23,0 | M16 | 1,9 | ✓ | 9 | 0,2 | 1980 | -2.25N/2.5N |
| R335.10-20100.RE-02-11A | Combimaster | 2,25-2,5 | 100,0 | 30,4 | 36,5 | 0,0 | 25,0 | M20 | 1,9 | ✓ | 11 | 0,4 | 1580 | -2.25N/2.5N |
| R335.10-1040.RE-03-4A | Combimaster | 3,1-3,1 | 40,0 | 12,9 | 18,5 | 4,3 | 20,0 | M10 | 2,4 | ✓ | 4 | 0,1 | 3970 | -3N |
| R335.10-1250.RE-03-5A | Combimaster | 3,1-3,1 | 50,0 | 15,6 | 23,0 | 4,3 | 20,0 | M12 | 2,4 | ✓ | 5 | 0,1 | 3180 | -3N |
| R335.10-1663.RE-03-7A | Combimaster | 3,1-3,1 | 63,0 | 15,9 | 30,0 | 0,0 | 23,0 | M16 | 2,4 | ✓ | 7 | 0,2 | 2520 | -3N |
| R335.10-1680.RE-03-9A | Combimaster | 3,1-3,1 | 80,0 | 24,3 | 30,0 | 0,0 | 23,0 | M16 | 2,4 | ✓ | 9 | 0,2 | 1980 | -3N |
| R335.10-20100.RE-03-11A | Combimaster | 3,1-3,1 | 100,0 | 30,6 | 36,5 | 0,0 | 25,0 | M20 | 2,4 | ✓ | 11 | 0,4 | 1580 | -3N |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Spare Parts

| For cutter | Insert key |
|------------|------------|
| | |
| R335.10-.. | 335.10-155 |
| | |
| | |
| | |

Please check availability in current price and stock-list

Cutter 335.10 - Insert 150.10

Width 2,25/2,5/3,1 mm – full side – HSS body

Type B₁ for Cylindrical/Weldon shank

Type B₂ for stub Arbor

Type B₄ for Combimaster

- For insert selection and cutting data recommendations, see page(s) 234-235
- For complete insert programme, see page(s) 687
- Spare parts, see page 232-233

Drawings for type A and B₃, see page 231

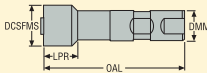
| Designation | Type of mounting | Dimensions in mm | | | | | | | | ⌀ | kg | | Insert 150.10 |
|----------------------|------------------|------------------|-------|-------|------|--------|------|-----|------|----|-----|------|---------------|
| | | CW min-max | DC | CDX | DCB | DCSFMS | DMM | TDZ | THUB | | | | |
| R335.10-25063.3-02-5 | B ₁ | 2,25-2,5 | 63,0 | 15,0 | – | – | 25,0 | – | 1,9 | 5 | 0,6 | 4000 | -2.25N/2.5N |
| R335.10-063-02.22-5 | B ₂ | 2,25-2,5 | 63,0 | 15,0 | 22,0 | – | – | – | 1,9 | 5 | 0,5 | 4000 | -2.25N/2.5N |
| R335.10-1663.RE-02-5 | B ₄ | 2,25-2,5 | 63,0 | 16,0 | – | 30,0 | – | – | 1,9 | 5 | 0,3 | 4000 | -2.25N/2.5N |
| R335.10-32080.3-02-6 | B ₁ | 2,25-2,5 | 80,0 | 19,5 | – | – | 32,0 | – | 1,9 | 6 | 1,1 | 3500 | -2.25N/2.5N |
| R335.10-080-02.22-6 | B ₂ | 2,25-2,5 | 80,0 | 19,5 | 22,0 | – | – | – | 1,9 | 6 | 0,5 | 3500 | -2.25N/2.5N |
| 335.10-080-02.22-6 | A | 2,25-2,5 | 80,0 | 22,5 | 22,0 | – | – | – | 1,9 | 6 | 0,1 | 3500 | -2.25N/2.5N |
| R335.10-1680.RE-02-6 | B ₄ | 2,25-2,5 | 80,0 | 19,5 | – | 30,0 | – | – | 1,9 | 6 | 0,4 | 3500 | -2.25N/2.5N |
| R335.10-100-02.27-7 | B ₃ | 2,25-2,5 | 100,0 | 25,5 | 27,0 | 48,0 | – | – | 1,9 | 7 | 0,9 | 3200 | -2.25N/2.5N |
| 335.10-100-02.27-7 | A | 2,25-2,5 | 100,0 | 29,0 | 27,0 | – | – | – | 1,9 | 7 | 0,1 | 3200 | -2.25N/2.5N |
| R335.10-125-02.32-9 | B ₃ | 2,5-2,25 | 125,0 | 33,0 | 32,0 | 58,0 | – | – | 1,9 | 9 | 1,1 | 2800 | -2.25N/2.5N |
| 335.10-125-02.32-9 | A | 2,25-2,5 | 125,0 | 34,5 | 32,0 | – | – | – | 1,9 | 9 | 0,2 | 2800 | -2.25N/2.5N |
| R335.10-160-02.40-12 | B ₃ | 2,25-2,5 | 160,0 | 39,5 | 40,0 | 80,0 | – | – | 1,9 | 12 | 2,4 | 2400 | -2.25N/2.5N |
| 335.10-160-02.40-12 | A | 2,25-2,5 | 160,0 | 39,5 | 40,0 | – | – | – | 1,9 | 12 | 0,3 | 2400 | -2.25N/2.5N |
| R335.10-25063.3-03-5 | B ₁ | 3,1 | 63,0 | 15,0 | – | – | 25,0 | – | 2,4 | 5 | 0,5 | 4000 | -3N |
| R335.10-063-03.22-5 | B ₂ | 3,1 | 63,0 | 15,0 | 22,0 | – | – | – | 2,4 | 5 | 0,4 | 4000 | -3N |
| R335.10-1663.RE-03-5 | B ₄ | 3,1-3,1 | 63,0 | 16,0 | – | 30,0 | – | – | 2,4 | 5 | 0,3 | 4000 | -3N |
| R335.10-32080.3-03-6 | B ₁ | 3,1 | 80,0 | 19,5 | – | – | 32,0 | – | 2,4 | 6 | 1,1 | 3500 | -3N |
| R335.10-080-03.22-6 | B ₂ | 3,1 | 80,0 | 19,5 | 22,0 | – | – | – | 2,4 | 6 | 0,5 | 3500 | -3N |
| 335.10-080-03.22-6 | A | 3,1 | 80,0 | 22,5 | 22,0 | – | – | – | 2,4 | 6 | 0,1 | 3500 | -3N |
| R335.10-1680.RE-03-6 | B ₄ | 3,1-3,1 | 80,0 | 19,5 | – | 30,0 | – | – | 2,4 | 6 | 0,5 | 3500 | -3N |
| R335.10-100-03.27-7 | B ₃ | 3,1 | 100,0 | 25,5 | 27,0 | 48,0 | – | – | 2,4 | 7 | 0,7 | 3200 | -3N |
| 335.10-100-03.27-7 | A | 3,1 | 100,0 | 29,0 | 27,0 | – | – | – | 2,4 | 7 | 0,2 | 3200 | -3N |
| R335.10-125-03.32-9 | B ₃ | 3,1 | 125,0 | 33,0 | 32,0 | 58,0 | – | – | 2,4 | 9 | 1,4 | 2800 | -3N |
| 335.10-125-03.32-9 | A | 3,1 | 125,0 | 34,5 | 32,0 | – | – | – | 2,4 | 9 | 0,3 | 2800 | -3N |
| R335.10-160-03.40-12 | B ₃ | 3,1 | 160,0 | 39,5 | 40,0 | 80,0 | – | – | 2,4 | 12 | 2,4 | 2400 | -3N |
| 335.10-160-03.40-12 | A | 3,1 | 160,0 | 39,5 | 40,0 | – | – | – | 2,4 | 12 | 0,3 | 2400 | -3N |
| 335.10-200-03.40-14 | A | 3,1 | 200,0 | 59,5 | 40,0 | – | – | – | 2,4 | 14 | 0,5 | 2200 | -3N |
| 335.10-250-03.40-18 | A | 3,1 | 250,0 | 84,5 | 40,0 | – | – | – | 2,4 | 18 | 1,0 | 2000 | -3N |
| 335.10-315-03.40-24 | A | 3,1 | 315,0 | 117,0 | 40,0 | – | – | – | 2,4 | 24 | 1,3 | 1700 | -3N |

Please check availability in current price and stock-list

For type A cutters, no drive holes for cutter dia 80-100 mm. For cutter dia > 100 mm, please use Seco drive rings, see page 232

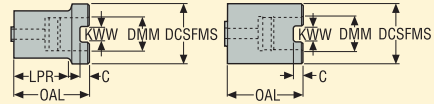
Note: For B₁, B₂, B₃ and B₄ types, the blade is assembled on the holder in the delivery

Holder for B₁



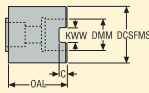
| Designation | DMM | DCSFMS | OAL | LPR |
|-------------|-----|--------|-----|-----|
| 335.10-25.3 | 25 | 32 | 106 | 25 |
| 335.10-32.3 | 32 | 40 | 150 | 30 |
| | | | | |
| | | | | |

Holder for B₂



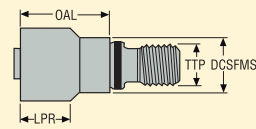
| Designation | DMM | DCSFMS | OAL | LPR | KWW | C |
|-------------|-----|--------|-----|-----|------|-----|
| 335.10-2232 | 22 | 40 | 50 | 36 | 10,4 | 6,3 |
| 335.10-2240 | 22 | 40 | 50 | – | 10,4 | 6,3 |
| | | | | | | |
| | | | | | | |

Holder for B₃



| Designation | DMM | DCSFMS | OAL | KWW | C |
|-------------|-----|--------|-----|------|---|
| 335.10-2748 | 27 | 48 | 50 | 12,4 | 7 |
| 335.10-3258 | 32 | 58 | 63 | 14,4 | 8 |
| 335.10-4080 | 40 | 80 | 63 | 16,4 | 9 |
| | | | | | |
| | | | | | |

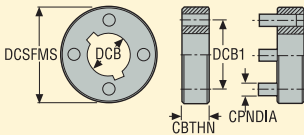
Holder for B₄



| Designation | LPR | TDZ | DCSFMS | OAL |
|----------------|-----|-----|--------|-----|
| 335.10-16RE-10 | 28 | M16 | 30 | 30 |
| 335.10-16RE-18 | 28 | M16 | 30 | 40 |
| | | | | |
| | | | | |

Note: assembly screws delivered with holder B1, B2 B3 and B4

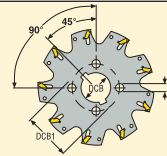
Drive rings for type A



| Designation | DCB | DCSFMS | CBTHN | DCB1 | CPNDIA |
|--------------|-----|--------|-------|------|--------|
| 335.10-14532 | 32 | 55 | 10 | 45 | 5,7 |
| 335.10-16340 | 40 | 80 | 12 | 63 | 10,7 |
| | | | | | |
| | | | | | |

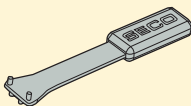
Drive ring to be ordered separately

Dimension of mounting for type A



| Designation | DCB | DCB1 | D1 |
|----------------|-----|------|----|
| 335.10-080 | 22 | – | – |
| 335.10-100 | 27 | – | – |
| 335.10-125 | 32 | 45 | 6 |
| 335.10-160-315 | 40 | 63 | 11 |
| | | | |
| | | | |

Spare parts



| For cutter | Insert removal key | | | |
|------------|--------------------|--|--|--|
| R335.10-.. | 150.10-150 | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list.

Disc milling cutters 335.10 – Spare parts



Assembly components/Standard parts for type B₁

| Part No. | Standard parts | |
|----------------------|----------------------|-----------------|
| | Cutter body Part No. | Holder Part no. |
| R335.10-25063.3-02-5 | B-R335.10-063.10-02 | 335.10-25.3 |
| R335.10-32080.3-02-6 | B-R335.10-080.18-02 | 335.10-32.3 |
| R335.10-25063.3-03-5 | B-R335.10-063.10-03 | 335.10-25.3 |
| R335.10-32080.3-03-6 | B-R335.10-080.18-03 | 335.10-32.3 |
| R335.10-25063.3-04-5 | B-R335.10-063.10-04 | 335.10-25.3 |
| R335.10-32080.3-04-6 | B-R335.10-080.18-04 | 335.10-32.3 |

Spare parts

| Assembly screw | Key (T-handle) | Key/Torque value |
|----------------------|----------------|------------------|
| | | |
| 3 x 335.10-0516-T15P | DOUBLE-T | H6B-T15P / 5 N.m |

Key to be ordered separately

Assembly components/Standard parts for type B₂

| Part No. | Standard parts | |
|---------------------|----------------------|-----------------|
| | Cutter body Part No. | Holder Part no. |
| R335.10-063-02.22-5 | B-R335.10-063.10-02 | 335.10-2232 |
| R335.10-080-02.22-6 | B-R335.10-080.18-02 | 335.10-2240 |
| R335.10-063-03.22-5 | B-R335.10-063.10-03 | 335.10-2232 |
| R335.10-080-03.22-6 | B-R335.10-080.18-03 | 335.10-2240 |
| R335.10-063-04.22-5 | B-R335.10-063.10-04 | 335.10-2232 |
| R335.10-080-04.22-6 | B-R335.10-080.18-04 | 335.10-2240 |

Spare parts

| Assembly screw | Key (T-handle) | Key/Torque value | Arbor screw |
|----------------------|----------------|------------------|-------------|
| | | | |
| 3 x 335.10-0516-T15P | DOUBLE-T | H6B-T15P / 5 N.m | 220.17-696 |

Key to be ordered separately

Assembly components/Standard parts for type B₃

| Part No. | Standard parts | |
|----------------------|----------------------|-----------------|
| | Cutter body Part No. | Holder Part no. |
| R335.10-100-02.27-7 | B-R335.10-100.27-02 | 335.10-2748 |
| R335.10-100-03.27-7 | B-R335.10-100.27-03 | 335.10-2748 |
| R335.10-100-04.27-7 | B-R335.10-100.27-04 | 335.10-2748 |
| R335.10-125-02.32-9 | B-R335.10-125.32-02 | 335.10-3258 |
| R335.10-125-03.32-9 | B-R335.10-125.32-03 | 335.10-3258 |
| R335.10-125-04.32-9 | B-R335.10-125.32-04 | 335.10-3258 |
| R335.10-160-02.40-12 | B-R335.10-160.40-02 | 335.10-4080 |
| R335.10-160-03.40-12 | B-R335.10-160.40-03 | 335.10-4080 |
| R335.10-160-04.40-12 | B-R335.10-160.40-04 | 335.10-4080 |

Spare parts

| Assembly screw | Key (T-handle) | Key/Torque value | Arbor screw |
|----------------------|----------------|------------------|--------------------------|
| | | | |
| 4 x 335.10-0516-T15P | DOUBLE-T | H6B-T15P / 5 N.m | MC6S 12x40 220.17-694 |
| 4 x 335.10-1030-T30P | DOUBLE-T | H6B-T30PL / 8N.m | MC6S 20x40 |

Key to be ordered separately

Assembly components/Standard parts for type B₄/Combimaster

| Part No. | Standard parts | |
|----------------------|----------------------|-----------------|
| | Cutter body Part No. | Holder Part no. |
| R335.10-1663.RE-02-5 | B-R335.10-063.10-02 | 335.10-16RE-10 |
| R335.10-1680.RE-02-6 | B-R335.10-080.18-02 | 335.10-16RE-18 |
| R335.10-1663.RE-03-5 | B-R335.10-063.10-03 | 335.10-16RE-10 |
| R335.10-1680.RE-03-6 | B-R335.10-080.18-03 | 335.10-16RE-18 |
| R335.10-1663.RE-04-5 | B-R335.10-063.10-04 | 335.10-16RE-10 |
| R335.10-1680.RE-04-6 | B-R335.10-080.18-04 | 335.10-16RE-18 |

Spare parts

| Assembly screw | Key (T-handle) | Key/Torque value |
|----------------------|----------------|------------------|
| | | |
| 3 x 335.10-0516-T15P | DOUBLE-T | H6B-T15P / 5 N.m |

Key to be ordered separately

335.10 - Insert selection

| SMG | | | | | f _z | | |
|-----|-----------------------|----------------------|--------------------|--------------------|----------------|-------|-------|
| | | | | | 30% | 20% | 10% |
| P1 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,090 | 0,11 | 0,14 |
| P2 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,095 | 0,11 | 0,14 |
| P3 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,090 | 0,10 | 0,14 |
| P4 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,085 | 0,10 | 0,13 |
| P5 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,085 | 0,10 | 0,13 |
| P6 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,085 | 0,095 | 0,13 |
| P7 | 150.10-2.25N-14 CP500 | 150.10-2.5N-14 CP500 | 150.10-3N-14 CP500 | 150.10-4N-14 CP500 | 0,085 | 0,095 | 0,13 |
| P8 | 150.10-2.25N-14 CP500 | 150.10-2.5N-14 CP500 | 150.10-3N-14 CP500 | 150.10-4N-14 CP500 | 0,090 | 0,10 | 0,14 |
| P11 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,085 | 0,095 | 0,13 |
| M1 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,095 | 0,11 | 0,14 |
| M2 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,085 | 0,10 | 0,13 |
| M3 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,070 | 0,080 | 0,10 |
| M4 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,060 | 0,070 | 0,090 |
| M5 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,060 | 0,070 | 0,090 |
| K1 | 150.10-2.25N-14 TGP45 | 150.10-2.5N-14 TGP45 | 150.10-3N-14 TGP45 | 150.10-4N-14 TGP45 | 0,095 | 0,11 | 0,14 |
| K2 | 150.10-2.25N-14 TGP45 | 150.10-2.5N-14 TGP45 | 150.10-3N-14 TGP45 | 150.10-4N-14 TGP45 | 0,085 | 0,10 | 0,13 |
| K3 | 150.10-2.25N-14 TGP45 | 150.10-2.5N-14 TGP45 | 150.10-3N-14 TGP45 | 150.10-4N-14 TGP45 | 0,085 | 0,10 | 0,13 |
| K4 | 150.10-2.25N-14 TGP45 | 150.10-2.5N-14 TGP45 | 150.10-3N-14 TGP45 | 150.10-4N-14 TGP45 | 0,085 | 0,10 | 0,13 |
| K5 | 150.10-2.25N-14 TGP45 | 150.10-2.5N-14 TGP45 | 150.10-3N-14 TGP45 | 150.10-4N-14 TGP45 | 0,075 | 0,090 | 0,12 |
| K6 | 150.10-2.25N-14 TGP45 | 150.10-2.5N-14 TGP45 | 150.10-3N-14 TGP45 | 150.10-4N-14 TGP45 | 0,085 | 0,10 | 0,13 |
| K7 | 150.10-2.25N-14 TGP45 | 150.10-2.5N-14 TGP45 | 150.10-3N-14 TGP45 | 150.10-4N-14 TGP45 | 0,075 | 0,090 | 0,12 |
| N1 | 150.10-2.25N-14 CP500 | 150.10-2.5N-12 CP500 | 150.10-3N-12 CP500 | 150.10-4N-12 CP500 | 0,12 | 0,14 | 0,18 |
| N2 | 150.10-2.25N-14 CP500 | 150.10-2.5N-12 CP500 | 150.10-3N-12 CP500 | 150.10-4N-12 CP500 | 0,12 | 0,14 | 0,18 |
| N3 | 150.10-2.25N-14 CP500 | 150.10-2.5N-12 CP500 | 150.10-3N-12 CP500 | 150.10-4N-12 CP500 | 0,12 | 0,14 | 0,18 |
| N11 | 150.10-2.25N-14 CP500 | 150.10-2.5N-12 CP500 | 150.10-3N-12 CP500 | 150.10-4N-12 CP500 | 0,12 | 0,14 | 0,18 |
| S1 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,060 | 0,070 | 0,090 |
| S2 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,060 | 0,070 | 0,090 |
| S3 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,055 | 0,065 | 0,085 |
| S11 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,070 | 0,080 | 0,10 |
| S12 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,070 | 0,080 | 0,10 |
| S13 | 150.10-2.25N-14 CP600 | 150.10-2.5N-14 CP600 | 150.10-3N-14 CP600 | 150.10-4N-14 CP600 | 0,060 | 0,070 | 0,090 |
| H5 | 150.10-2.25N-14 TGP45 | 150.10-2.5N-14 TGP45 | 150.10-3N-14 TGP45 | 150.10-4N-14 TGP45 | 0,060 | 0,065 | 0,090 |
| H8 | 150.10-2.25N-14 TGP45 | 150.10-2.5N-14 TGP45 | 150.10-3N-14 TGP45 | 150.10-4N-14 TGP45 | 0,044 | 0,050 | 0,070 |
| H11 | 150.10-2.25N-14 TGP45 | 150.10-2.5N-14 TGP45 | 150.10-3N-14 TGP45 | 150.10-4N-14 TGP45 | 0,060 | 0,065 | 0,090 |
| H12 | 150.10-2.25N-14 TGP45 | 150.10-2.5N-14 TGP45 | 150.10-3N-14 TGP45 | 150.10-4N-14 TGP45 | 0,060 | 0,065 | 0,090 |
| H21 | 150.10-2.25N-14 TGP45 | 150.10-2.5N-14 TGP45 | 150.10-3N-14 TGP45 | 150.10-4N-14 TGP45 | 0,044 | 0,050 | 0,070 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

335.10 - Cutting data $v_c =$ (m/min)

| SMG | TGP45 | | | T350M | | | CP500 | | | CP600 | | |
|-----|-------|-----|-----|-------|-----|-----|-------|-----|-----|-------|-----|-----|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 255 | 275 | 300 | 220 | 235 | 260 | 240 | 260 | 285 | 195 | 205 | 230 |
| P2 | 245 | 265 | 295 | 215 | 230 | 255 | 230 | 250 | 275 | 185 | 200 | 220 |
| P3 | 215 | 230 | 255 | 185 | 195 | 220 | 205 | 215 | 240 | 165 | 175 | 195 |
| P4 | 190 | 205 | 225 | 165 | 175 | 195 | 180 | 195 | 215 | 145 | 155 | 170 |
| P5 | 185 | 195 | 220 | 160 | 170 | 190 | 175 | 185 | 205 | 140 | 150 | 165 |
| P6 | 205 | 220 | 245 | 180 | 190 | 210 | 195 | 210 | 230 | 155 | 165 | 185 |
| P7 | 195 | 210 | 230 | 170 | 180 | 200 | 185 | 195 | 220 | 150 | 155 | 175 |
| P8 | 180 | 190 | 215 | 155 | 165 | 185 | 170 | 180 | 205 | 135 | 145 | 165 |
| P11 | 190 | 200 | 225 | 165 | 175 | 195 | 180 | 190 | 210 | 145 | 155 | 170 |
| M1 | 175 | 190 | 210 | 165 | 175 | 195 | 175 | 190 | 205 | 150 | 160 | 180 |
| M2 | 150 | 160 | 175 | 135 | 145 | 160 | 145 | 155 | 170 | 125 | 135 | 150 |
| M3 | 120 | 130 | 140 | 110 | 120 | 130 | 115 | 125 | 135 | 100 | 110 | 120 |
| M4 | 90 | 100 | 110 | 85 | 90 | 100 | 90 | 95 | 105 | 80 | 85 | 90 |
| M5 | 75 | 80 | 90 | 70 | 75 | 85 | 75 | 80 | 90 | 65 | 70 | 75 |
| K1 | 195 | 210 | 230 | 170 | 180 | 200 | 185 | 200 | 220 | 145 | 160 | 175 |
| K2 | 175 | 185 | 205 | 150 | 160 | 180 | 165 | 175 | 195 | 135 | 140 | 155 |
| K3 | 150 | 155 | 175 | 130 | 135 | 150 | 140 | 150 | 165 | 110 | 120 | 135 |
| K4 | 140 | 150 | 165 | 120 | 130 | 145 | 135 | 140 | 160 | 105 | 115 | 125 |
| K5 | 85 | 90 | 100 | 75 | 80 | 85 | 80 | 85 | 95 | 65 | 70 | 75 |
| K6 | 125 | 130 | 145 | 110 | 115 | 125 | 120 | 125 | 140 | 95 | 100 | 110 |
| K7 | 110 | 115 | 130 | 95 | 100 | 110 | 105 | 110 | 120 | 85 | 90 | 100 |
| N1 | 720 | 780 | 860 | — | — | — | 690 | 740 | 820 | 550 | 590 | 650 |
| N2 | 580 | 630 | 700 | — | — | — | 550 | 600 | 660 | 445 | 475 | 530 |
| N3 | 390 | 420 | 465 | — | — | — | 370 | 395 | 440 | 295 | 320 | 350 |
| N11 | 445 | 480 | 530 | — | — | — | 420 | 455 | 500 | 335 | 365 | 400 |
| S1 | 45 | 48 | 55 | 39 | 42 | 47 | 42 | 45 | 50 | 36 | 39 | 43 |
| S2 | 36 | 38 | 43 | 32 | 34 | 38 | 34 | 36 | 40 | 29 | 31 | 35 |
| S3 | 31 | 34 | 37 | 28 | 30 | 33 | 30 | 32 | 35 | 26 | 27 | 30 |
| S11 | 65 | 65 | 75 | 55 | 60 | 65 | 60 | 65 | 70 | 50 | 55 | 60 |
| S12 | 44 | 47 | 50 | 39 | 42 | 46 | 41 | 45 | 49 | 36 | 38 | 42 |
| S13 | 35 | 37 | 41 | 31 | 33 | 37 | 33 | 35 | 39 | 28 | 30 | 34 |
| H5 | 37 | 39 | 43 | 35 | 37 | 41 | 36 | 38 | 42 | 31 | 32 | 36 |
| H8 | 38 | 41 | 46 | 37 | 39 | 43 | 38 | 40 | 44 | 32 | 34 | 38 |
| H11 | 47 | 50 | 55 | 45 | 47 | 50 | 46 | 49 | 55 | 39 | 42 | 46 |
| H12 | 75 | 80 | 90 | 70 | 75 | 85 | 75 | 80 | 85 | 65 | 65 | 75 |
| H21 | 38 | 41 | 46 | 37 | 39 | 43 | 38 | 40 | 44 | 32 | 34 | 38 |

Cutter 335.19 - Insert SNHQ

Width 4 mm - full side

- For insert selection and cutting data recommendations, see page(s) 243-246
- For complete insert programme, see page(s) 668, 692
- For spare parts and technical information, see page 241-242

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | | | | ZEFP | kg | 17100 | () = No of inserts | |
|----------------------|------------------|------------------|-----|------|------|------|--------|-----|-------|------|-------|------|------|------|------|-------|------------|--------------------|------------|
| | | CW | DC | CDX | DMM | DCB | DCSFMS | TDZ | LF | OAL | LB | LS | THUB | SNHQ | | | | SNHQ | |
| R335.19-1040.RE-04.2 | RE | 4,0 | 40 | 11,6 | - | - | 18,5 | M10 | 23,0 | - | 8,3 | - | - | 4 | 2 | 0,1 | 17100 | 1102..R(2) | 1102..L(2) |
| R335.19-2550.0-04.2 | Cyl | 4,0 | 50 | 13,9 | 25,0 | - | - | - | 150,0 | 11,0 | 132,2 | - | 4 | 2 | 0,6 | 19100 | 1102..R(2) | 1102..L(2) | |
| R335.19-1650.RE-04.2 | RE | 4,0 | 50 | 13,9 | - | - | 30,0 | M16 | 35,0 | - | 11,0 | - | 4 | 2 | 0,2 | 19100 | 1102..R(2) | 1102..L(2) | |
| R335.19-3263.0-04.4 | Cyl | 4,0 | 63 | 13,9 | 32,0 | - | - | - | 170,0 | 0,0 | 148,6 | - | 8 | 4 | 1,2 | 17100 | 1102..R(4) | 1102..L(4) | |
| R335.19-063.04.16-4 | B | 4,0 | 63 | 13,9 | - | 16,0 | 33,0 | - | 35,0 | - | 0,0 | - | 8 | 4 | 0,3 | 17100 | 1102..R(4) | 1102..L(4) | |
| R335.19-063.04.22-3 | B | 4,0 | 63 | 13,9 | - | 22,0 | 40,0 | - | 50,0 | - | 11,3 | - | 6 | 3 | 0,4 | 17100 | 1102..R(3) | 1102..L(3) | |
| R335.19-1663.RE-04.4 | RE | 4,0 | 63 | 13,9 | - | - | 33,0 | M16 | 35,0 | - | 0,0 | - | 8 | 4 | 0,4 | 17100 | 1102..R(4) | 1102..L(4) | |
| 335.19-063.04.22-4 | A | 4,0 | 63 | 13,6 | - | 22,0 | 33,0 | - | - | - | - | 8,0 | 8 | 4 | 0,1 | 17100 | 1102..R(4) | 1102..L(4) | |
| R335.19-080.04.22-4 | B | 4,0 | 80 | 22,4 | - | 22,0 | 40,0 | - | 50,0 | - | 11,3 | - | 8 | 4 | 0,4 | 15200 | 1102..R(4) | 1102..L(4) | |
| R335.19-080.04.22-5 | B | 4,0 | 80 | 22,4 | - | 22,0 | 40,0 | - | 50,0 | - | 11,3 | - | 10 | 5 | 0,5 | 15200 | 1102..R(5) | 1102..L(5) | |
| 335.19-080.04.22-5 | A | 4,0 | 80 | 18,6 | - | 22,0 | 33,0 | - | - | - | - | 12,0 | 10 | 5 | 0,2 | 15200 | 1102..R(5) | 1102..L(5) | |
| R335.19-100.04.27-6 | B | 4,0 | 100 | 22,1 | - | 27,0 | 48,0 | - | 50,0 | - | 0,0 | - | 12 | 6 | 0,7 | 13500 | 1102..R(6) | 1102..L(6) | |
| 335.19-100.04.27-6 | A | 4,0 | 100 | 24,6 | - | 27,0 | 41,0 | - | - | - | - | 12,0 | 12 | 6 | 0,3 | 13500 | 1102..R(6) | 1102..L(6) | |
| R335.19-125.04.32-7 | B | 4,0 | 125 | 29,6 | - | 32,0 | 58,0 | - | 50,0 | - | 0,0 | - | 14 | 7 | 1,1 | 12200 | 1102..R(7) | 1102..L(7) | |
| 335.19-125.04.40-7 | A | 4,0 | 125 | 30,1 | - | 40,0 | 55,0 | - | - | - | - | 12,0 | 14 | 7 | 0,4 | 12200 | 1102..R(7) | 1102..L(7) | |
| R335.19-160.04.40-9 | B | 4,0 | 160 | 41,1 | - | 40,0 | 70,0 | - | 50,0 | - | 0,0 | - | 18 | 9 | 1,2 | 10700 | 1102..R(9) | 1102..L(9) | |
| 335.19-160.04.40-9 | A | 4,0 | 160 | 42,6 | - | 40,0 | 65,0 | - | - | - | - | 12,0 | 18 | 9 | 0,6 | 10700 | 1102..R(9) | 1102..L(9) | |

Please check availability in current price and stock-list

For Combimaster Shanks, see Machining Navigator Tooling System

Cutter 335.19 - Insert SNHQ

Width 5 mm - full side

- For insert selection and cutting data recommendations, see page(s) 243-246
- For complete insert programme, see page(s) 668, 692
- For spare parts and technical information, see page 241-242

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | | | | ⊙ | ZEFP | kg | | () = No of inserts | |
|----------------------|------------------|------------------|-----|------|------|------|--------|-----|------|-------|------|-------|------|------|---|------|-------|------------|--------------------|--|
| | | CW | DC | CDX | DMM | DCB | DCSFMS | TDZ | LF | OAL | LB | LS | THUB | SNHQ | | | | | SNHQ | |
| R335.19-1040.RE-05.2 | RE | 5,0 | 40 | 11,6 | - | - | 18,5 | M10 | 23,0 | - | 7,3 | - | - | 4 | 2 | 0,1 | 16800 | 1103..R(2) | 1103..L(2) | |
| R335.19-2550.0-05.2 | Cyl | 5,0 | 50 | 13,9 | 25,0 | - | - | - | - | 150,0 | 10,0 | 132,2 | - | 4 | 2 | 0,6 | 16800 | 1103..R(2) | 1103..L(2) | |
| R335.19-1650.RE-05.2 | B | 5,0 | 50 | 13,9 | - | - | 30,0 | M16 | 35,0 | - | 10,0 | - | - | 4 | 2 | 0,3 | 16800 | 1103..R(2) | 1103..L(2) | |
| R335.19-063.05.16-4 | B | 5,0 | 63 | 13,9 | - | 16,0 | 33,0 | - | 35,0 | - | 0,0 | - | - | 8 | 4 | 0,3 | 14900 | 1103..R(4) | 1103..L(4) | |
| R335.19-063.05.22-3 | B | 5,0 | 63 | 13,9 | - | 22,0 | 40,0 | - | 50,0 | - | 10,3 | - | - | 6 | 3 | 0,4 | 14900 | 1103..R(3) | 1103..L(3) | |
| R335.19-1663.RE-05.4 | RE | 5,0 | 63 | 13,9 | - | - | 33,0 | M16 | 35,0 | - | 0,0 | - | - | 8 | 4 | 0,3 | 14900 | 1103..R(4) | 1103..L(4) | |
| 335.19-063.05.22-4 | A | 5,0 | 63 | 13,6 | - | 22,0 | 33,0 | - | - | - | - | - | 8,0 | 8 | 4 | 0,1 | 14900 | 1103..R(4) | 1103..L(4) | |
| R335.19-3280.0-05.5 | Cyl | 5,0 | 80 | 22,5 | 32,0 | - | - | - | - | 170,0 | 0,0 | 148,6 | - | 10 | 5 | 1,2 | 13200 | 1102..R(5) | 1102..L(5) | |
| R335.19-080.05.22-5 | B | 5,0 | 80 | 22,4 | - | 22,0 | 40,0 | - | 50,0 | - | 10,3 | - | - | 10 | 5 | 0,5 | 13200 | 1103..R(5) | 1103..L(5) | |
| R335.19-080.05.22-4 | B | 5,0 | 80 | 22,4 | - | 22,0 | 40,0 | - | 50,0 | - | 10,3 | - | - | 8 | 4 | 0,5 | 13200 | 1103..R(4) | 1103..L(4) | |
| 335.19-080.05.22-5 | A | 5,0 | 80 | 19,6 | - | 22,0 | 33,0 | - | - | - | - | - | 12,0 | 10 | 5 | 0,2 | 13200 | 1103..R(5) | 1103..L(5) | |
| R335.19-100.05.27-6 | B | 5,0 | 100 | 22,1 | - | 27,0 | 48,0 | - | 50,0 | - | 0,0 | - | - | 12 | 6 | 0,7 | 11800 | 1103..R(6) | 1103..L(6) | |
| 335.19-100.05.27-6 | A | 5,0 | 100 | 25,6 | - | 27,0 | 41,0 | - | - | - | - | - | 12,0 | 12 | 6 | 0,3 | 11800 | 1103..R(6) | 1103..L(6) | |
| 335.19-125.05.40-7 | A | 5,0 | 125 | 31,1 | - | 40,0 | 55,0 | - | - | - | - | - | 12,0 | 14 | 7 | 0,4 | 10700 | 1103..R(7) | 1103..R(7) | |
| R335.19-125.05.32-7 | B | 5,0 | 125 | 29,6 | - | 32,0 | 58,0 | - | 50,0 | - | 0,0 | - | - | 14 | 7 | 1,1 | 10700 | 1103..R(7) | 1103..L(7) | |
| 335.19-160.05.40-9 | A | 5,0 | 160 | 43,6 | - | 40,0 | 65,0 | - | - | - | - | - | 12,0 | 18 | 9 | 0,7 | 9300 | 1103..R(9) | 1103..L(9) | |
| R335.19-160.05.40-9 | B | 5,0 | 160 | 41,1 | - | 40,0 | 70,0 | - | 50,0 | - | 0,0 | - | - | 18 | 9 | 1,3 | 9300 | 1103..R(9) | 1103..L(9) | |

Please check availability in current price and stock-list

For Combimaster Shanks, see Machining Navigator Tooling System

Cutter 335.19 - Insert SNHQ

Width 7/8/10 mm - full side

Type B

Type A

- For insert selection and cutting data recommendations, see page(s) 243-246
- For complete insert programme, see page(s) 668, 692
- For spare parts and technical information, see page 241-242

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Z | ZEFP | KG | | () = No of inserts | |
|---------------------|------------------|------------------|-------|------|------|--------|------|-----|------|------|----|------|------|--------------------|--------------------|--|
| | | CW | DC | DCB | CDX | DCSFMS | LF | LB | THUB | SNHQ | | | | | SNHQ | |
| R335.19-063.07.16-3 | B | 7,0 | 63,0 | 16,0 | 13,8 | 33,0 | 35,0 | 0,0 | - | 6 | 3 | 0,3 | 9400 | 1204/12045..R(3)* | 1204/12045..L(3)* | |
| R335.19-063.07.22-3 | B | 7,0 | 63,0 | 22,0 | 13,8 | 40,0 | 50,0 | 8,3 | - | 6 | 3 | 0,4 | 9400 | 1204/12045..R(3)* | 1204/12045..L(3)* | |
| R335.19-080.07.22-4 | B | 7,0 | 80,0 | 22,0 | 22,0 | 40,0 | 50,0 | 8,3 | - | 8 | 4 | 0,5 | 8400 | 1204/12045..R(4)* | 1204/12045..L(4)* | |
| 335.19-080.07.22-4 | A | 7,0 | 80,0 | 22,0 | 20,6 | 33,0 | - | - | 12,0 | 8 | 4 | 0,2 | 8400 | 1204/12045..R(4)* | 1204/12045..L(4)* | |
| R335.19-100.07.27-5 | B | 7,0 | 100,0 | 27,0 | 22,0 | 48,0 | 50,0 | 0,0 | - | 10 | 5 | 0,9 | 7500 | 1204/12045..R(5)* | 1204/12045..L(5)* | |
| 335.19-100.07.27-5 | A | 7,0 | 100,0 | 27,0 | 26,6 | 41,0 | - | - | 12,0 | 10 | 5 | 0,3 | 7500 | 1204/12045..R(5)* | 1204/12045..L(5)* | |
| R335.19-125.07.32-6 | B | 7,0 | 125,0 | 32,0 | 29,5 | 58,0 | 50,0 | 0,0 | - | 12 | 6 | 1,2 | 6700 | 1204/12045..R(6)* | 1204/12045..L(6)* | |
| 335.19-125.07.40-6 | A | 7,0 | 125,0 | 40,0 | 32,1 | 55,0 | - | - | 12,0 | 12 | 6 | 0,5 | 6700 | 1204/12045..R(6)* | 1204/12045..L(6)* | |
| R335.19-160.07.40-8 | B | 7,0 | 160,0 | 40,0 | 41,1 | 70,0 | 50,0 | 0,0 | - | 16 | 8 | 1,5 | 5900 | 1204/12045..R(8)* | 1204/12045..L(8)* | |
| 335.19-160.07.40-8 | A | 7,0 | 160,0 | 40,0 | 44,6 | 65,0 | - | - | 12,0 | 16 | 8 | 0,9 | 5900 | 1204/12045..R(8)* | 1204/12045..L(8)* | |
| 335.19-200.07.50-9 | A | 7,0 | 200,0 | 50,0 | 62,6 | 69,0 | - | - | 12,0 | 18 | 9 | 1,4 | 5200 | 1204/12045..R(9)* | 1204/12045..L(9)* | |
| 335.19-250.07.50-12 | A | 7,0 | 250,0 | 50,0 | 87,6 | 69,0 | - | - | 12,0 | 24 | 12 | 2,1 | 4700 | 1204/12045..R(12)* | 1204/12045..L(12)* | |
| R335.19-100.10.27-5 | B | 10,0 | 100,0 | 27,0 | 22,0 | 48,0 | 50,0 | 0,0 | - | 10 | 5 | 0,9 | 6600 | 1205..R(5) | 1205..L(5) | |
| 335.19-100.10.27-5 | A | 10,0 | 100,0 | 27,0 | 27,6 | 41,0 | - | - | 12,0 | 10 | 5 | 0,4 | 6600 | 1205..R(5) | 1205..L(5) | |
| R335.19-125.10.32-6 | B | 10,0 | 125,0 | 32,0 | 29,5 | 58,0 | 50,0 | 0,0 | - | 12 | 6 | 1,3 | 6000 | 1205..R(6) | 1205..L(6) | |
| 335.19-125.10.40-6 | A | 10,0 | 125,0 | 40,0 | 33,1 | 55,0 | - | - | 12,0 | 12 | 6 | 0,6 | 6000 | 1205..R(6) | 1205..L(6) | |
| R335.19-160.10.40-8 | B | 10,0 | 160,0 | 40,0 | 41,1 | 70,0 | 50,0 | 0,0 | - | 16 | 8 | 1,8 | 5200 | 1205..R(8) | 1205..L(8) | |
| 335.19-160.10.40-8 | A | 10,0 | 160,0 | 40,0 | 46,2 | 65,0 | - | - | 12,0 | 16 | 8 | 1,2 | 5200 | 1205..R(8) | 1205..L(8) | |
| 335.19-200.10.50-9 | A | 10,0 | 200,0 | 50,0 | 63,6 | 69,0 | - | - | 12,0 | 18 | 9 | 1,9 | 4700 | 1205..R(9) | 1205..L(9) | |
| 335.19-250.10.50-12 | A | 10,0 | 250,0 | 50,0 | 88,6 | 69,0 | - | - | 12,0 | 24 | 12 | 3,0 | 4200 | 1205..R(12) | 1205..L(12) | |

Please check availability in current price and stock-list

*To generate CW=8mm use insert SNHQ12045..., LF=50,5mm and 35,5mm

Type B

Type A




- For insert selection and cutting data recommendations, see page(s) 243-246
- For complete insert programme, see page(s) 668, 692
- For spare parts and technical information, see page 241-242

| Designation | Type of mounting | Dimensions in mm | | | | | | | Ø | ZEFP | kg | | () = No of inserts | |
|---------------------|------------------|------------------|-------|------|------|--------|------|------|----|------|-----|------|--------------------|-------------|
| | | CW | DC | CDX | DCB | DCSFMS | LF | THUB | | | | | SNHQ | SNHQ |
| R335.19-100.12.27-5 | B | 12,0 | 100,0 | 22,0 | 27,0 | 48,0 | 50,0 | — | 10 | 5 | 0,9 | 6000 | 1207..R(5) | 1207..L(5) |
| 335.19-100.12.27-5 | A | 12,0 | 100,0 | 27,9 | 27,0 | 41,0 | — | 12,0 | 10 | 5 | 0,5 | 6000 | 1207..R(5) | 1207..L(5) |
| R335.19-125.12.32-6 | B | 12,0 | 125,0 | 29,5 | 32,0 | 58,0 | 50,0 | — | 12 | 6 | 1,5 | 5300 | 1207..R(6) | 1207..L(6) |
| R335.19-160.12.40-8 | B | 12,0 | 160,0 | 41,1 | 40,0 | 70,0 | 50,0 | — | 16 | 8 | 1,9 | 4700 | 1207..R(8) | 1207..L(8) |
| 335.19-160.12.40-8 | A | 12,0 | 160,0 | 45,9 | 40,0 | 65,0 | — | 12,0 | 16 | 8 | 1,3 | 4700 | 1207..R(8) | 1207..L(8) |
| 335.19-200.12.50-9 | A | 12,0 | 200,0 | 64,2 | 50,0 | 69,0 | — | 12,0 | 18 | 9 | 2,2 | 4200 | 1207..R(9) | 1207..L(9) |
| 335.19-250.12.50-11 | A | 12,0 | 250,0 | 89,2 | 50,0 | 69,0 | — | 12,0 | 22 | 11 | 3,7 | 3700 | 1207..R(11) | 1207..L(11) |
| | | | | | | | | | | | | | | |
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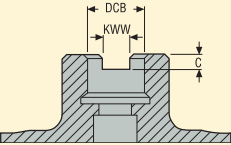

Please check availability in current price and stock-list

ZEFP = Effective number of teeth

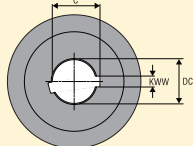
Locking screw/Key

| For CW | Assembly screw  | Key (T-handle)  | Insert key  | Torque value (Nm) |
|--------|---|---|---|-------------------|
| 4 | C93504-T09P | DOUBLE-T | H4B-T09P | 2,0 |
| 5 | C93505-T09P | DOUBLE-T | H4B-T09P | 2,0 |
| 6 | C94005-T15P | DOUBLE-T | H6B-T15PL | 3,5 |
| 7/8 | C94006-T15P | DOUBLE-T | H6B-T15PL | 3,5 |
| 10 | C94008-T15P | DOUBLE-T | H6B-T15PL | 3,5 |
| 12 | C94010-T15P | DOUBLE-T | H6B-T15PL | 3,5 |

Dimensions of mounting and arbor screw for Type B

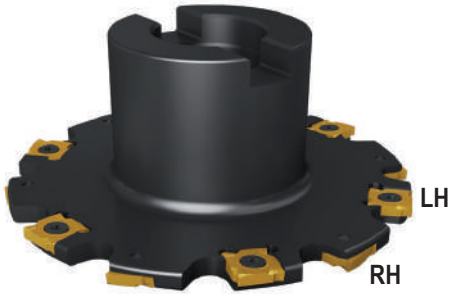
|  | Designation | Dimensions in mm | | | Assembly screw  |
|---|-------------|------------------|------|-----|---|
| | | DCB | KWW | C | |
| | R335.19-063 | 16 | 8,4 | 5,6 | TCEI0825 |
| | R335.19-063 | 22 | 10,4 | 6,3 | MC6S 10x40 |
| | R335.19-080 | 22 | 10,4 | 6,3 | MC6S 10x40 |
| | R335.19-100 | 27 | 12,4 | 7 | MC6S 12x35 |
| | R335.19-125 | 32 | 14,4 | 8 | 220.17-694 |
| | R335.19-125 | 40 | 16,4 | 9 | – |
| | R335.19-160 | 40 | 16,4 | 9 | – |

Dimensions of mounting – Keyway for Type A

|  | Dimensions in mm | | |
|---|------------------|-----|-------|
| | DCB | KWW | C |
| | 22 | 6 | 24,15 |
| | 27 | 7 | 29,9 |
| | 40 | 10 | 43,6 |
| | 50 | 12 | 53,6 |
| | | | |
| | | | |

Disc milling cutter 335.19 – Technical information

Cutter side



LH = Left hand insert
RH = Right hand insert

SNHQ insert choice: Width of cut and corner radius choice



| Inserts | a_p | R 0,2 | R 0,4 | R 0,8 | R 1,0 | R 1,2 | R 1,6 | R 2,0 | R 2,4 | R 3,0 | R 3,1 | R 3,5 | R 4,0 | R 5,0 | R 6,0 |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| SNHQ 1102 | 4 | ■ | ■ | ■ | | ■ | ■ | ■ | | | | | | | |
| SNHQ 1103 | 5 | ■ | ■ | ■ | | ■ | ■ | ■ | | | | | | | |
| SNHQ 1203 | 6 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | x | o | | | | | |
| SNHQ 1204 | 7 | ■ | ■ | ■ | | ■ | ■ | ■ | x | | x | o | | | |
| SNHQ 12045 | 8 | ■ | ■ | ■ | | ■ | ■ | ■ | x | | x | | o | | |
| SNHQ 1205 | 10 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | x | | x | | x | o | |
| SNHQ 1207 | 12 | ■ | ■ | ■ | | ■ | ■ | ■ | x | | x | | x | x | o |

■ = SNHQ 4 edges
x = SNHQ 2 edges
o = Full radius possibilities

SNHQ - Insert selection

| SMG | | f _z | | |
|-----|--------------------|----------------|-------|-------|
| | | 30% | 20% | 10% |
| P1 | SNHQ...-M07 F40M | 0,12 | 0,14 | 0,19 |
| P2 | SNHQ...-M07 F40M | 0,13 | 0,14 | 0,19 |
| P3 | SNHQ...-M07 F40M | 0,12 | 0,14 | 0,18 |
| P4 | SNHQ...-M07 F40M | 0,12 | 0,13 | 0,18 |
| P5 | SNHQ...-M07 F40M | 0,11 | 0,13 | 0,17 |
| P6 | SNHQ...-M07 F40M | 0,11 | 0,13 | 0,17 |
| P7 | SNHQ...-M07 F40M | 0,11 | 0,13 | 0,17 |
| P8 | SNHQ...-M07 F30M | 0,12 | 0,14 | 0,18 |
| P11 | SNHQ...-M07 F40M | 0,11 | 0,13 | 0,17 |
| P12 | SNHQ...-M07 F40M | 0,075 | 0,090 | 0,12 |
| M1 | SNHQ...-M07 F40M | 0,13 | 0,14 | 0,19 |
| M2 | SNHQ...-M07 F40M | 0,11 | 0,13 | 0,17 |
| M3 | SNHQ...-M07 F40M | 0,090 | 0,10 | 0,14 |
| M4 | SNHQ...-M07 F40M | 0,080 | 0,090 | 0,12 |
| M5 | SNHQ...-M07 F40M | 0,080 | 0,090 | 0,12 |
| K1 | SNHQ...-M07 MP2500 | 0,13 | 0,14 | 0,19 |
| K2 | SNHQ...-M07 MP2500 | 0,11 | 0,13 | 0,17 |
| K3 | SNHQ...-M07 MP2500 | 0,11 | 0,13 | 0,17 |
| K4 | SNHQ...-M07 MP2500 | 0,11 | 0,13 | 0,17 |
| K5 | SNHQ...-M07 MP2500 | 0,10 | 0,12 | 0,16 |
| K6 | SNHQ...-M07 MP2500 | 0,11 | 0,13 | 0,17 |
| K7 | SNHQ...-M07 MP2500 | 0,10 | 0,12 | 0,16 |
| N1 | SNHQ...-E05 H25 | 0,14 | 0,16 | 0,22 |
| N2 | SNHQ...-E05 H25 | 0,14 | 0,16 | 0,22 |
| N3 | SNHQ...-E05 H25 | 0,14 | 0,16 | 0,22 |
| N11 | SNHQ...-E05 H25 | 0,14 | 0,16 | 0,22 |
| S1 | SNHQ...-M07 F40M | 0,080 | 0,090 | 0,12 |
| S2 | SNHQ...-M07 F40M | 0,080 | 0,090 | 0,12 |
| S3 | SNHQ...-M07 F40M | 0,075 | 0,085 | 0,11 |
| S11 | SNHQ...-M07 F40M | 0,090 | 0,10 | 0,14 |
| S12 | SNHQ...-M07 F40M | 0,090 | 0,10 | 0,14 |
| S13 | SNHQ...-M07 F40M | 0,080 | 0,090 | 0,12 |
| H5 | SNHQ...-M07 F30M | 0,075 | 0,090 | 0,12 |
| H8 | SNHQ...-M07 F30M | 0,060 | 0,070 | 0,090 |
| H11 | SNHQ...-M07 F40M | 0,075 | 0,090 | 0,12 |
| H12 | SNHQ...-M07 F40M | 0,060 | 0,070 | 0,090 |
| H21 | SNHQ...-M07 F30M | 0,060 | 0,070 | 0,090 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

SNHQ - Cutting data $v_c =$ (m/min)

| SMG | MP2500 | | | F30M | | | F40M | | | MM4500 | | | H25 | | |
|-----|--------|-----|-----|------|------|------|------|------|------|--------|-----|-----|------|------|------|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 245 | 260 | 285 | 195 | 205 | 230 | 185 | 195 | 215 | 150 | 160 | 175 | — | — | — |
| P2 | 235 | 255 | 280 | 185 | 200 | 220 | 175 | 190 | 210 | 145 | 155 | 170 | — | — | — |
| P3 | 205 | 220 | 245 | 165 | 175 | 195 | 155 | 165 | 185 | 125 | 135 | 150 | — | — | — |
| P4 | 180 | 195 | 215 | 145 | 155 | 170 | 135 | 150 | 165 | 110 | 120 | 130 | — | — | — |
| P5 | 175 | 185 | 210 | 140 | 150 | 165 | 135 | 140 | 155 | 110 | 115 | 130 | — | — | — |
| P6 | 200 | 210 | 235 | 155 | 165 | 185 | 150 | 160 | 175 | 120 | 130 | 145 | — | — | — |
| P7 | 185 | 200 | 220 | 150 | 160 | 175 | 140 | 150 | 165 | 115 | 120 | 135 | — | — | — |
| P8 | 170 | 185 | 205 | 135 | 145 | 165 | 130 | 140 | 155 | 105 | 115 | 125 | — | — | — |
| P11 | 180 | 190 | 215 | 145 | 155 | 170 | 135 | 145 | 160 | 110 | 120 | 130 | — | — | — |
| P12 | 115 | 125 | 135 | 95 | 100 | 110 | 90 | 95 | 105 | 70 | 75 | 85 | — | — | — |
| M1 | 170 | 185 | 200 | 150 | 165 | 180 | 140 | 155 | 170 | 125 | 135 | 145 | — | — | — |
| M2 | 140 | 150 | 165 | 125 | 135 | 150 | 120 | 125 | 140 | 105 | 110 | 120 | — | — | — |
| M3 | 115 | 120 | 135 | 100 | 110 | 120 | 95 | 105 | 115 | 85 | 90 | 100 | — | — | — |
| M4 | 85 | 95 | 105 | 80 | 85 | 90 | 75 | 80 | 90 | 65 | 70 | 75 | — | — | — |
| M5 | 75 | 80 | 85 | 65 | 70 | 75 | 60 | 65 | 75 | 55 | 55 | 65 | — | — | — |
| K1 | 185 | 200 | 220 | 145 | 160 | 175 | 140 | 150 | 170 | — | — | — | — | — | — |
| K2 | 165 | 175 | 195 | 135 | 140 | 155 | 125 | 135 | 150 | — | — | — | — | — | — |
| K3 | 140 | 150 | 165 | 115 | 120 | 135 | 105 | 115 | 125 | — | — | — | — | — | — |
| K4 | 135 | 145 | 160 | 105 | 115 | 125 | 100 | 110 | 120 | — | — | — | — | — | — |
| K5 | 80 | 85 | 95 | 65 | 70 | 75 | 60 | 65 | 75 | — | — | — | — | — | — |
| K6 | 120 | 125 | 140 | 95 | 100 | 110 | 90 | 95 | 105 | — | — | — | — | — | — |
| K7 | 105 | 110 | 125 | 85 | 90 | 100 | 80 | 85 | 95 | — | — | — | — | — | — |
| N1 | — | — | — | 1100 | 1175 | 1300 | 1050 | 1125 | 1250 | — | — | — | 1025 | 1100 | 1200 |
| N2 | — | — | — | 445 | 480 | 530 | 425 | 455 | 500 | — | — | — | 415 | 440 | 485 |
| N3 | — | — | — | 295 | 320 | 355 | 280 | 305 | 335 | — | — | — | 275 | 295 | 325 |
| N11 | — | — | — | 340 | 365 | 405 | 320 | 345 | 385 | — | — | — | 315 | 335 | 370 |
| S1 | — | — | — | 36 | 39 | 43 | 35 | 37 | 41 | 20 | 21 | 23 | — | — | — |
| S2 | — | — | — | 29 | 31 | 35 | 28 | 30 | 33 | 16 | 17 | 19 | — | — | — |
| S3 | — | — | — | 26 | 27 | 30 | 24 | 26 | 29 | 14 | 15 | 16 | — | — | — |
| S11 | — | — | — | 50 | 55 | 60 | 49 | 50 | 55 | 27 | 30 | 32 | — | — | — |
| S12 | — | — | — | 43 | 46 | 50 | 41 | 44 | 48 | 25 | 27 | 30 | — | — | — |
| S13 | — | — | — | 25 | 27 | 29 | 24 | 25 | 28 | 15 | 16 | 17 | — | — | — |
| H5 | 35 | 37 | 41 | 31 | 33 | 36 | 29 | 31 | 34 | — | — | — | — | — | — |
| H8 | 37 | 39 | 44 | 32 | 34 | 38 | 31 | 33 | 36 | — | — | — | — | — | — |
| H11 | 45 | 48 | 55 | 39 | 42 | 46 | 37 | 40 | 44 | — | — | — | — | — | — |
| H12 | 43 | 46 | 50 | 38 | 40 | 45 | 36 | 38 | 42 | — | — | — | — | — | — |
| H21 | 37 | 39 | 44 | 32 | 34 | 38 | 31 | 33 | 36 | — | — | — | — | — | — |

335.19 - Insert selection

| SMG | | f _z | | |
|-----|----------------------|----------------|-------|------|
| | | 30% | 20% | 10% |
| P1 | 335.19-...-M08 F40M | 0,12 | 0,14 | 0,19 |
| P2 | 335.19-...-M08 F40M | 0,12 | 0,14 | 0,19 |
| P3 | 335.19-...-M08 F40M | 0,12 | 0,14 | 0,18 |
| P4 | 335.19-...-M08 F40M | 0,12 | 0,13 | 0,18 |
| P5 | 335.19-...-M08 F40M | 0,11 | 0,13 | 0,17 |
| P6 | 335.19-...-M08 F40M | 0,11 | 0,13 | 0,17 |
| P7 | 335.19-...-M08 F40M | 0,11 | 0,13 | 0,17 |
| P8 | 335.19-...-MD09 F40M | 0,13 | 0,15 | 0,20 |
| P11 | 335.19-...-M08 F40M | 0,11 | 0,13 | 0,17 |
| P12 | 335.19-...-M08 F40M | 0,075 | 0,090 | 0,12 |
| M1 | 335.19-...-M08 F40M | 0,12 | 0,14 | 0,19 |
| M2 | 335.19-...-M08 F40M | 0,11 | 0,13 | 0,17 |
| M3 | 335.19-...-M08 F40M | 0,090 | 0,10 | 0,14 |
| M4 | 335.19-...-M08 F40M | 0,080 | 0,090 | 0,12 |
| M5 | 335.19-...-M08 F40M | 0,080 | 0,090 | 0,12 |
| K1 | 335.19-...-MD09 F40M | 0,14 | 0,16 | 0,22 |
| K2 | 335.19-...-MD09 F40M | 0,13 | 0,15 | 0,20 |
| K3 | 335.19-...-MD09 F40M | 0,13 | 0,15 | 0,20 |
| K4 | 335.19-...-MD09 F40M | 0,13 | 0,15 | 0,20 |
| K5 | 335.19-...-MD09 F40M | 0,11 | 0,13 | 0,18 |
| K6 | 335.19-...-MD09 F40M | 0,13 | 0,15 | 0,20 |
| K7 | 335.19-...-MD09 F40M | 0,11 | 0,13 | 0,18 |
| S1 | 335.19-...-M08 F40M | 0,080 | 0,090 | 0,12 |
| S2 | 335.19-...-M08 F40M | 0,080 | 0,090 | 0,12 |
| S3 | 335.19-...-M08 F40M | 0,075 | 0,085 | 0,11 |
| S11 | 335.19-...-M08 F40M | 0,090 | 0,10 | 0,14 |
| S12 | 335.19-...-M08 F40M | 0,090 | 0,10 | 0,14 |
| S13 | 335.19-...-M08 F40M | 0,080 | 0,090 | 0,12 |
| H5 | 335.19-...-MD09 F40M | 0,085 | 0,10 | 0,13 |
| H8 | 335.19-...-MD09 F40M | 0,065 | 0,075 | 0,10 |
| H11 | 335.19-...-MD09 F40M | 0,085 | 0,10 | 0,13 |
| H12 | 335.19-...-MD09 F40M | 0,065 | 0,075 | 0,10 |
| H21 | 335.19-...-MD09 F40M | 0,065 | 0,075 | 0,10 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

335.19 Cutting data $v_c =$ (m/min)

| SMG | MP2500 | | | F40M | | |
|-----|--------|-----|-----|------|------|------|
| | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 220 | 240 | 260 | 175 | 185 | 205 |
| P2 | 215 | 230 | 255 | 170 | 180 | 200 |
| P3 | 190 | 205 | 225 | 145 | 155 | 175 |
| P4 | 165 | 180 | 200 | 130 | 140 | 155 |
| P5 | 160 | 170 | 190 | 125 | 135 | 150 |
| P6 | 180 | 195 | 215 | 140 | 150 | 165 |
| P7 | 170 | 185 | 205 | 135 | 140 | 160 |
| P8 | 160 | 170 | 190 | 125 | 130 | 145 |
| P11 | 165 | 180 | 195 | 130 | 140 | 155 |
| P12 | 110 | 115 | 125 | 85 | 90 | 100 |
| M1 | 155 | 165 | 185 | 135 | 145 | 160 |
| M2 | 130 | 135 | 150 | 115 | 120 | 135 |
| M3 | 105 | 110 | 120 | 90 | 100 | 105 |
| M4 | 80 | 85 | 95 | 70 | 75 | 85 |
| M5 | 65 | 70 | 80 | 60 | 65 | 70 |
| K1 | 170 | 185 | 200 | 135 | 145 | 160 |
| K2 | 150 | 160 | 180 | 120 | 125 | 140 |
| K3 | 130 | 135 | 150 | 100 | 110 | 120 |
| K4 | 120 | 130 | 145 | 95 | 105 | 115 |
| K5 | 75 | 80 | 90 | 60 | 60 | 70 |
| K6 | 110 | 115 | 125 | 85 | 90 | 100 |
| K7 | 95 | 105 | 115 | 75 | 80 | 90 |
| N1 | — | — | — | 990 | 1075 | 1175 |
| N2 | — | — | — | 400 | 430 | 475 |
| N3 | — | — | — | 265 | 285 | 315 |
| N11 | — | — | — | 305 | 325 | 365 |
| S1 | — | — | — | 33 | 35 | 39 |
| S2 | — | — | — | 26 | 28 | 31 |
| S3 | — | — | — | 23 | 25 | 27 |
| S11 | — | — | — | 46 | 50 | 55 |
| S12 | — | — | — | 39 | 42 | 46 |
| S13 | — | — | — | 22 | 24 | 27 |
| H5 | — | — | — | 28 | 30 | 33 |
| H8 | — | — | — | 29 | 31 | 35 |
| H11 | — | — | — | 36 | 38 | 42 |
| H12 | — | — | — | 34 | 36 | 40 |
| H21 | — | — | — | 29 | 31 | 35 |

Cutter 335.18 - Insert LNK.

Width 8/10 mm - full side - Fixed pocket

- For insert selection and cutting data recommendations, see page(s) 278-279
- For complete insert programme, see page(s) 645-646
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | | | ZEFP | kg | Insert | | |
|---------------------------|------------------|------------------|-------|-----|------|------|--------|-----|------|-------|------|-------|------|------|----|--------|-------|----------|
| | | CW | DC | DCB | CDX | DMM | DCSFMS | TDZ | LF | OAL | LB | LS | THUB | | | | | |
| R335.18-1632.0-08.1N | Cyl | 8,0 | 32,0 | - | 9,0 | 16,0 | - | - | - | 140,0 | 23,0 | 108,0 | - | 2 | 1 | 0,3 | 17300 | LNK.05.. |
| R335.18-2040.0-08.2N | Cyl | 8,0 | 40,0 | - | 12,0 | 20,0 | - | - | - | 140,0 | 22,0 | 108,0 | - | 4 | 2 | 0,4 | 15400 | LNK.05.. |
| R335.18-2550.0-08.3N | Cyl | 8,0 | 50,0 | - | 15,0 | 25,0 | - | - | - | 150,0 | 29,5 | 110,0 | - | 6 | 3 | 0,6 | 13800 | LNK.05.. |
| R335.18-1650.RE-08.3N | RE | 8,0 | 50,0 | - | 15,0 | - | 28,0 | M16 | 35,0 | - | 12,0 | - | - | 6 | 3 | 0,2 | 13800 | LNK.05.. |
| R335.18-3263.0-08.3N | Cyl | 8,0 | 63,0 | - | 15,5 | 32,0 | - | - | - | 170,0 | 0,0 | 155,0 | - | 6 | 3 | 1,2 | 12300 | LNK.05.. |
| R335.18-063.08.22-3N | B | 8,0 | 63,0 | 22 | 15,0 | - | 40,0 | - | 50,0 | - | 28,9 | - | - | 6 | 3 | 0,4 | 12300 | LNK.05.. |
| R335.18-080.08.22-4N | B | 8,0 | 80,0 | 22 | 23,5 | - | 40,0 | - | 50,0 | - | 28,9 | - | - | 8 | 4 | 0,5 | 10900 | LNK.05.. |
| 335.18-080.08.27-4N | A | 8,0 | 80,0 | 27 | 19,2 | - | 41,0 | - | - | - | - | - | 15,0 | 8 | 4 | 0,3 | 10900 | LNK.05.. |
| R335.18-100.08.27-5N | B | 8,0 | 100,0 | 27 | 25,0 | - | 48,0 | - | 50,0 | - | 0,0 | - | - | 10 | 5 | 0,8 | 9700 | LNK.05.. |
| 335.18-100.08.27-5N | A | 8,0 | 100,0 | 27 | 27,9 | - | 41,0 | - | - | - | - | - | 15,0 | 10 | 5 | 0,4 | 9700 | LNK.05.. |
| R335.18-125.08.32-6N | B | 8,0 | 125,0 | 32 | 34,0 | - | 58,0 | - | 50,0 | - | 0,0 | - | - | 12 | 6 | 1,0 | 8400 | LNK.05.. |
| 335.18-125.08.40-6N | A | 8,0 | 125,0 | 40 | 33,4 | - | 55,0 | - | - | - | - | - | 15,0 | 12 | 6 | 0,6 | 8400 | LNK.05.. |
| R335.18-1632.0-10.1N-LN05 | Cyl | 10,0 | 32,0 | - | 9,0 | 16,0 | - | - | - | 140,0 | 21,0 | 108,0 | - | 2 | 1 | 0,3 | 17300 | LNK.05.. |
| R335.18-2040.0-10.2N-LN05 | Cyl | 10,0 | 40,0 | - | 12,0 | 20,0 | - | - | - | 140,0 | 20,0 | 108,0 | - | 4 | 2 | 0,4 | 15400 | LNK.05.. |
| R335.18-2040.0-10.2N | Cyl | 10,0 | 40,0 | - | 12,0 | 20,0 | - | - | - | 140,0 | 20,0 | 108,0 | - | 4 | 2 | 0,4 | 14900 | LNK.06.. |
| R335.18-2550.0-10.3N | Cyl | 10,0 | 50,0 | - | 15,0 | 25,0 | - | - | - | 150,0 | 27,5 | 110,0 | - | 6 | 3 | 0,6 | 13400 | LNK.06.. |
| R335.18-1650.RE-10.3N | RE | 10,0 | 50,0 | - | 15,0 | - | 28,0 | M16 | 35,0 | - | 10,0 | - | - | 6 | 3 | 0,2 | 13400 | LNK.06.. |
| R335.18-3263.0-10.3N | Cyl | 10,0 | 63,0 | - | 15,5 | 32,0 | - | - | - | 170,0 | 0,0 | 155,0 | - | 6 | 3 | 1,2 | 11900 | LNK.06.. |
| R335.18-063.10.22-3N | B | 10,0 | 63,0 | 22 | 15,0 | - | 40,0 | - | 50,0 | - | 27,0 | - | - | 6 | 3 | 0,4 | 11900 | LNK.06.. |
| R335.18-3280.0-10.4N | Cyl | 10,0 | 80,0 | - | 24,0 | 32,0 | - | - | - | 170,0 | 0,0 | 155,0 | - | 8 | 4 | 1,3 | 10500 | LNK.06.. |
| R335.18-080.10.22-4N | B | 10,0 | 80,0 | 22 | 23,5 | - | 40,0 | - | 50,0 | - | 27,0 | - | - | 8 | 4 | 0,5 | 10500 | LNK.06.. |
| 335.18-080.10.27-4N | A | 10,0 | 80,0 | 27 | 19,0 | - | 41,0 | - | - | - | - | - | 15,0 | 8 | 4 | 0,3 | 10500 | LNK.06.. |
| R335.18-100.10.27-5N | B | 10,0 | 100,0 | 27 | 26,0 | - | 48,0 | - | 50,0 | - | 0,0 | - | - | 10 | 5 | 0,9 | 9400 | LNK.06.. |
| 335.18-100.10.27-5N | A | 10,0 | 100,0 | 27 | 28,0 | - | 41,0 | - | - | - | - | - | 15,0 | 10 | 5 | 0,4 | 9400 | LNK.06.. |
| R335.18-125.10.32-6N | B | 10,0 | 125,0 | 32 | 34,0 | - | 58,0 | - | 50,0 | - | 0,0 | - | - | 12 | 6 | 1,1 | 8400 | LNK.06.. |
| 335.18-125.10.40-6N | A | 10,0 | 125,0 | 40 | 33,0 | - | 55,0 | - | - | - | - | - | 15,0 | 12 | 6 | 0,8 | 8400 | LNK.06.. |

Please check availability in current price and stock-list

Cutter 335.18 - Insert LNK.

Width 12/14 mm - full side - Fixed pocket

- For insert selection and cutting data recommendations, see page(s) 278-279
- For complete insert programme, see page(s) 646
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | | | Z | ZEFP | KG | PCD | Insert |
|-----------------------|------------------|------------------|-------|-----|------|------|--------|-----|------|-------|------|-------|------|----|------|-----|-------|----------|
| | | CW | DC | DCB | CDX | DMM | DCSFMS | TDZ | LF | OAL | LB | LS | THUB | | | | | |
| R335.18-2550.0-12.3N | Cyl | 12,0 | 50,0 | - | 15,0 | 25,0 | - | - | - | 150,0 | 25,5 | 110,0 | - | 6 | 3 | 0,6 | 13400 | LNK.06.. |
| R335.18-1650.RE-12.3N | RE | 12,0 | 50,0 | - | 15,0 | - | 28,0 | M16 | 35,0 | - | 8,0 | - | - | 6 | 3 | 0,3 | 13400 | LNK.06.. |
| R335.18-3263.0-12.3N | Cyl | 12,0 | 63,0 | - | 15,5 | 32,0 | - | - | - | 170,0 | 0,0 | 155,0 | - | 6 | 3 | 1,2 | 11900 | LNK.06.. |
| R335.18-063.12.22-3N | B | 12,0 | 63,0 | 22 | 15,0 | - | 40,0 | - | 50,0 | - | 25,0 | - | - | 6 | 3 | 0,4 | 11900 | LNK.06.. |
| R335.18-3280.0-12.4N | Cyl | 12,0 | 80,0 | - | 24,0 | 32,0 | - | - | - | 170,0 | 0,0 | 155,0 | - | 8 | 4 | 1,3 | 10500 | LNK.06.. |
| R335.18-080.12.22-4N | B | 12,0 | 80,0 | 22 | 23,5 | - | 40,0 | - | 50,0 | - | 25,0 | - | - | 8 | 4 | 0,8 | 10500 | LNK.06.. |
| 335.18-080.12.27-4N | A | 12,0 | 80,0 | 27 | 19,0 | - | 41,0 | - | - | - | - | - | 15,0 | 8 | 4 | 0,3 | 10500 | LNK.06.. |
| R335.18-100.12.27-5N | B | 12,0 | 100,0 | 27 | 26,0 | - | 48,0 | - | 50,0 | - | 0,0 | - | - | 10 | 5 | 0,9 | 9400 | LNK.06.. |
| 335.18-100.12.27-5N | A | 12,0 | 100,0 | 27 | 28,0 | - | 41,0 | - | - | - | - | - | 15,0 | 10 | 5 | 0,5 | 9400 | LNK.06.. |
| R335.18-125.12.32-6N | B | 12,0 | 125,0 | 32 | 34,0 | - | 58,0 | - | 50,0 | - | 0,0 | - | - | 12 | 6 | 1,1 | 8400 | LNK.06.. |
| 335.18-125.14.40-6N | A | 12,0 | 125,0 | 40 | 33,0 | - | 55,0 | - | - | - | - | - | 15,0 | 12 | 6 | 0,8 | 8400 | LNK.06.. |
| R335.18-063.14.22-3N | B | 14,0 | 63,0 | 22 | 15,0 | - | 40,0 | - | 50,0 | - | 23,0 | - | - | 6 | 3 | 0,4 | 11900 | LNK.08.. |
| R335.18-080.14.22-4N | B | 14,0 | 80,0 | 22 | 23,5 | - | 40,0 | - | 50,0 | - | 23,0 | - | - | 8 | 4 | 0,6 | 10500 | LNK.08.. |
| R335.18-100.14.27-5N | B | 14,0 | 100,0 | 27 | 26,0 | - | 48,0 | - | 50,0 | - | 0,0 | - | - | 10 | 5 | 1,0 | 9400 | LNK.08.. |
| R335.18-125.14.32-6N | B | 14,0 | 125,0 | 32 | 34,0 | - | 58,0 | - | 50,0 | - | 0,0 | - | - | 12 | 6 | 1,3 | 8400 | LNK.08.. |
| 335.18-125.14.40-6N | A | 14,0 | 125,0 | 40 | 34,0 | - | 55,0 | - | - | - | - | - | 15,0 | 12 | 6 | 0,9 | 8400 | LNK.08.. |
| 335.18-160.14.40-7N | A | 14,0 | 160,0 | 40 | 51,0 | - | 55,0 | - | - | - | - | - | 15,0 | 14 | 7 | 1,6 | 7500 | LNK.08.. |

Please check availability in current price and stock-list

Cutter 335.18 - Insert LNK.

Width 17/20 mm - full side - Fixed pockets

Type B for stub arbor (B)

Type A for milling arbor (A)

CW 17/20 mm

- For insert selection and cutting data recommendations, see page(s) 278-279
- For complete insert programme, see page(s) 646
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | ZEFP | | | Insert |
|----------------------|------------------|------------------|-------|-----|------|--------|------|------|------|------|----|------|-----|-------|----------|
| | | CW | DC | DCB | CDX | DCSFMS | DCB | LF | LB | THUB | | | | | |
| R335.18-080.17.22-3N | B | 17,0 | 80,0 | 22 | 24,0 | 40,0 | 22,0 | 50,0 | 20,0 | - | 9 | 3 | 0,6 | 10500 | LNK.06.. |
| R335.18-100.17.27-3N | B | 17,0 | 100,0 | 27 | 26,0 | 48,0 | 27,0 | 50,0 | 0,0 | - | 9 | 3 | 1,1 | 9400 | LNK.06.. |
| R335.18-125.17.32-4N | B | 17,0 | 125,0 | 32 | 33,5 | 58,0 | 32,0 | 50,0 | 0,0 | - | 12 | 4 | 1,4 | 8400 | LNK.06.. |
| 335.18-125.17.40-4N | A | 17,0 | 125,0 | 40 | 33,0 | 55,0 | 40,0 | - | - | 20,0 | 12 | 4 | 1,1 | 8400 | LNK.06.. |
| R335.18-160.17.40-5N | B | 17,0 | 160,0 | 40 | 45,0 | 70,0 | 40,0 | 50,0 | 0,0 | - | 15 | 5 | 2,4 | 7500 | LNK.06.. |
| 335.18-160.17.40-5N | A | 17,0 | 160,0 | 40 | 50,7 | 55,0 | 40,0 | - | - | 20,0 | 15 | 5 | 1,9 | 7500 | LNK.06.. |
| R335.18-080.20.22-4N | B | 20,0 | 80,0 | 22 | 24,0 | 40,0 | 22,0 | 50,0 | 16,9 | - | 12 | 4 | 0,7 | 10500 | LNK.08.. |
| R335.18-100.20.27-5N | B | 20,0 | 100,0 | 27 | 26,0 | 48,0 | 27,0 | 50,0 | 0,0 | - | 15 | 5 | 1,2 | 9400 | LNK.08.. |
| R335.18-125.20.32-6N | B | 20,0 | 125,0 | 32 | 33,5 | 58,0 | 32,0 | 50,0 | 0,0 | - | 18 | 6 | 1,6 | 8400 | LNK.08.. |
| 335.18-125.20.40-6N | A | 20,0 | 125,0 | 40 | 34,0 | 55,0 | 40,0 | - | - | 20,0 | 18 | 6 | 1,2 | 8400 | LNK.08.. |
| R335.18-160.20.40-7N | B | 20,0 | 160,0 | 40 | 45,0 | 70,0 | 40,0 | 50,0 | 0,0 | - | 21 | 7 | 2,7 | 7500 | LNK.08.. |
| 335.18-160.20.40-7N | A | 20,0 | 160,0 | 40 | 51,2 | 55,0 | 40,0 | - | - | 20,0 | 21 | 7 | 2,3 | 7500 | LNK.08.. |
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Please check availability in current price and stock-list

Cutter 335.18 - Insert LNK.

Width 8-10 mm - full side - Adjustable design

Type B

Type A

- For insert selection and cutting data recommendations, see page(s) 278-279
- For complete insert programme, see page(s) 645-646
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | ZEFP | | | Insert |
|--------------------------|------------------|------------------|-----|-----|-----|-----|--------|------|------|----|------|-----|-------|----------|
| | | CW min-max | DC | DCB | DCX | DCB | DCSFMS | LF | THUB | | | | | |
| R335.18-080.0810.27-3N | B | 8,0-10,0 | 80 | 27 | 15 | 27 | 48 | 50,0 | - | 6 | 3 | 0,7 | 10900 | LNK.05.. |
| R335.18-100.0810.27-4N | B | 8,0-10,0 | 100 | 27 | 25 | 27 | 48 | 50,0 | - | 8 | 4 | 0,8 | 9400 | LNK.05.. |
| 335.18-100.0810.27-4N | A | 8,0-10,0 | 100 | 27 | 27 | 27 | 41 | - | 15 | 8 | 4 | 0,4 | 9400 | LNK.05.. |
| R335.18-125.0810.32-5N | B | 8,0-10,0 | 125 | 32 | 32 | 32 | 58 | 50,0 | - | 10 | 5 | 1,0 | 8400 | LNK.05.. |
| 335.18-125.0810.40-5N | A | 8,0-10,0 | 125 | 40 | 33 | 40 | 55 | - | 15 | 10 | 5 | 0,6 | 8400 | LNK.05.. |
| R335.18-160.0810.40-6N | B | 8,0-10,0 | 160 | 40 | 44 | 40 | 70 | 50,0 | - | 12 | 6 | 1,6 | 7500 | LNK.05.. |
| 335.18-160.0810.40-6N | A | 8,0-10,0 | 160 | 40 | 50 | 40 | 55 | - | 15 | 12 | 6 | 1,0 | 7500 | LNK.05.. |
| R335.18-200.0810XL.40-7N | B | 8,0-10,0 | 200 | 40 | 54 | 40 | 90 | 50,0 | - | 14 | 7 | 2,6 | 6700 | LNK.05.. |
| 335.18-200.0810XL.50-7N | A | 8,0-10,0 | 200 | 50 | 64 | 50 | 69 | - | 15 | 14 | 7 | 1,4 | 6700 | LNK.05.. |
| R335.18-250.0810XL.40-9N | B | 8,0-10,0 | 250 | 40 | 78 | 40 | 90 | 50,0 | - | 18 | 18 | 4,4 | 6000 | LNK.05.. |
| 335.18-250.0810XL.50-9N | A | 8,0-10,0 | 250 | 50 | 89 | 50 | 69 | - | 15 | 18 | 9 | 2,3 | 6000 | LNK.05.. |
| 335.18-315.0810XL.50-12N | A | 8,0-10,0 | 315 | 50 | 121 | 50 | 69 | - | 15 | 24 | 12 | 2,4 | 5300 | LNK.05.. |
| R335.18-080.1012.27-3N | B | 10,0-12,0 | 80 | 27 | 15 | 27 | 48 | 50,0 | - | 6 | 3 | 0,7 | 10500 | LNK.06.. |
| R335.18-100.1012.27-4N | B | 10,0-12,0 | 100 | 27 | 25 | 27 | 48 | 50,0 | - | 8 | 4 | 0,9 | 9400 | LNK.06.. |
| 335.18-100.1012.27-4N | A | 10,0-12,0 | 100 | 27 | 27 | 27 | 41 | - | 15 | 8 | 4 | 0,4 | 9400 | LNK.06.. |
| R335.18-125.1012.32-5N | B | 10,0-12,0 | 125 | 32 | 32 | 32 | 58 | 50,0 | - | 10 | 5 | 1,1 | 8400 | LNK.06.. |
| 335.18-125.1012.40-5N | A | 10,0-12,0 | 125 | 40 | 33 | 40 | 55 | - | 15 | 10 | 5 | 0,7 | 8400 | LNK.06.. |
| R335.18-160.1012.40-6N | B | 10,0-12,0 | 160 | 40 | 44 | 40 | 70 | 50,0 | - | 12 | 6 | 1,7 | 7500 | LNK.06.. |
| 335.18-160.1012.40-6N | A | 10,0-12,0 | 160 | 40 | 50 | 40 | 55 | - | 15 | 12 | 6 | 1,2 | 7500 | LNK.06.. |
| R335.18-200.1012XL.40-7N | B | 10,0-12,0 | 200 | 40 | 54 | 40 | 90 | 50,0 | - | 14 | 7 | 2,1 | 6700 | LNK.06.. |
| 335.18-200.1012XL.50-7N | A | 10,0-12,0 | 200 | 50 | 64 | 50 | 69 | - | 15 | 14 | 7 | 2,1 | 6700 | LNK.06.. |
| R335.18-250.1012XL.40-9N | B | 10,0-12,0 | 250 | 40 | 78 | 40 | 90 | 50,0 | - | 18 | 9 | 2,3 | 6000 | LNK.06.. |
| 335.18-250.1012XL.50-9N | A | 10,0-12,0 | 250 | 50 | 89 | 50 | 69 | - | 15 | 18 | 9 | 2,8 | 6000 | LNK.06.. |
| 335.18-315.1012XL.50-12N | A | 10,0-12,0 | 315 | 50 | 121 | 50 | 69 | - | 15 | 24 | 12 | 4,5 | 5300 | LNK.06.. |

Please check availability in current price and stock-list

Adjustable cutter may be ordered with the cutting width set to any value within its range, see page 273 for more info.
All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

Cutter 335.18 - Insert LNK.

Width 12-15 mm - full side - Adjustable design

Type B

Type A

- For insert selection and cutting data recommendations, see page(s) 278-279
- For complete insert programme, see page(s) 646
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | ZEFP | | | Insert |
|--------------------------|------------------|------------------|-----|-----|-----|--------|------|------|----|----|------|-------|----------|--------|
| | | CW min-max | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | | |
| R335.18-080.1215.27-3N | B | 12,0-15,0 | 80 | 27 | 15 | 48 | 50,0 | – | 6 | 3 | 0,7 | 10500 | LNK.08.. | |
| R335.18-100.1215.27-4N | B | 12,0-15,0 | 100 | 27 | 25 | 48 | 50,0 | – | 8 | 4 | 0,9 | 9400 | LNK.08.. | |
| 335.18-100.1215.27-4N | A | 12,0-15,0 | 100 | 27 | 27 | 41 | – | 15 | 8 | 4 | 0,6 | 9400 | LNK.08.. | |
| R335.18-125.1215.32-5N | B | 12,0-15,0 | 125 | 32 | 32 | 58 | 50,0 | – | 10 | 5 | 1,2 | 8400 | LNK.08.. | |
| 335.18-125.1215.40-5N | A | 12,0-15,0 | 125 | 40 | 33 | 55 | – | 15 | 10 | 5 | 0,8 | 8400 | LNK.08.. | |
| R335.18-160.1215.40-6N | B | 12,0-15,0 | 160 | 40 | 44 | 70 | 50,0 | – | 12 | 6 | 1,9 | 7500 | LNK.08.. | |
| 335.18-160.1215.40-6N | A | 12,0-15,0 | 160 | 40 | 50 | 55 | – | 15 | 12 | 6 | 1,4 | 7500 | LNK.08.. | |
| R335.18-200.1215XL.40-7N | B | 12,0-15,0 | 200 | 40 | 54 | 90 | 50,0 | – | 14 | 7 | 3,1 | 6700 | LNK.08.. | |
| 335.18-200.1215XL.50-7N | A | 12,0-15,0 | 200 | 50 | 64 | 69 | – | 15 | 14 | 7 | 2,0 | 6700 | LNK.08.. | |
| R335.18-250.1215XL.40-9N | B | 12,0-15,0 | 250 | 40 | 78 | 90 | 50,0 | – | 18 | 9 | 4,4 | 6000 | LNK.08.. | |
| 335.18-250.1215XL.50-9N | A | 12,0-15,0 | 250 | 50 | 89 | 69 | – | 15 | 18 | 9 | 3,3 | 6000 | LNK.08.. | |
| 335.18-315.1215XL.50-12N | A | 12,0-15,0 | 315 | 50 | 121 | 69 | – | 15 | 24 | 12 | 5,5 | 5300 | LNK.08.. | |
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Please check availability in current price and stock-list

Adjustable cutter may be ordered with the cutting width set to any value within its range, see page 273 for more info.
 All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

Cutter 335.25 - Insert XNHQ and LNHQ

Width 15/20/25 mm - full side and face - Fixed pockets

Type B

Dia = 80

Dia > 80

Type A

- For insert selection and cutting data recommendations, see page(s) 280-287
- For complete insert programme, see page(s) 644, 681
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | Z | ZEFP | kg | PCD | Insert: First choice | Insert: Alternative choice |
|-----------------------|------------------|------------------|-------|------|-------|--------|------|------|----|------|-----|-------|----------------------|----------------------------|
| | | CW | DC | DCB | CDX | DCSFMS | LF | LB | | | | | | |
| R335.25-080.15.22-4NA | B | 15,0 | 80,0 | 22,0 | 22,73 | 40,0 | 50,0 | 21,4 | 8 | 4 | 0,6 | 10200 | XNHQ09... | - |
| R335.25-100.15.27-5NA | B | 15,0 | 100,0 | 27,0 | 25,31 | 48,0 | 50,0 | 0,0 | 10 | 5 | 1,0 | 9200 | XNHQ09... | - |
| R335.25-125.15.32-6NA | B | 15,0 | 125,0 | 32,0 | 32,81 | 58,0 | 50,0 | 0,0 | 12 | 6 | 1,5 | 8200 | XNHQ09... | - |
| R335.25-160.15.40-7NA | B | 15,0 | 160,0 | 40,0 | 44,31 | 70,0 | 50,0 | 0,0 | 14 | 7 | 2,4 | 7200 | XNHQ09... | - |
| 335.25-160.15.40-7N | A | 15,0 | 160,0 | 40,0 | 52,00 | 55,0 | - | - | 14 | 7 | 1,7 | 7200 | XNHQ09... | - |
| R335.25-200.15.40-8N | B | 15,0 | 200,0 | 40,0 | 54,31 | 90,0 | 50,0 | - | 16 | 8 | 3,6 | 6500 | XNHQ09... | - |
| 335.25-200.15.50-8N | A | 15,0 | 200,0 | 50,0 | 64,45 | 69,0 | - | - | 16 | 8 | 2,6 | 6500 | XNHQ09... | - |
| R335.25-100.20.27-4NA | B | 20,0 | 100,0 | 27,0 | 25,31 | 48,0 | 50,0 | 0,0 | 8 | 4 | 1,2 | 7200 | XNHQ12... | - |
| R335.25-125.20.32-5NA | B | 20,0 | 125,0 | 32,0 | 32,81 | 58,0 | 50,0 | 0,0 | 10 | 5 | 1,8 | 6500 | XNHQ12... | - |
| R335.25-160.20.40-6NA | B | 20,0 | 160,0 | 40,0 | 44,31 | 70,0 | 50,0 | 0,0 | 12 | 6 | 2,9 | 5700 | XNHQ12... | - |
| 335.25-160.20.40-6N | A | 20,0 | 160,0 | 40,0 | 51,45 | 55,0 | - | - | 12 | 6 | 2,2 | 5600 | XNHQ12... | - |
| R335.25-200.20.40-7N | B | 20,0 | 200,0 | 40,0 | 54,31 | 90,0 | 50,0 | 49,0 | 14 | 7 | 4,3 | 5100 | XNHQ12... | - |
| 335.25-200.20.50-7N | A | 20,0 | 200,0 | 50,0 | 64,34 | 69,0 | - | - | 14 | 7 | 3,5 | 5100 | XNHQ12... | - |
| R335.25-250.20.60-9N | B | 20,0 | 250,0 | 60,0 | 59,31 | 130,0 | 50,0 | - | 18 | 9 | 7,2 | 4600 | XNHQ12... | - |
| 335.25-250.20.50-9N | A | 20,0 | 250,0 | 50,0 | 88,45 | 71,0 | - | - | 18 | 9 | 5,8 | 4600 | XNHQ12... | - |
| R335.25-125.25.32-5NA | B | 25,0 | 125,0 | 32,0 | 33,00 | 58,0 | 50,0 | 0,0 | 10 | 5 | 1,9 | 4900 | XNHQ14... | LNHQ14... |
| R335.25-160.25.40-6NA | B | 25,0 | 160,0 | 40,0 | 44,40 | 70,0 | 50,0 | 0,0 | 12 | 6 | 3,1 | 4400 | XNHQ14... | LNHQ14... |
| 335.25-160.25.40-6N | A | 25,0 | 160,0 | 40,0 | 50,70 | 55,0 | - | - | 12 | 6 | 2,7 | 4400 | XNHQ14... | LNHQ14... |
| R335.25-200.25.40-7N | B | 25,0 | 200,0 | 40,0 | 54,50 | 90,0 | 50,0 | - | 14 | 7 | 5,0 | 3900 | XNHQ14... | LNHQ14... |
| 335.25-200.25.50-7N | A | 25,0 | 200,0 | 50,0 | 62,70 | 71,0 | - | - | 14 | 7 | 4,3 | 3900 | XNHQ14... | LNHQ14... |
| 335.25-250.25.50-9N | A | 25,0 | 250,0 | 50,0 | 87,70 | 71,0 | - | - | 18 | 9 | 7,3 | 3500 | XNHQ14... | LNHQ14... |
| R335.25-250.25.60-9N | B | 25,0 | 250,0 | 60,0 | 59,50 | 130,0 | 50,0 | - | 18 | 9 | 8,3 | 3500 | XNHQ14... | LNHQ14... |

Please check availability in current price and stock-list

Type B cutters, from diameter 80 to 160 mm are equipped with central coolant channels

Cutter 335.25 - Insert XNHQ

Width 13 - 21 mm - full side and face - Adjustable design

Type B

Type A

- For insert selection and cutting data recommendations, see page(s) 280-283
- For complete insert programme, see page(s) 681
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | ZEPF | | kg | | Insert |
|---------------------------|------------------|------------------|-----|-----|-----|--------|------|------|----|----|------|------|----------|--|--------|
| | | CW min-max | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | | | |
| R335.25-100.1317.27-3N | B | 13,5-17,0 | 100 | 27 | 25 | 48 | 50,0 | - | 6 | 3 | 1,0 | 9200 | XNHQ09.. | | |
| R335.25-125.1317.32-4N | B | 13,5-17,0 | 125 | 32 | 32 | 58 | 50,0 | - | 8 | 4 | 1,4 | 8200 | XNHQ09.. | | |
| 335.25-125.1317.40-4N | A | 13,5-17,0 | 125 | 40 | 33 | 55 | - | 17 | 8 | 4 | 0,9 | 8200 | XNHQ09.. | | |
| R335.25-160.1317.40-6N | B | 13,5-17,0 | 160 | 40 | 44 | 70 | 50,0 | - | 12 | 6 | 2,3 | 7200 | XNHQ09.. | | |
| 335.25-160.1317.40-6N | A | 13,5-17,0 | 160 | 40 | 51 | 55 | - | 17 | 12 | 6 | 1,5 | 7200 | XNHQ09.. | | |
| R335.25-200.1317.40-7N | B | 13,5-17,0 | 200 | 40 | 54 | 90 | 50,0 | - | 14 | 7 | 3,6 | 6500 | XNHQ09.. | | |
| 335.25-200.1317.50-7N | A | 13,5-17,0 | 200 | 50 | 64 | 69 | - | 17 | 14 | 7 | 2,5 | 6500 | XNHQ09.. | | |
| R335.25-250.1317XL.60-8N | B | 13,5-17,0 | 250 | 60 | 59 | 130 | 50,0 | - | 16 | 8 | 6,0 | 5800 | XNHQ09.. | | |
| 335.25-250.1317XL.50-8N | A | 13,5-17,0 | 250 | 50 | 89 | 69 | - | 17 | 16 | 8 | 3,9 | 5800 | XNHQ09.. | | |
| R335.25-315.1317XL.60-10N | B | 13,5-17,0 | 315 | 60 | 91 | 130 | 50,0 | - | 20 | 10 | 8,6 | 5200 | XNHQ09.. | | |
| 335.25-315.1317XL.50-10N | A | 13,5-17,0 | 315 | 50 | 121 | 69 | - | 17 | 20 | 10 | 6,5 | 5200 | XNHQ09.. | | |
| R335.25-100.1721.27-3N | B | 17,0-21,0 | 100 | 27 | 25 | 48 | 50,0 | - | 6 | 3 | 1,1 | 7200 | XNHQ12.. | | |
| R335.25-125.1721.32-4N | B | 17,0-21,0 | 125 | 32 | 32 | 58 | 50,0 | - | 8 | 4 | 1,6 | 6500 | XNHQ12.. | | |
| 335.25-125.1721.40-4N | A | 17,0-21,0 | 125 | 40 | 33 | 55 | - | 21 | 8 | 4 | 1,1 | 8200 | XNHQ12.. | | |
| R335.25-160.1721.40-5N | B | 17,0-21,0 | 160 | 40 | 44 | 70 | 50,0 | - | 10 | 5 | 2,7 | 5700 | XNHQ12.. | | |
| 335.25-160.1721.40-5N | A | 17,0-21,0 | 160 | 40 | 51 | 55 | - | 21 | 10 | 5 | 1,9 | 7200 | XNHQ12.. | | |
| R335.25-200.1721.40-6N | B | 17,0-21,0 | 200 | 40 | 54 | 90 | 50,0 | - | 12 | 6 | 4,1 | 5100 | XNHQ12.. | | |
| 335.25-200.1721.50-6N | A | 17,0-21,0 | 200 | 50 | 63 | 69 | - | 21 | 12 | 6 | 3,2 | 6500 | XNHQ12.. | | |
| R335.25-250.1721XL.60-8N | B | 17,0-21,0 | 250 | 60 | 59 | 130 | 50,0 | - | 16 | 8 | 6,7 | 4600 | XNHQ12.. | | |
| 335.25-250.1721XL.50-8N | A | 17,0-21,0 | 250 | 50 | 89 | 69 | - | 21 | 16 | 8 | 4,9 | 5800 | XNHQ12.. | | |
| R335.25-315.1721XL.60-10N | B | 17,0-21,0 | 315 | 60 | 91 | 130 | 50,0 | - | 20 | 10 | 10,0 | 4100 | XNHQ12.. | | |
| 335.25-315.1721XL.50-10N | A | 17,0-21,0 | 315 | 50 | 121 | 69 | - | 21 | 20 | 10 | 8,2 | 5200 | XNHQ12.. | | |
| | | | | | | | | | | | | | | | |
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Please check availability in current price and stock-list

Adjustable cutter may be ordered with the cutting width set to any value within its range, see page 273 for more info.
All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

Cutter 335.25 - Insert XNHQ and LNHQ

Width 21 - 32 mm - full side and face - Adjustable design

Type B

Type A

- For insert selection and cutting data recommendations, see page(s) 284-287
- For complete insert programme, see page(s) 644, 681
- For spare parts and technical information, see page 271-277

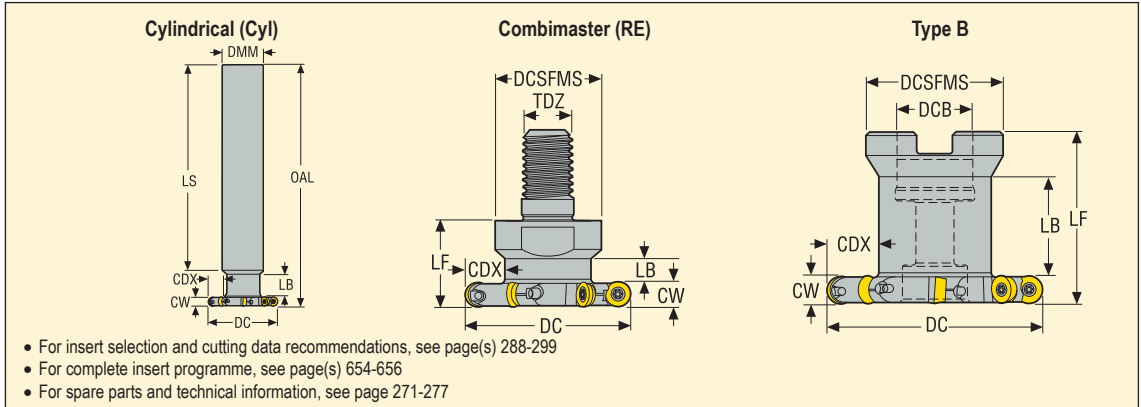
| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | | Insert: First choice | Insert: Alternative choice |
|--------------------------|------------------|------------------|-----|-----|-----|--------|------|------|-----|------|------|-------|----------------------|----------------------------|
| | | CW min-max | DC | DCB | CDX | DCSFMS | LF | THUB | ZEP | ZEFP | kg | Image | | |
| R335.25-125.2126.32-4N | B | 21,0-26,0 | 125 | 32 | 32 | 58 | 50,0 | - | 8 | 4 | 1,7 | 4900 | XNHQ1407... | LNHQ1407... |
| 335.25-125.2126.40-4N | A | 21,0-26,0 | 125 | 40 | 33 | 55 | - | 32 | 8 | 4 | 1,3 | 4900 | XNHQ1407... | LNHQ1407... |
| R335.25-160.2126.40-5N | B | 21,0-26,0 | 160 | 40 | 44 | 70 | 50,0 | - | 10 | 5 | 2,9 | 4400 | XNHQ1407... | LNHQ1407... |
| 335.25-160.2126.40-5N | A | 21,0-26,0 | 160 | 40 | 50 | 55 | - | 32 | 10 | 5 | 2,3 | 4400 | XNHQ1407... | LNHQ1407... |
| R335.25-200.2126.40-6N | B | 21,0-26,0 | 200 | 40 | 54 | 90 | 50,0 | - | 12 | 6 | 4,6 | 3900 | XNHQ1407... | LNHQ1407... |
| 335.25-200.2126.50-6N | A | 21,0-26,0 | 200 | 50 | 63 | 69 | - | 32 | 12 | 6 | 3,9 | 3900 | XNHQ1407... | LNHQ1407... |
| R335.25-250.2126XL.60-7N | B | 21,0-26,0 | 250 | 60 | 59 | 130 | 50,0 | - | 14 | 7 | 7,3 | 3500 | XNHQ1407... | LNHQ1407... |
| 335.25-250.2126XL.50-7N | A | 21,0-26,0 | 250 | 50 | 88 | 69 | - | 32 | 14 | 7 | 6,0 | 3500 | XNHQ1407... | LNHQ1407... |
| R335.25-315.2126XL.60-9N | B | 21,0-26,0 | 315 | 60 | 92 | 130 | 50,0 | - | 18 | 9 | 11,3 | 3100 | XNHQ1407... | LNHQ1407... |
| 335.25-315.2126XL.60-9N | A | 21,0-26,0 | 315 | 60 | 113 | 84 | - | 32 | 18 | 9 | 10,0 | 3100 | XNHQ1407... | LNHQ1407... |
| R335.25-160.2632.40-5N | B | 26,0-32,0 | 160 | 40 | 44 | 70 | 50,0 | - | 10 | 5 | 3,4 | 4600 | XNHQ1707... | LNHQ1707... |
| 335.25-160.2632.40-5N | A | 26,0-32,0 | 160 | 40 | 50 | 55 | - | 32 | 10 | 5 | 2,9 | 4600 | XNHQ1707... | LNHQ1707... |
| R335.25-200.2632.40-6N | B | 26,0-32,0 | 200 | 40 | 54 | 90 | 50,0 | - | 12 | 6 | 5,3 | 4100 | XNHQ1707... | LNHQ1707... |
| 335.25-200.2632.50-6N | A | 26,0-32,0 | 200 | 50 | 63 | 69 | - | 32 | 12 | 6 | 4,8 | 4100 | XNHQ1707... | LNHQ1707... |
| R335.25-250.2632XL.60-7N | B | 26,0-32,0 | 250 | 60 | 59 | 130 | 50,0 | - | 14 | 7 | 8,4 | 3700 | XNHQ1707... | LNHQ1707... |
| 335.25-250.2632XL.50-7N | A | 26,0-32,0 | 250 | 50 | 88 | 69 | - | 32 | 14 | 7 | 7,4 | 3700 | XNHQ1707... | LNHQ1707... |
| R335.25-315.2632XL.60-9N | B | 26,0-32,0 | 315 | 60 | 92 | 130 | 50,0 | - | 18 | 9 | 13,4 | 3300 | XNHQ1707... | LNHQ1707... |
| 335.25-315.2632XL.60-9N | A | 26,0-32,0 | 315 | 60 | 113 | 84 | - | 32 | 18 | 9 | 12,3 | 3300 | XNHQ1707... | LNHQ1707... |

Please check availability in current price and stock-list

Adjustable cutter may be ordered with the cutting width set to any value within its range, see page 273 for more info.
All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

Cutter 335.29 - Round inserts

Width 5/6/7/8/10/12 - full side - radius profile - Fixed pockets



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | | Z | ZEFP | KG | Insert | |
|----------------------------|------------------|------------------|------|-----|------|------|--------|-----|------|-------|------|-------|----|------|-----|--------|----------|
| | | CW | DC | DCB | CDX | DMM | DCSFMS | TDZ | LF | OAL | LB | LS | | | | | |
| R335.29-1225.0-05.4N-R25A | Cyl | 5,0 | 25,0 | - | 6,9 | 12,0 | - | - | - | 110,0 | 10,0 | 94,0 | 4 | 4 | 0,1 | 44800 | RD..0501 |
| R335.29-1632.0-05.5N-R25A | Cyl | 5,0 | 32,0 | - | 8,4 | 16,0 | - | - | - | 130,0 | 10,0 | 114,0 | 5 | 5 | 0,2 | 39600 | RD..0501 |
| R335.29-2040.0-05.6N-R25A | Cyl | 5,0 | 40,0 | - | 10,4 | 20,0 | - | - | - | 140,0 | 10,0 | 124,0 | 6 | 6 | 0,4 | 35400 | RD..0501 |
| R335.29-2550.0-05.8N-R25A | Cyl | 5,0 | 50,0 | - | 12,9 | 25,0 | - | - | - | 150,0 | 10,0 | 134,0 | 8 | 8 | 0,6 | 31700 | RD..0501 |
| R335.29-1225.0-06.4N-R3A | Cyl | 6,0 | 25,0 | - | 6,9 | 12,0 | - | - | - | 110,0 | 10,0 | 93,0 | 4 | 4 | 0,1 | 20600 | RD..06T1 |
| R335.29-1632.0-06.5N-R3A | Cyl | 6,0 | 32,0 | - | 8,4 | 16,0 | - | - | - | 130,0 | 10,0 | 113,0 | 5 | 5 | 0,2 | 18700 | RD..06T1 |
| R335.29-2040.0-06.6N-R3A | Cyl | 6,0 | 40,0 | - | 10,4 | 20,0 | - | - | - | 140,0 | 10,0 | 123,0 | 6 | 6 | 0,4 | 16300 | RD..06T1 |
| R335.29-1240.RE-06.6N-R3A | RE | 6,0 | 40,0 | - | 10,0 | - | 23,0 | M12 | 28,0 | - | 10,0 | - | 6 | 6 | 0,2 | 17600 | RD..06T1 |
| R335.29-2550.0-06.8N-R3A | Cyl | 6,0 | 50,0 | - | 12,9 | 25,0 | - | - | - | 150,0 | 10,0 | 133,0 | 8 | 8 | 0,6 | 17300 | RD..06T1 |
| R335.29-1650.RE-06.8N-R3A | RE | 6,0 | 50,0 | - | 12,5 | - | 30,0 | M16 | 28,0 | - | 9,0 | - | 8 | 8 | 0,2 | 17300 | RD..06T1 |
| R335.29-063.06.22-10N-R3A | B | 6,0 | 63,0 | 22 | 15,0 | - | 40,0 | - | 50,0 | - | 30,6 | - | 10 | 10 | 0,4 | 13900 | RD..06T1 |
| R335.29-1632.0-07.5N-R35A | Cyl | 7,0 | 32,0 | - | 8,4 | 16,0 | - | - | - | 130,0 | 10,0 | 112,0 | 5 | 5 | 0,2 | 31600 | RD..0702 |
| R335.29-1240.RE-07.6N-R35A | RE | 7,0 | 40,0 | - | 10,0 | - | 23,0 | M12 | 28,0 | - | 9,0 | - | 6 | 6 | 0,2 | 28200 | RD..0702 |
| R335.29-1650.RE-07.7N-R35A | RE | 7,0 | 50,0 | - | 12,5 | - | 30,0 | M16 | 28,0 | - | 8,0 | - | 7 | 7 | 0,2 | 25300 | RD..0702 |
| R335.29-063.07.22-10N-R35A | B | 7,0 | 63,0 | 22 | 15,0 | - | 40,0 | - | 50,0 | - | 29,6 | - | 10 | 10 | 0,4 | 22500 | RD..0702 |
| R335.29-1632.0-08.4N-R4A | Cyl | 8,0 | 32,0 | - | 8,4 | 16,0 | - | - | - | 130,0 | 10,0 | 111,0 | 4 | 4 | 0,2 | 23300 | RD..08.. |
| R335.29-2040.0-08.5N-R4A | Cyl | 8,0 | 40,0 | - | 10,4 | 20,0 | - | - | - | 140,0 | 10,0 | 121,0 | 5 | 5 | 0,4 | 18800 | RD..08.. |
| R335.29-1240.RE-08.5N-R4A | RE | 8,0 | 40,0 | - | 10,0 | - | 23,0 | M12 | 28,0 | - | 8,0 | - | 5 | 5 | 0,2 | 18800 | RD..08.. |
| R335.29-2550.0-08.6N-R4A | Cyl | 8,0 | 50,0 | - | 12,9 | 25,0 | - | - | - | 150,0 | 10,0 | 131,0 | 6 | 6 | 0,6 | 17300 | RD..08.. |
| R335.29-1650.RE-08.6N-R4A | RE | 8,0 | 50,0 | - | 12,5 | - | 30,0 | M16 | 28,0 | - | 7,0 | - | 6 | 6 | 0,2 | 17300 | RD..08.. |
| R335.29-063.08.22-8N-R4A | B | 8,0 | 63,0 | 22 | 15,0 | - | 40,0 | - | 50,0 | - | 28,6 | - | 8 | 8 | 0,4 | 15600 | RD..08.. |
| R335.29-080.08.27-10N-R4A | B | 8,0 | 80,0 | 27 | 20,0 | - | 48,0 | - | 50,0 | - | 26,8 | - | 10 | 10 | 0,5 | 13700 | RD..08.. |
| R335.29-1650.RE-10.6N-R5A | RE | 10,0 | 50,0 | - | 12,5 | - | 30,0 | M16 | 28,0 | - | 4,3 | - | 6 | 3 | 0,2 | 15800 | RD..10T3 |
| R335.29-063.10.22-6N-R5A | B | 10,0 | 63,0 | 22 | 15,0 | - | 40,0 | - | 50,0 | - | 26,6 | - | 6 | 3 | 0,4 | 13500 | RD..10T3 |
| R335.29-080.10.27-8N-R5A | B | 10,0 | 80,0 | 27 | 20,0 | - | 48,0 | - | 50,0 | - | 24,7 | - | 8 | 4 | 0,5 | 12000 | RD..10T3 |
| R335.29I-1650.RE-12.4N-R6A | RE | 12,0 | 50,0 | - | 12,5 | - | 30,0 | M16 | 28,0 | - | 4,3 | - | 4 | 2 | 0,2 | 11200 | RP..1204 |
| R335.29I-063.12.22-6N-R6A | B | 12,0 | 63,0 | 22 | 15,0 | - | 40,0 | - | 50,0 | - | 24,6 | - | 6 | 3 | 0,4 | 10200 | RP..1204 |
| R335.29I-080.12.27-8N-R6A | B | 12,0 | 80,0 | 27 | 20,0 | - | 48,0 | - | 50,0 | - | 22,7 | - | 8 | 4 | 0,5 | 10000 | RP..1204 |

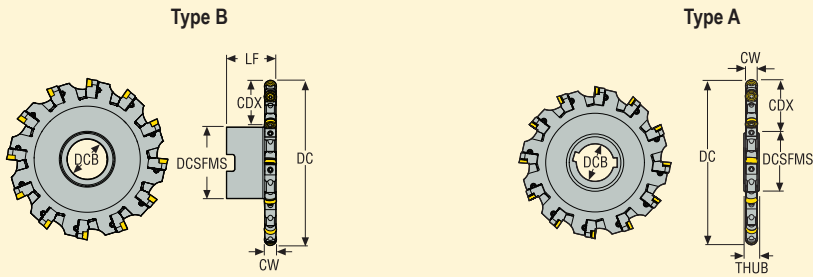
Please check availability in current price and stock-list

Note: All cutters are equipped with central coolant channels

R335.29I Disc Milling cutters offer indexing possibility - Indexing screw SX2035-T05P included in the delivery

Cutter 335.18 - Round inserts diameter 8 and 10 mm

Width 8-12 mm - full side - radius profile - Adjustable



- For insert selection and cutting data recommendations, see page(s) 294-297
- For complete insert programme, see page(s) 654
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | ZEFP | | | Insert |
|------------------------------|------------------|------------------|-----|-----|-----|--------|------|------|----|------|-----|-------|----------|
| | | CW min-max | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | |
| R335.18-080.0810.27-6N-R4 | B | 8,0-10,0 | 82 | 27 | 16 | 48 | 50,0 | – | 6 | 6 | 0,7 | 10500 | RD..08.. |
| R335.18-100.0810.27-8N-R4 | B | 8,0-10,0 | 102 | 27 | 26 | 48 | 50,0 | – | 8 | 8 | 0,8 | 9400 | RD..08.. |
| 335.18-100.0810.27-8N-R4 | A | 8,0-10,0 | 102 | 27 | 28 | 41 | – | 15 | 8 | 8 | 0,4 | 9400 | RD..08.. |
| R335.18-125.0810.32-10N-R4 | B | 8,0-10,0 | 127 | 32 | 32 | 58 | 50,0 | – | 10 | 10 | 1,0 | 8400 | RD..08.. |
| 335.18-125.0810.40-10N-R4 | A | 8,0-10,0 | 127 | 40 | 34 | 55 | – | 15 | 10 | 10 | 0,6 | 8400 | RD..08.. |
| R335.18-160.0810.40-12N-R4 | B | 8,0-10,0 | 162 | 40 | 45 | 70 | 50,0 | – | 12 | 12 | 1,6 | 7500 | RD..08.. |
| 335.18-160.0810.40-12N-R4 | A | 8,0-10,0 | 162 | 40 | 51 | 55 | – | 15 | 12 | 12 | 1,0 | 7500 | RD..08.. |
| R335.18-200.0810XL.40-14N-R4 | B | 8,0-10,0 | 200 | 40 | 54 | 90 | 50,0 | – | 14 | 7 | 2,6 | 6700 | RD..08.. |
| 335.18-200.0810XL.50-14N-R4 | A | 8,0-10,0 | 200 | 50 | 64 | 69 | – | 15 | 14 | 14 | 1,4 | 6700 | RD..08.. |
| R335.18-250.0810XL.40-18N-R4 | B | 8,0-10,0 | 250 | 40 | 78 | 90 | 50,0 | – | 18 | 18 | 3,5 | 6000 | RD..08.. |
| 335.18-250.0810XL.50-18N-R4 | A | 8,0-10,0 | 250 | 50 | 89 | 69 | – | 15 | 18 | 18 | 2,3 | 6000 | RD..08.. |
| 335.18-315.0810XL.50-24N-R4 | A | 8,0-10,0 | 315 | 50 | 121 | 69 | – | 15 | 24 | 24 | 3,7 | 5300 | RD..08.. |
| R335.18-080.1012.27-3N-R5 | B | 10,0-12,0 | 82 | 27 | 16 | 48 | 50,0 | – | 6 | 3 | 0,7 | 10500 | RD..10T3 |
| R335.18-100.1012.27-4N-R5 | B | 10,0-12,0 | 102 | 27 | 26 | 48 | 50,0 | – | 8 | 4 | 0,9 | 9400 | RD..10T3 |
| 335.18-100.1012.27-4N-R5 | A | 10,0-12,0 | 102 | 27 | 28 | 41 | – | 15 | 8 | 4 | 0,6 | 9400 | RD..10T3 |
| R335.18-125.1012.32-5N-R5 | B | 10,0-12,0 | 127 | 32 | 33 | 58 | 50,0 | – | 10 | 5 | 1,1 | 8400 | RD..10T3 |
| 335.18-125.1012.40-5N-R5 | A | 10,0-12,0 | 127 | 40 | 34 | 55 | – | 15 | 10 | 5 | 0,7 | 8400 | RD..10T3 |
| R335.18-160.1012.40-6N-R5 | B | 10,0-12,0 | 162 | 40 | 45 | 70 | 50,0 | – | 12 | 6 | 1,7 | 7500 | RD..10T3 |
| 335.18-160.1012.40-6N-R5 | A | 10,0-12,0 | 162 | 40 | 51 | 55 | – | 15 | 12 | 6 | 1,3 | 7500 | RD..10T3 |
| R335.18-200.1012XL.40-7N-R5 | B | 10,0-12,0 | 200 | 40 | 54 | 90 | 50,0 | – | 14 | 7 | 2,2 | 6700 | RD..10T3 |
| 335.18-200.1012XL.50-7N-R5 | A | 10,0-12,0 | 200 | 50 | 64 | 69 | – | 15 | 14 | 7 | 1,7 | 6700 | RD..10T3 |
| R335.18-250.1012XL.40-9N-R5 | B | 10,0-12,0 | 250 | 40 | 78 | 90 | 50,0 | – | 18 | 9 | 4,0 | 6000 | RD..10T3 |
| 335.18-250.1012XL.50-9N-R5 | A | 10,0-12,0 | 250 | 50 | 89 | 69 | – | 15 | 18 | 9 | 1,7 | 6000 | RD..10T3 |
| 335.18-315.1012XL.50-12N-R5 | A | 10,0-12,0 | 315 | 50 | 121 | 69 | – | 15 | 24 | 12 | 4,6 | 5300 | RD..10T3 |

Please check availability in current price and stock-list

Adjustable cutter may be ordered with the cutting width set to any value within its range, see page 273 for more info.
All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

Cutter 335.18 - Round inserts diameter 12 mm

Width 12-15 mm - radius profile - Adjustable

Type A

Type B

- For insert selection and cutting data recommendations, see page(s) 298-299
- For complete insert programme, see page(s) 656
- For spare parts and technical information, see page 271-277

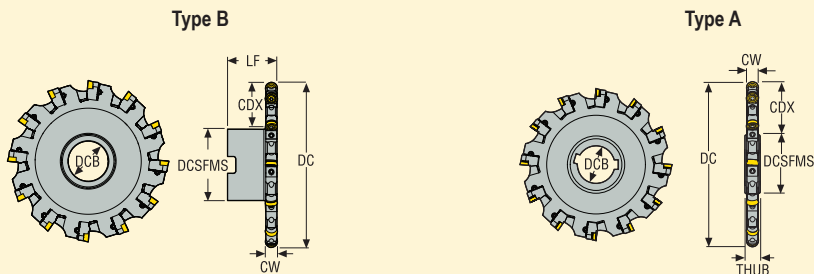
| Designation | Type of mounting | Dimensions in mm | | | | | | | | ZEFP | | | Insert |
|-----------------------------|------------------|------------------|-----|-----|-----|--------|------|------|----|------|-----|-------|----------|
| | | CW min-max | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | |
| R335.18-080.1215.27-3N-R6 | B | 12,0-15,0 | 82 | 27 | 16 | 48 | 50,0 | - | 6 | 3 | 0,7 | 10000 | RP..1204 |
| R335.18-100.1215.27-4N-R6 | B | 12,0-15,0 | 102 | 27 | 26 | 48 | 50,0 | - | 8 | 4 | 0,9 | 9400 | RP..1204 |
| 335.18-100.1215.27-4N-R6 | A | 12,0-15,0 | 102 | 27 | 28 | 41 | - | 15 | 8 | 4 | 0,8 | 9400 | RP..1204 |
| R335.18-125.1215.32-5N-R6 | B | 12,0-15,0 | 127 | 32 | 33 | 58 | 50,0 | - | 10 | 5 | 1,2 | 8400 | RP..1204 |
| 335.18-125.1215.40-5N-R6 | A | 12,0-15,0 | 127 | 40 | 34 | 55 | - | 15 | 10 | 5 | 0,9 | 8400 | RP..1204 |
| R335.18-160.1215.40-6N-R6 | B | 12,0-15,0 | 162 | 40 | 45 | 70 | 50,0 | - | 12 | 6 | 1,9 | 7500 | RP..1204 |
| 335.18-160.1215.40-6N-R6 | A | 12,0-15,0 | 162 | 40 | 51 | 55 | - | 15 | 12 | 6 | 1,5 | 7500 | RP..1204 |
| R335.18-200.1215XL.40-7N-R6 | B | 12,0-15,0 | 200 | 40 | 54 | 90 | 50,0 | - | 14 | 7 | 3,2 | 6700 | RP..1204 |
| 335.18-200.1215XL.50-7N-R6 | A | 12,0-15,0 | 200 | 50 | 64 | 69 | - | 15 | 14 | 7 | 2,0 | 6700 | RP..1204 |
| R335.18-250.1215XL.40-9N-R6 | B | 12,0-15,0 | 250 | 40 | 78 | 90 | 50,0 | - | 18 | 9 | 4,5 | 6000 | RP..1204 |
| 335.18-250.1215XL.50-9N-R6 | A | 12,0-15,0 | 250 | 50 | 89 | 69 | - | 15 | 18 | 9 | 3,4 | 6000 | RP..1204 |
| 335.18-315.1215XL.50-12N-R6 | A | 12,0-15,0 | 315 | 50 | 121 | 69 | - | 15 | 24 | 12 | 5,5 | 5300 | RP..1204 |
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Please check availability in current price and stock-list

Adjustable cutter may be ordered with the cutting width set to any value within its range, see page 273 for more info.
 All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

Cutter 335.25 - Round inserts diameter 16 and 20 mm

Width 16-21 mm - Full side - Radius profile - Adjustable



- For insert selection and cutting data recommendations, see page(s) 300-303
- For complete insert programme, see page(s) 657
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | ZEFP | kg | Insert | |
|-------------------------------|------------------|------------------|-----|-----|-----|--------|--------|------|----|------|-----|--------|----------|
| | | CW min-max | DC | CDX | DCB | DCSFMS | LF | THUB | | | | | |
| R335.25-100.1317.27-3N-R8 | B | 16,03-17,0 | 105 | 28 | 27 | 48 | 51,265 | - | 6 | 3 | 1,0 | 9200 | RP..1605 |
| R335.25-125.1317.32-4N-R8 | B | 16,03-17,0 | 130 | 36 | 32 | 58 | 51,265 | - | 8 | 4 | 1,4 | 8200 | RP..1605 |
| 335.25-125.1317.40-4N-R8 | A | 16,03-17,0 | 130 | 36 | 40 | 55 | - | 17 | 8 | 4 | 0,9 | 8200 | RP..1605 |
| R335.25-160.1317.40-6N-R8 | B | 16,03-17,0 | 165 | 47 | 40 | 70 | 51,265 | - | 12 | 6 | 2,3 | 7200 | RP..1605 |
| 335.25-160.1317.40-6N-R8 | A | 16,03-17,0 | 165 | 54 | 40 | 55 | - | 17 | 12 | 6 | 1,5 | 7200 | RP..1605 |
| R335.25-200.1317.40-7N-R8 | B | 16,03-17,0 | 205 | 57 | 40 | 90 | 51,265 | - | 14 | 7 | 3,8 | 6500 | RP..1605 |
| 335.25-200.1317.50-7N-R8 | A | 16,03-17,0 | 205 | 67 | 50 | 69 | - | 17 | 14 | 7 | 2,4 | 6500 | RP..1605 |
| R335.25-250.1317XL.60-8N-R8 | B | 16,03-17,0 | 255 | 62 | 60 | 130 | 51,265 | - | 16 | 8 | 6,0 | 5800 | RP..1605 |
| 335.25-250.1317XL.50-8N-R8 | A | 16,03-17,0 | 255 | 92 | 50 | 69 | - | 17 | 16 | 8 | 4,0 | 5800 | RP..1605 |
| R335.25-315.1317XL.60-10N-R8 | B | 16,03-17,0 | 320 | 95 | 60 | 130 | 51,265 | - | 20 | 10 | 8,6 | 5200 | RP..1605 |
| 335.25-315.1317XL.50-10N-R8 | A | 16,03-17,0 | 320 | 124 | 50 | 69 | - | 17 | 20 | 10 | 6,6 | 5200 | RP..1605 |
| R335.25-250.1721XL.60-8N-R10 | B | 20,03-21,0 | 255 | 62 | 60 | 130 | 51,515 | - | 16 | 8 | 6,7 | 4600 | RP..2006 |
| 335.25-250.1721XL.50-8N-R10 | A | 20,03-21,0 | 255 | 92 | 50 | 69 | - | 21 | 16 | 8 | 4,9 | 4600 | RP..2006 |
| R335.25-315.1721XL.60-10N-R10 | B | 20,03-21,0 | 320 | 95 | 60 | 130 | 51,515 | - | 20 | 10 | 9,9 | 4100 | RP..2006 |
| 335.25-315.1721XL.50-10N-R10 | A | 20,03-21,0 | 320 | 124 | 50 | 69 | - | 21 | 20 | 10 | 8,2 | 4100 | RP..2006 |
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Please check availability in current price and stock-list

Cutter 335.18 - Insert LNK.

Width max 5-6 mm - half side - Right hand with cassettes

Type B

Typ A

- For insert selection and cutting data recommendations, see page(s) 278-279
- For complete insert programme, see page(s) 656
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | ZEFP | | | Insert |
|---------------------------|------------------|------------------|-------|------|-------|--------|------|------|----|------|-----|-------|----------|
| | | APMXS | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | |
| R335.18-080.0810.27-6R | B | 5,0 | 80,0 | 27,0 | 14,8 | 48,0 | 50,0 | - | 6 | 6 | 0,7 | 10500 | LNK.05.. |
| R335.18-100.0810.27-8R | B | 5,0 | 100,0 | 27,0 | 24,8 | 48,0 | 50,0 | - | 8 | 8 | 0,8 | 9400 | LNK.05.. |
| 335.18-100.0810.27-8R | A | 5,0 | 100,0 | 27,0 | 27,2 | 41,0 | - | 15,0 | 8 | 8 | 0,4 | 9400 | LNK.05.. |
| R335.18-125.0810.32-10R | B | 5,0 | 125,0 | 32,0 | 32,3 | 58,0 | 50,0 | - | 10 | 10 | 1,0 | 8400 | LNK.05.. |
| 335.18-125.0810.40-10R | A | 5,0 | 125,0 | 40,0 | 32,7 | 55,0 | - | 15,0 | 10 | 10 | 0,6 | 8400 | LNK.05.. |
| R335.18-160.0810.40-12R | B | 5,0 | 160,0 | 40,0 | 43,8 | 70,0 | 50,0 | - | 12 | 12 | 1,5 | 7500 | LNK.05.. |
| 335.18-160.0810.40-12R | A | 5,0 | 160,0 | 40,0 | 50,2 | 55,0 | - | 15,0 | 12 | 12 | 1,0 | 7500 | LNK.05.. |
| R335.18-200.0810XL.40-14R | B | 5,0 | 200,0 | 40,0 | 53,5 | 90,0 | 50,0 | - | 14 | 14 | 2,6 | 6700 | LNK.05.. |
| 335.18-200.0810XL.50-14R | A | 5,0 | 200,0 | 50,0 | 63,5 | 69,0 | - | 15,0 | 14 | 14 | 1,7 | 6700 | LNK.05.. |
| R335.18-250.0810XL.40-18R | B | 5,0 | 250,0 | 40,0 | 78,0 | 90,0 | 50,0 | - | 18 | 18 | 3,5 | 6000 | LNK.05.. |
| 335.18-250.0810XL.50-18R | A | 5,0 | 250,0 | 50,0 | 88,5 | 69,0 | - | 15,0 | 18 | 18 | 1,7 | 6000 | LNK.05.. |
| 335.18-315.0810XL.50-24R | A | 5,0 | 315,0 | 50,0 | 121,0 | 69,0 | - | 15,0 | 24 | 24 | 1,9 | 5300 | LNK.05.. |
| R335.18-080.1012.27-6R | B | 6,0 | 80,0 | 27,0 | 14,8 | 48,0 | 50,0 | - | 6 | 6 | 0,8 | 10500 | LNK.06.. |
| R335.18-100.1012.27-8R | B | 6,0 | 100,0 | 27,0 | 24,8 | 48,0 | 50,0 | - | 8 | 8 | 1,2 | 9400 | LNK.06.. |
| 335.18-100.1012.27-8R | A | 6,0 | 100,0 | 27,0 | 27,2 | 41,0 | - | 15,0 | 8 | 8 | 0,4 | 9400 | LNK.06.. |
| R335.18-125.1012.32-10R | B | 6,0 | 125,0 | 32,0 | 32,3 | 58,0 | 50,0 | - | 10 | 10 | 1,0 | 8400 | LNK.06.. |
| 335.18-125.1012.40-10R | A | 6,0 | 125,0 | 40,0 | 32,7 | 55,0 | - | 15,0 | 10 | 10 | 0,7 | 8400 | LNK.06.. |
| R335.18-160.1012.40-12R | B | 6,0 | 160,0 | 40,0 | 43,8 | 70,0 | 50,0 | - | 12 | 12 | 1,9 | 7500 | LNK.06.. |
| 335.18-160.1012.40-12R | A | 6,0 | 160,0 | 40,0 | 50,2 | 55,0 | - | 15,0 | 12 | 12 | 1,5 | 7500 | LNK.06.. |
| R335.18-200.1012XL.40-14R | B | 6,0 | 200,0 | 40,0 | 53,5 | 90,0 | 50,0 | - | 14 | 14 | 2,9 | 6700 | LNK.06.. |
| 335.18-200.1012XL.50-14R | A | 6,0 | 200,0 | 50,0 | 63,5 | 69,0 | - | 15,0 | 14 | 14 | 1,7 | 6700 | LNK.06.. |
| R335.18-250.1012XL.40-18R | B | 6,0 | 250,0 | 40,0 | 78,0 | 90,0 | 50,0 | - | 18 | 18 | 4,0 | 6000 | LNK.06.. |
| 335.18-250.1012XL.50-18R | A | 6,0 | 250,0 | 50,0 | 88,5 | 69,0 | - | 15,0 | 18 | 18 | 1,8 | 6000 | LNK.06.. |
| 335.18-315.1012XL.50-24R | A | 6,0 | 315,0 | 50,0 | 121,0 | 69,0 | - | 15,0 | 24 | 24 | 1,9 | 5300 | LNK.06.. |

Please check availability in current price and stock-list

Cutter 335.18 - Insert LNK.

Width max 7,5 mm - half side - Right hand with cassettes

Type B

Type A

- For insert selection and cutting data recommendations, see page(s) 278-279
- For complete insert programme, see page(s) 646
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | ZEP | ZEFP | kg | | Insert |
|---------------------------|------------------|------------------|-------|------|-------|--------|------|------|-----|------|-----|-------|----------|
| | | APMXS | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | |
| R335.18-080.1215.27-6R | B | 7,5 | 80,0 | 27,0 | 14,8 | 48,0 | 50,0 | — | 6 | 6 | 1,1 | 10500 | LNK.08.. |
| R335.18-100.1215.27-8R | B | 7,5 | 100,0 | 27,0 | 24,8 | 48,0 | 50,0 | — | 8 | 8 | 0,9 | 9400 | LNK.08.. |
| 335.18-100.1215.27-8R | A | 7,5 | 100,0 | 27,0 | 27,2 | 41,0 | — | 15,0 | 8 | 8 | 0,5 | 9400 | LNK.08.. |
| R335.18-125.1215.32-10R | B | 7,5 | 125,0 | 32,0 | 32,3 | 58,0 | 50,0 | — | 10 | 10 | 1,2 | 8400 | LNK.08.. |
| 335.18-125.1215.40-10R | A | 7,5 | 125,0 | 40,0 | 32,7 | 55,0 | — | 15,0 | 10 | 10 | 0,9 | 8400 | LNK.08.. |
| R335.18-160.1215.40-12R | B | 7,5 | 160,0 | 40,0 | 43,8 | 70,0 | 50,0 | — | 12 | 12 | 2,7 | 7500 | LNK.08.. |
| 335.18-160.1215.40-12R | A | 7,5 | 160,0 | 40,0 | 50,2 | 55,0 | — | 15,0 | 12 | 12 | 1,5 | 7500 | LNK.08.. |
| R335.18-200.1215XL.40-14R | B | 7,5 | 200,0 | 40,0 | 53,5 | 90,0 | 50,0 | — | 14 | 14 | 3,6 | 6700 | LNK.08.. |
| 335.18-200.1215XL.50-14R | A | 7,5 | 200,0 | 50,0 | 63,5 | 69,0 | — | 15,0 | 14 | 14 | 1,7 | 6700 | LNK.08.. |
| R335.18-250.1215XL.40-18R | B | 7,5 | 250,0 | 40,0 | 78,0 | 90,0 | 50,0 | — | 18 | 18 | 4,5 | 6000 | LNK.08.. |
| 335.18-250.1215XL.50-18R | A | 7,5 | 250,0 | 50,0 | 88,5 | 69,0 | — | 15,0 | 18 | 18 | 2,5 | 6000 | LNK.08.. |
| 335.18-315.1215XL.50-24R | A | 7,5 | 315,0 | 50,0 | 121,0 | 69,0 | — | 15,0 | 24 | 24 | 2,2 | 5300 | LNK.08.. |

Please check availability in current price and stock-list

Cutter 335.25 - Insert XNHQ

Max depth of cut 11 mm - half side - right hand with cassettes

Type B

Type A

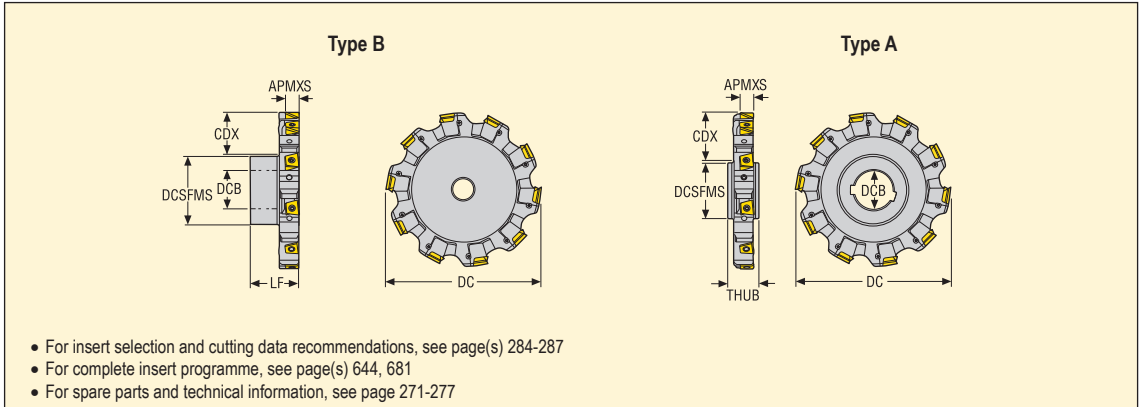
- For insert selection and cutting data recommendations, see page(s) 280-283
- For complete insert programme, see page(s) 681
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | ZEFP | | | Insert |
|---------------------------|------------------|------------------|-------|------|--------|--------|------|------|----|------|------|------|----------|
| | | APMXS | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | |
| R335.25-100.1317.27-6R | B | 9,0 | 100,0 | 27,0 | 24,82 | 48,0 | 50,0 | - | 6 | 6 | 1,0 | 9200 | XNHQ09.. |
| R335.25-125.1317.32-8R | B | 9,0 | 125,0 | 32,0 | 32,32 | 58,0 | 50,0 | - | 8 | 8 | 1,4 | 8200 | XNHQ09.. |
| 335.25-125.1317.40-8R | A | 9,0 | 125,0 | 40,0 | 32,92 | 55,0 | - | 17,0 | 8 | 8 | 1,9 | 8200 | XNHQ09.. |
| R335.25-160.1317.40-12R | B | 9,0 | 160,0 | 40,0 | 43,82 | 70,0 | 50,0 | - | 12 | 12 | 2,3 | 7200 | XNHQ09.. |
| 335.25-160.1317.40-12R | A | - | 160,0 | 40,0 | 50,50 | 55,0 | - | 17,0 | 12 | 12 | 1,5 | 7200 | XNHQ09.. |
| R335.25-200.1317.40-14R | B | 9,0 | 200,0 | 40,0 | 53,98 | 90,0 | 50,0 | - | 14 | 14 | 3,6 | 6500 | XNHQ09.. |
| 335.25-200.1317.50-14R | A | - | 200,0 | 50,0 | 63,50 | 69,0 | - | 17,0 | 14 | 14 | 3,1 | 6500 | XNHQ09.. |
| R335.25-250.1317XL.60-16R | B | 9,0 | 250,0 | 60,0 | 58,98 | 130,0 | 50,0 | - | 16 | 16 | 6,0 | 5800 | XNHQ09.. |
| 335.25-250.1317XL.50-16R | A | 9,0 | 250,0 | 50,0 | 88,54 | 69,0 | - | 17,0 | 16 | 16 | 3,9 | 5800 | XNHQ09.. |
| R335.25-315.1317XL.60-20R | B | 9,0 | 315,0 | 60,0 | 91,48 | 130,0 | 50,0 | - | 20 | 20 | 8,6 | 5200 | XNHQ09.. |
| 335.25-315.1317XL.50-20R | A | 9,0 | 315,0 | 50,0 | 121,04 | 69,0 | - | 17,0 | 20 | 20 | 6,5 | 5200 | XNHQ09.. |
| R335.25-100.1721.27-6R | B | 11,1 | 100,0 | 27,0 | 24,82 | 48,0 | 50,0 | - | 6 | 6 | 1,1 | 7200 | XNHQ12.. |
| R335.25-125.1721.32-8R | B | 11,1 | 125,0 | 32,0 | 32,32 | 58,0 | 50,0 | - | 8 | 8 | 1,6 | 6500 | XNHQ12.. |
| 335.25-125.1721.40-8R | A | 11,1 | 125,0 | 40,0 | 32,86 | 55,0 | - | 21,0 | 8 | 8 | 1,0 | 6500 | XNHQ12.. |
| R335.25-160.1721.40-10R | B | 11,1 | 160,0 | 40,0 | 43,82 | 70,0 | 50,0 | - | 10 | 10 | 2,7 | 5700 | XNHQ12.. |
| 335.25-160.1721.40-10R | A | 11,1 | 160,0 | 40,0 | 50,50 | 55,0 | - | 21,0 | 10 | 10 | 1,9 | 5700 | XNHQ12.. |
| R335.25-200.1721.40-12R | B | 11,1 | 200,0 | 40,0 | 53,98 | 90,0 | 50,0 | - | 12 | 12 | 4,1 | 5100 | XNHQ12.. |
| 335.25-200.1721.50-12R | A | 11,1 | 200,0 | 50,0 | 63,50 | 69,0 | - | 21,0 | 12 | 12 | 3,1 | 5100 | XNHQ12.. |
| R335.25-250.1721XL.60-16R | B | 11,1 | 250,0 | 60,0 | 58,98 | 130,0 | 50,0 | - | 16 | 16 | 6,7 | 4600 | XNHQ12.. |
| 335.25-250.1721XL.50-16R | A | 11,1 | 250,0 | 50,0 | 88,50 | 69,0 | - | 21,0 | 16 | 16 | 8,2 | 4600 | XNHQ12.. |
| R335.25-315.1721XL.60-20R | B | 11,1 | 315,0 | 60,0 | 91,48 | 130,0 | 50,0 | - | 20 | 20 | 10,0 | 4100 | XNHQ12.. |
| 335.25-315.1721XL.50-20R | A | 11,1 | 315,0 | 50,0 | 121,00 | 69,0 | - | 21,0 | 20 | 20 | 8,2 | 4100 | XNHQ12.. |
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Please check availability in current price and stock-list

Cutter 335.25 - Insert XNHQ and LNHQ

Max depth of cut 16 mm - half side - right hand with cassettes



| Designation | Type of mounting | Dimensions in mm | | | | | | | | ZEFP | KG | 4000 | Insert: First choice | Insert: Alternative choice |
|---------------------------|------------------|------------------|-----|-----|-------|--------|------|------|----|------|------|------|----------------------|----------------------------|
| | | APMXS | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | | |
| R335.25-125.2126.32-8R | B | 13,0 | 125 | 32 | 32,3 | 58 | 50,0 | - | 8 | 8 | 1,7 | 4900 | XNHQ1407... | LNHQ1407... |
| 335.25-125.2126.40-8R | A | 13,0 | 125 | 40 | 32,7 | 55 | - | 32 | 8 | 8 | 1,3 | 4900 | XNHQ1407... | LNHQ1407... |
| R335.25-160.2126.40-10R | B | 13,0 | 160 | 40 | 43,8 | 70 | 50,0 | - | 10 | 10 | 2,9 | 4400 | XNHQ1407... | LNHQ1407... |
| 335.25-160.2126.40-10R | A | 13,0 | 160 | 40 | 50,3 | 55 | - | 32 | 10 | 10 | 2,3 | 4400 | XNHQ1407... | LNHQ1407... |
| R335.25-200.2126.40-12R | B | 13,0 | 200 | 40 | 54,0 | 90 | 50,0 | - | 12 | 12 | 4,6 | 3900 | XNHQ1407... | LNHQ1407... |
| 335.25-200.2126.50-12R | A | 13,0 | 200 | 50 | 63,3 | 69 | - | 32 | 12 | 12 | 3,9 | 3900 | XNHQ1407... | LNHQ1407... |
| R335.25-250.2126XL.60-14R | B | 13,0 | 250 | 60 | 59,0 | 130 | 50,0 | - | 14 | 14 | 7,3 | 3500 | XNHQ1407... | LNHQ1407... |
| 335.25-250.2126XL.50-14R | A | 13,0 | 250 | 50 | 88,3 | 69 | - | 32 | 14 | 14 | 6,0 | 3500 | XNHQ1407... | LNHQ1407... |
| R335.25-315.2126XL.60-18R | B | 13,0 | 315 | 60 | 91,5 | 130 | 50,0 | - | 18 | 18 | 11,3 | 3100 | XNHQ1407... | LNHQ1407... |
| 335.25-315.2126XL.60-18R | A | 13,0 | 315 | 60 | 113,3 | 84 | - | 32 | 18 | 18 | 10,0 | 3100 | XNHQ1407... | LNHQ1407... |
| | | | | | | | | | | | | | | |
| R335.25-160.2632.40-10R | B | 16,0 | 160 | 40 | 43,8 | 70 | 50,0 | - | 10 | 10 | 3,4 | 4600 | XNHQ1707... | LNHQ1707... |
| 335.25-160.2632.40-10R | A | 16,0 | 160 | 40 | 50,3 | 55 | - | 32 | 10 | 10 | 2,9 | 4600 | XNHQ1707... | LNHQ1707... |
| R335.25-200.2632.40-12R | B | 16,0 | 200 | 40 | 54,0 | 90 | 50,0 | - | 12 | 12 | 5,4 | 4100 | XNHQ1707... | LNHQ1707... |
| 335.25-200.2632.50-12R | A | 16,0 | 200 | 50 | 63,3 | 69 | - | 32 | 12 | 12 | 4,8 | 4100 | XNHQ1707... | LNHQ1707... |
| R335.25-250.2632XL.60-14R | B | 16,0 | 250 | 60 | 59,0 | 130 | 50,0 | - | 14 | 14 | 8,4 | 3700 | XNHQ1707... | LNHQ1707... |
| 335.25-250.2632XL.50-14R | A | 16,0 | 250 | 50 | 88,3 | 69 | - | 32 | 14 | 14 | 7,4 | 3700 | XNHQ1707... | LNHQ1707... |
| R335.25-315.2632XL.60-18R | B | 16,0 | 315 | 60 | 91,5 | 130 | 50,0 | - | 18 | 18 | 13,4 | 3300 | XNHQ1707... | LNHQ1707... |
| 335.25-315.2632XL.60-18R | A | 16,0 | 315 | 60 | 113,3 | 84 | - | 32 | 18 | 18 | 12,3 | 3300 | XNHQ1707... | LNHQ1707... |
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Please check availability in current price and stock-list

Cutter 335.18 - Round inserts diameter 10 and 12 mm

Width max 6 mm - Half side - Right hand - radius profile with cassette

Type B

Type A

- For insert selection and cutting data recommendations, see page(s) 296-299
- For complete insert programme, see page(s) 654-656
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | ZEFP | | | Insert |
|------------------------------|------------------|------------------|-------|------|-------|--------|------|------|----|------|-----|-------|----------|
| | | APMXS | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | |
| R335.18-080.1012.27-6R-R5 | B | 5,0 | 82,0 | 27,0 | 15,8 | 48,0 | 50,0 | - | 6 | 6 | 0,8 | 10500 | RD..10T3 |
| R335.18-100.1012.27-8R-R5 | B | 5,0 | 102,0 | 27,0 | 25,8 | 48,0 | 50,0 | - | 8 | 8 | 1,0 | 9400 | RD..10T3 |
| 335.18-100.1012.27-8R-R5 | A | 5,0 | 102,0 | 27,0 | 28,2 | 41,0 | - | 15,0 | 8 | 8 | 0,4 | 9400 | RD..10T3 |
| R335.18-125.1012.32-10R-R5 | B | 5,0 | 127,0 | 32,0 | 33,3 | 58,0 | 50,0 | - | 10 | 10 | 1,2 | 8400 | RD..10T3 |
| 335.18-125.1012.40-10R-R5 | A | 5,0 | 127,0 | 40,0 | 33,7 | 55,0 | - | 15,0 | 10 | 10 | 0,7 | 8400 | RD..10T3 |
| R335.18-160.1012.40-12R-R5 | B | 5,0 | 162,0 | 40,0 | 44,8 | 70,0 | 50,0 | - | 12 | 12 | 0,1 | 7500 | RD..10T3 |
| 335.18-160.1012.40-12R-R5 | A | 5,0 | 162,0 | 40,0 | 51,2 | 55,0 | - | 15,0 | 12 | 12 | 1,3 | 7500 | RD..10T3 |
| R335.18-200.1012XL.40-14R-R5 | B | 5,0 | 200,0 | 40,0 | 53,5 | 90,0 | 50,0 | - | 14 | 14 | 2,9 | 6700 | RD..10T3 |
| 335.18-200.1012XL.50-14R-R5 | A | 5,0 | 200,0 | 50,0 | 63,5 | 69,0 | - | 15,0 | 14 | 14 | 1,7 | 6700 | RD..10T3 |
| R335.18-250.1012XL.40-18R-R5 | B | 5,0 | 250,0 | 40,0 | 78,0 | 90,0 | 50,0 | - | 18 | 18 | 4,0 | 6000 | RD..10T3 |
| 335.18-250.1012XL.50-18R-R5 | A | 5,0 | 250,0 | 50,0 | 88,5 | 69,0 | - | 15,0 | 18 | 18 | 3,8 | 6000 | RD..10T3 |
| 335.18-315.1012XL.50-24R-R5 | A | 5,0 | 315,0 | 50,0 | 121,0 | 69,0 | - | 15,0 | 24 | 24 | 2,0 | 5300 | RD..10T3 |
| R335.18-080.1215.27-6R-R6 | B | 6,0 | 82,0 | 27,0 | 14,8 | 48,0 | 50,0 | - | 6 | 6 | 0,7 | 10500 | RP..1204 |
| R335.18-100.1215.27-8R-R6 | B | 6,0 | 102,0 | 27,0 | 25,8 | 48,0 | 50,0 | - | 8 | 8 | 1,1 | 9400 | RP..1204 |
| 335.18-100.1215.27-8R-R6 | A | 6,0 | 102,0 | 27,0 | 28,2 | 41,0 | - | 15,0 | 8 | 8 | 0,7 | 9400 | RP..1204 |
| R335.18-125.1215.32-10R-R6 | B | 6,0 | 127,0 | 32,0 | 33,3 | 58,0 | 50,0 | - | 10 | 10 | 1,4 | 8400 | RP..1204 |
| 335.18-125.1215.40-10R-R6 | A | 6,0 | 127,0 | 40,0 | 33,7 | 55,0 | - | 15,0 | 10 | 10 | 0,9 | 8400 | RP..1204 |
| R335.18-160.1215.40-12R-R6 | B | 6,0 | 162,0 | 40,0 | 44,8 | 70,0 | 50,0 | - | 12 | 12 | 1,9 | 7500 | RP..1204 |
| 335.18-160.1215.40-12R-R6 | A | 6,0 | 162,0 | 40,0 | 51,2 | 55,0 | - | 15,0 | 12 | 12 | 1,5 | 7500 | RP..1204 |
| R335.18-200.1215XL.40-14R-R6 | B | 6,0 | 200,0 | 40,0 | 53,5 | 90,0 | 50,0 | - | 14 | 14 | 4,3 | 6700 | RP..1204 |
| 335.18-200.1215XL.50-14R-R6 | A | 6,0 | 200,0 | 50,0 | 63,5 | 69,0 | - | 15,0 | 14 | 14 | 2,0 | 6700 | RP..1204 |
| R335.18-250.1215XL.40-18R-R6 | B | 6,0 | 250,0 | 40,0 | 78,0 | 90,0 | 50,0 | - | 18 | 18 | 4,5 | 6000 | RP..1204 |
| 335.18-250.1215XL.50-18R-R6 | A | 6,0 | 250,0 | 50,0 | 88,5 | 69,0 | - | 15,0 | 18 | 18 | 2,0 | 6000 | RP..1204 |
| 335.18-315.1215XL.50-24R-R6 | A | 6,0 | 315,0 | 50,0 | 121,0 | 69,0 | - | 15,0 | 24 | 24 | 5,7 | 5300 | RP..1204 |

Please check availability in current price and stock-list

Cutter 335.25 - Round inserts diameter 16 and 20 mm

Width max 10mm - half side - right hand - Radius profile with cassette

Type B

Type A

- For insert selection and cutting data recommendations, see page(s) 300-303
- For complete insert programme, see page(s) 657
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | ⊘ | ZEFP | KG | | Insert | |
|-------------------------------|------------------|------------------|-------|------|-------|--------|--------|------|----|------|------|------|----------|--|
| | | APMXS | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | | |
| R335.25-100.1317.27-6R-R8 | B | 8,0 | 105,0 | 27,0 | 28,0 | 48,0 | 51,265 | – | 6 | 6 | 1,0 | 9200 | RP..1605 | |
| R335.25-125.1317.32-8R-R8 | B | 8,0 | 130,0 | 32,0 | 35,5 | 58,0 | 51,265 | – | 8 | 8 | 1,4 | 8200 | RP..1605 | |
| 335.25-125.1317.40-8R-R8 | A | 8,0 | 130,0 | 40,0 | 36,1 | 55,0 | – | 17,0 | 8 | 8 | 0,9 | 8200 | RP..1605 | |
| R335.25-160.1317.40-12R-R8 | B | 8,0 | 165,0 | 40,0 | 47,0 | 70,0 | 51,265 | – | 12 | 12 | 2,3 | 7200 | RP..1605 | |
| 335.25-160.1317.40-12R-R8 | A | 8,0 | 165,0 | 40,0 | 53,6 | 55,0 | – | 17,0 | 12 | 12 | 1,5 | 7200 | RP..1605 | |
| R335.25-200.1317.40-14R-R8 | B | 8,0 | 205,0 | 40,0 | 57,0 | 90,0 | 51,265 | – | 14 | 14 | 3,6 | 6500 | RP..1605 | |
| 335.25-200.1317.50-14R-R8 | A | 8,0 | 205,0 | 50,0 | 66,6 | 69,0 | – | 17,0 | 14 | 14 | 2,5 | 6500 | RP..1605 | |
| R335.25-250.1317XL.60-16R-R8 | B | 8,0 | 255,0 | 60,0 | 62,0 | 130,0 | 51,265 | – | 16 | 16 | 6,1 | 5800 | RP..1605 | |
| 335.25-250.1317XL.50-16R-R8 | A | 8,0 | 255,0 | 50,0 | 91,6 | 69,0 | – | 17,0 | 16 | 16 | 4,0 | 5800 | RP..1605 | |
| R335.25-315.1317XL.60-20R-R8 | B | 8,0 | 320,0 | 60,0 | 94,5 | 130,0 | 51,265 | – | 20 | 20 | 8,7 | 5200 | RP..1605 | |
| 335.25-315.1317XL.50-20R-R8 | A | 8,0 | 320,0 | 50,0 | 124,1 | 69,0 | – | 17,0 | 20 | 20 | 6,6 | 5200 | RP..1605 | |
| R335.25-250.1721XL.60-16R-R10 | B | 10,0 | 255,0 | 60,0 | 62,0 | 130,0 | 51,515 | – | 16 | 16 | 6,7 | 4600 | RP..2006 | |
| 335.25-250.1721XL.50-16R-R10 | A | 10,0 | 255,0 | 50,0 | 91,6 | 69,0 | – | 21,0 | 16 | 16 | 5,0 | 4600 | RP..2006 | |
| R335.25-315.1721XL.60-20R-R10 | B | 10,0 | 320,0 | 60,0 | 94,5 | 130,0 | 51,515 | – | 20 | 20 | 10,0 | 4100 | RP..2006 | |
| 335.25-315.1721XL.50-20R-R10 | A | 10,0 | 320,0 | 50,0 | 124,1 | 69,0 | – | 21,0 | 20 | 20 | 8,2 | 4100 | RP..2006 | |
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Please check availability in current price and stock-list

Cutter 335.18 - Insert LNK.

Width max 6 mm - Half side - Left hand - with cassette

Type B

Type A

- For insert selection and cutting data recommendations, see page(s) 278-279
- For complete insert programme, see page(s) 645-646
- For spare parts and technical information, see page 271-277

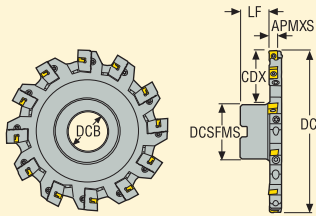
| Designation | Type of mounting | Dimensions in mm | | | | | | | | ZEPF | | KG | | Insert |
|---------------------------|------------------|------------------|-------|------|-------|--------|------|------|----|------|-----|-------|----------|--------|
| | | APMXS | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | | |
| R335.18-080.0810.27-6L | B | 5,0 | 80,0 | 27,0 | 14,8 | 48,0 | 42,0 | - | 6 | 6 | 0,7 | 10500 | LNK.05.. | |
| R335.18-100.0810.27-8L | B | 5,0 | 100,0 | 27,0 | 24,8 | 48,0 | 42,0 | - | 8 | 8 | 0,8 | 9400 | LNK.05.. | |
| 335.18-100.0810.27-8L | A | 5,0 | 100,0 | 27,0 | 27,2 | 41,0 | - | 15,0 | 8 | 8 | 0,4 | 9400 | LNK.05.. | |
| R335.18-125.0810.32-10L | B | 5,0 | 125,0 | 32,0 | 32,3 | 58,0 | 42,0 | - | 10 | 10 | 1,0 | 8400 | LNK.05.. | |
| 335.18-125.0810.40-10L | A | 5,0 | 125,0 | 40,0 | 32,7 | 55,0 | - | 15,0 | 10 | 10 | 0,6 | 8400 | LNK.05.. | |
| R335.18-160.0810.40-12L | B | 5,0 | 160,0 | 40,0 | 43,8 | 70,0 | 42,0 | - | 12 | 12 | 1,6 | 7500 | LNK.05.. | |
| 335.18-160.0810.40-12L | A | 5,0 | 160,0 | 40,0 | 50,2 | 55,0 | - | 15,0 | 12 | 12 | 1,0 | 7500 | LNK.05.. | |
| R335.18-200.0810XL.40-14L | B | 5,0 | 200,0 | 40,0 | 53,5 | 90,0 | 42,0 | - | 14 | 14 | 2,7 | 6700 | LNK.05.. | |
| 335.18-200.0810XL.50-14L | A | 5,0 | 200,0 | 50,0 | 63,5 | 69,0 | - | 15,0 | 14 | 14 | 1,7 | 6700 | LNK.05.. | |
| R335.18-250.0810XL.40-18L | B | 5,0 | 250,0 | 40,0 | 78,0 | 90,0 | 42,0 | - | 18 | 18 | 3,5 | 6000 | LNK.05.. | |
| 335.18-250.0810XL.50-18L | A | 5,0 | 250,0 | 50,0 | 88,5 | 69,0 | - | 15,0 | 18 | 18 | 1,7 | 6000 | LNK.05.. | |
| 335.18-315.0810XL.50-24L | A | 5,0 | 315,0 | 50,0 | 121,0 | 69,0 | - | 15,0 | 24 | 24 | 1,9 | 5300 | LNK.05.. | |
| R335.18-080.1012.27-6L | B | 6,0 | 80,0 | 27,0 | 14,8 | 48,0 | 40,0 | - | 6 | 6 | 1,0 | 10500 | LNK.06.. | |
| R335.18-100.1012.27-8L | B | 6,0 | 100,0 | 27,0 | 24,8 | 48,0 | 40,0 | - | 8 | 8 | 0,9 | 9400 | LNK.06.. | |
| 335.18-100.1012.27-8L | A | 6,0 | 100,0 | 27,0 | 27,2 | 41,0 | - | 15,0 | 8 | 8 | 0,4 | 9400 | LNK.06.. | |
| R335.18-125.1012.32-10L | B | 6,0 | 125,0 | 32,0 | 32,3 | 58,0 | 40,0 | - | 10 | 10 | 1,0 | 8400 | LNK.06.. | |
| 335.18-125.1012.40-10L | A | 6,0 | 125,0 | 40,0 | 32,7 | 55,0 | - | 15,0 | 10 | 10 | 0,8 | 8400 | LNK.06.. | |
| R335.18-160.1012.40-12L | B | 6,0 | 160,0 | 40,0 | 43,8 | 70,0 | 40,0 | - | 12 | 12 | 1,3 | 7500 | LNK.06.. | |
| 335.18-160.1012.40-12L | A | 6,0 | 160,0 | 40,0 | 50,2 | 55,0 | - | 15,0 | 12 | 12 | 1,5 | 7500 | LNK.06.. | |
| R335.18-200.1012XL.40-14L | B | 6,0 | 200,0 | 40,0 | 53,5 | 90,0 | 40,0 | - | 14 | 14 | 2,9 | 6700 | LNK.06.. | |
| 335.18-200.1012XL.50-14L | A | 6,0 | 200,0 | 50,0 | 63,5 | 69,0 | - | 15,0 | 14 | 14 | 1,7 | 6700 | LNK.06.. | |
| R335.18-250.1012XL.40-18L | B | 6,0 | 250,0 | 40,0 | 78,0 | 90,0 | 40,0 | - | 18 | 18 | 3,9 | 6000 | LNK.06.. | |
| 335.18-250.1012XL.50-18L | A | 6,0 | 250,0 | 50,0 | 88,5 | 69,0 | - | 15,0 | 18 | 18 | 1,8 | 6000 | LNK.06.. | |
| 335.18-315.1012XL.50-24L | A | 6,0 | 315,0 | 50,0 | 121,0 | 69,0 | - | 15,0 | 24 | 24 | 2,0 | 5300 | LNK.06.. | |

Please check availability in current price and stock-list

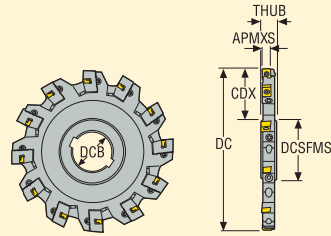
Cutter 335.18 - Insert LNK.

Width max 7,5 mm - Half side - Left hand - with cassette

Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 278-279
- For complete insert programme, see page(s) 646
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | ZEFP | kg | | Insert |
|---------------------------|------------------|------------------|-------|------|-------|--------|------|------|----|------|-----|-------|----------|
| | | APMXS | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | |
| R335.18-080.1215.27-6L | B | 7,5 | 80,0 | 27,0 | 14,8 | 48,0 | 38,0 | - | 6 | 6 | 0,8 | 10500 | LNK.08.. |
| R335.18-100.1215.27-8L | B | 7,5 | 100,0 | 27,0 | 24,8 | 48,0 | 38,0 | - | 8 | 8 | 1,1 | 9400 | LNK.08.. |
| 335.18-100.1215.27-8L | A | 7,5 | 100,0 | 27,0 | 27,2 | 41,0 | - | 15,0 | 8 | 8 | 0,6 | 9400 | LNK.08.. |
| R335.18-125.1215.32-10L | B | 7,5 | 125,0 | 32,0 | 33,3 | 58,0 | 38,0 | - | 10 | 10 | 1,0 | 8400 | LNK.08.. |
| 335.18-125.1215.40-10L | A | 7,5 | 125,0 | 40,0 | 32,7 | 55,0 | - | 15,0 | 10 | 10 | 0,9 | 8400 | LNK.08.. |
| R335.18-160.1215.40-12L | B | 7,5 | 160,0 | 40,0 | 43,8 | 70,0 | 38,0 | - | 12 | 12 | 2,1 | 7500 | LNK.08.. |
| 335.18-160.1215.40-12L | A | 7,5 | 160,0 | 40,0 | 50,2 | 55,0 | - | 15,0 | 12 | 12 | 1,4 | 7500 | LNK.08.. |
| R335.18-200.1215XL.40-14L | B | 7,5 | 200,0 | 40,0 | 53,5 | 90,0 | 38,0 | - | 14 | 14 | 3,5 | 6700 | LNK.08.. |
| 335.18-200.1215XL.50-14L | A | 7,5 | 200,0 | 50,0 | 63,5 | 69,0 | - | 15,0 | 14 | 14 | 2,0 | 6700 | LNK.08.. |
| R335.18-250.1215XL.40-18L | B | 7,5 | 250,0 | 40,0 | 78,0 | 90,0 | 90,0 | - | 18 | 18 | 4,5 | 6000 | LNK.08.. |
| 335.18-250.1215XL.50-18L | A | 7,5 | 250,0 | 50,0 | 88,5 | 69,0 | - | 15,0 | 18 | 18 | 3,2 | 6000 | LNK.08.. |
| 335.18-315.1215XL.50-24L | A | 7,5 | 315,0 | 50,0 | 121,0 | 69,0 | - | 15,0 | 24 | 24 | 5,6 | 5300 | LNK.08.. |
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Please check availability in current price and stock-list

Cutter 335.25 - Insert XNHQ

Max depth of cut 11 mm – Half side – Left hand with cassette

Type B

Type A

- For insert selection and cutting data recommendations, see page(s) 280-283
- For complete insert programme, see page(s) 681
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | ZEFP | | | Insert | |
|---------------------------|------------------|------------------|-------|------|--------|--------|------|------|----|------|------|------|----------|--|
| | | APMXS | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | | |
| R335.25-100.1317.27-6L | B | 9,0 | 100,0 | 27,0 | 24,82 | 48,0 | 50,0 | – | 6 | 6 | 1,4 | 9200 | XNHQ09.. | |
| R335.25-125.1317.32-8L | B | 9,0 | 125,0 | 32,0 | 32,32 | 58,0 | 50,0 | – | 8 | 8 | 1,4 | 8200 | XNHQ09.. | |
| 335.25-125.1317.40-8L | A | 9,0 | 125,0 | 40,0 | 32,92 | 55,0 | – | 17,0 | 8 | 8 | 0,9 | 8200 | XNHQ09.. | |
| R335.25-160.1317.40-12L | B | 9,0 | 160,0 | 40,0 | 43,82 | 70,0 | 50,0 | – | 12 | 12 | 2,3 | 7200 | XNHQ09.. | |
| 335.25-160.1317.40-12L | A | – | 160,0 | 40,0 | 50,50 | 55,0 | – | 17,0 | 12 | 12 | 1,5 | 7200 | XNHQ09.. | |
| R335.25-200.1317.40-14L | B | 9,0 | 200,0 | 40,0 | 53,98 | 90,0 | 50,0 | – | 14 | 14 | 3,5 | 6500 | XNHQ09.. | |
| 335.25-200.1317.50-14L | A | – | 200,0 | 50,0 | 63,50 | 69,0 | – | 17,0 | 14 | 14 | 3,1 | 6500 | XNHQ09.. | |
| R335.25-250.1317XL.60-16L | B | 9,0 | 250,0 | 60,0 | 58,98 | 130,0 | 50,0 | – | 16 | 16 | 6,0 | 5800 | XNHQ09.. | |
| 335.25-250.1317XL.50-16L | A | 9,0 | 250,0 | 50,0 | 88,54 | 69,0 | – | 17,0 | 16 | 16 | 3,9 | 5800 | XNHQ09.. | |
| R335.25-315.1317XL.60-20L | B | 9,0 | 315,0 | 60,0 | 91,48 | 130,0 | 50,0 | – | 20 | 20 | 8,6 | 5200 | XNHQ09.. | |
| 335.25-315.1317XL.50-20L | A | 9,0 | 315,0 | 50,0 | 121,04 | 69,0 | – | 17,0 | 20 | 20 | 6,5 | 5200 | XNHQ09.. | |
| R335.25-100.1721.27-6L | B | 11,1 | 100,0 | 27,0 | 24,82 | 48,0 | 50,0 | – | 6 | 6 | 1,1 | 7200 | XNHQ12.. | |
| R335.25-125.1721.32-8L | B | 11,1 | 125,0 | 32,0 | 32,32 | 58,0 | 50,0 | – | 8 | 8 | 1,9 | 6500 | XNHQ12.. | |
| 335.25-125.1721.40-8L | A | 11,1 | 125,0 | 40,0 | 32,86 | 55,0 | – | 21,0 | 8 | 8 | 1,1 | 6500 | XNHQ12.. | |
| R335.25-160.1721.40-10L | B | 11,1 | 160,0 | 40,0 | 43,82 | 70,0 | 50,0 | – | 10 | 10 | 2,8 | 5700 | XNHQ12.. | |
| 335.25-160.1721.40-10L | A | 11,1 | 160,0 | 40,0 | 50,50 | 55,0 | – | 21,0 | 10 | 10 | 1,9 | 5700 | XNHQ12.. | |
| R335.25-200.1721.40-12L | B | 11,1 | 200,0 | 40,0 | 53,98 | 90,0 | 50,0 | – | 12 | 12 | 4,5 | 5100 | XNHQ12.. | |
| 335.25-200.1721.50-12L | A | 11,1 | 200,0 | 50,0 | 63,50 | 69,0 | – | 21,0 | 12 | 12 | 3,3 | 5100 | XNHQ12.. | |
| R335.25-250.1721XL.60-16L | B | 11,1 | 250,0 | 60,0 | 58,98 | 130,0 | 50,0 | – | 16 | 16 | 6,7 | 4600 | XNHQ12.. | |
| 335.25-250.1721XL.50-16L | A | 11,1 | 250,0 | 50,0 | 88,50 | 69,0 | – | 21,0 | 16 | 16 | 4,9 | 4600 | XNHQ12.. | |
| R335.25-315.1721XL.60-20L | B | 11,1 | 315,0 | 60,0 | 91,48 | 130,0 | 50,0 | – | 20 | 20 | 10,0 | 4100 | XNHQ12.. | |
| 335.25-315.1721XL.50-20L | A | 11,1 | 315,0 | 50,0 | 121,00 | 69,0 | – | 21,0 | 20 | 20 | 8,2 | 4100 | XNHQ12.. | |
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Please check availability in current price and stock-list

Type B

Type A

- For insert selection and cutting data recommendations, see page(s) 284-287
- For complete insert programme, see page(s) 644, 681
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | ZEFP | | | Insert: First choice | Insert: Alternative choice |
|---------------------------|------------------|------------------|-----|-----|-----|--------|------|------|----|----|------|------|-------------|-------------------------|-------------------------------|
| | | APMXS | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | | | |
| R335.25-125.2126.32-8L | B | 13,0 | 125 | 32 | 32 | 58 | 29,0 | - | 8 | 8 | 1,7 | 4900 | XNHQ1407... | LNHQ1407... | |
| 335.25-125.2126.40-8L | A | 13,0 | 125 | 40 | 33 | 55 | - | 32 | 8 | 8 | 1,3 | 4900 | XNHQ1407... | LNHQ1407... | |
| R335.25-160.2126.40-10L | B | 13,0 | 160 | 40 | 44 | 70 | 29,0 | - | 10 | 10 | 2,9 | 4400 | XNHQ1407... | LNHQ1407... | |
| 335.25-160.2126.40-10L | A | 13,0 | 160 | 40 | 50 | 55 | - | 32 | 10 | 10 | 2,3 | 4400 | XNHQ1407... | LNHQ1407... | |
| R335.25-200.2126.40-12L | B | 13,0 | 200 | 40 | 54 | 90 | 29,0 | - | 12 | 12 | 4,6 | 3900 | XNHQ1407... | LNHQ1407... | |
| 335.25-200.2126.50-12L | A | 13,0 | 200 | 50 | 63 | 69 | - | 32 | 12 | 12 | 3,9 | 3900 | XNHQ1407... | LNHQ1407... | |
| R335.25-250.2126XL.60-14L | B | 13,0 | 250 | 60 | 59 | 130 | 29,0 | - | 14 | 14 | 7,3 | 3500 | XNHQ1407... | LNHQ1407... | |
| 335.25-250.2126XL.50-14L | A | 13,0 | 250 | 50 | 88 | 69 | - | 32 | 14 | 14 | 6,0 | 3500 | XNHQ1407... | LNHQ1407... | |
| R335.25-315.2126XL.60-18L | B | 13,0 | 315 | 60 | 92 | 130 | 29,0 | - | 18 | 18 | 11,3 | 3100 | XNHQ1407... | LNHQ1407... | |
| 335.25-315.2126XL.60-18L | A | 13,0 | 315 | 60 | 113 | 84 | - | 32 | 18 | 18 | 10,0 | 3100 | XNHQ1407... | LNHQ1407... | |
| R335.25-160.2632.40-10L | B | 16,0 | 160 | 40 | 44 | 70 | 24,0 | - | 10 | 10 | 3,4 | 4600 | XNHQ1707... | LNHQ1707... | |
| 335.25-160.2632.40-10L | A | 16,0 | 160 | 40 | 50 | 55 | - | 32 | 10 | 10 | 2,9 | 4600 | XNHQ1707... | LNHQ1707... | |
| R335.25-200.2632.40-12L | B | 16,0 | 200 | 40 | 54 | 90 | 24,0 | - | 12 | 12 | 5,4 | 4100 | XNHQ1707... | LNHQ1707... | |
| 335.25-200.2632.50-12L | A | 16,0 | 200 | 50 | 63 | 69 | - | 32 | 12 | 12 | 4,8 | 4100 | XNHQ1707... | LNHQ1707... | |
| R335.25-250.2632XL.60-14L | B | 16,0 | 250 | 60 | 59 | 130 | 24,0 | - | 14 | 14 | 8,4 | 3700 | XNHQ1707... | LNHQ1707... | |
| 335.25-250.2632XL.50-14L | A | 16,0 | 250 | 50 | 88 | 69 | - | 32 | 14 | 14 | 7,4 | 3700 | XNHQ1707... | LNHQ1707... | |
| R335.25-315.2632XL.60-18L | B | 16,0 | 315 | 60 | 92 | 130 | 24,0 | - | 18 | 18 | 13,4 | 3300 | XNHQ1707... | LNHQ1707... | |
| 335.25-315.2632XL.60-18L | A | 16,0 | 315 | 60 | 113 | 84 | - | 32 | 18 | 18 | 12,3 | 3300 | XNHQ1707... | LNHQ1707... | |
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Please check availability in current price and stock-list

Cutter 335.18 - Round inserts

Width max 6 mm - Half side - Left hand - radius profile with cassette

Type B

Type A

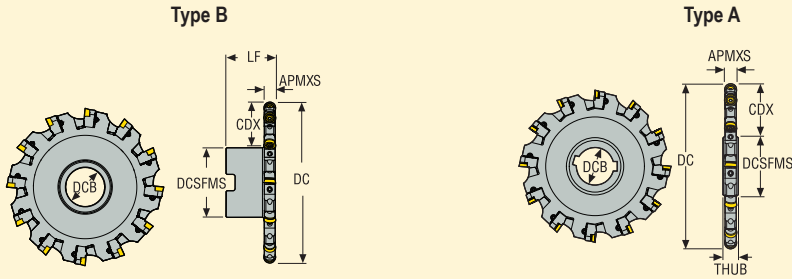
- For insert selection and cutting data recommendations, see page(s) 296-299
- For complete insert programme, see page(s) 654, 656
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | ZEFP | | | Insert |
|------------------------------|------------------|------------------|-------|------|-------|--------|------|------|----|------|------|-------|----------|
| | | APMXS | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | |
| R335.18-080.1012.27-6L-R5 | B | 5,0 | 82,0 | 27,0 | 15,8 | 48,0 | 40,0 | - | 6 | 6 | 0,8 | 10500 | RD..10T3 |
| R335.18-100.1012.27-8L-R5 | B | 5,0 | 102,0 | 27,0 | 25,8 | 48,0 | 40,0 | - | 8 | 8 | 1,0 | 9400 | RD..10T3 |
| 335.18-100.1012.27-8L-R5 | A | 5,0 | 102,0 | 27,0 | 28,2 | 41,0 | - | 15,0 | 8 | 8 | 0,4 | 9400 | RD..10T3 |
| R335.18-125.1012.32-10L-R5 | B | 5,0 | 127,0 | 32,0 | 33,3 | 58,0 | 42,0 | - | 10 | 10 | 1,2 | 8400 | RD..10T3 |
| 335.18-125.1012.40-10L-R5 | A | 5,0 | 127,0 | 40,0 | 33,7 | 55,0 | - | 15,0 | 10 | 10 | 0,8 | 8400 | RD..10T3 |
| R335.18-160.1012.40-12L-R5 | B | 5,0 | 162,0 | 40,0 | 44,8 | 70,0 | 40,0 | - | 12 | 12 | 2,3 | 7500 | RD..10T3 |
| 335.18-160.1012.40-12L-R5 | A | 5,0 | 162,0 | 40,0 | 51,2 | 55,0 | - | 15,0 | 12 | 12 | 11,0 | 7500 | RD..10T3 |
| R335.18-200.1012XL.40-14L-R5 | B | 5,0 | 200,0 | 40,0 | 53,5 | 90,0 | 40,0 | - | 14 | 14 | 2,9 | 6700 | RD..10T3 |
| 335.18-200.1012XL.50-14L-R5 | A | 5,0 | 200,0 | 50,0 | 63,5 | 69,0 | - | 15,0 | 14 | 14 | 1,7 | 6700 | RD..10T3 |
| R335.18-250.1012XL.40-18L-R5 | B | 5,0 | 250,0 | 40,0 | 78,0 | 90,0 | 40,0 | - | 18 | 18 | 4,0 | 6000 | RD..10T3 |
| 335.18-250.1012XL.50-18L-R5 | A | 5,0 | 250,0 | 50,0 | 88,5 | 69,0 | - | 15,0 | 18 | 18 | 1,8 | 6000 | RD..10T3 |
| 335.18-315.1012XL.50-24L-R5 | A | 5,0 | 315,0 | 50,0 | 121,0 | 69,0 | - | 15,0 | 24 | 24 | 2,0 | 5300 | RD..10T3 |
| R335.18-080.1215.27-6L-R6 | B | 6,0 | 82,0 | 27,0 | 15,8 | 48,0 | 38,0 | - | 6 | 6 | 0,7 | 10500 | RP..1204 |
| R335.18-100.1215.27-8L-R6 | B | 6,0 | 102,0 | 27,0 | 25,8 | 48,0 | 38,0 | - | 8 | 8 | 1,1 | 9400 | RP..1204 |
| 335.18-100.1215.27-8L-R6 | A | 6,0 | 102,0 | 27,0 | 28,2 | 41,0 | - | 15,0 | 8 | 8 | 0,6 | 9400 | RP..1204 |
| R335.18-125.1215.32-10L-R6 | B | 6,0 | 127,0 | 32,0 | 32,3 | 58,0 | 38,0 | - | 10 | 10 | 1,1 | 8400 | RP..1204 |
| 335.18-125.1215.40-10L-R6 | A | 6,0 | 127,0 | 40,0 | 33,7 | 55,0 | - | 15,0 | 10 | 10 | 0,9 | 8400 | RP..1204 |
| R335.18-160.1215.40-12L-R6 | B | 6,0 | 162,0 | 40,0 | 44,8 | 70,0 | 38,0 | - | 12 | 12 | 2,0 | 7500 | RP..1204 |
| 335.18-160.1215.40-12L-R6 | A | 6,0 | 162,0 | 40,0 | 51,2 | 55,0 | - | 15,0 | 12 | 12 | 1,5 | 7500 | RP..1204 |
| R335.18-200.1215XL.40-14L-R6 | B | 6,0 | 200,0 | 40,0 | 53,5 | 90,0 | 38,0 | - | 14 | 14 | 3,4 | 6700 | RP..1204 |
| 335.18-200.1215XL.50-14L-R6 | A | 6,0 | 200,0 | 50,0 | 63,5 | 69,0 | - | 15,0 | 14 | 14 | 1,9 | 6700 | RP..1204 |
| R335.18-250.1215XL.40-18L-R6 | B | 6,0 | 250,0 | 40,0 | 78,0 | 90,0 | 38,0 | - | 18 | 18 | 4,4 | 6000 | RP..1204 |
| 335.18-250.1215XL.50-18L-R6 | A | 6,0 | 250,0 | 50,0 | 88,5 | 69,0 | - | 15,0 | 18 | 18 | 2,0 | 6000 | RP..1204 |
| 335.18-315.1215XL.50-24L-R6 | A | 6,0 | 315,0 | 50,0 | 121,0 | 69,0 | - | 15,0 | 24 | 24 | 2,2 | 5300 | RP..1204 |

Please check availability in current price and stock-list

Cutter 335.25 - Round inserts diameter 16 and 20 mm

Width max 10mm - half side - left hand - Radius profile with cassette



- For insert selection and cutting data recommendations, see page(s) 300-303
- For complete insert programme, see page(s) 657
- For spare parts and technical information, see page 271-277

| Designation | Type of mounting | Dimensions in mm | | | | | | | | ⊘ | ZEFP | KG | | Insert |
|-------------------------------|------------------|------------------|-------|------|-------|--------|------|------|----|----|------|------|----------|--------|
| | | APMXS | DC | DCB | CDX | DCSFMS | LF | THUB | | | | | | |
| R335.25-100.1317.27-6L-R8 | B | 8,0 | 105,0 | 27,0 | 28,0 | 48,0 | 51,3 | - | 6 | 6 | 1,0 | 9200 | RP..1605 | |
| R335.25-125.1317.32-8L-R8 | B | 8,0 | 130,0 | 32,0 | 35,5 | 58,0 | 51,3 | - | 8 | 8 | 1,4 | 8200 | RP..1605 | |
| 335.25-125.1317.40-8L-R8 | A | 8,0 | 130,0 | 40,0 | 36,1 | 55,0 | - | 17,0 | 8 | 8 | 0,9 | 8200 | RP..1605 | |
| R335.25-160.1317.40-12L-R8 | B | 8,0 | 165,0 | 40,0 | 47,0 | 70,0 | 51,3 | - | 12 | 12 | 2,3 | 7200 | RP..1605 | |
| 335.25-160.1317.40-12L-R8 | A | 8,0 | 165,0 | 40,0 | 53,6 | 55,0 | - | 17,0 | 12 | 12 | 1,5 | 7200 | RP..1605 | |
| R335.25-200.1317.40-14L-R8 | B | 8,0 | 205,0 | 40,0 | 57,0 | 90,0 | 51,3 | - | 14 | 14 | 3,6 | 6500 | RP..1605 | |
| 335.25-200.1317.50-14L-R8 | A | 8,0 | 205,0 | 50,0 | 66,6 | 69,0 | - | 17,0 | 14 | 14 | 2,5 | 6500 | RP..1605 | |
| R335.25-250.1317XL.60-16L-R8 | B | 8,0 | 255,0 | 60,0 | 62,0 | 130,0 | 51,3 | - | 16 | 16 | 6,1 | 5800 | RP..1605 | |
| 335.25-250.1317XL.50-16L-R8 | A | 8,0 | 255,0 | 50,0 | 91,6 | 69,0 | - | 17,0 | 16 | 16 | 4,0 | 5800 | RP..1605 | |
| R335.25-315.1317XL.60-20L-R8 | B | 8,0 | 320,0 | 60,0 | 94,5 | 130,0 | 51,3 | - | 20 | 20 | 8,7 | 5200 | RP..1605 | |
| 335.25-315.1317XL.50-20L-R8 | A | 8,0 | 320,0 | 50,0 | 124,1 | 69,0 | - | 17,0 | 20 | 20 | 6,5 | 5200 | RP..1605 | |
| R335.25-250.1721XL.60-16L-R10 | B | 10,0 | 255,0 | 60,0 | 62,0 | 130,0 | 51,5 | - | 16 | 16 | 6,7 | 4600 | RP..2006 | |
| 335.25-250.1721XL.50-16L-R10 | A | 10,0 | 255,0 | 50,0 | 91,6 | 69,0 | - | 21,0 | 16 | 16 | 5,0 | 4600 | RP..2006 | |
| R335.25-315.1721XL.60-20L-R10 | B | 10,0 | 320,0 | 60,0 | 94,5 | 130,0 | 51,5 | - | 20 | 20 | 10,0 | 4100 | RP..2006 | |
| 335.25-315.1721XL.50-20L-R10 | A | 10,0 | 320,0 | 50,0 | 124,1 | 69,0 | - | 21,0 | 20 | 20 | 8,2 | 4100 | RP..2006 | |
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Please check availability in current price and stock-list

Spare parts for (R)335.18/(R)335.29 - Fixed pocket

| Cutter family | Width of cut | Insert type | Insert locking screw/Nm | Key (T-handle) | Insert key | Indexing screw | Key for indexing screw |
|---------------|--------------|-------------|-------------------------|----------------|------------|----------------|------------------------|
| (R)335.18 | 8 | LNK.05... | C02508-T08P / 1.2Nm | | | | |
| | 10, 17 | LNK.06... | C73007-T09P / 2.0Nm | | | | |
| | 12, 14, 20 | LNK.08... | C73007-T09P / 2.0Nm | | | | |
| (R)335.29 | 5 | RD..05... | C02035-T06P / 0.5Nm | | | | |
| | 6 | RD..06... | C02205-T07P / 0.9Nm | | | | |
| | 7 | RD..07... | C02545-T07P / 0.9Nm | | | | |
| | 8 | RD..08... | C02506-T08P / 1.2Nm | | | | |
| | 10 | RD..10... | C03007-T09P / 2.0Nm | | | | |
| | 12 | RP..12... | C03508-T15P / 3.0Nm | | | | |

Spare parts for (R)335.18 -LNK and round insert - Adjustable design

| For cutter (R)335.18-xxx- | Insert type | Key (T-handle) | Insert locking screw/Nm | Insert key | Wedge | Wedge screw | Key for wedge screw | Adjusting screw | Key for adjusting screw | Cassettes | |
|---------------------------|-------------|----------------|-------------------------|------------|--------------|--------------|---------------------|-----------------|-------------------------|-----------------|--------------|
| | | | | | | | | | | Right | Left |
| 0810 | LN.K05... | DOUBLE-T | C02508-T08P / 1,2Nm | H4B-T08P | 335.18-607 | LD5018F-T15P | H6B-T15PL | SH6004-T08P | H4B-T08P | R335.18-... | L335.18-... |
| 0810XL | | | | | 335.18-XL607 | | | | | ...0810-05 | ...0810-05 |
| 0810 | RD..08... | DOUBLE-T | C02506-T08P / 1,2Nm | H4B-T08P | 335.18-607 | LD5018F-T15P | H6B-T15PL | SH6004-T08P | H4B-T08P | N335.18-08-R4 | |
| 0810XL | | | | | 335.18-XL607 | | | | | N335.18-08XL-R4 | |
| 1012 | LNK.06... | DOUBLE-T | C73007-T09P / 2,0Nm | H4B-T09P | 335.18-609 | LD6018F-T20P | H6B-T20PL | SH6005-T09P | H4B-T09P | ...1012-06 | ...1012-06 |
| 1012XL | | | | | 335.18-XL609 | | | | | ...1012XL-06 | ...1012XL-06 |
| 1012 | RD..10T3 | DOUBLE-T | C03007-T09P / 2,0Nm | H4B-T09P | 335.18-609 | LD6018F-T20P | H6B-T20PL | SH6005-T09P | H4B-T09P | ...10-R5 | ...10-R5 |
| 1012XL | | | | | 335.18-XL609 | | | | | ...10XL-R5 | ...10XL-R5 |
| 1215 | LNK08... | DOUBLE-T | C73007-T09P / 2,0Nm | H4B-T09P | 335.18-611 | LD6018F-T20P | H6B-T20PL | SH6005-T09P | H4B-T09P | ...1215-08 | ...1215-08 |
| 1215XL | | | | | 335.18-XL611 | | | | | ...1215XL-08 | ...1215XL-08 |
| 1215 | RP..12... | DOUBLE-T | C03508-T15P / 3,0 Nm | H6B-T15PL | 335.18-611 | LD6018F-T20P | H6B-T20PL | SH6005-T09P | H4B-T09P | ...12-R6 | ...12-R6 |
| 1215XL | | | | | 335.18-XL611 | | | | | ...12XL-R6 | ...12XL-R6 |

Torque Key, see page 732

Spare parts for fixed pockets and adjustable cutter (R)335.25 equipped with XHNQ/LNHQ inserts

| For fixed pocket cutter | Insert type | Key (T-handle) | Locking screw/Nm | Insert key |
|-------------------------|---------------|----------------|------------------|------------|
| 15 mm | XHNQ09 | DOUBLE-T | C03509-T10P/3 Nm | H6B-T10P |
| 20 mm | XHNQ12 | DOUBLE-T | C03511-T10P/3 Nm | H6B-T10P |
| 25 mm | XHNQ14/LNHQ14 | DOUBLE-T | C04013-T15P/5 Nm | H6B-T15P |

| For adjustable cutter | Insert type | Key (T-handle) | Locking screw/Nm | Insert key | Wedge | Wedge screw | Key for wedge screw | Adjusting screw | Key for adjusting screw | Cassettes | |
|-----------------------|-----------------|----------------|------------------|------------|------------|--------------|---------------------|-----------------|-------------------------|-------------|-------------|
| | | | | | | | | | | Right | Left |
| | | | | | | | | | | R335.25-... | L335.25-... |
| 1317 | XHNQ09 | DOUBLE-T | C03509-T10P/3Nm | H6B-T10P | 335.25-612 | LD6018F-T20P | H6B-T20PL | SH6005-T09P | H4B-T09P | 1317-09* | 1317-09* |
| 1317XL | | | | | | | | | | 1317XL-09 | 1317XL-09 |
| 1721 | XHNQ12 | DOUBLE-T | C03511-T10P/3Nm | H6B-T10P | 335.25-616 | LD6018F-T20P | H6B-T20PL | SH6005-T09P | H4B-T09P | 1721-12** | 1721-12** |
| 1721XL | | | | | | | | | | 1721XL-12 | 1721XL-12 |
| 2126 | XHNQ14 / LNHQ14 | DOUBLE-T | C04013-T15P/5 Nm | H6B-T15P | 335.25-620 | LD6018F-T20P | H6B-T20PL | SH6005-T09P | H4B-T09P | 2126-14*** | 2126-14*** |
| 2126XL | | | | | | | | | | 2126XL-14 | 2126XL-14 |
| 2632 | XHNQ17 / LNHQ17 | DOUBLE-T | C05013-T20P/5 Nm | H6B-T20P | 335.25-625 | LD6018F-T20P | H6B-T20PL | SH6005-T09P | H4B-T09P | 2632-17**** | 2632-17**** |
| 2632XL | | | | | | | | | | 2632XL-17 | 2632XL-17 |

*Cassette compatible with adjustable disc milling cutter x335.18-xxx-1418 series to generate width of cut from 14 to 17 mm, generating nominal "DC" diameter

**Cassette compatible with adjustable disc milling cutter x335.18-xxx-1924 series to generate width of cut from 18.5 to 21 mm, generating nominal "DC" diameter

***Cassette compatible with adjustable disc milling cutter x335.18-xxx-2530 series to generate width of cut from 24.3 to 26 mm, generating nominal "DC" diameter

**** Cassette compatible with adjustable disc milling cutter x335.18-xxx-2530 series to generate width of cut from 26 to 30,5 mm, generating nominal "DC" diameter

Spare parts for adjustable cutter (R)335.25 equipped with round insert dia 16 and 20mm

| For adjustable cutter | Insert type | Key (T-handle) | Insert locking screw/Nm | Insert key | Wedge | Wedge screw | Key for wedge screw | Adjusting screw | Key for adjusting screw | Cassettes | |
|-----------------------|-------------|----------------|-------------------------|------------|------------|--------------|---------------------|-----------------|-------------------------|----------------|----------------|
| | | | | | | | | | | Right | Left |
| | | | | | | | | | | R335.25-... | L335.25-... |
| 1317 | RP..1605 | DOUBLE-T | C05010-T20P / 5N.m | H6B-T20PL | 335.25-612 | LD6018F-T20P | H6B-T20PL | SH6005-T09P | H4B-T09P | ...16-R8-D5* | ...16-R8-D5* |
| 1317XL | | | | | | | | | | ...16XL-R8-D5 | ...16XL-R8-D5 |
| 1721XL | RP..2006 | DOUBLE-T | C05013-T20P / 5N.m | H6B-T20PL | 335.25-616 | LD6018F-T20P | H6B-T20PL | SH6005-T09P | H4B-T09P | ...20XL-R10-D5 | ...20XL-R10-D5 |

*Cassette compatible with adjustable disc milling cutter x335.18-xxx-1418 series to generate width of cut from 16 to 18,5 mm, generating nominal "DC" diameter +5mm

Retaining screw B type: R335.18 / R335.25 / R335.29 (supplied with the cutter in the delivery)

| For cutter dia | Cutter 335.18 - fixed pocket | Cutter 335.18 adj. "0810", "1012", "1215" series | Cutter 335.25 - fixed pocket | Cutter 335.25 - adj. | Cutter 335.29 |
|----------------|------------------------------|--|------------------------------|----------------------|---------------|
| 63 | MC6S 10x40 | MC6S 10x40 | - | - | MC6S 10x40 |
| 80 | MC6S 12x40 | MC6S 12x40 | MLC6S10X45 | - | MC6S 12x35 |
| 100 | MC6S 12x40 | MC6S 12x40 | MC6S12X40 | MC6S12X40 | - |
| 125 | - | - | 950E1645 | MC6S16X40 | - |
| 160 | - | - | MLC6S20X40 | MLC6S20X40 | - |
| | | | | | |
| | | | | | |
| | | | | | |

Note: For disc cutter not mentioned in the table above, please use cross head retaining screw, supplied with the Seco-EPB shell mill holder

To order a standard adjustable disc milling cutter set at a specific width

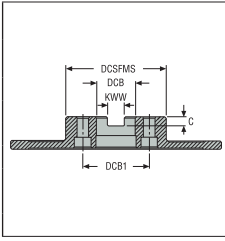
To order a standard adjustable disc mill 335.18/335.25 full side set to a specific width.

To obtain an adjustable disc mill set to your required dimension add "/ADJ" at the end of the reference and specify your required width which will be set with a tolerance of +/- 0,03 mm. Without specification the standard disc mill is set to the minimum cutting width.

Ordering example: R335.25-200.1317.40-7N/ADJ and specify on your order your width to any value within its range, for example specify a cutting width of 15.50mm in your order. The disc mill will be set to 15.50 +/- 0,03 mm.

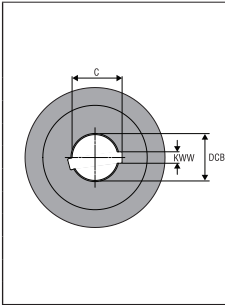
The delivery time is approx. 3 days for a set adjustable disc mill.

Dimension of mounting B type - R335.18 / R335.25 / R335.29



| Dimensions in mm | | | | |
|------------------|--------|-------|------|-----|
| DCB | DCSFMS | DBC1 | KWW | C |
| 22 | 40 | - | 10,4 | 6,3 |
| 27 | 48 | - | 12,4 | 7 |
| 32 | 58 | - | 14,4 | 8 |
| 40 | 70 | - | 16,4 | 9 |
| 40 | 90 | 66,7 | 16,4 | 9 |
| 60 | 130 | 101,6 | 25,7 | 14 |

Dimension of mounting A type -Keyway dimension - 335.18 / 335.25



| Dimensions in mm | | |
|------------------|-----|-------|
| DCB | KWW | C |
| 22 | 6 | 24,15 |
| 27 | 7 | 29,9 |
| 40 | 10 | 43,6 |
| 50 | 12 | 53,6 |
| 60 | 14 | 64,3 |
| | | |
| | | |
| | | |
| | | |

LNK 05/06/08 inserts



LNK.05
For width 8-10



LNK.06
For width 10-12



LNK.08
For width 12-15

LNK.06 and LNK.08 have the same size, but LNK.06 have a reduced cutting length (6mm) to decrease cutting forces for width= 10-12 mm.
LNK.08 have a cutting length = 7,5 mm for width 12-15 mm.

Radius possibilities/Number of cutting edges

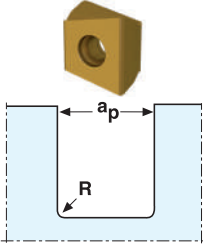
| | R | Fixed pocket version: CW = | | | | | | Adjustable version: CW = | | | | |
|---------------------------------|------------|----------------------------|----|----|----|----|----|--------------------------|----|----|----|---|
| | | 8 | 10 | 12 | 14 | 17 | 20 | 8 | 10 | 12 | 15 | |
| 4 cutting edges | | | | | | | | | | | | |
| | LNK.050404 | 0,4 | x | x | | | | | x | x | | |
| | LNK.050408 | 0,8 | x | x | | | | | x | x | | |
| | LNK.050416 | 1,6 | x | x | | | | | x | x | | |
| | LNK.050420 | 2,0 | x | x | | | | | x | x | | |
| | LNK.060504 | 0,4 | | x | x | | x | | | x | x | |
| | LNK.060508 | 0,8 | | x | x | | x | | | x | x | |
| | LNK.060516 | 1,6 | | x | x | | x | | | x | x | |
| | LNK.080504 | 0,4 | | o | o | x | o | x | | o | o | x |
| | LNK.080508 | 0,8 | | o | o | x | o | x | | o | o | x |
| | LNK.080516 | 1,6 | | o | o | x | o | x | | o | o | x |
| | LNK.080520 | 2,0 | | x | x | x | x | x | | x | x | x |
| | LNK.080524 | 2,4 | | x | x | x | x | x | | x | x | x |
| 2 cutting edges | | | | | | | | | | | | |
| | LNK.050424 | 2,4 | x | x | | | | | x | x | | |
| | LNK.060531 | 3,1 | | x | x | | x | | | x | x | |
| | LNK.080531 | 3,1 | | | o | x | o | x | | | o | x |
| 1 cutting edge (L and R insert) | | | | | | | | | | | | |
| | LNK.050431 | 3,1 | x | x | | | | | x | x | | |
| | LNK.060540 | 4,0 | | x | x | | x | | | x | x | |
| | LNK.080540 | 4,0 | | | o | x | o | x | | | o | x |

x = First choice o = Alternative choice

Width and profile generated with LNK.06/08 radii R1,6/R2,0 and R2,4

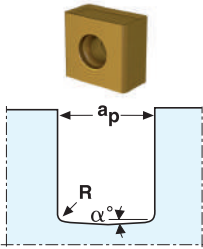
| ap (mm) | H (mm) | |
|---------|------------|-----------------|
| | Radius 1,6 | Radii 2 and 2,4 |
| 13,4 | – | 0 |
| 14 | – | 0,03 |
| 14,2 | 0 | 0,07 |
| 14,5 | 0,01 | 0,13 |
| 15 | 0,1 | 0,3 |

Width and profile generated by XNHQ insert with fixed pocket cutter for $a_p = 15/20/25\text{mm}$



| Insert corner radius | $a_p = 15\text{mm}$ | $a_p = 20\text{mm}$ | $a_p = 25\text{mm}$ |
|----------------------|---------------------|---------------------|---------------------|
| 0,4 | 15 | 20 | 25 |
| 0,8 | 15 | 20 | 25 |
| 1,2 | 15 | 20 | 25 |
| 1,6 | 15 | 20 | 25 |
| 2 | 15 | 20 | 25 |
| 2,4 | 15 | 20 | 25 |
| 3,1 | 14,86 | 20 | 25 |
| 4 | 14,6 | 19,78 | 25 |
| 5 | – | 19,46 | 24,73 |
| 6 | – | – | 24,46 |

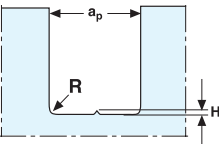
Width and profile generated by LNHQ* insert with fixed pocket cutter for $a_p = 25\text{mm}$



| Insert corner radius | a_p generated | angle α° |
|----------------------|-----------------|----------------------|
| 0,8 | 25,17 | 2 |
| 3,1 | 25,02 | 2 |
| 4 | 24,92 | 2 |
| 5 | 24,78 | 2 |
| 6 | 24,64 | 2 |
| | | |
| | | |
| | | |
| | | |

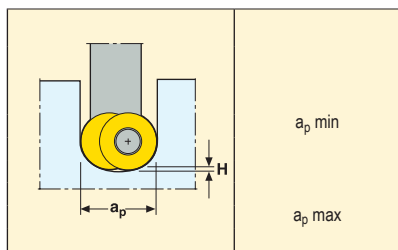
*LNHQ is an insert intended for roughing in difficult conditions (this will not generate a flat bottom).

Width and profile generated with XNHQ 14 and 17 insert, radii 5 and 6 mm, with adjustable cutter



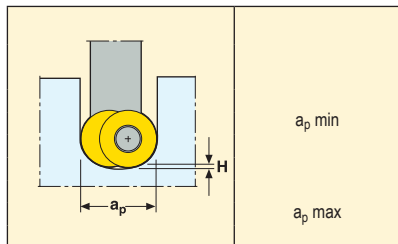
| Width cutter | a_p mm | H (mm) | |
|--------------|----------|----------|----------|
| | | Radius 5 | Radius 6 |
| 21-26 | 25,5 | 0 | 0 |
| 21-26 | 25,8 | 0 | 0,01 |
| 21-26 | 26,0 | 0,01 | 0,03 |
| 26-32 | 31,7 | 0 | 0 |
| 26-32 | 32,0 | 0 | 0,01 |

Profile machined with adjustable 335.18/335.25 cutter equipped with round inserts



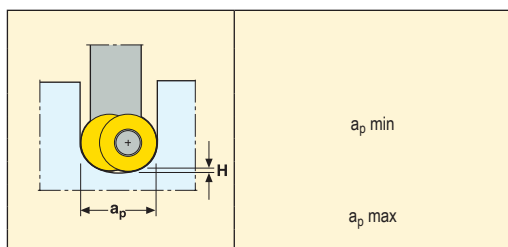
| Round 8 | |
|--|------------------------|
| a_p mm | Profile height H mm |
| 8,03 | 0 |
| 8,50 | 0 |
| 9,00 | 0,03 |
| 9,50 | 0,07 |
| 10,00 | 0,13 |
| Recom. min setting width is 8,03 mm | |

| Round 10 | |
|---|------------------------|
| a_p mm | Profile height H mm |
| 10,03 | 0 |
| 10,50 | 0 |
| 11,00 | 0,025 |
| 11,50 | 0,060 |
| 12,00 | 0,100 |
| Recom. min setting width is 10,03 mm | |



| Round 12 | |
|---|------------------------|
| a_p mm | Profile height H mm |
| 12,03 | 0 |
| 12,50 | 0,01 |
| 13,00 | 0,02 |
| 14,00 | 0,08 |
| 15,00 | 0,19 |
| Recom. min setting width is 12,03 mm | |

| Round 16 | |
|---|------------------------|
| a_p mm | Profile height H mm |
| 16,03 | 0 |
| 16,50 | 0 |
| 17,00 | 0,02 |
| Recom. min setting width is 16,03 mm | |



| Round 20 | |
|---|------------------------|
| a_p mm | Profile height H mm |
| 20,03 | 0 |
| 20,5 | 0,01 |
| 21 | 0,02 |
| Recom. min setting width is 20,05 mm | |

335.18 LNK. - Insert selection

| SMG | | | | f _z | | |
|-----|----------------------|----------------------|----------------------|----------------|-------|-------|
| | | | | 30% | 20% | 10% |
| P1 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,12 | 0,14 | 0,19 |
| P2 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,13 | 0,14 | 0,19 |
| P3 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,12 | 0,14 | 0,18 |
| P4 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,12 | 0,13 | 0,18 |
| P5 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,11 | 0,13 | 0,17 |
| P6 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,11 | 0,13 | 0,17 |
| P7 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,11 | 0,13 | 0,17 |
| P8 | LNKT05...-M06 MP3000 | LNKT06...-M06 MP3000 | LNKT08...-M06 MP3000 | 0,12 | 0,14 | 0,18 |
| P11 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,11 | 0,13 | 0,17 |
| P12 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,075 | 0,090 | 0,12 |
| M1 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,13 | 0,14 | 0,19 |
| M2 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,11 | 0,13 | 0,17 |
| M3 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,090 | 0,10 | 0,14 |
| M4 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,080 | 0,090 | 0,12 |
| M5 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,080 | 0,090 | 0,12 |
| K1 | LNKT05...-M06 MP3000 | LNKT06...-M06 MK2050 | LNKT08...-M06 MK2050 | 0,13 | 0,14 | 0,19 |
| K2 | LNKT05...-M06 MP3000 | LNKT06...-M06 MK2050 | LNKT08...-M06 MK2050 | 0,11 | 0,13 | 0,17 |
| K3 | LNKT05...-M06 MP3000 | LNKT06...-M06 MK2050 | LNKT08...-M06 MK2050 | 0,11 | 0,13 | 0,17 |
| K4 | LNKT05...-M06 MP3000 | LNKT06...-M06 MK2050 | LNKT08...-M06 MK2050 | 0,11 | 0,13 | 0,17 |
| K5 | LNKT05...-M06 MP3000 | LNKT06...-M06 MK2050 | LNKT08...-M06 MK2050 | 0,10 | 0,12 | 0,16 |
| K6 | LNKT05...-M06 MP3000 | LNKT06...-M06 MK2050 | LNKT08...-M06 MK2050 | 0,11 | 0,13 | 0,17 |
| K7 | LNKT05...-M06 MP3000 | LNKT06...-M06 MK2050 | LNKT08...-M06 MK2050 | 0,10 | 0,12 | 0,16 |
| N1 | LNKT05...-E05 H25 | LNKT06...-E05 H25 | LNKT08...-E05 H25 | 0,14 | 0,16 | 0,22 |
| N2 | LNKT05...-E05 H25 | LNKT06...-E05 H25 | LNKT08...-E05 H25 | 0,14 | 0,16 | 0,22 |
| N3 | LNKT05...-E05 H25 | LNKT06...-E05 H25 | LNKT08...-E05 H25 | 0,14 | 0,16 | 0,22 |
| N11 | LNKT05...-E05 H25 | LNKT06...-E05 H25 | LNKT08...-E05 H25 | 0,14 | 0,16 | 0,22 |
| S1 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,080 | 0,090 | 0,12 |
| S2 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,080 | 0,090 | 0,12 |
| S3 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,075 | 0,085 | 0,11 |
| S11 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,090 | 0,10 | 0,14 |
| S12 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,090 | 0,10 | 0,14 |
| S13 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,080 | 0,090 | 0,12 |
| H5 | LNKT05...-M06 MP3000 | LNKT06...-M06 MP3000 | LNKT08...-M06 MP3000 | 0,075 | 0,090 | 0,12 |
| H8 | LNKT05...-M06 MP3000 | LNKT06...-M06 MP3000 | LNKT08...-M06 MP3000 | 0,060 | 0,070 | 0,090 |
| H11 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,075 | 0,090 | 0,12 |
| H12 | LNKT05...-M06 F40M | LNKT06...-M06 F40M | LNKT08...-M06 F40M | 0,060 | 0,070 | 0,090 |
| H21 | LNKT05...-M06 MP3000 | LNKT06...-M06 MP3000 | LNKT08...-M06 MP3000 | 0,060 | 0,070 | 0,090 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

Disc milling cutters



335.18 LNK.- Cutting data $v_c =$ (m/min)

| SMG | MP2500 | | | MP3000 | | | T350M | | | F40M | | | MK1500 | | | MK2050 | | |
|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|------|------|--------|-----|-----|--------|-----|-----|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 260 | 275 | 305 | 245 | 260 | 290 | 225 | 240 | 265 | 195 | 210 | 230 | — | — | — | 255 | 275 | 300 |
| P2 | 250 | 270 | 295 | 235 | 255 | 280 | 215 | 235 | 260 | 190 | 205 | 225 | — | — | — | 245 | 265 | 295 |
| P3 | 220 | 230 | 260 | 205 | 220 | 245 | 190 | 200 | 225 | 165 | 175 | 195 | — | — | — | 215 | 230 | 255 |
| P4 | 190 | 210 | 230 | 180 | 195 | 215 | 165 | 180 | 200 | 145 | 160 | 175 | — | — | — | 190 | 205 | 225 |
| P5 | 185 | 200 | 220 | 175 | 190 | 210 | 165 | 175 | 195 | 140 | 150 | 165 | — | — | — | 185 | 195 | 220 |
| P6 | 210 | 225 | 250 | 200 | 210 | 235 | 185 | 195 | 215 | 160 | 170 | 190 | — | — | — | 205 | 220 | 245 |
| P7 | 200 | 210 | 235 | 190 | 200 | 220 | 175 | 185 | 205 | 150 | 160 | 175 | — | — | — | 195 | 205 | 230 |
| P8 | 185 | 195 | 220 | 175 | 185 | 205 | 160 | 170 | 190 | 140 | 150 | 165 | — | — | — | 180 | 190 | 215 |
| P11 | 195 | 205 | 230 | 185 | 195 | 215 | 170 | 180 | 200 | 145 | 155 | 170 | — | — | — | 190 | 200 | 225 |
| P12 | 125 | 130 | 145 | 120 | 125 | 140 | 110 | 115 | 125 | 95 | 100 | 110 | — | — | — | 125 | 130 | 145 |
| M1 | 180 | 195 | 215 | 175 | 190 | 210 | 165 | 180 | 200 | 150 | 165 | 180 | — | — | — | — | — | — |
| M2 | 150 | 160 | 180 | 150 | 155 | 175 | 140 | 150 | 165 | 130 | 135 | 150 | — | — | — | — | — | — |
| M3 | 120 | 130 | 140 | 120 | 130 | 140 | 110 | 120 | 130 | 100 | 110 | 120 | — | — | — | — | — | — |
| M4 | 95 | 100 | 110 | 90 | 100 | 110 | 85 | 95 | 105 | 80 | 85 | 95 | — | — | — | — | — | — |
| M5 | 75 | 85 | 90 | 75 | 80 | 90 | 70 | 75 | 85 | 65 | 70 | 80 | — | — | — | — | — | — |
| K1 | 195 | 215 | 235 | 185 | 200 | 225 | — | — | — | 150 | 160 | 180 | 280 | 305 | 335 | 265 | 285 | 315 |
| K2 | 180 | 190 | 210 | 170 | 180 | 200 | — | — | — | 135 | 145 | 160 | 250 | 265 | 295 | 240 | 255 | 280 |
| K3 | 150 | 160 | 180 | 140 | 150 | 170 | — | — | — | 115 | 120 | 135 | 215 | 225 | 250 | 200 | 215 | 240 |
| K4 | 145 | 150 | 170 | 135 | 145 | 160 | — | — | — | 110 | 115 | 130 | 205 | 215 | 240 | 195 | 205 | 225 |
| K5 | 90 | 95 | 100 | 85 | 90 | 95 | — | — | — | 65 | 70 | 80 | 125 | 130 | 145 | 115 | 125 | 135 |
| K6 | 125 | 135 | 150 | 120 | 125 | 140 | — | — | — | 95 | 100 | 115 | 180 | 190 | 210 | 170 | 180 | 200 |
| K7 | 110 | 120 | 130 | 105 | 110 | 125 | — | — | — | 85 | 90 | 100 | 160 | 170 | 185 | 150 | 160 | 175 |
| N1 | — | — | — | — | — | — | — | — | — | 1100 | 1200 | 1325 | — | — | — | — | — | — |
| N2 | — | — | — | 560 | 600 | 670 | — | — | — | 450 | 485 | 540 | — | — | — | — | — | — |
| N3 | — | — | — | 375 | 405 | 445 | — | — | — | 300 | 320 | 355 | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | 340 | 370 | 410 | — | — | — | — | — | — |
| S1 | — | — | — | 43 | 46 | 50 | 40 | 43 | 48 | 37 | 39 | 44 | — | — | — | — | — | — |
| S2 | — | — | — | 34 | 37 | 41 | 33 | 35 | 39 | 30 | 32 | 35 | — | — | — | — | — | — |
| S3 | — | — | — | 30 | 32 | 36 | 28 | 30 | 34 | 26 | 28 | 31 | — | — | — | — | — | — |
| S11 | — | — | — | 60 | 65 | 70 | 55 | 60 | 65 | 50 | 55 | 60 | — | — | — | — | — | — |
| S12 | — | — | — | 50 | 55 | 60 | 48 | 50 | 55 | 43 | 47 | 50 | — | — | — | — | — | — |
| S13 | — | — | — | 29 | 31 | 35 | 28 | 30 | 33 | 25 | 27 | 30 | — | — | — | — | — | — |
| H5 | 38 | 40 | 44 | 37 | 39 | 43 | 36 | 38 | 42 | 31 | 33 | 37 | — | — | — | — | — | — |
| H8 | 39 | 42 | 47 | 38 | 41 | 45 | 38 | 40 | 45 | 33 | 35 | 39 | — | — | — | — | — | — |
| H11 | 48 | 50 | 55 | 47 | 49 | 55 | 46 | 48 | 55 | 40 | 42 | 47 | — | — | — | — | — | — |
| H12 | 46 | 49 | 55 | 45 | 47 | 55 | 40 | 45 | 50 | 38 | 41 | 45 | — | — | — | — | — | — |
| H21 | 39 | 42 | 47 | 38 | 41 | 45 | 38 | 40 | 45 | 33 | 35 | 39 | — | — | — | — | — | — |

| SMG | MM4500 | | | H25 | | |
|-----|--------|-----|-----|------|------|------|
| | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 160 | 170 | 185 | — | — | — |
| P2 | 150 | 165 | 180 | — | — | — |
| P3 | 135 | 140 | 160 | — | — | — |
| P4 | 120 | 130 | 140 | — | — | — |
| P5 | 115 | 120 | 135 | — | — | — |
| P6 | 130 | 135 | 150 | — | — | — |
| P7 | 120 | 130 | 145 | — | — | — |
| P8 | 110 | 120 | 135 | — | — | — |
| P11 | 120 | 125 | 140 | — | — | — |
| P12 | 75 | 80 | 90 | — | — | — |
| M1 | 130 | 140 | 155 | — | — | — |
| M2 | 110 | 115 | 130 | — | — | — |
| M3 | 90 | 95 | 105 | — | — | — |
| M4 | 70 | 75 | 80 | — | — | — |
| M5 | 55 | 60 | 65 | — | — | — |
| K1 | — | — | — | — | — | — |
| K2 | — | — | — | — | — | — |
| K3 | — | — | — | — | — | — |
| K4 | — | — | — | — | — | — |
| K5 | — | — | — | — | — | — |
| K6 | — | — | — | — | — | — |
| K7 | — | — | — | — | — | — |
| N1 | — | — | — | 1150 | 1225 | 1350 |
| N2 | — | — | — | 465 | 495 | 550 |
| N3 | — | — | — | 310 | 330 | 365 |
| N11 | — | — | — | 355 | 380 | 415 |
| S1 | 21 | 22 | 25 | — | — | — |
| S2 | 17 | 18 | 20 | — | — | — |
| S3 | 15 | 16 | 17 | — | — | — |
| S11 | 29 | 31 | 34 | — | — | — |
| S12 | 27 | 29 | 32 | — | — | — |
| S13 | 16 | 17 | 18 | — | — | — |
| H5 | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — |
| H21 | — | — | — | — | — | — |

335.25 XN09 - Insert selection

| SMG | | f_z | | |
|-----|--------------------------|-------|-------|------|
| | | 30% | 20% | 10% |
| P1 | XNHQ090508TN4-M08 F40M | 0,14 | 0,16 | 0,22 |
| P2 | XNHQ090508TN4-M08 F40M | 0,14 | 0,16 | 0,22 |
| P3 | XNHQ090508TN4-M08 F40M | 0,13 | 0,15 | 0,20 |
| P4 | XNHQ090508TN4-M08 F40M | 0,13 | 0,15 | 0,20 |
| P5 | XNHQ090508TN4-M08 F40M | 0,13 | 0,15 | 0,20 |
| P6 | XNHQ090508TN4-M08 F40M | 0,13 | 0,15 | 0,19 |
| P7 | XNHQ090508TN4-M08 F40M | 0,13 | 0,15 | 0,19 |
| P8 | XNHQ090508TN4-M08 MP2500 | 0,13 | 0,15 | 0,20 |
| P11 | XNHQ090508TN4-M08 F40M | 0,13 | 0,15 | 0,19 |
| P12 | XNHQ090508TN4-M08 F40M | 0,085 | 0,10 | 0,13 |
| M1 | XNHQ090508TN4-M08 F40M | 0,14 | 0,16 | 0,22 |
| M2 | XNHQ090508TN4-M08 F40M | 0,13 | 0,15 | 0,20 |
| M3 | XNHQ090508TN4-M08 F40M | 0,10 | 0,12 | 0,16 |
| M4 | XNHQ090508TN4-M08 F40M | 0,090 | 0,10 | 0,14 |
| M5 | XNHQ090508TN4-M08 F40M | 0,090 | 0,10 | 0,14 |
| K1 | XNHQ090508TN4-M08 MK2050 | 0,14 | 0,16 | 0,22 |
| K2 | XNHQ090508TN4-M08 MK2050 | 0,13 | 0,15 | 0,20 |
| K3 | XNHQ090508TN4-M08 MK2050 | 0,13 | 0,15 | 0,20 |
| K4 | XNHQ090508TN4-M08 MK2050 | 0,13 | 0,15 | 0,20 |
| K5 | XNHQ090508TN4-M08 MK2050 | 0,12 | 0,13 | 0,18 |
| K6 | XNHQ090508TN4-M08 MK2050 | 0,13 | 0,15 | 0,20 |
| K7 | XNHQ090508TN4-M08 MK2050 | 0,12 | 0,13 | 0,18 |
| N1 | XNHQ090508EN4-E07 F40M | 0,16 | 0,18 | 0,24 |
| N2 | XNHQ090508EN4-E07 F40M | 0,16 | 0,18 | 0,24 |
| N3 | XNHQ090508EN4-E07 F40M | 0,16 | 0,18 | 0,24 |
| N11 | XNHQ090508EN4-E07 F40M | 0,16 | 0,18 | 0,24 |
| S1 | XNHQ090508TN4-M08 F40M | 0,090 | 0,10 | 0,14 |
| S2 | XNHQ090508TN4-M08 F40M | 0,090 | 0,10 | 0,14 |
| S3 | XNHQ090508TN4-M08 F40M | 0,085 | 0,095 | 0,13 |
| S11 | XNHQ090508TN4-M08 F40M | 0,10 | 0,12 | 0,16 |
| S12 | XNHQ090508TN4-M08 F40M | 0,10 | 0,12 | 0,16 |
| S13 | XNHQ090508TN4-M08 F40M | 0,090 | 0,10 | 0,14 |
| H5 | XNHQ090508TN4-M08 MP2500 | 0,085 | 0,10 | 0,13 |
| H8 | XNHQ090508TN4-M08 MP2500 | 0,065 | 0,075 | 0,10 |
| H11 | XNHQ090508TN4-M08 F40M | 0,085 | 0,10 | 0,13 |
| H12 | XNHQ090508TN4-M08 F40M | 0,065 | 0,075 | 0,10 |
| H21 | XNHQ090508TN4-M08 MP2500 | 0,065 | 0,075 | 0,10 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

335.25 XN09 - Cutting data $v_c =$ (m/min)

| SMG | F40M | | | MP2500 | | | MK2050 | | |
|-----|------|------|------|--------|-----|-----|--------|-----|-----|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 185 | 195 | 215 | 240 | 260 | 285 | 240 | 255 | 280 |
| P2 | 180 | 190 | 210 | 235 | 255 | 280 | 230 | 250 | 275 |
| P3 | 155 | 170 | 185 | 205 | 220 | 245 | 205 | 220 | 240 |
| P4 | 140 | 150 | 165 | 180 | 195 | 215 | 180 | 190 | 210 |
| P5 | 130 | 140 | 155 | 175 | 185 | 205 | 170 | 185 | 205 |
| P6 | 150 | 160 | 180 | 195 | 210 | 235 | 195 | 205 | 230 |
| P7 | 140 | 150 | 170 | 185 | 195 | 220 | 180 | 195 | 220 |
| P8 | 130 | 140 | 155 | 175 | 185 | 205 | 170 | 185 | 205 |
| P11 | 135 | 145 | 165 | 180 | 190 | 215 | 175 | 190 | 210 |
| P12 | 90 | 95 | 105 | 120 | 125 | 140 | 115 | 125 | 135 |
| M1 | 145 | 155 | 170 | 170 | 180 | 200 | — | — | — |
| M2 | 120 | 125 | 140 | 140 | 150 | 165 | — | — | — |
| M3 | 95 | 100 | 115 | 115 | 120 | 135 | — | — | — |
| M4 | 75 | 80 | 90 | 90 | 95 | 105 | — | — | — |
| M5 | 60 | 65 | 75 | 75 | 80 | 85 | — | — | — |
| K1 | 140 | 150 | 165 | 185 | 200 | 220 | 250 | 270 | 295 |
| K2 | 125 | 135 | 150 | 165 | 175 | 195 | 220 | 235 | 260 |
| K3 | 105 | 115 | 125 | 140 | 150 | 165 | 190 | 200 | 220 |
| K4 | 100 | 110 | 120 | 135 | 145 | 160 | 180 | 190 | 210 |
| K5 | 60 | 65 | 75 | 80 | 90 | 95 | 110 | 120 | 130 |
| K6 | 90 | 95 | 105 | 120 | 125 | 140 | 160 | 170 | 185 |
| K7 | 80 | 85 | 95 | 105 | 115 | 125 | 140 | 150 | 165 |
| N1 | 1050 | 1125 | 1225 | — | — | — | — | — | — |
| N2 | 420 | 455 | 500 | — | — | — | — | — | — |
| N3 | 280 | 305 | 330 | — | — | — | — | — | — |
| N11 | 320 | 345 | 380 | — | — | — | — | — | — |
| S1 | 35 | 37 | 41 | — | — | — | — | — | — |
| S2 | 28 | 30 | 33 | — | — | — | — | — | — |
| S3 | 24 | 26 | 29 | — | — | — | — | — | — |
| S11 | 49 | 50 | 55 | — | — | — | — | — | — |
| S12 | 41 | 43 | 48 | — | — | — | — | — | — |
| S13 | 24 | 26 | 28 | — | — | — | — | — | — |
| H5 | 30 | 31 | 35 | 35 | 38 | 42 | — | — | — |
| H8 | 31 | 33 | 37 | 38 | 40 | 44 | — | — | — |
| H11 | 38 | 40 | 44 | 45 | 48 | 55 | — | — | — |
| H12 | 36 | 39 | 43 | 44 | 47 | 50 | — | — | — |
| H21 | 31 | 33 | 37 | 38 | 40 | 44 | — | — | — |

335.25 XN12 - Insert selection

| SMG | | f_z | | |
|-----|--------------------------|-------|-------|------|
| | | 30% | 20% | 10% |
| P1 | XNHQ120608TN4-M10 F40M | 0,17 | 0,19 | 0,26 |
| P2 | XNHQ120608TN4-M10 F40M | 0,17 | 0,20 | 0,26 |
| P3 | XNHQ120608TN4-M10 F40M | 0,16 | 0,19 | 0,24 |
| P4 | XNHQ120608TN4-M10 F40M | 0,16 | 0,18 | 0,24 |
| P5 | XNHQ120608TN4-M10 F40M | 0,16 | 0,18 | 0,24 |
| P6 | XNHQ120608TN4-M10 F40M | 0,15 | 0,18 | 0,24 |
| P7 | XNHQ120608TN4-M10 F40M | 0,15 | 0,18 | 0,24 |
| P8 | XNHQ120608TN4-M10 MP2500 | 0,16 | 0,19 | 0,24 |
| P11 | XNHQ120608TN4-M10 F40M | 0,15 | 0,18 | 0,24 |
| P12 | XNHQ120608TN4-M10 F40M | 0,11 | 0,12 | 0,16 |
| M1 | XNHQ120608TN4-M10 F40M | 0,17 | 0,20 | 0,26 |
| M2 | XNHQ120608TN4-M10 F40M | 0,16 | 0,18 | 0,24 |
| M3 | XNHQ120608TN4-M10 F40M | 0,12 | 0,14 | 0,19 |
| M4 | XNHQ120608TN4-M10 F40M | 0,11 | 0,13 | 0,17 |
| M5 | XNHQ120608TN4-M10 F40M | 0,11 | 0,13 | 0,17 |
| K1 | XNHQ120608TN4-M10 MK2050 | 0,17 | 0,20 | 0,26 |
| K2 | XNHQ120608TN4-M10 MK2050 | 0,16 | 0,18 | 0,24 |
| K3 | XNHQ120608TN4-M10 MK2050 | 0,16 | 0,18 | 0,24 |
| K4 | XNHQ120608TN4-M10 MK2050 | 0,16 | 0,18 | 0,24 |
| K5 | XNHQ120608TN4-M10 MK2050 | 0,14 | 0,16 | 0,22 |
| K6 | XNHQ120608TN4-M10 MK2050 | 0,16 | 0,18 | 0,24 |
| K7 | XNHQ120608TN4-M10 MK2050 | 0,14 | 0,16 | 0,22 |
| N1 | XNHQ120608EN4-E09 F40M | 0,20 | 0,22 | 0,30 |
| N2 | XNHQ120608EN4-E09 F40M | 0,20 | 0,22 | 0,30 |
| N3 | XNHQ120608EN4-E09 F40M | 0,20 | 0,22 | 0,30 |
| N11 | XNHQ120608EN4-E09 F40M | 0,20 | 0,22 | 0,30 |
| S1 | XNHQ120608TN4-M10 F40M | 0,11 | 0,13 | 0,17 |
| S2 | XNHQ120608TN4-M10 F40M | 0,11 | 0,13 | 0,17 |
| S3 | XNHQ120608TN4-M10 F40M | 0,10 | 0,12 | 0,16 |
| S11 | XNHQ120608TN4-M10 F40M | 0,12 | 0,14 | 0,19 |
| S12 | XNHQ120608TN4-M10 F40M | 0,12 | 0,14 | 0,19 |
| S13 | XNHQ120608TN4-M10 F40M | 0,11 | 0,13 | 0,17 |
| H5 | XNHQ120608TN4-M10 MP2500 | 0,11 | 0,12 | 0,16 |
| H8 | XNHQ120608TN4-M10 MP2500 | 0,080 | 0,095 | 0,12 |
| H11 | XNHQ120608TN4-M10 F40M | 0,11 | 0,12 | 0,16 |
| H12 | XNHQ120608TN4-M10 F40M | 0,080 | 0,095 | 0,12 |
| H21 | XNHQ120608TN4-M10 MP2500 | 0,080 | 0,095 | 0,12 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

335.25 XN12 - Cutting data $v_c =$ (m/min)

| SMG | F40M | | | MP2500 | | | MK2050 | | |
|-----|------|------|------|--------|-----|-----|--------|-----|-----|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 175 | 190 | 210 | 235 | 250 | 275 | 230 | 250 | 275 |
| P2 | 170 | 185 | 205 | 225 | 240 | 270 | 225 | 240 | 265 |
| P3 | 150 | 160 | 180 | 200 | 210 | 235 | 195 | 210 | 235 |
| P4 | 135 | 145 | 160 | 175 | 190 | 210 | 175 | 185 | 205 |
| P5 | 125 | 135 | 150 | 165 | 180 | 200 | 165 | 175 | 195 |
| P6 | 145 | 155 | 170 | 190 | 200 | 225 | 190 | 200 | 220 |
| P7 | 135 | 145 | 160 | 180 | 190 | 210 | 180 | 190 | 210 |
| P8 | 125 | 135 | 150 | 165 | 175 | 200 | 165 | 175 | 195 |
| P11 | 135 | 140 | 155 | 175 | 185 | 205 | 175 | 185 | 200 |
| P12 | 85 | 90 | 100 | 110 | 120 | 135 | 110 | 120 | 135 |
| M1 | 140 | 150 | 165 | 165 | 175 | 195 | — | — | — |
| M2 | 115 | 125 | 135 | 135 | 145 | 160 | — | — | — |
| M3 | 95 | 100 | 110 | 110 | 120 | 130 | — | — | — |
| M4 | 70 | 75 | 85 | 85 | 90 | 100 | — | — | — |
| M5 | 60 | 65 | 70 | 70 | 75 | 85 | — | — | — |
| K1 | 135 | 145 | 160 | 180 | 190 | 215 | 240 | 255 | 285 |
| K2 | 120 | 130 | 145 | 160 | 170 | 190 | 215 | 230 | 255 |
| K3 | 100 | 110 | 120 | 135 | 145 | 160 | 180 | 195 | 215 |
| K4 | 95 | 105 | 115 | 130 | 140 | 155 | 170 | 185 | 205 |
| K5 | 60 | 65 | 70 | 80 | 85 | 95 | 105 | 115 | 125 |
| K6 | 85 | 90 | 100 | 115 | 120 | 135 | 150 | 165 | 180 |
| K7 | 75 | 80 | 90 | 100 | 110 | 120 | 135 | 145 | 160 |
| N1 | 1000 | 1050 | 1175 | — | — | — | — | — | — |
| N2 | 405 | 430 | 480 | — | — | — | — | — | — |
| N3 | 270 | 285 | 320 | — | — | — | — | — | — |
| N11 | 305 | 325 | 365 | — | — | — | — | — | — |
| S1 | 34 | 36 | 40 | — | — | — | — | — | — |
| S2 | 27 | 29 | 32 | — | — | — | — | — | — |
| S3 | 24 | 25 | 28 | — | — | — | — | — | — |
| S11 | 48 | 50 | 55 | — | — | — | — | — | — |
| S12 | 40 | 43 | 47 | — | — | — | — | — | — |
| S13 | 23 | 24 | 27 | — | — | — | — | — | — |
| H5 | 28 | 31 | 34 | 34 | 37 | 41 | — | — | — |
| H8 | 31 | 32 | 36 | 37 | 39 | 43 | — | — | — |
| H11 | 36 | 39 | 43 | 43 | 47 | 50 | — | — | — |
| H12 | 36 | 38 | 42 | 43 | 45 | 50 | — | — | — |
| H21 | 31 | 32 | 36 | 37 | 39 | 43 | — | — | — |

335.25 XN14/17 - Insert selection

| SMG | | | f _z | | |
|-----|--------------------------|--------------------------|----------------|------|------|
| | | | 30% | 20% | 10% |
| P1 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,20 | 0,22 | 0,30 |
| P2 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,20 | 0,24 | 0,32 |
| P3 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,19 | 0,22 | 0,30 |
| P4 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,19 | 0,22 | 0,28 |
| P5 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,18 | 0,22 | 0,28 |
| P6 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,18 | 0,20 | 0,28 |
| P7 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,18 | 0,20 | 0,28 |
| P8 | XNHQ140708TN4-M11 MP2500 | XNHQ170708TN4-M13 MP2500 | 0,19 | 0,22 | 0,30 |
| P11 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,18 | 0,20 | 0,28 |
| P12 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,13 | 0,14 | 0,19 |
| M1 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,20 | 0,24 | 0,32 |
| M2 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,18 | 0,22 | 0,28 |
| M3 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,15 | 0,17 | 0,22 |
| M4 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,13 | 0,15 | 0,20 |
| M5 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,13 | 0,15 | 0,20 |
| K1 | XNHQ140708TN4-M11 MK2050 | XNHQ170708TN4-M13 MK2050 | 0,20 | 0,24 | 0,32 |
| K2 | XNHQ140708TN4-M11 MK2050 | XNHQ170708TN4-M13 MK2050 | 0,18 | 0,22 | 0,28 |
| K3 | XNHQ140708TN4-M11 MK2050 | XNHQ170708TN4-M13 MK2050 | 0,18 | 0,22 | 0,28 |
| K4 | XNHQ140708TN4-M11 MK2050 | XNHQ170708TN4-M13 MK2050 | 0,18 | 0,22 | 0,28 |
| K5 | XNHQ140708TN4-M11 MK2050 | XNHQ170708TN4-M13 MK2050 | 0,17 | 0,19 | 0,26 |
| K6 | XNHQ140708TN4-M11 MK2050 | XNHQ170708TN4-M13 MK2050 | 0,18 | 0,22 | 0,28 |
| K7 | XNHQ140708TN4-M11 MK2050 | XNHQ170708TN4-M13 MK2050 | 0,17 | 0,19 | 0,26 |
| N1 | XNHQ140708EN4-E10 H25 | XNHQ170708EN4-E12 F40M | 0,24 | 0,28 | 0,36 |
| N2 | XNHQ140708EN4-E10 H25 | XNHQ170708EN4-E12 F40M | 0,24 | 0,28 | 0,36 |
| N3 | XNHQ140708EN4-E10 H25 | XNHQ170708EN4-E12 F40M | 0,24 | 0,28 | 0,36 |
| N11 | XNHQ140708EN4-E10 H25 | XNHQ170708EN4-E12 F40M | 0,24 | 0,28 | 0,36 |
| S1 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,13 | 0,15 | 0,20 |
| S2 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,13 | 0,15 | 0,20 |
| S3 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,12 | 0,14 | 0,18 |
| S11 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,15 | 0,17 | 0,22 |
| S12 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,15 | 0,17 | 0,22 |
| S13 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,13 | 0,15 | 0,20 |
| H5 | XNHQ140708TN4-M11 MP2500 | XNHQ170708TN4-M13 MP2500 | 0,13 | 0,14 | 0,19 |
| H8 | XNHQ140708TN4-M11 MP2500 | XNHQ170708TN4-M13 MP2500 | 0,095 | 0,11 | 0,15 |
| H11 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,13 | 0,14 | 0,19 |
| H12 | XNHQ140708TN4-M11 F40M | XNHQ170708TN4-M13 F40M | 0,095 | 0,11 | 0,15 |
| H21 | XNHQ140708TN4-M11 MP2500 | XNHQ170708TN4-M13 MP2500 | 0,095 | 0,11 | 0,15 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

335.25 XN14/17 - Cutting data $v_c =$ (m/min)

| SMG | MP2500 | | | F40M | | | MK2050 | | | H25 | | |
|-----|--------|-----|-----|------|------|------|--------|-----|-----|-----|------|------|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 225 | 245 | 270 | 170 | 185 | 205 | 225 | 240 | 265 | — | — | — |
| P2 | 220 | 235 | 260 | 165 | 175 | 195 | 215 | 230 | 255 | — | — | — |
| P3 | 195 | 205 | 225 | 145 | 155 | 170 | 190 | 205 | 225 | — | — | — |
| P4 | 170 | 180 | 205 | 130 | 135 | 155 | 165 | 180 | 200 | — | — | — |
| P5 | 165 | 175 | 195 | 125 | 130 | 145 | 160 | 170 | 190 | — | — | — |
| P6 | 185 | 200 | 220 | 140 | 150 | 165 | 180 | 195 | 215 | — | — | — |
| P7 | 175 | 190 | 205 | 130 | 145 | 155 | 170 | 185 | 205 | — | — | — |
| P8 | 160 | 175 | 190 | 125 | 130 | 145 | 160 | 170 | 190 | — | — | — |
| P11 | 170 | 185 | 200 | 130 | 140 | 150 | 165 | 180 | 195 | — | — | — |
| P12 | 110 | 120 | 130 | 85 | 90 | 100 | 110 | 120 | 130 | — | — | — |
| M1 | 160 | 170 | 185 | 135 | 140 | 160 | — | — | — | — | — | — |
| M2 | 130 | 140 | 155 | 110 | 120 | 135 | — | — | — | — | — | — |
| M3 | 105 | 115 | 130 | 90 | 95 | 110 | — | — | — | — | — | — |
| M4 | 85 | 90 | 100 | 70 | 75 | 85 | — | — | — | — | — | — |
| M5 | 70 | 75 | 80 | 60 | 65 | 70 | — | — | — | — | — | — |
| K1 | 175 | 185 | 205 | 130 | 140 | 155 | 235 | 250 | 275 | — | — | — |
| K2 | 155 | 165 | 185 | 120 | 125 | 140 | 210 | 220 | 250 | — | — | — |
| K3 | 130 | 140 | 155 | 100 | 105 | 120 | 175 | 185 | 210 | — | — | — |
| K4 | 125 | 135 | 150 | 95 | 100 | 115 | 170 | 180 | 200 | — | — | — |
| K5 | 75 | 80 | 90 | 60 | 60 | 70 | 100 | 110 | 120 | — | — | — |
| K6 | 110 | 115 | 130 | 85 | 90 | 100 | 150 | 155 | 175 | — | — | — |
| K7 | 100 | 105 | 115 | 75 | 80 | 90 | 130 | 140 | 155 | — | — | — |
| N1 | — | — | — | 960 | 1025 | 1150 | — | — | — | 970 | 1050 | 1175 |
| N2 | — | — | — | 390 | 415 | 460 | — | — | — | 395 | 420 | 470 |
| N3 | — | — | — | 260 | 280 | 310 | — | — | — | 260 | 280 | 315 |
| N11 | — | — | — | 295 | 315 | 350 | — | — | — | 300 | 320 | 360 |
| S1 | — | — | — | 33 | 35 | 39 | — | — | — | — | — | — |
| S2 | — | — | — | 26 | 28 | 31 | — | — | — | — | — | — |
| S3 | — | — | — | 23 | 25 | 28 | — | — | — | — | — | — |
| S11 | — | — | — | 46 | 49 | 55 | — | — | — | — | — | — |
| S12 | — | — | — | 38 | 41 | 46 | — | — | — | — | — | — |
| S13 | — | — | — | 22 | 24 | 27 | — | — | — | — | — | — |
| H5 | 33 | 36 | 40 | 28 | 30 | 33 | — | — | — | — | — | — |
| H8 | 36 | 38 | 42 | 30 | 32 | 35 | — | — | — | — | — | — |
| H11 | 42 | 46 | 50 | 35 | 38 | 42 | — | — | — | — | — | — |
| H12 | 42 | 45 | 49 | 35 | 37 | 41 | — | — | — | — | — | — |
| H21 | 36 | 38 | 42 | 30 | 32 | 35 | — | — | — | — | — | — |

335.25 LN14/17 - Insert selection

| SMG | | | f _z | | |
|-----|--------------------------|------------------------|----------------|------|------|
| | | | 30% | 20% | 10% |
| P1 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,20 | 0,22 | 0,30 |
| P2 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,20 | 0,24 | 0,32 |
| P3 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,19 | 0,22 | 0,30 |
| P4 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,19 | 0,22 | 0,28 |
| P5 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,18 | 0,22 | 0,28 |
| P6 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,18 | 0,20 | 0,28 |
| P7 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,18 | 0,20 | 0,28 |
| P8 | LNHQ140708TN4-M11 MP2500 | LNHQ170708TN4-M13 F40M | 0,19 | 0,22 | 0,30 |
| P11 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,18 | 0,20 | 0,28 |
| P12 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,13 | 0,14 | 0,19 |
| M1 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,20 | 0,24 | 0,32 |
| M2 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,18 | 0,22 | 0,28 |
| M3 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,15 | 0,17 | 0,22 |
| M4 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,13 | 0,15 | 0,20 |
| M5 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,13 | 0,15 | 0,20 |
| K1 | LNHQ140708TN4-M11 MP2500 | LNHQ170708TN4-M13 F40M | 0,20 | 0,24 | 0,32 |
| K2 | LNHQ140708TN4-M11 MP2500 | LNHQ170708TN4-M13 F40M | 0,18 | 0,22 | 0,28 |
| K3 | LNHQ140708TN4-M11 MP2500 | LNHQ170708TN4-M13 F40M | 0,18 | 0,22 | 0,28 |
| K4 | LNHQ140708TN4-M11 MP2500 | LNHQ170708TN4-M13 F40M | 0,18 | 0,22 | 0,28 |
| K5 | LNHQ140708TN4-M11 MP2500 | LNHQ170708TN4-M13 F40M | 0,17 | 0,19 | 0,26 |
| K6 | LNHQ140708TN4-M11 MP2500 | LNHQ170708TN4-M13 F40M | 0,18 | 0,22 | 0,28 |
| K7 | LNHQ140708TN4-M11 MP2500 | LNHQ170708TN4-M13 F40M | 0,17 | 0,19 | 0,26 |
| S1 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,13 | 0,15 | 0,20 |
| S2 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,13 | 0,15 | 0,20 |
| S3 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,12 | 0,14 | 0,18 |
| S11 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,15 | 0,17 | 0,22 |
| S12 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,15 | 0,17 | 0,22 |
| S13 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,13 | 0,15 | 0,20 |
| H5 | LNHQ140708TN4-M11 MP2500 | LNHQ170708TN4-M13 F40M | 0,13 | 0,14 | 0,19 |
| H8 | LNHQ140708TN4-M11 MP2500 | LNHQ170708TN4-M13 F40M | 0,095 | 0,11 | 0,15 |
| H11 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,13 | 0,14 | 0,19 |
| H12 | LNHQ140708TN4-M11 F40M | LNHQ170708TN4-M13 F40M | 0,095 | 0,11 | 0,15 |
| H21 | LNHQ140708TN4-M11 MP2500 | LNHQ170708TN4-M13 F40M | 0,095 | 0,11 | 0,15 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

335.25 LN14/17 - Cutting data $v_c =$ (m/min)

| SMG | MP2500 | | | F40M | | |
|-----|--------|-----|-----|------|------|------|
| | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 225 | 245 | 270 | 170 | 185 | 205 |
| P2 | 220 | 235 | 260 | 165 | 175 | 195 |
| P3 | 195 | 205 | 225 | 145 | 155 | 170 |
| P4 | 170 | 180 | 205 | 130 | 135 | 155 |
| P5 | 165 | 175 | 195 | 125 | 130 | 145 |
| P6 | 185 | 200 | 220 | 140 | 150 | 165 |
| P7 | 175 | 190 | 205 | 130 | 145 | 155 |
| P8 | 160 | 175 | 190 | 125 | 130 | 145 |
| P11 | 170 | 185 | 200 | 130 | 140 | 150 |
| P12 | 110 | 120 | 130 | 85 | 90 | 100 |
| M1 | 160 | 170 | 185 | 135 | 140 | 160 |
| M2 | 130 | 140 | 155 | 110 | 120 | 135 |
| M3 | 105 | 115 | 130 | 90 | 95 | 110 |
| M4 | 85 | 90 | 100 | 70 | 75 | 85 |
| M5 | 70 | 75 | 80 | 60 | 65 | 70 |
| K1 | 175 | 185 | 205 | 130 | 140 | 155 |
| K2 | 155 | 165 | 185 | 120 | 125 | 140 |
| K3 | 130 | 140 | 155 | 100 | 105 | 120 |
| K4 | 125 | 135 | 150 | 95 | 100 | 115 |
| K5 | 75 | 80 | 90 | 60 | 60 | 70 |
| K6 | 110 | 115 | 130 | 85 | 90 | 100 |
| K7 | 100 | 105 | 115 | 75 | 80 | 90 |
| N1 | — | — | — | 960 | 1025 | 1150 |
| N2 | — | — | — | 390 | 415 | 460 |
| N3 | — | — | — | 260 | 280 | 310 |
| N11 | — | — | — | 295 | 315 | 350 |
| S1 | — | — | — | 33 | 35 | 39 |
| S2 | — | — | — | 26 | 28 | 31 |
| S3 | — | — | — | 23 | 25 | 28 |
| S11 | — | — | — | 46 | 49 | 55 |
| S12 | — | — | — | 38 | 41 | 46 |
| S13 | — | — | — | 22 | 24 | 27 |
| H5 | 33 | 36 | 40 | 28 | 30 | 33 |
| H8 | 36 | 38 | 42 | 30 | 32 | 35 |
| H11 | 42 | 46 | 50 | 35 | 38 | 42 |
| H12 | 42 | 45 | 49 | 35 | 37 | 41 |
| H21 | 36 | 38 | 42 | 30 | 32 | 35 |

335.29 Round 5 - Insert selection

| SMG | | f_z | | |
|-----|------------------------|-------|-------|-------|
| | | 25% | 10% | 5% |
| P1 | RDHW0501M0-MD01 F40M | 0,055 | 0,080 | 0,11 |
| P2 | RDHW0501M0-MD01 F40M | 0,055 | 0,080 | 0,11 |
| P3 | RDHW0501M0-MD01 F40M | 0,050 | 0,075 | 0,10 |
| P4 | RDHW0501M0-MD01 F40M | 0,050 | 0,075 | 0,10 |
| P5 | RDHW0501M0-MD01 F40M | 0,050 | 0,075 | 0,10 |
| P6 | RDHW0501M0-MD01 F40M | 0,050 | 0,070 | 0,10 |
| P7 | RDHW0501M0-MD01 F40M | 0,050 | 0,070 | 0,10 |
| P8 | RDHW0501M0-MD01 MP3000 | 0,050 | 0,075 | 0,10 |
| P11 | RDHW0501M0-MD01 F40M | 0,050 | 0,070 | 0,10 |
| P12 | RDHW0501M0-MD01 F40M | 0,034 | 0,050 | 0,070 |
| M1 | RDHW0501M0-MD01 F40M | 0,055 | 0,080 | 0,11 |
| M2 | RDHW0501M0-MD01 F40M | 0,050 | 0,075 | 0,10 |
| M3 | RDHW0501M0-MD01 F40M | 0,040 | 0,060 | 0,080 |
| M4 | RDHW0501M0-MD01 F40M | 0,036 | 0,050 | 0,070 |
| M5 | RDHW0501M0-MD01 F40M | 0,036 | 0,050 | 0,070 |
| K1 | RDHW0501M0-MD01 MP3000 | 0,055 | 0,080 | 0,11 |
| K2 | RDHW0501M0-MD01 MP3000 | 0,050 | 0,075 | 0,10 |
| K3 | RDHW0501M0-MD01 MP3000 | 0,050 | 0,075 | 0,10 |
| K4 | RDHW0501M0-MD01 MP3000 | 0,050 | 0,075 | 0,10 |
| K5 | RDHW0501M0-MD01 MP3000 | 0,046 | 0,065 | 0,090 |
| K6 | RDHW0501M0-MD01 MP3000 | 0,050 | 0,075 | 0,10 |
| K7 | RDHW0501M0-MD01 MP3000 | 0,046 | 0,065 | 0,090 |
| N1 | RDHW0501M0-MD01 MP3000 | 0,070 | 0,10 | 0,14 |
| N2 | RDHW0501M0-MD01 MP3000 | 0,070 | 0,10 | 0,14 |
| N3 | RDHW0501M0-MD01 MP3000 | 0,070 | 0,10 | 0,14 |
| N11 | RDHW0501M0-MD01 MP3000 | 0,070 | 0,10 | 0,14 |
| S1 | RDHW0501M0-MD01 F40M | 0,036 | 0,050 | 0,070 |
| S2 | RDHW0501M0-MD01 F40M | 0,036 | 0,050 | 0,070 |
| S3 | RDHW0501M0-MD01 F40M | 0,032 | 0,048 | 0,065 |
| S11 | RDHW0501M0-MD01 F40M | 0,040 | 0,060 | 0,080 |
| S12 | RDHW0501M0-MD01 F40M | 0,040 | 0,060 | 0,080 |
| S13 | RDHW0501M0-MD01 F40M | 0,036 | 0,050 | 0,070 |
| H5 | RDHW0501M0-MD01 MP3000 | 0,034 | 0,050 | 0,070 |
| H8 | RDHW0501M0-MD01 MP3000 | 0,026 | 0,038 | 0,050 |
| H11 | RDHW0501M0-MD01 MP3000 | 0,034 | 0,050 | 0,070 |
| H12 | RDHW0501M0-MD01 MP3000 | 0,026 | 0,038 | 0,050 |
| H21 | RDHW0501M0-MD01 MP3000 | 0,026 | 0,038 | 0,050 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

335.29 Round 5 - Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | F40M | | |
|-----|--------|------|------|------|------|------|
| | 25% | 10% | 5% | 25% | 10% | 5% |
| P1 | 325 | 365 | 400 | 260 | 295 | 320 |
| P2 | 315 | 360 | 390 | 250 | 285 | 310 |
| P3 | 275 | 310 | 340 | 220 | 250 | 270 |
| P4 | 240 | 275 | 300 | 195 | 220 | 240 |
| P5 | 230 | 260 | 285 | 185 | 210 | 225 |
| P6 | 260 | 295 | 320 | 205 | 235 | 255 |
| P7 | 245 | 280 | 300 | 195 | 225 | 240 |
| P8 | 230 | 260 | 285 | 185 | 210 | 225 |
| P11 | 235 | 270 | 295 | 190 | 215 | 235 |
| P12 | 145 | 165 | 180 | 120 | 135 | 145 |
| M1 | 235 | 265 | 290 | 200 | 230 | 250 |
| M2 | 190 | 220 | 235 | 165 | 190 | 205 |
| M3 | 150 | 170 | 185 | 130 | 150 | 160 |
| M4 | 115 | 130 | 140 | 100 | 115 | 120 |
| M5 | 95 | 110 | 120 | 80 | 95 | 100 |
| K1 | 250 | 285 | 305 | 200 | 225 | 245 |
| K2 | 220 | 250 | 270 | 175 | 200 | 215 |
| K3 | 185 | 210 | 230 | 150 | 170 | 185 |
| K4 | 175 | 200 | 220 | 140 | 160 | 175 |
| K5 | 105 | 120 | 130 | 85 | 95 | 105 |
| K6 | 155 | 175 | 190 | 125 | 140 | 155 |
| K7 | 135 | 155 | 170 | 110 | 125 | 135 |
| N1 | 1900 | 2175 | 2350 | 1525 | 1725 | 1875 |
| N2 | 760 | 870 | 940 | 610 | 700 | 760 |
| N3 | 510 | 580 | 630 | 410 | 465 | 500 |
| N11 | 580 | 670 | 720 | 465 | 530 | 580 |
| S1 | 55 | 60 | 65 | 46 | 55 | 55 |
| S2 | 43 | 49 | 55 | 37 | 42 | 46 |
| S3 | 38 | 43 | 46 | 32 | 37 | 40 |
| S11 | 75 | 85 | 95 | 65 | 75 | 80 |
| S12 | 65 | 75 | 80 | 55 | 65 | 70 |
| S13 | 37 | 42 | 45 | 32 | 36 | 39 |
| H5 | 46 | 50 | 55 | 39 | 44 | 48 |
| H8 | 47 | 55 | 60 | 40 | 45 | 49 |
| H11 | 60 | 65 | 70 | 50 | 55 | 60 |
| H12 | 55 | 60 | 65 | 47 | 55 | 55 |
| H21 | 47 | 55 | 60 | 40 | 45 | 49 |

335.29 Round 6 - Insert selection

| SMG | | f_z | | |
|-----|------------------------|-------|-------|-------|
| | | 20% | 10% | 5% |
| P1 | RDHW06T1M0-MD02 F40M | 0,060 | 0,080 | 0,11 |
| P2 | RDHW06T1M0-MD02 F40M | 0,060 | 0,080 | 0,11 |
| P3 | RDHW06T1M0-MD02 F40M | 0,055 | 0,075 | 0,10 |
| P4 | RDHW06T1M0-MD02 F40M | 0,055 | 0,075 | 0,10 |
| P5 | RDHW06T1M0-MD02 F40M | 0,055 | 0,075 | 0,10 |
| P6 | RDHW06T1M0-MD02 F40M | 0,055 | 0,070 | 0,10 |
| P7 | RDHW06T1M0-MD02 F40M | 0,055 | 0,070 | 0,10 |
| P8 | RDHW06T1M0-MD02 MP3000 | 0,055 | 0,075 | 0,10 |
| P11 | RDHW06T1M0-MD02 F40M | 0,055 | 0,070 | 0,10 |
| P12 | RDHW06T1M0-MD02 F40M | 0,038 | 0,050 | 0,070 |
| M1 | RDHW06T1M0-MD02 F40M | 0,060 | 0,080 | 0,11 |
| M2 | RDHW06T1M0-MD02 F40M | 0,055 | 0,075 | 0,10 |
| M3 | RDHW06T1M0-MD02 F40M | 0,044 | 0,060 | 0,080 |
| M4 | RDHW06T1M0-MD02 F40M | 0,038 | 0,050 | 0,070 |
| M5 | RDHW06T1M0-MD02 F40M | 0,038 | 0,050 | 0,070 |
| K1 | RDHW06T1M0-MD02 MK2050 | 0,060 | 0,080 | 0,11 |
| K2 | RDHW06T1M0-MD02 MK2050 | 0,055 | 0,075 | 0,10 |
| K3 | RDHW06T1M0-MD02 MK2050 | 0,055 | 0,075 | 0,10 |
| K4 | RDHW06T1M0-MD02 MK2050 | 0,055 | 0,075 | 0,10 |
| K5 | RDHW06T1M0-MD02 MK2050 | 0,050 | 0,065 | 0,090 |
| K6 | RDHW06T1M0-MD02 MK2050 | 0,055 | 0,075 | 0,10 |
| K7 | RDHW06T1M0-MD02 MK2050 | 0,050 | 0,065 | 0,090 |
| N1 | RDHT06T1M0-E02 H25 | 0,050 | 0,070 | 0,095 |
| N2 | RDHT06T1M0-E02 H25 | 0,050 | 0,070 | 0,095 |
| N3 | RDHT06T1M0-E02 H25 | 0,050 | 0,070 | 0,095 |
| N11 | RDHT06T1M0-E02 H25 | 0,050 | 0,070 | 0,095 |
| S1 | RDHW06T1M0-MD02 F40M | 0,038 | 0,050 | 0,070 |
| S2 | RDHW06T1M0-MD02 F40M | 0,038 | 0,050 | 0,070 |
| S3 | RDHW06T1M0-MD02 F40M | 0,036 | 0,048 | 0,065 |
| S11 | RDHW06T1M0-MD02 F40M | 0,044 | 0,060 | 0,080 |
| S12 | RDHW06T1M0-MD02 F40M | 0,044 | 0,060 | 0,080 |
| S13 | RDHW06T1M0-MD02 F40M | 0,038 | 0,050 | 0,070 |
| H5 | RDHW06T1M0-MD02 F15M | 0,038 | 0,050 | 0,070 |
| H8 | RDHW06T1M0-MD02 F15M | 0,028 | 0,038 | 0,050 |
| H11 | RDHW06T1M0-MD02 F15M | 0,038 | 0,050 | 0,070 |
| H12 | RDHW06T1M0-MD02 F15M | 0,028 | 0,038 | 0,050 |
| H21 | RDHW06T1M0-MD02 F15M | 0,028 | 0,038 | 0,050 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

335.29 Round 6 - Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | F15M | | | F30M | | | F40M | | | MK2050 | | | H25 | | |
|-----|--------|------|------|------|-----|-----|------|------|------|------|------|------|--------|-----|-----|------|------|------|
| | 20% | 10% | 5% | 20% | 10% | 5% | 20% | 10% | 5% | 20% | 10% | 5% | 20% | 10% | 5% | 20% | 10% | 5% |
| P1 | 320 | 350 | 380 | — | — | — | 270 | 295 | 320 | 255 | 280 | 305 | 330 | 365 | 395 | — | — | — |
| P2 | 310 | 345 | 370 | — | — | — | 260 | 290 | 310 | 250 | 275 | 295 | 325 | 355 | 385 | — | — | — |
| P3 | 270 | 300 | 325 | — | — | — | 230 | 250 | 270 | 215 | 240 | 260 | 280 | 310 | 335 | — | — | — |
| P4 | 240 | 260 | 285 | — | — | — | 200 | 220 | 240 | 190 | 210 | 230 | 250 | 275 | 295 | — | — | — |
| P5 | 230 | 250 | 275 | — | — | — | 190 | 210 | 230 | 180 | 200 | 220 | 235 | 260 | 285 | — | — | — |
| P6 | 255 | 285 | 305 | — | — | — | 215 | 240 | 255 | 205 | 225 | 245 | 265 | 295 | 320 | — | — | — |
| P7 | 240 | 270 | 290 | — | — | — | 205 | 225 | 245 | 195 | 215 | 230 | 250 | 280 | 300 | — | — | — |
| P8 | 230 | 250 | 275 | — | — | — | 190 | 210 | 230 | 180 | 200 | 220 | 235 | 260 | 285 | — | — | — |
| P11 | 235 | 260 | 280 | — | — | — | 195 | 220 | 235 | 190 | 210 | 225 | 245 | 270 | 290 | — | — | — |
| M1 | 235 | 255 | 280 | — | — | — | 210 | 230 | 250 | 200 | 220 | 240 | — | — | — | — | — | — |
| M2 | 190 | 210 | 230 | — | — | — | 170 | 190 | 205 | 165 | 180 | 195 | — | — | — | — | — | — |
| M3 | 150 | 165 | 180 | — | — | — | 135 | 150 | 160 | 130 | 140 | 155 | — | — | — | — | — | — |
| M4 | 115 | 125 | 135 | — | — | — | 105 | 115 | 125 | 100 | 110 | 115 | — | — | — | — | — | — |
| M5 | 95 | 105 | 115 | — | — | — | 85 | 95 | 105 | 80 | 90 | 100 | — | — | — | — | — | — |
| K1 | 245 | 270 | 295 | 235 | 260 | 285 | 205 | 230 | 245 | 195 | 215 | 235 | 350 | 385 | 415 | — | — | — |
| K2 | 215 | 240 | 260 | 210 | 230 | 250 | 180 | 200 | 215 | 175 | 190 | 205 | 305 | 335 | 365 | — | — | — |
| K3 | 185 | 200 | 220 | 175 | 195 | 210 | 155 | 170 | 185 | 145 | 160 | 175 | 260 | 285 | 310 | — | — | — |
| K4 | 175 | 190 | 210 | 170 | 185 | 200 | 145 | 160 | 175 | 140 | 155 | 165 | 250 | 270 | 295 | — | — | — |
| K5 | 105 | 115 | 125 | 100 | 110 | 120 | 90 | 100 | 105 | 85 | 95 | 100 | 150 | 165 | 180 | — | — | — |
| K6 | 155 | 170 | 185 | 150 | 160 | 175 | 130 | 140 | 155 | 125 | 135 | 145 | 220 | 240 | 260 | — | — | — |
| K7 | 135 | 150 | 160 | 130 | 145 | 155 | 115 | 125 | 135 | 110 | 120 | 130 | 190 | 210 | 230 | — | — | — |
| N1 | 1875 | 2075 | 2250 | — | — | — | 1575 | 1750 | 1875 | 1500 | 1650 | 1800 | — | — | — | 1725 | 1900 | 2050 |
| N2 | 760 | 840 | 910 | — | — | — | 640 | 700 | 760 | 610 | 670 | 730 | — | — | — | 700 | 770 | 830 |
| N3 | 510 | 560 | 600 | — | — | — | 425 | 470 | 510 | 405 | 445 | 485 | — | — | — | 465 | 510 | 560 |
| N11 | 580 | 640 | 690 | — | — | — | 485 | 540 | 580 | 465 | 510 | 550 | — | — | — | 530 | 580 | 630 |
| S1 | 55 | 60 | 65 | — | — | — | 48 | 55 | 55 | 46 | 50 | 55 | — | — | — | — | — | — |
| S2 | 43 | 47 | 50 | — | — | — | 39 | 43 | 46 | 37 | 41 | 44 | — | — | — | — | — | — |
| S3 | 37 | 41 | 44 | — | — | — | 34 | 37 | 40 | 32 | 35 | 38 | — | — | — | — | — | — |
| S11 | 75 | 85 | 90 | — | — | — | 70 | 75 | 80 | 65 | 70 | 80 | — | — | — | — | — | — |
| S12 | 65 | 70 | 75 | — | — | — | 60 | 65 | 70 | 55 | 60 | 65 | — | — | — | — | — | — |
| S13 | 36 | 40 | 43 | — | — | — | 33 | 36 | 39 | 31 | 35 | 37 | — | — | — | — | — | — |
| H5 | 45 | 50 | 55 | 46 | 50 | 55 | 40 | 45 | 48 | 39 | 43 | 46 | — | — | — | — | — | — |
| H8 | 47 | 50 | 55 | 48 | 50 | 55 | 42 | 46 | 50 | 40 | 44 | 47 | — | — | — | — | — | — |
| H11 | 55 | 65 | 70 | 60 | 65 | 70 | 50 | 55 | 60 | 49 | 55 | 60 | — | — | — | — | — | — |
| H12 | 55 | 60 | 65 | 55 | 60 | 65 | 49 | 55 | 60 | 46 | 50 | 55 | — | — | — | — | — | — |
| H21 | 47 | 50 | 55 | 48 | 50 | 55 | 42 | 46 | 50 | 40 | 44 | 47 | — | — | — | — | — | — |

335.29 Round 7 - Insert selection

| SMG | | f _z | | |
|-----|-------------------------|----------------|-------|-------|
| | | 20% | 10% | 5% |
| P1 | RDHW0702M0-MD03 F40M | 0,080 | 0,10 | 0,14 |
| P2 | RDHW0702M0-MD03 F40M | 0,080 | 0,11 | 0,15 |
| P3 | RDHW0702M0-MD03 F40M | 0,075 | 0,10 | 0,14 |
| P4 | RDHW0702M0-MD03 F40M | 0,075 | 0,10 | 0,14 |
| P5 | RDHW0702M0-MD03 F40M | 0,075 | 0,095 | 0,13 |
| P6 | RDHW0702M0-MD03 F40M | 0,070 | 0,095 | 0,13 |
| P7 | RDHW0702M0-MD03 F40M | 0,070 | 0,095 | 0,13 |
| P8 | RDHW0702M0-MD03 MP3000 | 0,075 | 0,10 | 0,14 |
| P11 | RDHW0702M0-MD03 F40M | 0,070 | 0,095 | 0,13 |
| P12 | RDHW0702M0-MD03 F40M | 0,050 | 0,065 | 0,090 |
| M1 | RDHW0702M0-MD03 F40M | 0,080 | 0,11 | 0,15 |
| M2 | RDHW0702M0-MD03 F40M | 0,075 | 0,095 | 0,13 |
| M3 | RDHW0702M0-MD03 F40M | 0,060 | 0,080 | 0,11 |
| M4 | RDHW0702M0-MD03 F40M | 0,050 | 0,070 | 0,095 |
| M5 | RDHW0702M0-MD03 F40M | 0,050 | 0,070 | 0,095 |
| K1 | RDHW0702M0T-MD04 MK2050 | 0,080 | 0,11 | 0,15 |
| K2 | RDHW0702M0T-MD04 MK2050 | 0,075 | 0,095 | 0,13 |
| K3 | RDHW0702M0T-MD04 MK2050 | 0,075 | 0,095 | 0,13 |
| K4 | RDHW0702M0T-MD04 MK2050 | 0,075 | 0,095 | 0,13 |
| K5 | RDHW0702M0T-MD04 MK2050 | 0,065 | 0,085 | 0,12 |
| K6 | RDHW0702M0T-MD04 MK2050 | 0,075 | 0,095 | 0,13 |
| K7 | RDHW0702M0T-MD04 MK2050 | 0,065 | 0,085 | 0,12 |
| N1 | RDHW0702M0-MD03 MP3000 | 0,10 | 0,14 | 0,19 |
| N2 | RDHW0702M0-MD03 MP3000 | 0,10 | 0,14 | 0,19 |
| N3 | RDHW0702M0-MD03 MP3000 | 0,10 | 0,14 | 0,19 |
| N11 | RDHW0702M0-MD03 MP3000 | 0,10 | 0,14 | 0,19 |
| S1 | RDHW0702M0-MD03 F40M | 0,050 | 0,070 | 0,095 |
| S2 | RDHW0702M0-MD03 F40M | 0,050 | 0,070 | 0,095 |
| S3 | RDHW0702M0-MD03 F40M | 0,048 | 0,065 | 0,085 |
| S11 | RDHW0702M0-MD03 F40M | 0,060 | 0,080 | 0,11 |
| S12 | RDHW0702M0-MD03 F40M | 0,060 | 0,080 | 0,11 |
| S13 | RDHW0702M0-MD03 F40M | 0,050 | 0,070 | 0,095 |
| H5 | RDHW0702M0T-MD04 F15M | 0,050 | 0,065 | 0,090 |
| H8 | RDHW0702M0T-MD04 F15M | 0,038 | 0,050 | 0,070 |
| H11 | RDHW0702M0T-MD04 F15M | 0,050 | 0,065 | 0,090 |
| H12 | RDHW0702M0T-MD04 F15M | 0,038 | 0,050 | 0,070 |
| H21 | RDHW0702M0T-MD04 F15M | 0,038 | 0,050 | 0,070 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

335.29 Round 7 - Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | F15M | | | F40M | | | MK2050 | | |
|-----|--------|------|------|------|-----|-----|------|------|------|--------|-----|-----|
| | 20% | 10% | 5% | 20% | 10% | 5% | 20% | 10% | 5% | 20% | 10% | 5% |
| P1 | 305 | 340 | 370 | — | — | — | 245 | 270 | 295 | 315 | 355 | 380 |
| P2 | 295 | 325 | 355 | — | — | — | 235 | 260 | 285 | 310 | 340 | 370 |
| P3 | 260 | 285 | 310 | — | — | — | 205 | 230 | 245 | 270 | 295 | 320 |
| P4 | 225 | 250 | 270 | — | — | — | 180 | 200 | 215 | 235 | 260 | 280 |
| P5 | 215 | 240 | 260 | — | — | — | 175 | 195 | 210 | 225 | 250 | 275 |
| P6 | 245 | 270 | 295 | — | — | — | 195 | 215 | 235 | 255 | 280 | 305 |
| P7 | 235 | 255 | 280 | — | — | — | 185 | 205 | 220 | 240 | 265 | 290 |
| P8 | 215 | 240 | 260 | — | — | — | 175 | 190 | 205 | 225 | 250 | 270 |
| P11 | 225 | 250 | 270 | — | — | — | 180 | 200 | 215 | 235 | 260 | 280 |
| P12 | 140 | 155 | 170 | — | — | — | 110 | 125 | 135 | 145 | 160 | 175 |
| M1 | 220 | 245 | 265 | — | — | — | 190 | 210 | 230 | — | — | — |
| M2 | 180 | 200 | 220 | — | — | — | 155 | 175 | 190 | — | — | — |
| M3 | 145 | 160 | 170 | — | — | — | 125 | 135 | 150 | — | — | — |
| M4 | 110 | 120 | 130 | — | — | — | 95 | 105 | 115 | — | — | — |
| M5 | 90 | 100 | 110 | — | — | — | 80 | 85 | 95 | — | — | — |
| K1 | 235 | 260 | 280 | 225 | 250 | 270 | 190 | 205 | 225 | 335 | 365 | 395 |
| K2 | 205 | 230 | 250 | 200 | 220 | 240 | 165 | 185 | 200 | 290 | 325 | 350 |
| K3 | 175 | 195 | 210 | 165 | 185 | 200 | 140 | 155 | 170 | 245 | 275 | 300 |
| K4 | 165 | 185 | 200 | 160 | 180 | 195 | 135 | 150 | 160 | 235 | 260 | 285 |
| K5 | 100 | 110 | 120 | 95 | 110 | 115 | 80 | 90 | 95 | 145 | 160 | 170 |
| K6 | 145 | 165 | 175 | 140 | 155 | 170 | 115 | 130 | 140 | 210 | 230 | 250 |
| K7 | 130 | 145 | 155 | 125 | 140 | 150 | 105 | 115 | 125 | 185 | 205 | 220 |
| N1 | 1775 | 1950 | 2125 | — | — | — | 1425 | 1550 | 1700 | — | — | — |
| N2 | 720 | 790 | 860 | — | — | — | 580 | 630 | 690 | — | — | — |
| N3 | 480 | 530 | 570 | — | — | — | 385 | 420 | 455 | — | — | — |
| N11 | 550 | 600 | 650 | — | — | — | 440 | 480 | 520 | — | — | — |
| S1 | 50 | 55 | 60 | — | — | — | 44 | 49 | 55 | — | — | — |
| S2 | 41 | 45 | 49 | — | — | — | 36 | 39 | 42 | — | — | — |
| S3 | 36 | 39 | 43 | — | — | — | 31 | 34 | 37 | — | — | — |
| S11 | 70 | 80 | 85 | — | — | — | 60 | 70 | 75 | — | — | — |
| S12 | 60 | 65 | 75 | — | — | — | 50 | 60 | 65 | — | — | — |
| S13 | 35 | 38 | 42 | — | — | — | 30 | 33 | 36 | — | — | — |
| H5 | 44 | 48 | 50 | 45 | 49 | 55 | 37 | 41 | 45 | — | — | — |
| H8 | 45 | 50 | 55 | 46 | 50 | 55 | 39 | 43 | 46 | — | — | — |
| H11 | 55 | 60 | 65 | 55 | 65 | 70 | 47 | 50 | 55 | — | — | — |
| H12 | 50 | 60 | 65 | 55 | 60 | 65 | 45 | 49 | 55 | — | — | — |
| H21 | 45 | 50 | 55 | 46 | 50 | 55 | 39 | 43 | 46 | — | — | — |

335.18/335.29 Round 8 - Insert selection

| SMG | | f_z | | |
|-----|-------------------------|-------|-------|-------|
| | | 30% | 20% | 10% |
| P1 | RDHW0803M0-MD03 F40M | 0,065 | 0,075 | 0,10 |
| P2 | RDHW0803M0-MD03 F40M | 0,065 | 0,075 | 0,10 |
| P3 | RDHW0803M0-MD03 F40M | 0,065 | 0,075 | 0,095 |
| P4 | RDKW0803M0T-MD05 F40M | 0,080 | 0,090 | 0,12 |
| P5 | RDKW0803M0T-MD05 F40M | 0,075 | 0,090 | 0,12 |
| P6 | RDKW0803M0T-MD05 F40M | 0,075 | 0,085 | 0,12 |
| P7 | RDKW0803M0T-MD05 F40M | 0,075 | 0,085 | 0,12 |
| P8 | RDKW0803M0T-MD05 MP2500 | 0,080 | 0,090 | 0,12 |
| P11 | RDKW0803M0T-MD05 F40M | 0,075 | 0,085 | 0,12 |
| P12 | RDKW0803M0T-MD05 F40M | 0,050 | 0,060 | 0,080 |
| M1 | RDHW0803M0-MD03 F40M | 0,065 | 0,075 | 0,10 |
| M2 | RDHW0803M0-MD03 F40M | 0,060 | 0,070 | 0,095 |
| M3 | RDHW0803M0-MD03 F40M | 0,048 | 0,055 | 0,075 |
| M4 | RDHW0803M0-MD03 F40M | 0,042 | 0,050 | 0,065 |
| M5 | RDHW0803M0-MD03 F40M | 0,042 | 0,050 | 0,065 |
| K1 | RDKW0803M0T-MD05 MK2050 | 0,085 | 0,095 | 0,13 |
| K2 | RDKW0803M0T-MD05 MK2050 | 0,075 | 0,090 | 0,12 |
| K3 | RDKW0803M0T-MD05 MK2050 | 0,075 | 0,090 | 0,12 |
| K4 | RDKW0803M0T-MD05 MK2050 | 0,075 | 0,090 | 0,12 |
| K5 | RDKW0803M0T-MD05 MK2050 | 0,070 | 0,080 | 0,11 |
| K6 | RDKW0803M0T-MD05 MK2050 | 0,075 | 0,090 | 0,12 |
| K7 | RDKW0803M0T-MD05 MK2050 | 0,070 | 0,080 | 0,11 |
| N1 | RDHT0803M0-E03 H25 | 0,065 | 0,075 | 0,10 |
| N2 | RDHT0803M0-E03 H25 | 0,065 | 0,075 | 0,10 |
| N3 | RDHT0803M0-E03 H25 | 0,065 | 0,075 | 0,10 |
| N11 | RDHT0803M0-E03 H25 | 0,065 | 0,075 | 0,10 |
| S1 | RDHW0803M0-MD03 F40M | 0,042 | 0,050 | 0,065 |
| S2 | RDHW0803M0-MD03 F40M | 0,042 | 0,050 | 0,065 |
| S3 | RDHW0803M0-MD03 F40M | 0,040 | 0,046 | 0,060 |
| S11 | RDHW0803M0-MD03 F40M | 0,048 | 0,055 | 0,075 |
| S12 | RDHW0803M0-MD03 F40M | 0,048 | 0,055 | 0,075 |
| S13 | RDHW0803M0-MD03 F40M | 0,042 | 0,050 | 0,065 |
| H5 | RDKW0803M0T-MD05 F15M | 0,050 | 0,060 | 0,080 |
| H8 | RDKW0803M0T-MD05 F15M | 0,040 | 0,046 | 0,060 |
| H11 | RDKW0803M0T-MD05 F15M | 0,050 | 0,060 | 0,080 |
| H12 | RDKW0803M0T-MD05 F15M | 0,040 | 0,046 | 0,060 |
| H21 | RDKW0803M0T-MD05 F15M | 0,040 | 0,046 | 0,060 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

335.18/335.29 Round 8 - Cutting data $v_c =$ (m/min)

| SMG | MP2500 | | | MP3000 | | | T350M | | | F15M | | | F25M | | | F30M | | |
|-----|--------|-----|-----|--------|------|------|-------|-----|-----|------|-----|-----|------|-----|-----|------|------|------|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 285 | 305 | 335 | 285 | 305 | 335 | 315 | 340 | 370 | — | — | — | 240 | 255 | 280 | 240 | 255 | 280 |
| P2 | 280 | 300 | 330 | 280 | 295 | 325 | 305 | 325 | 360 | — | — | — | 230 | 250 | 275 | 235 | 250 | 275 |
| P3 | 245 | 260 | 285 | 240 | 255 | 285 | 265 | 285 | 310 | — | — | — | 200 | 215 | 240 | 200 | 215 | 240 |
| P4 | 215 | 230 | 255 | 215 | 225 | 250 | 235 | 250 | 275 | — | — | — | 180 | 190 | 210 | 180 | 190 | 210 |
| P5 | 205 | 220 | 240 | 205 | 215 | 240 | 225 | 240 | 265 | — | — | — | 170 | 180 | 200 | 170 | 180 | 200 |
| P6 | 230 | 250 | 270 | 230 | 245 | 270 | 250 | 270 | 295 | — | — | — | 195 | 205 | 225 | 190 | 205 | 225 |
| P7 | 220 | 235 | 255 | 215 | 230 | 255 | 240 | 255 | 280 | — | — | — | 180 | 195 | 215 | 180 | 195 | 215 |
| P8 | 205 | 220 | 240 | 200 | 215 | 240 | 225 | 240 | 260 | — | — | — | 170 | 180 | 200 | 170 | 180 | 200 |
| P11 | 215 | 225 | 250 | 210 | 225 | 245 | 230 | 250 | 270 | — | — | — | 175 | 190 | 205 | 175 | 185 | 205 |
| P12 | 135 | 140 | 155 | 130 | 140 | 155 | 145 | 150 | 170 | — | — | — | 110 | 120 | 130 | 110 | 115 | 130 |
| M1 | 200 | 215 | 235 | 210 | 220 | 245 | 235 | 250 | 280 | — | — | — | — | — | — | 190 | 200 | 220 |
| M2 | 165 | 175 | 195 | 170 | 180 | 200 | 195 | 205 | 225 | — | — | — | — | — | — | 155 | 165 | 180 |
| M3 | 130 | 140 | 155 | 135 | 145 | 155 | 150 | 160 | 180 | — | — | — | — | — | — | 120 | 130 | 140 |
| M4 | 100 | 110 | 120 | 105 | 110 | 120 | 115 | 125 | 135 | — | — | — | — | — | — | 95 | 100 | 110 |
| M5 | 85 | 90 | 100 | 85 | 90 | 100 | 95 | 105 | 115 | — | — | — | — | — | — | 75 | 80 | 90 |
| K1 | 220 | 235 | 260 | 220 | 235 | 260 | — | — | — | 200 | 215 | 235 | 185 | 195 | 215 | 185 | 195 | 215 |
| K2 | 195 | 205 | 230 | 195 | 205 | 225 | — | — | — | 180 | 190 | 210 | 165 | 175 | 190 | 160 | 170 | 190 |
| K3 | 165 | 175 | 195 | 165 | 175 | 190 | — | — | — | 150 | 160 | 175 | 140 | 145 | 160 | 135 | 145 | 160 |
| K4 | 160 | 170 | 185 | 155 | 165 | 180 | — | — | — | 145 | 150 | 170 | 130 | 140 | 155 | 130 | 140 | 155 |
| K5 | 95 | 100 | 110 | 95 | 100 | 110 | — | — | — | 85 | 95 | 100 | 80 | 85 | 95 | 80 | 85 | 95 |
| K6 | 140 | 150 | 165 | 140 | 145 | 160 | — | — | — | 125 | 135 | 150 | 115 | 125 | 135 | 115 | 125 | 135 |
| K7 | 120 | 130 | 145 | 120 | 130 | 140 | — | — | — | 110 | 120 | 130 | 100 | 110 | 120 | 100 | 105 | 120 |
| N1 | — | — | — | 1650 | 1750 | 1950 | — | — | — | — | — | — | — | — | — | 1400 | 1475 | 1650 |
| N2 | — | — | — | 670 | 710 | 790 | — | — | — | — | — | — | — | — | — | 560 | 600 | 660 |
| N3 | — | — | — | 445 | 475 | 530 | — | — | — | — | — | — | — | — | — | 375 | 400 | 440 |
| N11 | — | — | — | 510 | 540 | 600 | — | — | — | — | — | — | — | — | — | 430 | 455 | 500 |
| S1 | — | — | — | 48 | 50 | 55 | 55 | 60 | 65 | — | — | — | — | — | — | 43 | 46 | 50 |
| S2 | — | — | — | 39 | 41 | 45 | 44 | 46 | 50 | — | — | — | — | — | — | 35 | 37 | 41 |
| S3 | — | — | — | 33 | 36 | 39 | 38 | 40 | 44 | — | — | — | — | — | — | 30 | 32 | 36 |
| S11 | — | — | — | 70 | 70 | 80 | 75 | 80 | 90 | — | — | — | — | — | — | 60 | 65 | 70 |
| S12 | — | — | — | 55 | 60 | 65 | 65 | 70 | 75 | — | — | — | — | — | — | 50 | 55 | 60 |
| S13 | — | — | — | 33 | 35 | 38 | 37 | 39 | 43 | — | — | — | — | — | — | 30 | 31 | 35 |
| H5 | — | — | — | 41 | 43 | 47 | 48 | 50 | 55 | 41 | 43 | 47 | — | — | — | 36 | 39 | 43 |
| H8 | — | — | — | 42 | 45 | 49 | 49 | 50 | 55 | 42 | 45 | 49 | — | — | — | 38 | 40 | 44 |
| H11 | — | — | — | 50 | 55 | 60 | 60 | 65 | 70 | 50 | 55 | 60 | — | — | — | 46 | 49 | 55 |
| H12 | — | — | — | 49 | 50 | 55 | 90 | 95 | 105 | 49 | 50 | 55 | — | — | — | 44 | 47 | 50 |
| H21 | — | — | — | 42 | 45 | 49 | 49 | 50 | 55 | 42 | 45 | 49 | — | — | — | 38 | 40 | 44 |

| SMG | F40M | | | MK2050 | | | MS2050 | | | MS2500 | | | H25 | | |
|-----|------|------|------|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|------|------|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 230 | 245 | 270 | 280 | 305 | 330 | — | — | — | 315 | 335 | 370 | — | — | — |
| P2 | 220 | 235 | 260 | 275 | 295 | 325 | — | — | — | 305 | 325 | 360 | — | — | — |
| P3 | 190 | 205 | 225 | 240 | 255 | 285 | — | — | — | 265 | 285 | 315 | — | — | — |
| P4 | 170 | 180 | 200 | 210 | 225 | 250 | — | — | — | 235 | 250 | 275 | — | — | — |
| P5 | 165 | 175 | 190 | 205 | 215 | 240 | — | — | — | 225 | 240 | 265 | — | — | — |
| P6 | 185 | 195 | 215 | 230 | 245 | 265 | — | — | — | 255 | 270 | 295 | — | — | — |
| P7 | 175 | 185 | 205 | 215 | 230 | 250 | — | — | — | 240 | 255 | 280 | — | — | — |
| P8 | 160 | 170 | 190 | 200 | 215 | 240 | — | — | — | 225 | 240 | 265 | — | — | — |
| P11 | 170 | 180 | 200 | 210 | 225 | 245 | — | — | — | 230 | 250 | 270 | — | — | — |
| P12 | 105 | 110 | 120 | 130 | 140 | 155 | — | — | — | 145 | 155 | 170 | — | — | — |
| M1 | 180 | 190 | 210 | — | — | — | — | — | — | 220 | 235 | 255 | — | — | — |
| M2 | 145 | 155 | 170 | — | — | — | — | — | — | 180 | 190 | 210 | — | — | — |
| M3 | 115 | 125 | 135 | — | — | — | — | — | — | 145 | 150 | 165 | — | — | — |
| M4 | 90 | 95 | 105 | — | — | — | — | — | — | 110 | 115 | 130 | — | — | — |
| M5 | 75 | 80 | 85 | — | — | — | — | — | — | 90 | 95 | 105 | — | — | — |
| K1 | 175 | 185 | 205 | 295 | 320 | 350 | — | — | — | — | — | — | — | — | — |
| K2 | 155 | 165 | 180 | 265 | 280 | 305 | — | — | — | — | — | — | — | — | — |
| K3 | 130 | 140 | 155 | 225 | 235 | 260 | — | — | — | — | — | — | — | — | — |
| K4 | 125 | 135 | 145 | 215 | 225 | 250 | — | — | — | — | — | — | — | — | — |
| K5 | 75 | 80 | 90 | 130 | 135 | 150 | — | — | — | — | — | — | — | — | — |
| K6 | 110 | 115 | 130 | 185 | 200 | 220 | — | — | — | — | — | — | — | — | — |
| K7 | 95 | 100 | 115 | 165 | 175 | 190 | — | — | — | — | — | — | — | — | — |
| N1 | 1325 | 1400 | 1550 | — | — | — | — | — | — | — | — | — | 1525 | 1625 | 1800 |
| N2 | 530 | 570 | 630 | — | — | — | — | — | — | — | — | — | 620 | 660 | 720 |
| N3 | 355 | 380 | 420 | — | — | — | — | — | — | — | — | — | 410 | 435 | 480 |
| N11 | 410 | 435 | 480 | — | — | — | — | — | — | — | — | — | 470 | 500 | 550 |
| S1 | 41 | 44 | 48 | — | — | — | 50 | 55 | 55 | 55 | 55 | 65 | — | — | — |
| S2 | 33 | 35 | 39 | — | — | — | 42 | 43 | 45 | 43 | 46 | 50 | — | — | — |
| S3 | 29 | 31 | 34 | — | — | — | 36 | 37 | 38 | 37 | 40 | 44 | — | — | — |
| S11 | 60 | 60 | 70 | — | — | — | 75 | 80 | 85 | 75 | 80 | 90 | — | — | — |
| S12 | 49 | 50 | 60 | — | — | — | 70 | 70 | 75 | 65 | 70 | 75 | — | — | — |
| S13 | 28 | 30 | 33 | — | — | — | 39 | 40 | 42 | 36 | 39 | 43 | — | — | — |
| H5 | 35 | 37 | 41 | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | 36 | 38 | 42 | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | 44 | 47 | 50 | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | 42 | 44 | 49 | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | 36 | 38 | 42 | — | — | — | — | — | — | — | — | — | — | — | — |

335.18/335.29 Round 10 - Insert selection

| SMG | | f _z | | |
|-----|-------------------------|----------------|-------|-------|
| | | 30% | 20% | 10% |
| P1 | RDHT10T3M0T-M05 F40M | 0,085 | 0,095 | 0,13 |
| P2 | RDHT10T3M0T-M05 F40M | 0,085 | 0,095 | 0,13 |
| P3 | RDHT10T3M0T-M05 F40M | 0,080 | 0,090 | 0,12 |
| P4 | RDHT10T3M0T-M05 F40M | 0,080 | 0,090 | 0,12 |
| P5 | RDHT10T3M0T-M05 F40M | 0,075 | 0,090 | 0,12 |
| P6 | RDHT10T3M0T-M05 F40M | 0,075 | 0,085 | 0,12 |
| P7 | RDHW10T3M0T-MD06 F40M | 0,090 | 0,10 | 0,14 |
| P8 | RDKW10T3M0T-MD06 MP2500 | 0,095 | 0,11 | 0,15 |
| P11 | RDHT10T3M0T-M07 F40M | 0,11 | 0,12 | 0,16 |
| P12 | RDHT10T3M0T-M07 F40M | 0,075 | 0,085 | 0,11 |
| M1 | RDHT10T3M0T-M05 F40M | 0,085 | 0,095 | 0,13 |
| M2 | RDHT10T3M0T-M05 F40M | 0,075 | 0,090 | 0,12 |
| M3 | RDHT10T3M0T-M05 F40M | 0,060 | 0,070 | 0,095 |
| M4 | RDHT10T3M0T-M05 F40M | 0,055 | 0,060 | 0,080 |
| M5 | RDHT10T3M0T-M05 F40M | 0,055 | 0,060 | 0,080 |
| K1 | RDKW10T3M0T-MD06 MK2050 | 0,10 | 0,12 | 0,16 |
| K2 | RDKW10T3M0T-MD06 MK2050 | 0,090 | 0,11 | 0,14 |
| K3 | RDKW10T3M0T-MD06 MK2050 | 0,090 | 0,11 | 0,14 |
| K4 | RDKW10T3M0T-MD06 MK2050 | 0,090 | 0,11 | 0,14 |
| K5 | RDKW10T3M0T-MD06 MK2050 | 0,085 | 0,095 | 0,13 |
| K6 | RDKW10T3M0T-MD06 MK2050 | 0,090 | 0,11 | 0,14 |
| K7 | RDKW10T3M0T-MD06 MK2050 | 0,085 | 0,095 | 0,13 |
| N1 | RDHT10T3M0-E04 H25 | 0,085 | 0,10 | 0,13 |
| N2 | RDHT10T3M0-E04 H25 | 0,085 | 0,10 | 0,13 |
| N3 | RDHT10T3M0-E04 H25 | 0,085 | 0,10 | 0,13 |
| N11 | RDHT10T3M0-E04 H25 | 0,085 | 0,10 | 0,13 |
| S1 | RDHT10T3M0T-M05 F40M | 0,055 | 0,060 | 0,080 |
| S2 | RDHT10T3M0T-M05 F40M | 0,055 | 0,060 | 0,080 |
| S3 | RDHT10T3M0T-M05 F40M | 0,050 | 0,055 | 0,075 |
| S11 | RDHT10T3M0T-M05 F40M | 0,060 | 0,070 | 0,095 |
| S12 | RDHT10T3M0T-M05 F40M | 0,060 | 0,070 | 0,095 |
| S13 | RDHT10T3M0T-M05 F40M | 0,055 | 0,060 | 0,080 |
| H5 | RDKW10T3M0T-MD06 F 15M | 0,065 | 0,070 | 0,095 |
| H8 | RDKW10T3M0T-MD06 F 15M | 0,048 | 0,055 | 0,075 |
| H11 | RDKW10T3M0T-MD06 F 15M | 0,065 | 0,070 | 0,095 |
| H12 | RDKW10T3M0T-MD06 F 15M | 0,048 | 0,055 | 0,075 |
| H21 | RDKW10T3M0T-MD06 F 15M | 0,048 | 0,055 | 0,075 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

Disc milling cutters



335.18/335.29 Round 10 - Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | T350M | | | F15M | | | F30M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|------|------|------|------|------|------|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 315 | 340 | 370 | 325 | 345 | 380 | 280 | 300 | 330 | — | — | — | 240 | 255 | 285 | 245 | 260 | 290 |
| P2 | 305 | 325 | 360 | 315 | 335 | 370 | 275 | 295 | 325 | — | — | — | 230 | 250 | 275 | 240 | 255 | 280 |
| P3 | 265 | 285 | 310 | 275 | 295 | 325 | 240 | 255 | 280 | — | — | — | 200 | 215 | 235 | 205 | 220 | 245 |
| P4 | 235 | 250 | 280 | 240 | 260 | 285 | 210 | 225 | 250 | — | — | — | 180 | 190 | 210 | 185 | 195 | 215 |
| P5 | 225 | 240 | 265 | 235 | 245 | 270 | 205 | 215 | 235 | — | — | — | 170 | 185 | 200 | 175 | 185 | 205 |
| P6 | 255 | 275 | 300 | 260 | 280 | 305 | 230 | 245 | 265 | — | — | — | 195 | 205 | 225 | 200 | 210 | 230 |
| P7 | 240 | 260 | 280 | 245 | 265 | 290 | 215 | 230 | 250 | — | — | — | 180 | 195 | 215 | 185 | 200 | 220 |
| P8 | 225 | 240 | 260 | 230 | 245 | 270 | 200 | 215 | 235 | — | — | — | 170 | 180 | 200 | 175 | 185 | 205 |
| P11 | 235 | 250 | 275 | 240 | 255 | 280 | 210 | 225 | 245 | — | — | — | 175 | 190 | 205 | 180 | 195 | 210 |
| P12 | 145 | 155 | 175 | 150 | 160 | 175 | 130 | 140 | 155 | — | — | — | 110 | 115 | 130 | 115 | 120 | 135 |
| M1 | — | — | — | 225 | 245 | 265 | 210 | 225 | 250 | — | — | — | 185 | 200 | 220 | 190 | 205 | 225 |
| M2 | — | — | — | 185 | 200 | 220 | 175 | 185 | 205 | — | — | — | 155 | 165 | 180 | 160 | 170 | 185 |
| M3 | — | — | — | 150 | 160 | 175 | 140 | 145 | 160 | — | — | — | 120 | 130 | 145 | 125 | 135 | 145 |
| M4 | — | — | — | 115 | 120 | 135 | 105 | 115 | 125 | — | — | — | 95 | 100 | 110 | 95 | 105 | 115 |
| M5 | — | — | — | 95 | 100 | 110 | 90 | 95 | 105 | — | — | — | 75 | 80 | 90 | 80 | 85 | 95 |
| K1 | 245 | 255 | 285 | 250 | 265 | 295 | 215 | 235 | 255 | 195 | 205 | 230 | 185 | 200 | 220 | 190 | 200 | 220 |
| K2 | 215 | 225 | 250 | 220 | 235 | 260 | 195 | 205 | 225 | 175 | 180 | 205 | 165 | 175 | 190 | 170 | 175 | 195 |
| K3 | 180 | 190 | 215 | 185 | 200 | 220 | 165 | 170 | 190 | 145 | 155 | 170 | 140 | 145 | 160 | 140 | 150 | 165 |
| K4 | 175 | 185 | 205 | 180 | 190 | 210 | 155 | 165 | 180 | 140 | 145 | 165 | 130 | 140 | 155 | 135 | 145 | 160 |
| K5 | 105 | 110 | 125 | 110 | 115 | 125 | 95 | 100 | 110 | 85 | 90 | 100 | 80 | 85 | 95 | 80 | 85 | 95 |
| K6 | 155 | 160 | 180 | 155 | 165 | 185 | 135 | 145 | 160 | 125 | 130 | 145 | 115 | 125 | 135 | 120 | 125 | 140 |
| K7 | 135 | 145 | 160 | 140 | 145 | 160 | 120 | 130 | 140 | 110 | 115 | 125 | 100 | 110 | 120 | 105 | 110 | 120 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1400 | 1475 | 1650 | 1425 | 1525 | 1675 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 560 | 600 | 670 | 570 | 620 | 680 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 375 | 400 | 445 | 380 | 410 | 455 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 430 | 455 | 510 | 435 | 470 | 520 |
| S1 | — | — | — | — | — | — | 49 | 55 | 60 | — | — | — | 43 | 46 | 50 | 45 | 48 | 55 |
| S2 | — | — | — | — | — | — | 40 | 43 | 47 | — | — | — | 35 | 37 | 41 | 36 | 39 | 43 |
| S3 | — | — | — | — | — | — | 35 | 37 | 41 | — | — | — | 30 | 32 | 36 | 32 | 34 | 37 |
| S11 | — | — | — | — | — | — | 70 | 75 | 80 | — | — | — | 60 | 65 | 70 | 65 | 70 | 75 |
| S12 | — | — | — | — | — | — | 60 | 65 | 70 | — | — | — | 50 | 55 | 60 | 55 | 55 | 65 |
| S13 | — | — | — | — | — | — | 34 | 36 | 40 | — | — | — | 30 | 32 | 35 | 31 | 33 | 36 |
| H5 | 49 | 50 | 55 | 46 | 48 | 55 | 44 | 46 | 50 | 39 | 42 | 46 | 37 | 39 | 43 | 38 | 40 | 44 |
| H8 | 50 | 55 | 60 | 47 | 50 | 55 | 45 | 48 | 55 | 41 | 44 | 48 | 38 | 40 | 44 | 39 | 42 | 46 |
| H11 | 60 | 65 | 75 | 60 | 60 | 70 | 55 | 60 | 65 | 50 | 55 | 60 | 47 | 50 | 55 | 49 | 50 | 55 |
| H12 | 60 | 65 | 70 | 55 | 60 | 65 | 80 | 85 | 95 | 48 | 50 | 55 | 44 | 47 | 50 | 46 | 49 | 55 |
| H21 | 50 | 55 | 60 | 47 | 50 | 55 | 45 | 48 | 55 | 41 | 44 | 48 | 38 | 40 | 44 | 39 | 42 | 46 |

| SMG | MK2050 | | | MM4500 | | | MS2050 | | | MS2500 | | | MH1000 | | | H25 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|------|------|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 275 | 295 | 325 | 200 | 215 | 235 | — | — | — | 350 | 380 | 415 | — | — | — | — | — | — |
| P2 | 265 | 285 | 310 | 195 | 205 | 225 | — | — | — | 345 | 370 | 405 | — | — | — | — | — | — |
| P3 | 230 | 250 | 270 | 170 | 180 | 200 | — | — | — | 300 | 320 | 355 | — | — | — | — | — | — |
| P4 | 205 | 220 | 245 | 150 | 160 | 175 | — | — | — | 265 | 280 | 310 | — | — | — | — | — | — |
| P5 | 200 | 210 | 230 | 145 | 150 | 165 | — | — | — | 255 | 270 | 295 | — | — | — | — | — | — |
| P6 | 220 | 240 | 260 | 160 | 170 | 185 | — | — | — | 285 | 305 | 335 | — | — | — | — | — | — |
| P7 | 210 | 225 | 245 | 150 | 160 | 175 | 90 | 85 | 90 | 270 | 290 | 315 | — | — | — | — | — | — |
| P8 | 195 | 210 | 230 | 140 | 150 | 165 | 90 | 85 | 85 | 250 | 270 | 295 | — | — | — | — | — | — |
| P11 | 205 | 220 | 240 | 145 | 155 | 170 | 85 | 85 | 90 | 260 | 280 | 305 | — | — | — | — | — | — |
| P12 | 130 | 135 | 150 | 95 | 100 | 110 | 30 | 31 | 31 | 165 | 175 | 195 | — | — | — | — | — | — |
| M1 | — | — | — | 165 | 180 | 195 | 115 | 110 | 115 | 245 | 265 | 290 | — | — | — | — | — | — |
| M2 | — | — | — | 135 | 145 | 160 | 80 | 85 | 85 | 205 | 215 | 235 | — | — | — | — | — | — |
| M3 | — | — | — | 110 | 115 | 125 | 48 | 47 | 48 | 160 | 170 | 190 | — | — | — | — | — | — |
| M4 | — | — | — | 85 | 90 | 100 | 32 | 29 | 28 | 125 | 130 | 145 | — | — | — | — | — | — |
| M5 | — | — | — | 70 | 75 | 80 | 26 | 24 | 24 | 100 | 110 | 120 | — | — | — | — | — | — |
| K1 | 290 | 305 | 335 | — | — | — | — | — | — | — | — | — | 235 | 250 | 275 | — | — | — |
| K2 | 255 | 270 | 300 | — | — | — | — | — | — | — | — | — | 210 | 220 | 245 | — | — | — |
| K3 | 215 | 230 | 255 | — | — | — | — | — | — | — | — | — | 175 | 185 | 210 | — | — | — |
| K4 | 205 | 215 | 240 | — | — | — | — | — | — | — | — | — | 170 | 180 | 200 | — | — | — |
| K5 | 125 | 135 | 145 | — | — | — | — | — | — | — | — | — | 100 | 110 | 120 | — | — | — |
| K6 | 180 | 190 | 215 | — | — | — | — | — | — | — | — | — | 150 | 155 | 175 | — | — | — |
| K7 | 160 | 170 | 185 | — | — | — | — | — | — | — | — | — | 130 | 140 | 155 | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1450 | 1550 | 1725 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 590 | 620 | 690 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 390 | 415 | 460 |
| S1 | — | — | — | 25 | 27 | 30 | 60 | 60 | 65 | 60 | 65 | 70 | — | — | — | — | — | — |
| S2 | — | — | — | 20 | 22 | 24 | 48 | 49 | 50 | 48 | 50 | 55 | — | — | — | — | — | — |
| S3 | — | — | — | 18 | 19 | 21 | 41 | 42 | 45 | 42 | 45 | 50 | — | — | — | — | — | — |
| S11 | — | — | — | 36 | 38 | 42 | 85 | 90 | 95 | 85 | 90 | 100 | — | — | — | — | — | — |
| S12 | — | — | — | 33 | 35 | 39 | 80 | 80 | 85 | 70 | 75 | 85 | — | — | — | — | — | — |
| S13 | — | — | — | 19 | 20 | 22 | 44 | 46 | 49 | 41 | 44 | 48 | — | — | — | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — | 47 | 50 | 55 | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | — | — | — | 50 | 55 | 60 | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — | 60 | 65 | 70 | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | — | — | — | 60 | 60 | 65 | — | — | — |
| H21 | — | — | — | — | — | — | — | — | — | — | — | — | 50 | 55 | 60 | — | — | — |

335.18/335.29 Round 12 - Insert selection

| SMG | | f_z | | |
|-----|---------------------------|-------|-------|------|
| | | 30% | 20% | 10% |
| P1 | RPHT1204M0T-6-ME07 F40M | 0,12 | 0,13 | 0,18 |
| P2 | RPHT1204M0T-6-ME07 F40M | 0,12 | 0,13 | 0,18 |
| P3 | RPHT1204M0T-6-M08 F40M | 0,13 | 0,15 | 0,19 |
| P4 | RPHT1204M0T-6-M08 F40M | 0,12 | 0,14 | 0,19 |
| P5 | RPHT1204M0T-6-M08 F40M | 0,12 | 0,14 | 0,19 |
| P6 | RPHT1204M0T-6-M08 F40M | 0,12 | 0,14 | 0,19 |
| P7 | RPHT1204M0T-6-M08 F40M | 0,12 | 0,14 | 0,19 |
| P8 | RPHT1204M0T-6-M08 MP2500 | 0,13 | 0,15 | 0,19 |
| P11 | RPHT1204M0T-6-M08 F40M | 0,12 | 0,14 | 0,19 |
| P12 | RPHT1204M0T-6-M08 F40M | 0,085 | 0,095 | 0,13 |
| M1 | RPHT1204M0T-6-ME07 F40M | 0,12 | 0,13 | 0,18 |
| M2 | RPHT1204M0T-6-ME07 F40M | 0,11 | 0,12 | 0,16 |
| M3 | RPHT1204M0T-6-M08 F40M | 0,10 | 0,11 | 0,15 |
| M4 | RPHT1204M0T-6-M08 F40M | 0,085 | 0,10 | 0,13 |
| M5 | RPHT1204M0T-6-M08 F40M | 0,085 | 0,10 | 0,13 |
| K1 | RPKW1204M0T-6-MD10 MK2050 | 0,17 | 0,19 | 0,26 |
| K2 | RPKW1204M0T-6-MD10 MK2050 | 0,15 | 0,18 | 0,24 |
| K3 | RPKW1204M0T-6-MD10 MK2050 | 0,15 | 0,18 | 0,24 |
| K4 | RPKW1204M0T-6-MD10 MK2050 | 0,15 | 0,18 | 0,24 |
| K5 | RPKW1204M0T-6-MD10 MK2050 | 0,14 | 0,16 | 0,22 |
| K6 | RPKW1204M0T-6-MD10 MK2050 | 0,15 | 0,18 | 0,24 |
| K7 | RPKW1204M0T-6-MD10 MK2050 | 0,14 | 0,16 | 0,22 |
| N1 | RPHT1204M0-6-E05 H25 | 0,11 | 0,12 | 0,16 |
| N2 | RPHT1204M0-6-E05 H25 | 0,11 | 0,12 | 0,16 |
| N3 | RPHT1204M0-6-E05 H25 | 0,11 | 0,12 | 0,16 |
| N11 | RPHT1204M0-6-E05 H25 | 0,11 | 0,12 | 0,16 |
| S1 | RPHT1204M0T-6-M08 F40M | 0,085 | 0,10 | 0,13 |
| S2 | RPHT1204M0T-6-M08 F40M | 0,085 | 0,10 | 0,13 |
| S3 | RPHT1204M0T-6-M08 F40M | 0,080 | 0,090 | 0,12 |
| S11 | RPHT1204M0T-6-ME07 F40M | 0,085 | 0,10 | 0,13 |
| S12 | RPHT1204M0T-6-ME07 F40M | 0,085 | 0,10 | 0,13 |
| S13 | RPHT1204M0T-6-M08 F40M | 0,085 | 0,10 | 0,13 |
| H5 | RPHW1204M0T-6-MD12 MH1000 | 0,12 | 0,14 | 0,19 |
| H8 | RPHW1204M0T-6-MD12 MH1000 | 0,095 | 0,11 | 0,15 |
| H11 | RPHT1204M0T-6-M13 F40M | 0,14 | 0,15 | 0,20 |
| H12 | RPHT1204M0T-6-M13 F40M | 0,10 | 0,12 | 0,16 |
| H21 | RPHW1204M0T-6-MD12 MH1000 | 0,095 | 0,11 | 0,15 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

335.18/335.29 Round 12 - Cutting data $v_c =$ (m/min)

| SMG | MP2500 | | | MP3000 | | | T350M | | | F40M | | |
|-----|--------|-----|-----|--------|------|------|-------|-----|-----|------|------|------|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 290 | 310 | 345 | 270 | 290 | 320 | 255 | 270 | 300 | 220 | 235 | 260 |
| P2 | 285 | 305 | 335 | 265 | 280 | 310 | 250 | 265 | 295 | 215 | 230 | 255 |
| P3 | 245 | 260 | 290 | 230 | 245 | 270 | 215 | 230 | 255 | 185 | 200 | 220 |
| P4 | 220 | 235 | 255 | 200 | 215 | 240 | 190 | 205 | 225 | 165 | 175 | 195 |
| P5 | 210 | 225 | 245 | 195 | 205 | 225 | 185 | 195 | 215 | 160 | 170 | 185 |
| P6 | 235 | 250 | 275 | 220 | 235 | 255 | 205 | 220 | 240 | 180 | 190 | 210 |
| P7 | 220 | 235 | 260 | 205 | 220 | 240 | 195 | 205 | 225 | 170 | 180 | 195 |
| P8 | 205 | 220 | 245 | 190 | 205 | 225 | 180 | 190 | 215 | 155 | 165 | 185 |
| P11 | 215 | 230 | 255 | 200 | 215 | 235 | 190 | 200 | 220 | 165 | 175 | 190 |
| P12 | 135 | 145 | 160 | 125 | 135 | 150 | 120 | 130 | 140 | 105 | 110 | 120 |
| M1 | 205 | 220 | 240 | 195 | 210 | 230 | 190 | 205 | 225 | 175 | 185 | 205 |
| M2 | 170 | 180 | 200 | 165 | 170 | 190 | 155 | 165 | 185 | 145 | 150 | 170 |
| M3 | 135 | 145 | 160 | 130 | 135 | 150 | 125 | 135 | 150 | 115 | 120 | 135 |
| M4 | 105 | 110 | 120 | 100 | 105 | 115 | 95 | 105 | 115 | 90 | 95 | 105 |
| M5 | 85 | 90 | 100 | 80 | 90 | 95 | 80 | 85 | 95 | 75 | 80 | 85 |
| K1 | 225 | 240 | 265 | 210 | 225 | 245 | 195 | 210 | 230 | 170 | 180 | 200 |
| K2 | 200 | 210 | 235 | 185 | 195 | 215 | 175 | 185 | 205 | 150 | 160 | 175 |
| K3 | 170 | 180 | 195 | 155 | 165 | 180 | 145 | 155 | 170 | 130 | 135 | 150 |
| K4 | 160 | 170 | 190 | 150 | 160 | 175 | 140 | 150 | 165 | 120 | 130 | 145 |
| K5 | 100 | 105 | 115 | 90 | 95 | 105 | 85 | 90 | 100 | 75 | 80 | 85 |
| K6 | 140 | 150 | 165 | 130 | 140 | 155 | 125 | 130 | 145 | 105 | 115 | 125 |
| K7 | 125 | 135 | 145 | 115 | 125 | 135 | 110 | 115 | 130 | 95 | 100 | 110 |
| N1 | — | — | — | 1550 | 1675 | 1850 | — | — | — | 1275 | 1350 | 1500 |
| N2 | — | — | — | 630 | 680 | 750 | — | — | — | 510 | 540 | 600 |
| N3 | — | — | — | 420 | 455 | 500 | — | — | — | 340 | 360 | 405 |
| N11 | — | — | — | 480 | 520 | 570 | — | — | — | 390 | 415 | 460 |
| S1 | — | — | — | 46 | 49 | 55 | 45 | 48 | 55 | 41 | 44 | 48 |
| S2 | — | — | — | 37 | 40 | 44 | 36 | 39 | 43 | 33 | 35 | 39 |
| S3 | — | — | — | 32 | 35 | 38 | 32 | 34 | 37 | 29 | 31 | 34 |
| S11 | — | — | — | 65 | 70 | 75 | 65 | 70 | 75 | 55 | 60 | 70 |
| S12 | — | — | — | 55 | 60 | 65 | 55 | 55 | 65 | 48 | 50 | 55 |
| S13 | — | — | — | 31 | 34 | 37 | 31 | 33 | 36 | 28 | 30 | 33 |
| H5 | 41 | 44 | 49 | 39 | 42 | 46 | 40 | 43 | 47 | 34 | 37 | 41 |
| H8 | 43 | 46 | 50 | 41 | 43 | 48 | 42 | 44 | 49 | 36 | 39 | 43 |
| H11 | 55 | 55 | 60 | 50 | 55 | 60 | 50 | 55 | 60 | 44 | 47 | 50 |
| H12 | 50 | 55 | 60 | 47 | 50 | 55 | 75 | 80 | 90 | 42 | 45 | 50 |
| H21 | 43 | 46 | 50 | 41 | 43 | 48 | 42 | 44 | 49 | 36 | 39 | 43 |

| SMG | MK2050 | | | MM4500 | | | MS2050 | | | H25 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|------|------|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 240 | 260 | 285 | 180 | 190 | 210 | — | — | — | — | — | — |
| P2 | 235 | 250 | 275 | 175 | 185 | 205 | — | — | — | — | — | — |
| P3 | 205 | 220 | 245 | 150 | 160 | 180 | — | — | — | — | — | — |
| P4 | 180 | 195 | 215 | 135 | 145 | 160 | — | — | — | — | — | — |
| P5 | 175 | 185 | 205 | 130 | 135 | 150 | — | — | — | — | — | — |
| P6 | 195 | 210 | 230 | 145 | 155 | 170 | — | — | — | — | — | — |
| P7 | 185 | 200 | 215 | 135 | 145 | 160 | 130 | 135 | 140 | — | — | — |
| P8 | 170 | 185 | 205 | 125 | 135 | 150 | 130 | 130 | 130 | — | — | — |
| P11 | 180 | 195 | 210 | 135 | 140 | 155 | 125 | 130 | 135 | — | — | — |
| P12 | 115 | 125 | 135 | 85 | 90 | 100 | 55 | 55 | 60 | — | — | — |
| M1 | — | — | — | 150 | 160 | 175 | 155 | 160 | 165 | — | — | — |
| M2 | — | — | — | 125 | 130 | 145 | 120 | 125 | 130 | — | — | — |
| M3 | — | — | — | 100 | 105 | 115 | 80 | 80 | 80 | — | — | — |
| M4 | — | — | — | 75 | 80 | 90 | 50 | 55 | 55 | — | — | — |
| M5 | — | — | — | 65 | 65 | 75 | 44 | 44 | 44 | — | — | — |
| K1 | 255 | 270 | 300 | — | — | — | — | — | — | — | — | — |
| K2 | 225 | 240 | 265 | — | — | — | — | — | — | — | — | — |
| K3 | 190 | 200 | 225 | — | — | — | — | — | — | — | — | — |
| K4 | 185 | 195 | 215 | — | — | — | — | — | — | — | — | — |
| K5 | 110 | 120 | 130 | — | — | — | — | — | — | — | — | — |
| K6 | 160 | 170 | 190 | — | — | — | — | — | — | — | — | — |
| K7 | 140 | 150 | 165 | — | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | 1375 | 1475 | 1625 |
| N2 | — | — | — | — | — | — | — | — | — | 550 | 600 | 660 |
| N3 | — | — | — | — | — | — | — | — | — | 370 | 400 | 440 |
| N11 | — | — | — | — | — | — | — | — | — | 420 | 455 | 500 |
| S1 | — | — | — | 23 | 25 | 27 | 55 | 60 | 60 | — | — | — |
| S2 | — | — | — | 19 | 20 | 22 | 44 | 46 | 50 | — | — | — |
| S3 | — | — | — | 16 | 17 | 19 | 39 | 41 | 44 | — | — | — |
| S11 | — | — | — | 32 | 35 | 38 | 75 | 80 | 85 | — | — | — |
| S12 | — | — | — | 30 | 32 | 35 | 70 | 75 | 80 | — | — | — |
| S13 | — | — | — | 17 | 18 | 21 | 41 | 43 | 47 | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | — | — | — | — | — | — | — | — | — | — | — | — |

335.25 Round 16 - Insert selection

| SMG | | f _z | | |
|-----|------------------------|----------------|------|------|
| | | 30% | 20% | 10% |
| P1 | RPHT1605M0T-ME11 F40M | 0,19 | 0,22 | 0,28 |
| P2 | RPHT1605M0T-ME11 F40M | 0,19 | 0,22 | 0,30 |
| P3 | RPHT1605M0T-ME11 F40M | 0,18 | 0,20 | 0,28 |
| P4 | RPHT1605M0T-M12 F40M | 0,19 | 0,22 | 0,30 |
| P5 | RPHT1605M0T-M12 F40M | 0,19 | 0,22 | 0,28 |
| P6 | RPHT1605M0T-M12 F40M | 0,19 | 0,22 | 0,28 |
| P7 | RPHT1605M0T-M12 MP2500 | 0,19 | 0,22 | 0,28 |
| P8 | RPHT1605M0T-M12 MP2500 | 0,20 | 0,22 | 0,30 |
| P11 | RPHT1605M0T-M12 F40M | 0,19 | 0,22 | 0,28 |
| M1 | RPHT1605M0T-ME11 F40M | 0,19 | 0,22 | 0,30 |
| M2 | RPHT1605M0T-ME11 F40M | 0,17 | 0,20 | 0,26 |
| M3 | RPHT1605M0T-M12 F40M | 0,15 | 0,17 | 0,24 |
| M4 | RPHT1605M0T-M12 F40M | 0,13 | 0,15 | 0,20 |
| M5 | RPHT1605M0T-M12 F40M | 0,13 | 0,15 | 0,20 |
| K1 | RPHT1605M0T-M18 MK2050 | 0,26 | 0,30 | 0,40 |
| K2 | RPHT1605M0T-M18 MK2050 | 0,24 | 0,26 | 0,36 |
| K3 | RPHT1605M0T-M18 MK2050 | 0,24 | 0,26 | 0,36 |
| K4 | RPHT1605M0T-M18 MK2050 | 0,24 | 0,26 | 0,36 |
| K5 | RPHT1605M0T-M18 MK2050 | 0,22 | 0,24 | 0,32 |
| K6 | RPHT1605M0T-M18 MK2050 | 0,24 | 0,26 | 0,36 |
| K7 | RPHT1605M0T-M18 MK2050 | 0,22 | 0,24 | 0,32 |
| N1 | RPKT1605M0T-ME11 F40M | 0,24 | 0,28 | 0,36 |
| N2 | RPKT1605M0T-ME11 F40M | 0,24 | 0,28 | 0,36 |
| N3 | RPKT1605M0T-ME11 F40M | 0,24 | 0,28 | 0,36 |
| N11 | RPKT1605M0T-ME11 F40M | 0,24 | 0,28 | 0,36 |
| S1 | RPHT1605M0T-M12 F40M | 0,13 | 0,15 | 0,20 |
| S2 | RPHT1605M0T-M12 F40M | 0,13 | 0,15 | 0,20 |
| S3 | RPHT1605M0T-M12 F40M | 0,12 | 0,14 | 0,19 |
| S11 | RPHT1605M0T-ME11 F40M | 0,14 | 0,16 | 0,22 |
| S12 | RPHT1605M0T-ME11 F40M | 0,14 | 0,16 | 0,22 |
| H5 | RPKW1605M0T-MD20 F15M | 0,22 | 0,24 | 0,32 |
| H8 | RPKW1605M0T-MD20 F15M | 0,16 | 0,19 | 0,24 |
| H11 | RPKW1605M0T-MD20 F15M | 0,22 | 0,24 | 0,32 |
| H12 | RPKW1605M0T-MD20 F15M | 0,22 | 0,24 | 0,32 |
| H21 | RPKW1605M0T-MD20 F15M | 0,16 | 0,19 | 0,24 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_φ/DC = %

All cutting data are start values

335.25 Round 16 - Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | T350M | | | F15M | | | F25M | | | F30M | | |
|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|------|-----|-----|------|------|------|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 255 | 275 | 310 | 245 | 260 | 290 | 215 | 225 | 250 | — | — | — | 190 | 205 | 230 | 190 | 205 | 230 |
| P2 | 250 | 270 | 295 | 240 | 255 | 280 | 210 | 220 | 245 | — | — | — | 185 | 200 | 220 | 185 | 200 | 220 |
| P3 | 220 | 235 | 260 | 205 | 225 | 245 | 180 | 195 | 215 | — | — | — | 165 | 175 | 190 | 165 | 175 | 190 |
| P4 | 195 | 205 | 230 | 185 | 195 | 215 | 160 | 170 | 190 | — | — | — | 145 | 155 | 170 | 145 | 155 | 170 |
| P5 | 185 | 200 | 220 | 175 | 185 | 210 | 155 | 165 | 185 | — | — | — | 135 | 150 | 165 | 135 | 150 | 165 |
| P6 | 210 | 225 | 250 | 195 | 210 | 235 | 170 | 185 | 205 | — | — | — | 155 | 165 | 185 | 155 | 165 | 185 |
| P7 | 195 | 215 | 235 | 185 | 200 | 220 | 160 | 175 | 195 | — | — | — | 145 | 160 | 175 | 150 | 155 | 175 |
| P8 | 185 | 200 | 220 | 175 | 185 | 205 | 150 | 165 | 180 | — | — | — | 135 | 145 | 160 | 135 | 145 | 160 |
| P11 | 190 | 210 | 230 | 180 | 195 | 215 | 155 | 170 | 190 | — | — | — | 140 | 155 | 170 | 145 | 155 | 170 |
| P12 | 125 | 135 | 150 | 115 | 125 | 140 | 100 | 110 | 120 | — | — | — | 95 | 100 | 110 | 90 | 95 | 110 |
| M1 | — | — | — | 170 | 180 | 200 | 160 | 170 | 190 | — | — | — | — | — | — | 150 | 160 | 175 |
| M2 | — | — | — | 140 | 150 | 170 | 130 | 140 | 155 | — | — | — | — | — | — | 125 | 135 | 145 |
| M3 | — | — | — | 115 | 120 | 135 | 105 | 115 | 125 | — | — | — | — | — | — | 100 | 105 | 120 |
| M4 | — | — | — | 90 | 95 | 105 | 85 | 90 | 100 | — | — | — | — | — | — | 75 | 80 | 90 |
| M5 | — | — | — | 75 | 80 | 85 | 70 | 75 | 80 | — | — | — | — | — | — | 65 | 70 | 75 |
| K1 | 200 | 210 | 235 | 190 | 200 | 220 | 165 | 175 | 195 | 130 | 140 | 155 | 145 | 155 | 175 | 150 | 160 | 175 |
| K2 | 175 | 190 | 210 | 165 | 180 | 200 | 145 | 155 | 175 | 115 | 125 | 140 | 130 | 140 | 155 | 130 | 140 | 155 |
| K3 | 150 | 160 | 180 | 140 | 150 | 170 | 125 | 130 | 145 | 100 | 105 | 120 | 110 | 120 | 130 | 110 | 120 | 130 |
| K4 | 140 | 155 | 170 | 135 | 145 | 160 | 115 | 125 | 140 | 95 | 100 | 110 | 105 | 115 | 125 | 105 | 115 | 125 |
| K5 | 85 | 95 | 105 | 80 | 90 | 100 | 70 | 75 | 85 | 60 | 60 | 70 | 65 | 70 | 75 | 65 | 70 | 75 |
| K6 | 125 | 135 | 150 | 120 | 125 | 140 | 105 | 110 | 125 | 85 | 90 | 100 | 90 | 100 | 110 | 95 | 100 | 110 |
| K7 | 110 | 120 | 135 | 105 | 115 | 125 | 90 | 100 | 110 | 75 | 80 | 90 | 80 | 90 | 100 | 85 | 90 | 100 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1100 | 1175 | 1325 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 445 | 475 | 530 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 295 | 320 | 355 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 335 | 365 | 405 |
| S1 | — | — | — | — | — | — | 39 | 41 | 46 | — | — | — | 37 | 39 | 43 | 36 | 38 | 42 |
| S2 | — | — | — | — | — | — | 31 | 33 | 37 | — | — | — | 30 | 31 | 34 | 29 | 31 | 34 |
| S3 | — | — | — | — | — | — | 27 | 29 | 32 | — | — | — | 26 | 27 | 30 | 25 | 27 | 30 |
| S11 | — | — | — | — | — | — | 55 | 60 | 65 | — | — | — | 50 | 55 | 60 | 50 | 55 | 60 |
| S12 | — | — | — | — | — | — | 45 | 49 | 55 | — | — | — | 43 | 45 | 50 | 42 | 46 | 50 |
| S13 | — | — | — | — | — | — | 26 | 28 | 31 | — | — | — | 25 | 27 | 29 | 24 | 26 | 29 |
| H5 | 42 | 45 | 50 | 35 | 38 | 42 | 34 | 36 | 40 | 28 | 30 | 33 | 31 | 33 | 37 | 30 | 32 | 36 |
| H8 | 45 | 48 | 50 | 37 | 40 | 44 | 36 | 39 | 43 | 30 | 32 | 36 | 33 | 35 | 39 | 32 | 34 | 37 |
| H11 | 55 | 55 | 65 | 45 | 48 | 55 | 43 | 46 | 50 | 35 | 38 | 42 | 39 | 42 | 47 | 39 | 41 | 45 |
| H12 | 50 | 55 | 60 | 44 | 47 | 50 | 65 | 70 | 75 | 35 | 37 | 42 | 38 | 41 | 45 | 37 | 39 | 44 |
| H21 | 45 | 48 | 50 | 37 | 40 | 44 | 36 | 39 | 43 | 30 | 32 | 36 | 33 | 35 | 39 | 32 | 34 | 37 |

| SMG | F40M | | | MK2050 | | | MM4500 | | | MS2050 | | | MS2500 | | |
|-----|------|------|------|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 185 | 195 | 220 | 225 | 240 | 270 | 150 | 160 | 175 | 205 | 210 | 220 | 270 | 285 | 315 |
| P2 | 180 | 190 | 210 | 220 | 235 | 260 | 145 | 155 | 170 | 200 | 205 | 215 | 260 | 275 | 305 |
| P3 | 155 | 170 | 185 | 195 | 205 | 225 | 125 | 135 | 150 | 170 | 170 | 185 | 225 | 245 | 265 |
| P4 | 140 | 150 | 165 | 170 | 180 | 200 | 115 | 120 | 130 | 150 | 150 | 160 | 200 | 215 | 235 |
| P5 | 135 | 140 | 160 | 160 | 175 | 195 | 110 | 115 | 130 | 140 | 145 | 150 | 190 | 205 | 230 |
| P6 | 150 | 160 | 180 | 180 | 200 | 215 | 120 | 130 | 145 | 155 | 160 | 170 | 215 | 230 | 255 |
| P7 | 140 | 150 | 170 | 170 | 185 | 205 | 115 | 120 | 135 | 150 | 155 | 160 | 205 | 215 | 240 |
| P8 | 130 | 140 | 155 | 160 | 175 | 190 | 105 | 115 | 125 | 140 | 145 | 155 | 190 | 205 | 225 |
| P11 | 135 | 145 | 165 | 165 | 180 | 200 | 110 | 120 | 135 | 145 | 150 | 155 | 195 | 210 | 235 |
| P12 | 90 | 95 | 105 | 110 | 120 | 130 | 70 | 75 | 85 | 75 | 70 | 75 | 130 | 135 | 150 |
| M1 | 145 | 155 | 170 | — | — | — | 125 | 135 | 145 | 175 | 180 | 190 | 185 | 200 | 220 |
| M2 | 120 | 130 | 145 | — | — | — | 105 | 110 | 125 | 135 | 140 | 145 | 155 | 165 | 185 |
| M3 | 95 | 105 | 115 | — | — | — | 85 | 90 | 100 | 95 | 100 | 105 | 125 | 135 | 145 |
| M4 | 75 | 80 | 90 | — | — | — | 65 | 70 | 75 | 65 | 70 | 70 | 95 | 105 | 115 |
| M5 | 65 | 65 | 75 | — | — | — | 55 | 60 | 65 | 55 | 55 | 55 | 80 | 85 | 95 |
| K1 | 145 | 150 | 170 | 235 | 250 | 280 | — | — | — | — | — | — | — | — | — |
| K2 | 125 | 135 | 150 | 210 | 230 | 250 | — | — | — | — | — | — | — | — | — |
| K3 | 105 | 115 | 130 | 175 | 195 | 210 | — | — | — | — | — | — | — | — | — |
| K4 | 100 | 110 | 120 | 170 | 185 | 200 | — | — | — | — | — | — | — | — | — |
| K5 | 60 | 65 | 75 | 105 | 110 | 125 | — | — | — | — | — | — | — | — | — |
| K6 | 90 | 95 | 105 | 150 | 160 | 180 | — | — | — | — | — | — | — | — | — |
| K7 | 80 | 85 | 95 | 130 | 145 | 160 | — | — | — | — | — | — | — | — | — |
| N1 | 1050 | 1125 | 1250 | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | 425 | 455 | 500 | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | 285 | 305 | 335 | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | 325 | 345 | 385 | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | 35 | 37 | 41 | — | — | — | 20 | 21 | 23 | 48 | 50 | 55 | 47 | 50 | 55 |
| S2 | 28 | 30 | 33 | — | — | — | 16 | 17 | 19 | 39 | 41 | 45 | 38 | 40 | 45 |
| S3 | 25 | 26 | 29 | — | — | — | 14 | 15 | 16 | 34 | 36 | 39 | 33 | 35 | 39 |
| S11 | 49 | 50 | 55 | — | — | — | 28 | 30 | 32 | 65 | 70 | 75 | 65 | 70 | 75 |
| S12 | 41 | 44 | 48 | — | — | — | 26 | 27 | 30 | 60 | 65 | 70 | 55 | 60 | 65 |
| S13 | 24 | 26 | 28 | — | — | — | 15 | 16 | 18 | 36 | 38 | 42 | 32 | 34 | 38 |
| H5 | 29 | 31 | 35 | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | 31 | 34 | 37 | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | 38 | 40 | 44 | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | 36 | 39 | 43 | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | 31 | 34 | 37 | — | — | — | — | — | — | — | — | — | — | — | — |

335.25 Round 20 - Insert selection

| SMG | | f _z | | |
|-----|------------------------|----------------|------|------|
| | | 30% | 20% | 10% |
| P1 | RPHT2006M0T-ME12 F40M | 0,20 | 0,24 | 0,32 |
| P2 | RPHT2006M0T-ME12 F40M | 0,20 | 0,24 | 0,32 |
| P3 | RPHT2006M0T-ME12 F40M | 0,20 | 0,22 | 0,30 |
| P4 | RPHT2006M0T-ME12 F40M | 0,19 | 0,22 | 0,30 |
| P5 | RPKT2006M0T-M15 F40M | 0,24 | 0,28 | 0,36 |
| P6 | RPKT2006M0T-M15 F40M | 0,24 | 0,26 | 0,36 |
| P7 | RPKT2006M0T-M15 MP2500 | 0,24 | 0,26 | 0,36 |
| P8 | RPKT2006M0T-M15 MP2500 | 0,24 | 0,28 | 0,38 |
| P11 | RPHT2006M0T-ME12 F40M | 0,19 | 0,22 | 0,28 |
| M1 | RPHT2006M0T-ME12 F40M | 0,20 | 0,24 | 0,32 |
| M2 | RPHT2006M0T-ME12 F40M | 0,19 | 0,22 | 0,28 |
| M3 | RPHT2006M0T-ME12 F40M | 0,15 | 0,17 | 0,24 |
| M4 | RPHT2006M0T-ME12 F40M | 0,13 | 0,15 | 0,20 |
| M5 | RPHT2006M0T-ME12 F40M | 0,13 | 0,15 | 0,20 |
| K1 | RPKT2006M0T-M20 MK2050 | 0,26 | 0,30 | 0,40 |
| K2 | RPKT2006M0T-M20 MK2050 | 0,24 | 0,28 | 0,36 |
| K3 | RPKT2006M0T-M20 MK2050 | 0,24 | 0,28 | 0,36 |
| K4 | RPKT2006M0T-M20 MK2050 | 0,24 | 0,28 | 0,36 |
| K5 | RPKT2006M0T-M20 MK2050 | 0,22 | 0,24 | 0,32 |
| K6 | RPKT2006M0T-M20 MK2050 | 0,24 | 0,28 | 0,36 |
| K7 | RPKT2006M0T-M20 MK2050 | 0,22 | 0,24 | 0,32 |
| N1 | RPHT2006M0T-ME12 F40M | 0,26 | 0,30 | 0,40 |
| N2 | RPHT2006M0T-ME12 F40M | 0,26 | 0,30 | 0,40 |
| N3 | RPHT2006M0T-ME12 F40M | 0,26 | 0,30 | 0,40 |
| N11 | RPHT2006M0T-ME12 F40M | 0,26 | 0,30 | 0,40 |
| S1 | RPHT2006M0T-ME12 F40M | 0,13 | 0,15 | 0,20 |
| S2 | RPHT2006M0T-ME12 F40M | 0,13 | 0,15 | 0,20 |
| S3 | RPHT2006M0T-ME12 F40M | 0,12 | 0,14 | 0,19 |
| S11 | RPHT2006M0T-ME12 F40M | 0,15 | 0,17 | 0,24 |
| S12 | RPHT2006M0T-ME12 F40M | 0,15 | 0,17 | 0,24 |
| H5 | RPKW2006M0T-MD22 F15M | 0,24 | 0,26 | 0,36 |
| H8 | RPKW2006M0T-MD22 F15M | 0,18 | 0,20 | 0,28 |
| H11 | RPKW2006M0T-MD22 F15M | 0,24 | 0,26 | 0,36 |
| H12 | RPKW2006M0T-MD22 F15M | 0,24 | 0,26 | 0,36 |
| H21 | RPKW2006M0T-MD22 F15M | 0,18 | 0,20 | 0,28 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_φ/DC = %

All cutting data are start values

Disc milling cutters



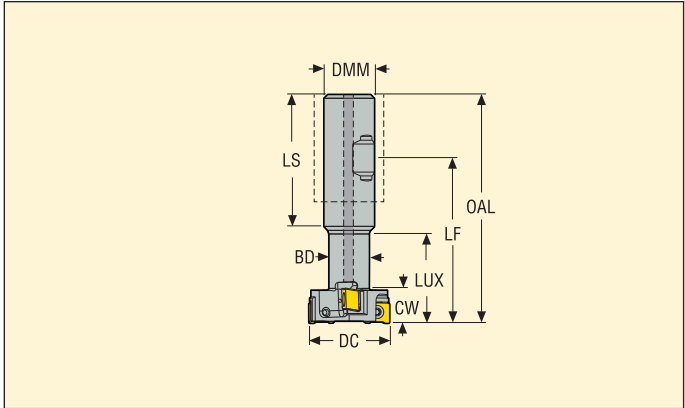
335.25 Round 20 - Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | T350M | | | F15M | | | F25M | | | F30M | | |
|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|------|-----|-----|------|------|------|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 255 | 275 | 310 | 230 | 245 | 275 | 200 | 210 | 240 | — | — | — | 190 | 205 | 230 | 180 | 195 | 215 |
| P2 | 250 | 270 | 295 | 220 | 235 | 265 | 195 | 205 | 230 | — | — | — | 185 | 200 | 220 | 175 | 190 | 210 |
| P3 | 220 | 235 | 260 | 195 | 210 | 230 | 170 | 180 | 200 | — | — | — | 165 | 175 | 190 | 155 | 165 | 185 |
| P4 | 195 | 205 | 230 | 170 | 185 | 205 | 150 | 160 | 180 | — | — | — | 145 | 155 | 170 | 135 | 145 | 160 |
| P5 | 185 | 200 | 220 | 165 | 175 | 195 | 145 | 155 | 170 | — | — | — | 135 | 145 | 165 | 130 | 140 | 155 |
| P6 | 210 | 225 | 250 | 185 | 200 | 220 | 160 | 175 | 190 | — | — | — | 155 | 165 | 185 | 145 | 155 | 175 |
| P7 | 195 | 215 | 235 | 175 | 190 | 210 | 150 | 165 | 180 | — | — | — | 145 | 160 | 175 | 140 | 150 | 165 |
| P8 | 185 | 200 | 220 | 165 | 175 | 195 | 145 | 155 | 170 | — | — | — | 135 | 145 | 160 | 130 | 140 | 155 |
| P11 | 190 | 210 | 230 | 170 | 185 | 200 | 145 | 160 | 175 | — | — | — | 140 | 155 | 170 | 135 | 145 | 160 |
| P12 | 125 | 135 | 150 | 110 | 120 | 130 | 95 | 105 | 115 | — | — | — | 95 | 100 | 110 | 85 | 95 | 105 |
| M1 | — | — | — | 160 | 170 | 190 | 150 | 160 | 175 | — | — | — | — | — | — | 145 | 150 | 170 |
| M2 | — | — | — | 130 | 140 | 160 | 125 | 130 | 145 | — | — | — | — | — | — | 115 | 125 | 140 |
| M3 | — | — | — | 105 | 115 | 130 | 100 | 105 | 120 | — | — | — | — | — | — | 95 | 100 | 110 |
| M4 | — | — | — | 85 | 90 | 100 | 80 | 85 | 90 | — | — | — | — | — | — | 75 | 80 | 85 |
| M5 | — | — | — | 70 | 75 | 80 | 65 | 70 | 75 | — | — | — | — | — | — | 60 | 65 | 70 |
| K1 | 200 | 210 | 235 | 175 | 190 | 210 | 155 | 165 | 180 | 125 | 135 | 150 | 145 | 155 | 175 | 140 | 150 | 165 |
| K2 | 175 | 190 | 210 | 155 | 165 | 185 | 135 | 145 | 160 | 115 | 120 | 135 | 130 | 140 | 155 | 125 | 135 | 145 |
| K3 | 150 | 160 | 180 | 130 | 140 | 155 | 115 | 125 | 135 | 95 | 105 | 115 | 110 | 115 | 130 | 105 | 110 | 125 |
| K4 | 140 | 150 | 170 | 125 | 135 | 150 | 110 | 115 | 130 | 90 | 100 | 110 | 105 | 110 | 125 | 100 | 105 | 120 |
| K5 | 85 | 95 | 105 | 75 | 85 | 90 | 65 | 75 | 80 | 55 | 60 | 65 | 65 | 70 | 75 | 60 | 65 | 70 |
| K6 | 125 | 135 | 150 | 110 | 120 | 130 | 95 | 105 | 115 | 80 | 85 | 95 | 90 | 100 | 110 | 90 | 95 | 105 |
| K7 | 110 | 120 | 135 | 100 | 105 | 120 | 85 | 95 | 105 | 70 | 75 | 85 | 80 | 90 | 100 | 80 | 85 | 90 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1050 | 1100 | 1225 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 420 | 445 | 495 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 280 | 295 | 330 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 320 | 340 | 380 |
| S1 | — | — | — | — | — | — | 37 | 39 | 43 | — | — | — | 37 | 39 | 43 | 34 | 36 | 40 |
| S2 | — | — | — | — | — | — | 30 | 31 | 34 | — | — | — | 30 | 31 | 34 | 28 | 29 | 32 |
| S3 | — | — | — | — | — | — | 26 | 27 | 30 | — | — | — | 26 | 27 | 30 | 24 | 26 | 28 |
| S11 | — | — | — | — | — | — | 50 | 55 | 60 | — | — | — | 50 | 55 | 60 | 48 | 50 | 55 |
| S12 | — | — | — | — | — | — | 43 | 45 | 50 | — | — | — | 43 | 45 | 50 | 40 | 43 | 48 |
| S13 | — | — | — | — | — | — | 25 | 27 | 29 | — | — | — | 25 | 27 | 29 | 23 | 25 | 27 |
| H5 | 42 | 45 | 50 | 34 | 36 | 40 | 32 | 35 | 38 | 27 | 29 | 32 | 31 | 33 | 37 | 29 | 31 | 34 |
| H8 | 45 | 48 | 50 | 36 | 38 | 42 | 35 | 37 | 40 | 29 | 31 | 34 | 33 | 35 | 39 | 31 | 32 | 36 |
| H11 | 55 | 55 | 65 | 43 | 46 | 50 | 41 | 44 | 49 | 34 | 37 | 41 | 39 | 42 | 47 | 37 | 39 | 44 |
| H12 | 50 | 55 | 60 | 42 | 45 | 49 | 60 | 65 | 75 | 34 | 37 | 40 | 38 | 41 | 45 | 36 | 38 | 42 |
| H21 | 45 | 48 | 50 | 36 | 38 | 42 | 35 | 37 | 40 | 29 | 31 | 34 | 33 | 35 | 39 | 31 | 32 | 36 |

| SMG | F40M | | | MK2050 | | | MM4500 | | | MS2050 | | | MS2500 | | | T25M | | |
|-----|------|------|------|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|-----|-----|
| | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% | 30% | 20% | 10% |
| P1 | 195 | 205 | 225 | 225 | 240 | 270 | 155 | 165 | 185 | 205 | 210 | 225 | 250 | 265 | 300 | 210 | 225 | 250 |
| P2 | 190 | 200 | 220 | 220 | 235 | 260 | 150 | 160 | 180 | 200 | 205 | 220 | 240 | 260 | 285 | 205 | 220 | 240 |
| P3 | 160 | 175 | 190 | 195 | 205 | 225 | 130 | 140 | 155 | 170 | 175 | 185 | 215 | 225 | 250 | 175 | 190 | 210 |
| P4 | 145 | 155 | 170 | 170 | 180 | 200 | 115 | 125 | 135 | 150 | 155 | 165 | 190 | 200 | 225 | 160 | 170 | 185 |
| P5 | 140 | 145 | 165 | 160 | 175 | 195 | 110 | 120 | 135 | 140 | 145 | 155 | 180 | 190 | 215 | 150 | 160 | 180 |
| P6 | 155 | 165 | 185 | 180 | 200 | 215 | 125 | 135 | 150 | 160 | 165 | 170 | 200 | 220 | 240 | 170 | 180 | 205 |
| P7 | 145 | 155 | 175 | 170 | 185 | 205 | 120 | 125 | 140 | 150 | 155 | 165 | 190 | 205 | 225 | 160 | 170 | 190 |
| P8 | 135 | 145 | 160 | 160 | 175 | 190 | 110 | 120 | 130 | 145 | 145 | 155 | 180 | 190 | 210 | 150 | 160 | 180 |
| P11 | 140 | 150 | 170 | 165 | 180 | 200 | 115 | 120 | 135 | 145 | 150 | 160 | 185 | 200 | 220 | 155 | 165 | 185 |
| M1 | 150 | 160 | 175 | — | — | — | 130 | 140 | 155 | 175 | 180 | 190 | 175 | 185 | 205 | 165 | 175 | 195 |
| M2 | 125 | 130 | 150 | — | — | — | 105 | 115 | 130 | 140 | 145 | 150 | 145 | 155 | 170 | 135 | 145 | 165 |
| M3 | 100 | 105 | 115 | — | — | — | 85 | 95 | 100 | 100 | 100 | 110 | 115 | 125 | 140 | 110 | 120 | 130 |
| M4 | 80 | 85 | 90 | — | — | — | 65 | 70 | 80 | 70 | 70 | 75 | 90 | 95 | 105 | 85 | 90 | 100 |
| M5 | 65 | 70 | 75 | — | — | — | 55 | 60 | 65 | 60 | 60 | 60 | 75 | 80 | 90 | 70 | 75 | 85 |
| K1 | 150 | 155 | 175 | 235 | 250 | 280 | — | — | — | — | — | — | — | — | — | — | — | — |
| K2 | 130 | 140 | 155 | 210 | 225 | 250 | — | — | — | — | — | — | — | — | — | — | — | — |
| K3 | 110 | 120 | 130 | 175 | 190 | 210 | — | — | — | — | — | — | — | — | — | — | — | — |
| K4 | 105 | 115 | 125 | 170 | 180 | 200 | — | — | — | — | — | — | — | — | — | — | — | — |
| K5 | 65 | 70 | 75 | 105 | 110 | 125 | — | — | — | — | — | — | — | — | — | — | — | — |
| K6 | 95 | 100 | 110 | 150 | 160 | 180 | — | — | — | — | — | — | — | — | — | — | — | — |
| K7 | 85 | 90 | 100 | 130 | 145 | 160 | — | — | — | — | — | — | — | — | — | — | — | — |
| N1 | 1100 | 1175 | 1300 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | 440 | 470 | 520 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | 295 | 315 | 350 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | 335 | 360 | 400 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | 36 | 39 | 43 | — | — | — | 21 | 22 | 24 | 46 | 49 | 55 | 45 | 47 | 50 | — | — | — |
| S2 | 29 | 31 | 35 | — | — | — | 17 | 18 | 20 | 37 | 39 | 43 | 36 | 38 | 42 | — | — | — |
| S3 | 26 | 27 | 30 | — | — | — | 15 | 15 | 17 | 33 | 35 | 37 | 32 | 33 | 37 | — | — | — |
| S11 | 50 | 55 | 60 | — | — | — | 29 | 31 | 34 | 60 | 65 | 70 | 60 | 65 | 75 | — | — | — |
| S12 | 43 | 46 | 50 | — | — | — | 26 | 28 | 31 | 55 | 60 | 65 | 50 | 55 | 60 | — | — | — |
| S13 | 25 | 26 | 29 | — | — | — | 15 | 16 | 18 | 34 | 36 | 40 | 31 | 32 | 36 | — | — | — |
| H5 | 31 | 33 | 36 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | 32 | 35 | 38 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | 39 | 41 | 46 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | 38 | 40 | 45 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | 32 | 35 | 38 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

R335.16

T-slot milling



- For insert selection and cutting data recommendations, see page(s) 307 - 309
- For complete insert programme, see page(s) 646, 677

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | ZEFP | kg | Insert | |
|-----------------------|------------------|------------------|------|------|------|------|------|-------|------|------|---|------|-----|--------|----------|
| | | CW | DC | BD | DMM | LS | LF | OAL | LUX | LC | | | | | |
| R335.16-1625.3-11.2NA | Cyl.-Weldon | 10,91 | 25,0 | 12,0 | 16,0 | 49,0 | 56,0 | 80,0 | 28,4 | 49,0 | 4 | 2 | 0,2 | 24500 | SPMX07.. |
| R335.16-2032.3-14.2NA | Cyl.-Weldon | 13,91 | 32,0 | 16,0 | 20,0 | 52,0 | 65,0 | 90,0 | 35,4 | 52,0 | 4 | 2 | 0,2 | 17600 | LNK.08.. |
| R335.16-2540.3-18.2NA | Cyl.-Weldon | 17,91 | 40,0 | 20,0 | 25,0 | 58,0 | 73,0 | 105,0 | 43,7 | 58,0 | 5 | 2 | 0,4 | 14600 | LNK.08.. |
| R335.16-3250.3-21.2NA | Cyl.-Weldon | 21,0 | 50,0 | 26,0 | 32,0 | 61,0 | 84,0 | 120,0 | 55,2 | 61,0 | 6 | 2 | 0,7 | 9800 | LNK.08.. |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| ø 25 | DOUBLE-T | C02506-T07P | H4B-T07P | 1,2 |
| ø 32-50 | DOUBLE-T | C73007-T09P | H4B-T09P | 2,0 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Technical information

For best result it is recommended to let a stock allowance when machining the T-slot shank passage $H = \min 20\%$ of the CW at the bottom of the T-slot.
 $H = 0.2 \times CW$

Please check availability in current price and stock-list

Torque keys, see page 732

335.16 - SP07 - Insert selection

| SMG | | f _z | | |
|-----|--------------------|----------------|-------|-------|
| | | 100% | 20% | 10% |
| P1 | SPMX070304-75 F40M | 0,085 | 0,11 | 0,14 |
| P2 | SPMX070304-75 F40M | 0,085 | 0,11 | 0,14 |
| P3 | SPMX070304-75 F40M | 0,080 | 0,10 | 0,14 |
| P4 | SPMX070304-75 F40M | 0,080 | 0,10 | 0,13 |
| P5 | SPMX070304-75 F40M | 0,080 | 0,10 | 0,13 |
| P6 | SPMX070304-75 F40M | 0,075 | 0,095 | 0,13 |
| P7 | SPMX070304-75 F40M | 0,075 | 0,095 | 0,13 |
| P8 | SPMX070304-75 F40M | 0,080 | 0,10 | 0,14 |
| P11 | SPMX070304-75 F40M | 0,075 | 0,095 | 0,13 |
| P12 | SPMX070304-75 F40M | 0,055 | 0,065 | 0,090 |
| M1 | SPMX070304-75 F40M | 0,085 | 0,11 | 0,14 |
| M2 | SPMX070304-75 F40M | 0,080 | 0,10 | 0,13 |
| M3 | SPMX070304-75 F40M | 0,060 | 0,080 | 0,10 |
| M4 | SPMX070304-75 F40M | 0,055 | 0,070 | 0,090 |
| M5 | SPMX070304-75 F40M | 0,055 | 0,070 | 0,090 |
| K1 | SPMX070304-75 F40M | 0,085 | 0,11 | 0,14 |
| K2 | SPMX070304-75 F40M | 0,080 | 0,10 | 0,13 |
| K3 | SPMX070304-75 F40M | 0,080 | 0,10 | 0,13 |
| K4 | SPMX070304-75 F40M | 0,080 | 0,10 | 0,13 |
| K5 | SPMX070304-75 F40M | 0,070 | 0,090 | 0,12 |
| K6 | SPMX070304-75 F40M | 0,080 | 0,10 | 0,13 |
| K7 | SPMX070304-75 F40M | 0,070 | 0,090 | 0,12 |
| N1 | SPMX070304-75 F40M | 0,11 | 0,14 | 0,18 |
| N2 | SPMX070304-75 F40M | 0,11 | 0,14 | 0,18 |
| N3 | SPMX070304-75 F40M | 0,11 | 0,14 | 0,18 |
| N11 | SPMX070304-75 F40M | 0,11 | 0,14 | 0,18 |
| S1 | SPMX070304-75 F40M | 0,055 | 0,070 | 0,090 |
| S2 | SPMX070304-75 F40M | 0,055 | 0,070 | 0,090 |
| S3 | SPMX070304-75 F40M | 0,050 | 0,065 | 0,085 |
| S11 | SPMX070304-75 F40M | 0,060 | 0,080 | 0,10 |
| S12 | SPMX070304-75 F40M | 0,060 | 0,080 | 0,10 |
| S13 | SPMX070304-75 F40M | 0,055 | 0,070 | 0,090 |
| H5 | SPMX070304-75 F40M | 0,055 | 0,065 | 0,090 |
| H8 | SPMX070304-75 F40M | 0,040 | 0,050 | 0,070 |
| H11 | SPMX070304-75 F40M | 0,055 | 0,065 | 0,090 |
| H12 | SPMX070304-75 F40M | 0,040 | 0,050 | 0,070 |
| H21 | SPMX070304-75 F40M | 0,040 | 0,050 | 0,070 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

335.16 - SP07 - Cutting data $v_c =$ (m/min)

| SMG | F40M | | | T25M | | |
|-----|------|------|------|------|------|------|
| | 100% | 20% | 10% | 100% | 20% | 10% |
| P1 | 175 | 250 | 275 | 195 | 275 | 305 |
| P2 | 170 | 240 | 270 | 190 | 265 | 295 |
| P3 | 150 | 210 | 230 | 165 | 235 | 255 |
| P4 | 130 | 185 | 210 | 145 | 205 | 230 |
| P5 | 125 | 180 | 200 | 140 | 195 | 220 |
| P6 | 145 | 205 | 225 | 160 | 225 | 245 |
| P7 | 135 | 190 | 210 | 150 | 210 | 230 |
| P8 | 125 | 180 | 195 | 140 | 195 | 215 |
| P11 | 130 | 185 | 205 | 145 | 205 | 225 |
| P12 | 85 | 120 | 130 | 90 | 130 | 145 |
| M1 | 140 | 195 | 215 | 155 | 215 | 240 |
| M2 | 115 | 160 | 180 | 125 | 175 | 195 |
| M3 | 95 | 130 | 145 | 100 | 140 | 160 |
| M4 | 70 | 100 | 110 | 80 | 110 | 120 |
| M5 | 60 | 85 | 90 | 65 | 90 | 100 |
| K1 | 135 | 190 | 215 | 150 | 210 | 235 |
| K2 | 120 | 170 | 190 | 130 | 185 | 205 |
| K3 | 100 | 145 | 160 | 110 | 160 | 175 |
| K4 | 95 | 135 | 150 | 105 | 150 | 165 |
| K5 | 60 | 85 | 90 | 65 | 90 | 100 |
| K6 | 85 | 120 | 135 | 95 | 135 | 145 |
| K7 | 75 | 105 | 120 | 85 | 115 | 130 |
| N1 | 1000 | 1425 | 1600 | 1100 | 1575 | 1750 |
| N2 | 405 | 570 | 640 | 450 | 630 | 710 |
| N3 | 270 | 385 | 430 | 300 | 420 | 470 |
| N11 | 310 | 440 | 490 | 340 | 480 | 540 |
| S1 | 33 | 46 | 50 | 36 | 50 | 55 |
| S2 | 27 | 37 | 41 | 29 | 41 | 46 |
| S3 | 23 | 33 | 36 | 26 | 36 | 40 |
| S11 | 47 | 65 | 75 | 50 | 70 | 80 |
| S12 | 39 | 55 | 60 | 43 | 60 | 65 |
| S13 | 23 | 32 | 35 | 25 | 35 | 39 |
| H5 | 28 | 39 | 43 | — | — | — |
| H8 | 30 | 41 | 45 | — | — | — |
| H11 | 35 | 50 | 55 | — | — | — |
| H12 | 34 | 48 | 55 | — | — | — |
| H21 | 30 | 41 | 45 | — | — | — |

335.16 - LNK - Insert selection

| SMG | | f _z | | |
|-----|---------------------------|----------------|-------|-------|
| | | 100% | 20% | 10% |
| P1 | LNKT080508PPTN-M06 F40M | 0,11 | 0,14 | 0,19 |
| P2 | LNKT080508PPTN-M06 F40M | 0,11 | 0,14 | 0,19 |
| P3 | LNKT080508PPTN-M06 F40M | 0,11 | 0,14 | 0,18 |
| P4 | LNKT080508PPTN-M06 F40M | 0,11 | 0,13 | 0,18 |
| P5 | LNKT080508PPTN-M06 F40M | 0,10 | 0,13 | 0,17 |
| P6 | LNKT080508PPTN-M06 F40M | 0,10 | 0,13 | 0,17 |
| P7 | LNKT080508PPTN-M06 F40M | 0,10 | 0,13 | 0,17 |
| P8 | LNKT080508PPTN-M06 MP3000 | 0,11 | 0,14 | 0,18 |
| P11 | LNKT080508PPTN-M06 F40M | 0,10 | 0,13 | 0,17 |
| P12 | LNKT080508PPTN-M06 F40M | 0,070 | 0,090 | 0,12 |
| M1 | LNKT080508PPTN-M06 F40M | 0,11 | 0,14 | 0,19 |
| M2 | LNKT080508PPTN-M06 F40M | 0,10 | 0,13 | 0,17 |
| M3 | LNKT080508PPTN-M06 F40M | 0,085 | 0,10 | 0,14 |
| M4 | LNKT080508PPTN-M06 F40M | 0,075 | 0,090 | 0,12 |
| M5 | LNKT080508PPTN-M06 F40M | 0,075 | 0,090 | 0,12 |
| K1 | LNKT080508PPTN-M06 MK2050 | 0,11 | 0,14 | 0,19 |
| K2 | LNKT080508PPTN-M06 MK2050 | 0,10 | 0,13 | 0,17 |
| K3 | LNKT080508PPTN-M06 MK2050 | 0,10 | 0,13 | 0,17 |
| K4 | LNKT080508PPTN-M06 MK2050 | 0,10 | 0,13 | 0,17 |
| K5 | LNKT080508PPTN-M06 MK2050 | 0,095 | 0,12 | 0,16 |
| K6 | LNKT080508PPTN-M06 MK2050 | 0,10 | 0,13 | 0,17 |
| K7 | LNKT080508PPTN-M06 MK2050 | 0,095 | 0,12 | 0,16 |
| N1 | LNKT080508PPN-E05 H25 | 0,13 | 0,16 | 0,22 |
| N2 | LNKT080508PPN-E05 H25 | 0,13 | 0,16 | 0,22 |
| N3 | LNKT080508PPN-E05 H25 | 0,13 | 0,16 | 0,22 |
| N11 | LNKT080508PPN-E05 H25 | 0,13 | 0,16 | 0,22 |
| S1 | LNKT080508PPTN-M06 F40M | 0,075 | 0,090 | 0,12 |
| S2 | LNKT080508PPTN-M06 F40M | 0,075 | 0,090 | 0,12 |
| S3 | LNKT080508PPTN-M06 F40M | 0,070 | 0,085 | 0,11 |
| S11 | LNKT080508PPTN-M06 F40M | 0,085 | 0,10 | 0,14 |
| S12 | LNKT080508PPTN-M06 F40M | 0,085 | 0,10 | 0,14 |
| S13 | LNKT080508PPTN-M06 F40M | 0,075 | 0,090 | 0,12 |
| H5 | LNKT080508PPTN-M06 MP3000 | 0,070 | 0,090 | 0,12 |
| H8 | LNKT080508PPTN-M06 MP3000 | 0,055 | 0,070 | 0,090 |
| H11 | LNKT080508PPTN-M06 F40M | 0,070 | 0,090 | 0,12 |
| H12 | LNKT080508PPTN-M06 F40M | 0,055 | 0,070 | 0,090 |
| H21 | LNKT080508PPTN-M06 MP3000 | 0,055 | 0,070 | 0,090 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

335.16 - LNK - Cutting data $v_c =$ (m/min)

| SMG | MP2500 | | | MP3000 | | | T350M | | | F40M | | | MK1500 | | | MK2050 | | |
|-----|--------|-----|-----|--------|------|------|-------|-----|-----|------|------|------|--------|-----|-----|--------|-----|-----|
| | 100% | 20% | 10% | 100% | 20% | 10% | 100% | 20% | 10% | 100% | 20% | 10% | 100% | 20% | 10% | 100% | 20% | 10% |
| P1 | 200 | 285 | 315 | 190 | 270 | 300 | 175 | 250 | 275 | 155 | 215 | 240 | — | — | — | 200 | 280 | 310 |
| P2 | 195 | 275 | 305 | 185 | 265 | 290 | 170 | 240 | 265 | 150 | 210 | 230 | — | — | — | 195 | 275 | 300 |
| P3 | 170 | 240 | 265 | 160 | 225 | 255 | 150 | 210 | 235 | 130 | 180 | 205 | — | — | — | 165 | 235 | 265 |
| P4 | 150 | 215 | 235 | 140 | 205 | 225 | 130 | 185 | 205 | 115 | 165 | 180 | — | — | — | 145 | 210 | 230 |
| P5 | 145 | 205 | 225 | 140 | 195 | 215 | 125 | 180 | 200 | 110 | 155 | 175 | — | — | — | 145 | 200 | 225 |
| P6 | 165 | 230 | 255 | 155 | 220 | 245 | 145 | 200 | 225 | 125 | 175 | 195 | — | — | — | 160 | 225 | 250 |
| P7 | 155 | 215 | 240 | 145 | 205 | 230 | 135 | 190 | 210 | 115 | 165 | 185 | — | — | — | 155 | 215 | 240 |
| P8 | 140 | 200 | 225 | 135 | 190 | 215 | 125 | 175 | 195 | 110 | 150 | 170 | — | — | — | 140 | 200 | 220 |
| P11 | 150 | 210 | 235 | 145 | 200 | 220 | 130 | 185 | 205 | 115 | 160 | 180 | — | — | — | 150 | 210 | 230 |
| P12 | 95 | 135 | 150 | 90 | 130 | 140 | 85 | 120 | 130 | 75 | 105 | 115 | — | — | — | 95 | 135 | 150 |
| M1 | 140 | 200 | 220 | 140 | 195 | 215 | 130 | 185 | 205 | 120 | 170 | 185 | — | — | — | — | — | — |
| M2 | 115 | 165 | 180 | 115 | 160 | 180 | 110 | 155 | 170 | 100 | 140 | 155 | — | — | — | — | — | — |
| M3 | 95 | 135 | 145 | 90 | 130 | 145 | 85 | 125 | 135 | 80 | 115 | 125 | — | — | — | — | — | — |
| M4 | 70 | 100 | 115 | 70 | 100 | 110 | 65 | 95 | 105 | 60 | 85 | 95 | — | — | — | — | — | — |
| M5 | 60 | 85 | 95 | 60 | 85 | 95 | 55 | 80 | 90 | 50 | 75 | 80 | — | — | — | — | — | — |
| K1 | 155 | 220 | 240 | 150 | 210 | 230 | 135 | 190 | 210 | 120 | 165 | 185 | 220 | 310 | 345 | 210 | 295 | 325 |
| K2 | 140 | 195 | 215 | 130 | 185 | 205 | 120 | 170 | 190 | 105 | 150 | 165 | 195 | 275 | 305 | 185 | 260 | 290 |
| K3 | 115 | 165 | 180 | 110 | 155 | 175 | 100 | 145 | 160 | 90 | 125 | 140 | 165 | 235 | 260 | 160 | 220 | 245 |
| K4 | 110 | 155 | 175 | 105 | 150 | 165 | 100 | 135 | 150 | 85 | 120 | 135 | 160 | 225 | 250 | 150 | 210 | 235 |
| K5 | 65 | 95 | 105 | 65 | 90 | 100 | 60 | 85 | 90 | 50 | 70 | 80 | 95 | 135 | 150 | 90 | 130 | 140 |
| K6 | 100 | 140 | 155 | 95 | 130 | 145 | 85 | 120 | 135 | 75 | 105 | 115 | 140 | 195 | 220 | 135 | 185 | 205 |
| K7 | 85 | 120 | 135 | 80 | 115 | 130 | 75 | 105 | 120 | 65 | 95 | 100 | 125 | 175 | 190 | 115 | 165 | 180 |
| N1 | — | — | — | 1075 | 1550 | 1700 | — | — | — | 860 | 1225 | 1375 | — | — | — | — | — | — |
| N2 | — | — | — | 430 | 620 | 690 | — | — | — | 345 | 500 | 550 | — | — | — | — | — | — |
| N3 | — | — | — | 290 | 415 | 460 | — | — | — | 230 | 330 | 370 | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | 265 | 380 | 420 | — | — | — | — | — | — |
| S1 | — | — | — | 33 | 47 | 50 | 31 | 45 | 50 | 29 | 41 | 45 | — | — | — | — | — | — |
| S2 | — | — | — | 27 | 38 | 42 | 25 | 36 | 40 | 23 | 33 | 36 | — | — | — | — | — | — |
| S3 | — | — | — | 23 | 33 | 37 | 22 | 31 | 35 | 20 | 29 | 32 | — | — | — | — | — | — |
| S11 | — | — | — | 46 | 65 | 75 | 44 | 65 | 70 | 40 | 55 | 65 | — | — | — | — | — | — |
| S12 | — | — | — | 39 | 55 | 60 | 37 | 55 | 60 | 34 | 48 | 55 | — | — | — | — | — | — |
| S13 | — | — | — | 23 | 32 | 36 | 21 | 31 | 34 | 20 | 28 | 31 | — | — | — | — | — | — |
| H5 | 29 | 41 | 45 | 29 | 40 | 44 | 28 | 39 | 43 | 24 | 34 | 38 | — | — | — | — | — | — |
| H8 | 31 | 43 | 48 | 30 | 42 | 47 | 30 | 41 | 46 | 26 | 36 | 40 | — | — | — | — | — | — |
| H11 | 37 | 50 | 55 | 36 | 50 | 55 | 36 | 50 | 55 | 31 | 44 | 48 | — | — | — | — | — | — |
| H12 | 36 | 50 | 55 | 35 | 49 | 55 | 35 | 55 | 75 | 85 | 30 | 42 | 47 | — | — | — | — | — |
| H21 | 31 | 43 | 48 | 30 | 42 | 47 | 30 | 41 | 46 | 26 | 36 | 40 | — | — | — | — | — | — |

335.16 - LNK - Cutting data $v_c =$ (m/min)

| SMG | MM4500 | | | H25 | | |
|-----|--------|-----|-----|------|------|------|
| | 100% | 20% | 10% | 100% | 20% | 10% |
| P1 | 125 | 175 | 195 | — | — | — |
| P2 | 120 | 170 | 190 | — | — | — |
| P3 | 105 | 145 | 165 | — | — | — |
| P4 | 90 | 130 | 145 | — | — | — |
| P5 | 90 | 125 | 140 | — | — | — |
| P6 | 100 | 140 | 155 | — | — | — |
| P7 | 95 | 135 | 150 | — | — | — |
| P8 | 90 | 125 | 140 | — | — | — |
| P11 | 90 | 130 | 145 | — | — | — |
| P12 | 60 | 85 | 90 | — | — | — |
| M1 | 105 | 145 | 160 | — | — | — |
| M2 | 85 | 120 | 135 | — | — | — |
| M3 | 70 | 100 | 105 | — | — | — |
| M4 | 55 | 75 | 85 | — | — | — |
| M5 | 44 | 65 | 70 | — | — | — |
| K1 | — | — | — | — | — | — |
| K2 | — | — | — | — | — | — |
| K3 | — | — | — | — | — | — |
| K4 | — | — | — | — | — | — |
| K5 | — | — | — | — | — | — |
| K6 | — | — | — | — | — | — |
| K7 | — | — | — | — | — | — |
| N1 | — | — | — | 900 | 1275 | 1400 |
| N2 | — | — | — | 365 | 520 | 570 |
| N3 | — | — | — | 240 | 345 | 380 |
| N11 | — | — | — | 275 | 395 | 435 |
| S1 | 16 | 23 | 25 | — | — | — |
| S2 | 13 | 19 | 20 | — | — | — |
| S3 | 11 | 16 | 18 | — | — | — |
| S11 | 23 | 32 | 35 | — | — | — |
| S12 | 21 | 30 | 33 | — | — | — |
| S13 | 12 | 17 | 19 | — | — | — |
| H5 | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — |
| H21 | — | — | — | — | — | — |

Plunge milling cutters

| Insert | a _p max | Material suitability | | | | | | | | |
|---------------|--------------------|----------------------|---|---|---|---|---|---|---|---|
| | | P | M | K | N | S | H | | | |
| XO06 | 3,0 | ■ | ■ | ■ | ■ | ■ | □ | ■ | ▣ | ■ |
| XO10 | 6,0 | ■ | ■ | ■ | ■ | ■ | □ | ■ | ■ | ■ |
| XO12 | 7,0 | ■ | ■ | ■ | ■ | ■ | □ | ▣ | ■ | ■ |
| SCET | 11,0 | | | | | | | | | |
| | 20,0 | ■ | ■ | ■ | ■ | ■ | □ | - | ■ | ▣ |
| | 30,0 | | | | | | | | | |
| | 40,0 | | | | | | | | | |
| XNEX08..L | 7,0 | ■ | ■ | ■ | ■ | ■ | □ | ■ | ■ | ■ |

| | | | | | |
|--------------------|---|--|---|--------------------------------|--|
| 1st choice | ■ | High speed machine with low Power/ Torque | | Unstable condition suitability | |
| Alternative choice | ▣ | Strong stable machine with rigid connection | | Ramping ability | |
| Possible choice | □ | Not recommended | - | Plunging ability | |

Plunge milling cutters

| No. of cutting edges | Application | Cutter diameter available with effective number of teeth | | | | | | | | | | | | | | See page |
|----------------------|-------------|--|----|----|----|----|----|----|----|----|----|-----|-----|-----|---------|----------|
| | | 12 | 16 | 18 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | | |
| 2 | | 2 | 3 | | | | | | | | | | | | 313 | |
| | | 3 | 4 | 4 | | | | | | | | | | | | |
| 2 | | | | | 2 | | | | | | | | | | 319-320 | |
| | | | | | | 3 | 4 | 5 | | | | | | | | |
| 2 | | | | | | | 2 | 3 | 4 | | | | | | 323-324 | |
| | | | | | | 2 | 3 | 4 | | 5 | | | | | | |
| 4 | | | | | | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | 327-329 | |
| | | | | | | | | | | | | 4 | | | | |
| | | | | | | | | | | | | | 4 | | | |
| | | | | | | | | | | | | | | 4 | | |
| 6 | | | | | | | | 3 | 4 | 5 | 6 | 7 | | | 313-318 | |
| | | | | | | | | | 5 | 6 | 7 | 9 | | | | |



x indicates number of teeth (first choice)

x indicates number of teeth



Troubleshooter for unstable fixturing and/or machine



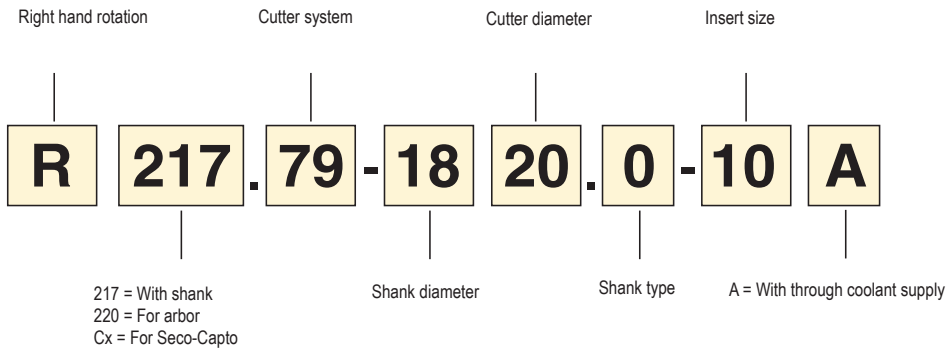
Basic choice

Milling cutters

In milling Seco uses product specific designation systems, there is no ISO system available for cutters. See example below.



Code key for Plunge milling cutter 217.79



Dimensions of mounting

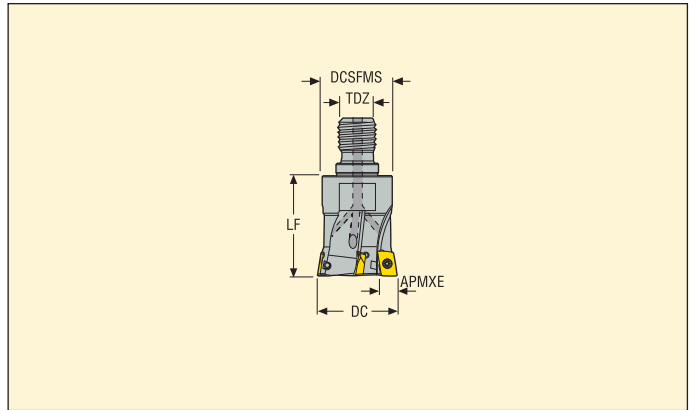
| | Dimensions in mm | | | | | | Spindle-nose |
|---------|------------------|------|-----|-------|-------|--------|--------------|
| | DCSFMS | DCB | KWW | C | DBC1 | DBC2 | |
| 30-35 | 16 | 8,4 | 5,6 | - | - | - | |
| 42-47 | 22 | 10,4 | 6,3 | - | - | - | |
| 48-62 | 27 | 12,4 | 7 | - | - | - | |
| 60-90 | 32 | 14,4 | 8 | - | - | - | |
| 90-130 | 40 | 16,4 | 9 | 66,7 | - | (8xxx) | |
| 130-270 | 60 | 25,7 | 14 | 101,6 | 177,8 | (8xxx) | |
| | | | | | | | |
| | | | | | | | |

For a more exact DCSFMS and DCB measurement, see each product table.

R217.79-06AN



- For insert selection and cutting data recommendations, see page(s) 314-315
- For complete insert programme, see page(s) 682
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | Insert |
|------------------------|------------------|------------------|------|--------|-----|------|---|-----|-------|--------|
| | | APMXE | DC | DCSFMS | TDZ | LF | | | | |
| R217.79-0612.RE-06.2AN | Combimaster | 3,0 | 12,0 | 11,0 | M6 | 18,0 | 2 | 0,1 | 32000 | XO..06 |
| R217.79-0612.RE-06.3AN | Combimaster | 3,0 | 12,0 | 11,0 | M6 | 18,0 | 3 | 0,1 | 32000 | XO..06 |
| R217.79-0816.RE-06.3AN | Combimaster | 3,0 | 16,0 | 13,5 | M8 | 20,0 | 3 | 0,1 | 28000 | XO..06 |
| R217.79-0816.RE-06.4AN | Combimaster | 3,0 | 16,0 | 13,5 | M8 | 20,0 | 4 | 0,1 | 28000 | XO..06 |
| R217.79-0818.RE-06.4AN | Combimaster | 3,0 | 18,0 | 13,5 | M8 | 20,0 | 4 | 0,1 | 25000 | XO..06 |
| | | | | | | | | | | |
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| | | | | | | | | | | |

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|--------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.79-.. | DOUBLE-T | C01804-T06P | H4B-T06P | 0,5 |
| R217.79-0818 | DOUBLE-T | C01804-T06P | H4B-T06P | 0,5 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217.79-06– Insert selection

| SMG | | f_z | a_{so} | | | |
|-----|------------------------|-------|----------|-----|-----|-----|
| | | | 100% | 70% | 50% | 30% |
| P1 | XOMX060204R-M05 F40M | 0,070 | 2,0 | 2,0 | 2,0 | 2,5 |
| P2 | XOMX060204R-M05 F40M | 0,070 | 2,0 | 2,0 | 2,0 | 2,5 |
| P3 | XOMX060204R-M05 F40M | 0,070 | 2,0 | 2,0 | 2,0 | 2,5 |
| P4 | XOMX060204R-M05 F40M | 0,065 | 2,0 | 2,0 | 2,0 | 2,5 |
| P5 | XOMX060204R-M05 F40M | 0,065 | 2,0 | 2,0 | 2,0 | 2,5 |
| P6 | XOMX060204R-M05 F40M | 0,065 | 2,0 | 2,0 | 2,0 | 2,5 |
| P7 | XOMX060204R-M05 F40M | 0,065 | 2,0 | 2,0 | 2,0 | 2,5 |
| P8 | XOMX060204R-M05 MP3000 | 0,070 | 2,0 | 2,0 | 2,0 | 2,5 |
| P11 | XOMX060204R-M05 F40M | 0,065 | 2,0 | 2,0 | 2,0 | 2,5 |
| P12 | XOMX060204R-M05 F40M | 0,044 | 1,6 | 1,6 | 1,6 | 1,8 |
| M1 | XOMX060204R-M05 F40M | 0,070 | 2,0 | 2,0 | 2,0 | 2,5 |
| M2 | XOMX060204R-M05 F40M | 0,065 | 2,0 | 2,0 | 2,0 | 2,5 |
| M3 | XOMX060204R-M05 F40M | 0,050 | 1,6 | 1,6 | 1,6 | 1,8 |
| M4 | XOMX060204R-M05 F40M | 0,046 | 1,3 | 1,3 | 1,3 | 1,5 |
| M5 | XOMX060204R-M05 F40M | 0,046 | 1,3 | 1,3 | 1,3 | 1,5 |
| K1 | XOMX060204R-M05 MP3000 | 0,070 | 2,0 | 2,0 | 2,0 | 2,5 |
| K2 | XOMX060204R-M05 MP3000 | 0,065 | 2,0 | 2,0 | 2,0 | 2,5 |
| K3 | XOMX060204R-M05 MP3000 | 0,065 | 2,0 | 2,0 | 2,0 | 2,5 |
| K4 | XOMX060204R-M05 MP3000 | 0,065 | 2,0 | 2,0 | 2,0 | 2,5 |
| K5 | XOMX060204R-M05 MP3000 | 0,060 | 2,0 | 2,0 | 2,0 | 2,5 |
| K6 | XOMX060204R-M05 MP3000 | 0,065 | 2,0 | 2,0 | 2,0 | 2,5 |
| K7 | XOMX060204R-M05 MP3000 | 0,060 | 2,0 | 2,0 | 2,0 | 2,5 |
| N1 | XOEX060204FR-E03 H15 | 0,075 | 2,0 | 2,0 | 2,0 | 2,5 |
| N2 | XOEX060204FR-E03 F40M | 0,075 | 2,0 | 2,0 | 2,0 | 2,5 |
| N3 | XOEX060204FR-E03 F40M | 0,075 | 2,0 | 2,0 | 2,0 | 2,5 |
| N11 | XOEX060204FR-E03 H15 | 0,075 | 2,0 | 2,0 | 2,0 | 2,5 |
| S1 | XOMX060204R-M05 F40M | 0,046 | 1,3 | 1,3 | 1,3 | 1,5 |
| S2 | XOMX060204R-M05 F40M | 0,046 | 1,3 | 1,3 | 1,3 | 1,5 |
| S3 | XOMX060204R-M05 F40M | 0,042 | 1,3 | 1,3 | 1,3 | 1,5 |
| S11 | XOMX060204R-M05 F40M | 0,050 | 1,5 | 1,5 | 1,5 | 1,7 |
| S12 | XOMX060204R-M05 F40M | 0,050 | 1,5 | 1,5 | 1,5 | 1,7 |
| S13 | XOMX060204R-M05 F40M | 0,046 | 1,3 | 1,3 | 1,3 | 1,5 |
| H5 | XOMX060204R-M05 MP3000 | 0,044 | 1,6 | 1,6 | 1,6 | 1,8 |
| H8 | XOMX060204R-M05 MP3000 | 0,034 | 1,5 | 1,5 | 1,5 | 1,7 |
| H11 | XOMX060204R-M05 MP3000 | 0,044 | 1,6 | 1,6 | 1,6 | 1,8 |
| H12 | XOMX060204R-M05 MP3000 | 0,034 | 1,5 | 1,5 | 1,5 | 1,7 |
| H21 | XOMX060204R-M05 MP3000 | 0,034 | 1,5 | 1,5 | 1,5 | 1,7 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

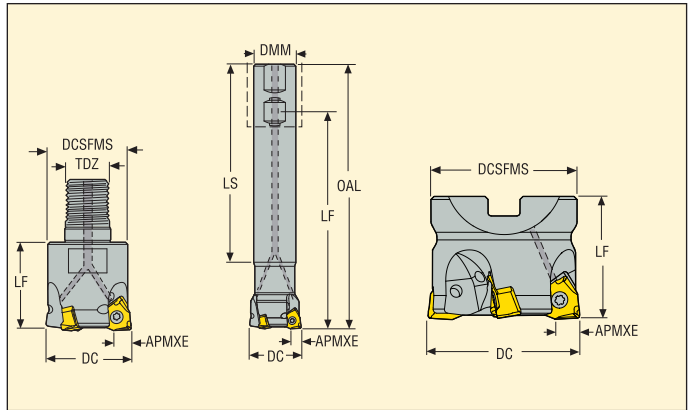
R217.79-06 – Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | | F40M | | | | MM4500 | | | | H15 | | | | MS2050 | | | |
|-----|--------|-----|-----|-----|------|------|------|------|--------|-----|-----|-----|------|------|------|------|--------|-----|-----|-----|
| | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% |
| P1 | 305 | 340 | 360 | 390 | 245 | 270 | 290 | 310 | 195 | 220 | 235 | 255 | — | — | — | — | — | — | — | — |
| P2 | 295 | 330 | 350 | 380 | 235 | 265 | 280 | 305 | 190 | 215 | 230 | 245 | — | — | — | — | — | — | — | — |
| P3 | 255 | 285 | 305 | 325 | 205 | 225 | 240 | 260 | 165 | 185 | 195 | 210 | — | — | — | — | — | — | — | — |
| P4 | 230 | 255 | 270 | 295 | 185 | 205 | 215 | 235 | 150 | 165 | 175 | 190 | — | — | — | — | — | — | — | — |
| P5 | 220 | 245 | 260 | 280 | 175 | 195 | 205 | 225 | 140 | 160 | 170 | 180 | — | — | — | — | — | — | — | — |
| P6 | 245 | 275 | 290 | 315 | 195 | 220 | 235 | 250 | 160 | 175 | 190 | 205 | — | — | — | — | — | — | — | — |
| P7 | 230 | 260 | 275 | 295 | 185 | 205 | 220 | 235 | 150 | 165 | 180 | 190 | — | — | — | — | — | — | — | — |
| P8 | 215 | 240 | 255 | 275 | 170 | 190 | 205 | 220 | 140 | 155 | 165 | 180 | — | — | — | — | — | — | — | — |
| P11 | 225 | 250 | 265 | 290 | 180 | 200 | 215 | 230 | 145 | 165 | 175 | 185 | — | — | — | — | — | — | — | — |
| P12 | 145 | 165 | 175 | 190 | 115 | 130 | 140 | 150 | 95 | 105 | 115 | 120 | — | — | — | — | 130 | 145 | 155 | 165 |
| M1 | 220 | 245 | 265 | 285 | 190 | 215 | 225 | 245 | 165 | 185 | 195 | 210 | — | — | — | — | 210 | 235 | 250 | 270 |
| M2 | 180 | 205 | 215 | 235 | 155 | 175 | 185 | 200 | 135 | 150 | 160 | 175 | — | — | — | — | 175 | 195 | 205 | 220 |
| M3 | 150 | 165 | 175 | 190 | 130 | 145 | 155 | 165 | 110 | 125 | 130 | 145 | — | — | — | — | 140 | 160 | 170 | 180 |
| M4 | 115 | 130 | 135 | 150 | 100 | 110 | 120 | 130 | 85 | 95 | 100 | 110 | — | — | — | — | 110 | 120 | 130 | 140 |
| M5 | 95 | 105 | 115 | 125 | 85 | 90 | 100 | 105 | 70 | 80 | 85 | 90 | — | — | — | — | 90 | 100 | 110 | 115 |
| K1 | 235 | 260 | 280 | 300 | 185 | 210 | 225 | 240 | — | — | — | — | — | — | — | — | — | — | — | — |
| K2 | 205 | 230 | 245 | 265 | 165 | 185 | 195 | 210 | — | — | — | — | — | — | — | — | — | — | — | — |
| K3 | 175 | 195 | 210 | 225 | 140 | 155 | 165 | 180 | — | — | — | — | — | — | — | — | — | — | — | — |
| K4 | 165 | 185 | 200 | 215 | 135 | 150 | 160 | 170 | — | — | — | — | — | — | — | — | — | — | — | — |
| K5 | 100 | 115 | 120 | 130 | 80 | 90 | 95 | 105 | — | — | — | — | — | — | — | — | — | — | — | — |
| K6 | 145 | 165 | 175 | 190 | 120 | 130 | 140 | 150 | — | — | — | — | — | — | — | — | — | — | — | — |
| K7 | 130 | 145 | 155 | 165 | 105 | 115 | 125 | 135 | — | — | — | — | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | 1400 | 1550 | 1650 | 1775 | — | — | — | — | 1475 | 1625 | 1750 | 1875 | — | — | — | — |
| N2 | 700 | 780 | 830 | 900 | 560 | 630 | 670 | 720 | — | — | — | — | 590 | 660 | 700 | 760 | — | — | — | — |
| N3 | 465 | 520 | 560 | 600 | 375 | 415 | 445 | 480 | — | — | — | — | 395 | 440 | 470 | 510 | — | — | — | — |
| N11 | — | — | — | — | 425 | 475 | 510 | 550 | — | — | — | — | 450 | 500 | 540 | 580 | — | — | — | — |
| S1 | 55 | 60 | 65 | 70 | 46 | 50 | 55 | 60 | 26 | 29 | 31 | 34 | — | — | — | — | 50 | 55 | 60 | 65 |
| S2 | 43 | 48 | 50 | 55 | 37 | 42 | 44 | 48 | 21 | 24 | 25 | 27 | — | — | — | — | 41 | 46 | 49 | 55 |
| S3 | 38 | 42 | 45 | 49 | 33 | 37 | 39 | 42 | 19 | 21 | 22 | 24 | — | — | — | — | 36 | 40 | 43 | 46 |
| S11 | 75 | 85 | 90 | 95 | 65 | 75 | 80 | 85 | 37 | 41 | 44 | 47 | — | — | — | — | 70 | 80 | 85 | 90 |
| S12 | 50 | 60 | 60 | 65 | 45 | 50 | 55 | 60 | 34 | 38 | 40 | 44 | — | — | — | — | 50 | 55 | 60 | 65 |
| S13 | 30 | 34 | 36 | 39 | 26 | 29 | 31 | 34 | 20 | 22 | 23 | 25 | — | — | — | — | 29 | 32 | 34 | 37 |
| H5 | 45 | 50 | 55 | 60 | 39 | 43 | 46 | 50 | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | 48 | 55 | 55 | 60 | 41 | 46 | 49 | 55 | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | 60 | 65 | 70 | 75 | 50 | 55 | 60 | 65 | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | 90 | 105 | 110 | 120 | 75 | 80 | 90 | 95 | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | 48 | 55 | 55 | 60 | 41 | 46 | 49 | 55 | — | — | — | — | — | — | — | — | — | — | — | — |

R217/220.79-08



- For insert selection and cutting data recommendations, see page(s) 314-315
- For complete insert programme, see page(s) 682
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | | | Insert |
|-----------------------|------------------|------------------|-----|--------|-----|-----|-----|-----|-----|-----|---|-----|-------|-----------|
| | | APMXE | DC | DCSFMS | DMM | DCB | TDZ | OAL | LS | LF | | | | |
| R217.79-2040.RE-08-3A | Combimaster | 7 | 40 | 37 | - | - | M20 | - | - | 40 | 3 | 0,5 | 11800 | XNEX08..L |
| R217.79-3240.3-08-3A | Cyl.-Weldon | 7 | 40 | - | 32 | - | - | 200 | 150 | 164 | 3 | 1,3 | 11800 | XNEX08..L |
| R220.79-0050-08-4A | Arbor | 7 | 50 | 48 | - | 22 | - | - | - | 40 | 4 | 1,0 | 10600 | XNEX08..L |
| R220.79-0050-08-5A | Arbor | 7 | 50 | 48 | - | 22 | - | - | - | 40 | 5 | 0,5 | 10600 | XNEX08..L |
| R220.79-0063-08-5A | Arbor | 7 | 63 | 60 | - | 27 | - | - | - | 50 | 5 | 1,0 | 9400 | XNEX08..L |
| R220.79-0063-08-6A | Arbor | 7 | 63 | 60 | - | 27 | - | - | - | 50 | 6 | 1,0 | 9400 | XNEX08..L |
| R220.79-0080-08-6A | Arbor | 7 | 80 | 62 | - | 27 | - | - | - | 50 | 6 | 1,2 | 8400 | XNEX08..L |
| R220.79-0080-08-7A | Arbor | 7 | 80 | 62 | - | 27 | - | - | - | 50 | 7 | 1,2 | 8400 | XNEX08..L |
| R220.79-0100-08-7A | Arbor | 7 | 100 | 78 | - | 32 | - | - | - | 50 | 7 | 2,3 | 7500 | XNEX08..L |
| R220.79-0100-08-9A | Arbor | 7 | 100 | 78 | - | 32 | - | - | - | 50 | 9 | 1,9 | 7500 | XNEX08..L |
| | | | | | | | | | | | | | | |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.79-... Ø40 | DOUBLE-T | C04011-T15P | H4B-T15P | - | 3,5 |
| 220.79-Ø50 | DOUBLE-T | C04011-T15P | H4B-T15P | 220.17-696 | 3,5 |
| 220.79-Ø63 | DOUBLE-T | C04011-T15P | H4B-T15P | MC6S12X35 | 3,5 |
| R220.79- Ø80-100 | DOUBLE-T | C04011-T15P | H4B-T15PL | - | 3,5 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Please check availability in current price and stock-list

Torque keys, see page 732

R217.79-08- Insert selection

| SMG | | f_z | a_{so} | | | |
|-----|-------------------------|-------|----------|-----|-----|-----|
| | | | 100% | 70% | 50% | 30% |
| P1 | XNEX080608TL-M13 F40M | 0,18 | 5,0 | 5,0 | 5,0 | 6,0 |
| P2 | XNEX080608TL-M13 F40M | 0,19 | 5,0 | 5,0 | 5,0 | 6,0 |
| P3 | XNEX080608TL-M13 MP2500 | 0,18 | 5,0 | 5,0 | 5,0 | 6,0 |
| P4 | XNEX080608TL-M13 MP2500 | 0,17 | 5,0 | 5,0 | 5,0 | 6,0 |
| P5 | XNEX080608TL-M13 MP2500 | 0,17 | 5,0 | 5,0 | 5,0 | 6,0 |
| P6 | XNEX080608TL-M13 MP2500 | 0,17 | 5,0 | 5,0 | 5,0 | 6,0 |
| P7 | XNEX080608TL-M13 MP2500 | 0,17 | 5,0 | 5,0 | 5,0 | 6,0 |
| P8 | XNEX080608TL-M13 MP2500 | 0,18 | 5,0 | 5,0 | 5,0 | 6,0 |
| P11 | XNEX080608TL-M13 T350M | 0,17 | 5,0 | 5,0 | 5,0 | 6,0 |
| P12 | XNEX080608TL-M13 T350M | 0,11 | 4,0 | 4,0 | 4,0 | 4,5 |
| M1 | XNEX080608TL-M13 F40M | 0,19 | 5,0 | 5,0 | 5,0 | 6,0 |
| M2 | XNEX080608TL-M13 F40M | 0,17 | 5,0 | 5,0 | 5,0 | 6,0 |
| M3 | XNEX080608TL-M13 F40M | 0,14 | 4,0 | 4,0 | 4,0 | 4,5 |
| M4 | XNEX080608TL-M13 T350M | 0,12 | 3,0 | 3,0 | 3,0 | 3,5 |
| M5 | XNEX080608TL-M13 T350M | 0,12 | 3,0 | 3,0 | 3,0 | 3,5 |
| K1 | XNEX080608TL-M13 MP2500 | 0,19 | 5,0 | 5,0 | 5,0 | 6,0 |
| K2 | XNEX080608TL-M13 MP2500 | 0,17 | 5,0 | 5,0 | 5,0 | 6,0 |
| K3 | XNEX080608TL-M13 MP2500 | 0,17 | 5,0 | 5,0 | 5,0 | 6,0 |
| K4 | XNEX080608TL-M13 MP2500 | 0,17 | 5,0 | 5,0 | 5,0 | 6,0 |
| K5 | XNEX080608TL-M13 MP2500 | 0,15 | 5,0 | 5,0 | 5,0 | 6,0 |
| K6 | XNEX080608TL-M13 MP2500 | 0,17 | 5,0 | 5,0 | 5,0 | 6,0 |
| K7 | XNEX080608TL-M13 MP2500 | 0,15 | 5,0 | 5,0 | 5,0 | 6,0 |
| S1 | XNEX080608TL-M13 T350M | 0,12 | 3,0 | 3,0 | 3,0 | 3,5 |
| S2 | XNEX080608TL-M13 T350M | 0,12 | 3,0 | 3,0 | 3,0 | 3,5 |
| S3 | XNEX080608TL-M13 T350M | 0,11 | 3,0 | 3,0 | 3,0 | 3,5 |
| S11 | XNEX080608TL-M13 MS2050 | 0,14 | 3,5 | 3,5 | 3,5 | 4,0 |
| S12 | XNEX080608TL-M13 MS2050 | 0,14 | 3,5 | 3,5 | 3,5 | 4,0 |
| S13 | XNEX080608TL-M13 MS2050 | 0,12 | 3,0 | 3,0 | 3,0 | 3,5 |
| H5 | XNEX080608TL-M13 MP2500 | 0,11 | 4,0 | 4,0 | 4,0 | 4,5 |
| H8 | XNEX080608TL-M13 MP2500 | 0,090 | 3,5 | 3,5 | 3,5 | 4,0 |
| H11 | XNEX080608TL-M13 MP2500 | 0,11 | 4,0 | 4,0 | 4,0 | 4,5 |
| H12 | XNEX080608TL-M13 MP2500 | 0,090 | 3,5 | 3,5 | 3,5 | 4,0 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

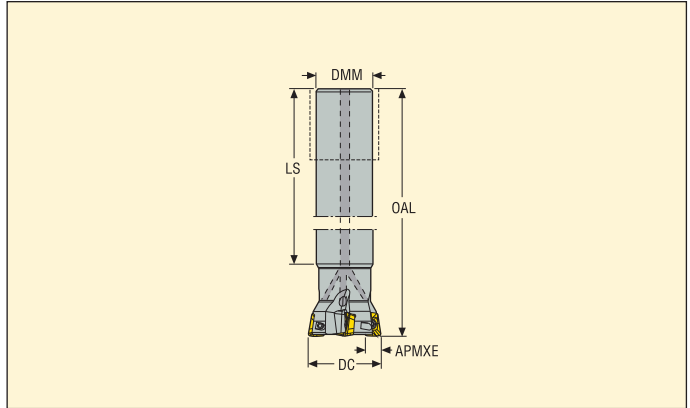
R217.79-08 – Cutting data $v_c =$ (m/min)

| SMG | MP2500 | | | | F40M | | | | T350M | | | | MS2050 | | | |
|-----|--------|-----|-----|-----|------|-----|-----|-----|-------|-----|-----|-----|--------|-----|-----|-----|
| | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% |
| P1 | 235 | 265 | 280 | 305 | 180 | 200 | 210 | 230 | 205 | 230 | 245 | 265 | — | — | — | — |
| P2 | 225 | 250 | 270 | 290 | 170 | 190 | 205 | 220 | 195 | 220 | 235 | 250 | — | — | — | — |
| P3 | 195 | 220 | 235 | 255 | 150 | 165 | 180 | 190 | 170 | 190 | 205 | 220 | — | — | — | — |
| P4 | 175 | 200 | 210 | 230 | 135 | 150 | 160 | 170 | 155 | 170 | 185 | 200 | — | — | — | — |
| P5 | 170 | 190 | 200 | 215 | 130 | 145 | 150 | 165 | 145 | 165 | 175 | 190 | — | — | — | — |
| P6 | 190 | 210 | 225 | 245 | 145 | 160 | 170 | 185 | 165 | 185 | 195 | 215 | — | — | — | — |
| P7 | 180 | 200 | 215 | 230 | 135 | 150 | 160 | 175 | 155 | 175 | 185 | 200 | — | — | — | — |
| P8 | 165 | 185 | 195 | 215 | 125 | 140 | 150 | 160 | 145 | 160 | 170 | 185 | — | — | — | — |
| P11 | 175 | 195 | 205 | 225 | 130 | 145 | 155 | 170 | 150 | 170 | 180 | 195 | — | — | — | — |
| P12 | 120 | 135 | 140 | 155 | 90 | 100 | 105 | 115 | 105 | 115 | 125 | 135 | 100 | 110 | 120 | 130 |
| M1 | 160 | 180 | 195 | 210 | 140 | 155 | 165 | 175 | 150 | 170 | 180 | 195 | 150 | 170 | 180 | 195 |
| M2 | 135 | 150 | 160 | 175 | 115 | 130 | 135 | 150 | 125 | 140 | 150 | 165 | 125 | 140 | 150 | 165 |
| M3 | 110 | 125 | 135 | 145 | 95 | 105 | 115 | 120 | 105 | 115 | 125 | 135 | 105 | 115 | 125 | 135 |
| M4 | 90 | 100 | 105 | 115 | 75 | 85 | 90 | 95 | 85 | 95 | 100 | 105 | 85 | 95 | 100 | 105 |
| M5 | 75 | 85 | 90 | 95 | 65 | 70 | 75 | 80 | 70 | 75 | 85 | 90 | 70 | 75 | 85 | 90 |
| K1 | 180 | 200 | 210 | 230 | 135 | 150 | 160 | 175 | — | — | — | — | — | — | — | — |
| K2 | 160 | 180 | 190 | 205 | 120 | 135 | 145 | 155 | — | — | — | — | — | — | — | — |
| K3 | 135 | 150 | 160 | 175 | 105 | 115 | 120 | 130 | — | — | — | — | — | — | — | — |
| K4 | 130 | 145 | 155 | 165 | 100 | 110 | 115 | 125 | — | — | — | — | — | — | — | — |
| K5 | 80 | 90 | 95 | 105 | 60 | 70 | 70 | 80 | — | — | — | — | — | — | — | — |
| K6 | 115 | 130 | 135 | 145 | 85 | 95 | 105 | 110 | — | — | — | — | — | — | — | — |
| K7 | 105 | 115 | 120 | 130 | 80 | 85 | 95 | 100 | — | — | — | — | — | — | — | — |
| S1 | — | — | — | — | 35 | 39 | 42 | 45 | 39 | 43 | 46 | 50 | 39 | 43 | 46 | 50 |
| S2 | — | — | — | — | 28 | 32 | 34 | 37 | 31 | 35 | 37 | 40 | 31 | 35 | 37 | 40 |
| S3 | — | — | — | — | 25 | 28 | 30 | 32 | 28 | 31 | 33 | 36 | 28 | 31 | 33 | 36 |
| S11 | — | — | — | — | 48 | 55 | 55 | 60 | 55 | 60 | 65 | 70 | 55 | 60 | 65 | 70 |
| S12 | — | — | — | — | 33 | 37 | 40 | 43 | 37 | 41 | 44 | 47 | 37 | 41 | 44 | 47 |
| S13 | — | — | — | — | 20 | 22 | 24 | 26 | 22 | 24 | 26 | 28 | 22 | 24 | 26 | 28 |
| H5 | 36 | 40 | 43 | 46 | 30 | 33 | 36 | 39 | 34 | 38 | 41 | 44 | — | — | — | — |
| H8 | 38 | 43 | 46 | 49 | 32 | 36 | 38 | 41 | 37 | 41 | 44 | 47 | — | — | — | — |
| H11 | 46 | 50 | 55 | 60 | 38 | 43 | 45 | 49 | 44 | 49 | 50 | 55 | — | — | — | — |
| H12 | 75 | 85 | 90 | 100 | 55 | 65 | 70 | 75 | 65 | 75 | 80 | 85 | — | — | — | — |

R217.79-10



- For insert selection and cutting data recommendations, see page(s) 321-322
- For complete insert programme, see page(s) 683
- For ISO attribute explanation, see page 15



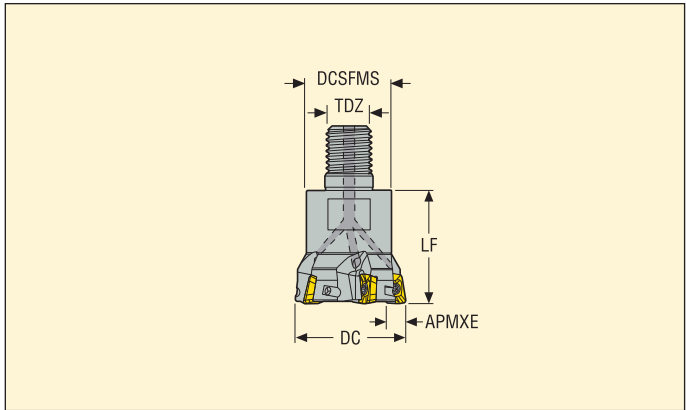
| Designation | Type of mounting | Dimensions in mm | | | | | | | | Insert |
|----------------------|------------------|------------------|------|------|-------|-------|---|-----|-------|----------|
| | | APMXE | DC | DMM | OAL | LS | | | | |
| R217.79-1820.0-10-2A | Cylindrical | 6,0 | 20,0 | 18,0 | 160,0 | 130,0 | 2 | 0,3 | 29000 | XO.X10T3 |
| R217.79-2025.0-10-3A | Cylindrical | 6,0 | 25,0 | 20,0 | 200,0 | 170,0 | 3 | 0,6 | 26000 | XO.X10T3 |
| R217.79-2532.0-10-4A | Cylindrical | 6,0 | 32,0 | 25,0 | 250,0 | 218,0 | 4 | 1,3 | 22900 | XO.X10T3 |
| | | | | | | | | | | |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.79-.. | DOUBLE-T | C02506-T07P | H4B-T07P | 1,0 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217.79-10



- For insert selection and cutting data recommendations, see page(s) 321-322
- For complete insert programme, see page(s) 683
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | Insert |
|-----------------------|------------------|------------------|------|--------|-----|------|---|-----|--------|----------|
| | | APMXE | DC | DCSFMS | TDZ | LF | | | | |
| R217.79-1020.RE-10-2A | Combimaster | 6,0 | 20,0 | 18,0 | M10 | 28,0 | 2 | 0,1 | 29000 | XO.X10T3 |
| R217.79-1225.RE-10-3A | Combimaster | 6,0 | 25,0 | 22,5 | M12 | 30,0 | 3 | 0,1 | 26000 | XO.X10T3 |
| R217.79-1632.RE-10-4A | Combimaster | 6,0 | 32,0 | 29,0 | M16 | 40,0 | 4 | 0,2 | 22900 | XO.X10T3 |
| R217.79-1640.RE-10-5A | Combimaster | 6,0 | 40,0 | 30,0 | M16 | 40,0 | 5 | 0,3 | 150000 | XO.X10T3 |
| R217.79-2040.RE-10-5A | Combimaster | 6,0 | 40,0 | 36,5 | M20 | 40,0 | 5 | 0,4 | 150000 | XO.X10T3 |
| | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.79-.. | DOUBLE-T | C02506-T07P | H4B-T07P | 1,0 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217.79-10- Insert selection

| SMG | | f_z | a_{so} | | | |
|-----|--------------------------|-------|----------|-----|-----|-----|
| | | | 100% | 70% | 50% | 30% |
| P1 | XOMX10T308TR-ME07 F40M | 0,11 | 4,0 | 4,0 | 4,0 | 4,5 |
| P2 | XOMX10T308TR-ME07 F40M | 0,11 | 4,0 | 4,0 | 4,0 | 4,5 |
| P3 | XOMX10T308TR-ME07 MP2500 | 0,11 | 4,0 | 4,0 | 4,0 | 4,5 |
| P4 | XOMX10T308TR-ME07 MP2500 | 0,11 | 4,0 | 4,0 | 4,0 | 4,5 |
| P5 | XOMX10T308TR-ME07 MP2500 | 0,10 | 4,0 | 4,0 | 4,0 | 4,5 |
| P6 | XOMX10T308TR-ME07 MP2500 | 0,10 | 4,0 | 4,0 | 4,0 | 4,5 |
| P7 | XOMX10T308TR-M09 MP2500 | 0,12 | 4,0 | 4,0 | 4,0 | 4,5 |
| P8 | XOMX10T308TR-M09 MP2500 | 0,12 | 4,0 | 4,0 | 4,0 | 4,5 |
| P11 | XOMX10T308TR-M09 MP2500 | 0,12 | 4,0 | 4,0 | 4,0 | 4,5 |
| P12 | XOMX10T308TR-M09 MP2500 | 0,080 | 3,5 | 3,5 | 3,5 | 4,0 |
| M1 | XOMX10T308TR-ME07 MP2500 | 0,11 | 4,0 | 4,0 | 4,0 | 4,5 |
| M2 | XOMX10T308TR-ME07 MP2500 | 0,10 | 4,0 | 4,0 | 4,0 | 4,5 |
| M3 | XOMX10T308TR-ME07 MP2500 | 0,085 | 3,5 | 3,5 | 3,5 | 4,0 |
| M4 | XOMX10T308TR-M09 T350M | 0,080 | 2,5 | 2,5 | 2,5 | 3,0 |
| M5 | XOMX10T308TR-M09 F40M | 0,080 | 2,5 | 2,5 | 2,5 | 3,0 |
| K1 | XOMX10T308TR-M09 MK1500 | 0,13 | 4,0 | 4,0 | 4,0 | 4,5 |
| K2 | XOMX10T308TR-M09 MK1500 | 0,12 | 4,0 | 4,0 | 4,0 | 4,5 |
| K3 | XOMX10T308TR-M09 MK1500 | 0,12 | 4,0 | 4,0 | 4,0 | 4,5 |
| K4 | XOMX10T308TR-M09 MK1500 | 0,12 | 4,0 | 4,0 | 4,0 | 4,5 |
| K5 | XOMX10T308TR-M09 MK1500 | 0,11 | 4,0 | 4,0 | 4,0 | 4,5 |
| K6 | XOMX10T308TR-M09 MK1500 | 0,12 | 4,0 | 4,0 | 4,0 | 4,5 |
| K7 | XOMX10T308TR-M09 MP1500 | 0,11 | 4,0 | 4,0 | 4,0 | 4,5 |
| N1 | XOEX10T308FR-E05 H15 | 0,090 | 4,0 | 4,0 | 4,0 | 4,5 |
| N2 | XOEX10T308FR-E05 F40M | 0,090 | 4,0 | 4,0 | 4,0 | 4,5 |
| N3 | XOEX10T308FR-E05 F40M | 0,090 | 4,0 | 4,0 | 4,0 | 4,5 |
| N11 | XOEX10T308FR-E05 F40M | 0,090 | 4,0 | 4,0 | 4,0 | 4,5 |
| S1 | XOMX10T308TR-ME07 T350M | 0,075 | 2,5 | 2,5 | 2,5 | 3,0 |
| S2 | XOMX10T308TR-ME07 T350M | 0,075 | 2,5 | 2,5 | 2,5 | 3,0 |
| S3 | XOMX10T308TR-M09 F40M | 0,075 | 2,5 | 2,5 | 2,5 | 3,0 |
| S11 | XOMX10T308TR-ME07 F40M | 0,085 | 3,0 | 3,0 | 3,0 | 3,5 |
| S12 | XOMX10T308TR-ME07 F40M | 0,085 | 3,0 | 3,0 | 3,0 | 3,5 |
| S13 | XOMX10T308TR-ME07 F40M | 0,075 | 2,5 | 2,5 | 2,5 | 3,0 |
| H5 | XOMX10T308TR-M09 MP1500 | 0,080 | 3,5 | 3,5 | 3,5 | 4,0 |
| H8 | XOMX10T308TR-M09 MP1500 | 0,060 | 3,0 | 3,0 | 3,0 | 3,5 |
| H11 | XOMX10T308TR-M09 T350M | 0,080 | 3,5 | 3,5 | 3,5 | 4,0 |
| H12 | XOMX10T308TR-M09 T350M | 0,060 | 3,0 | 3,0 | 3,0 | 3,5 |
| H21 | XOMX10T308TR-M09 MP1500 | 0,060 | 3,0 | 3,0 | 3,0 | 3,5 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R217.79-10 - Cutting data $v_c = (m/min)$

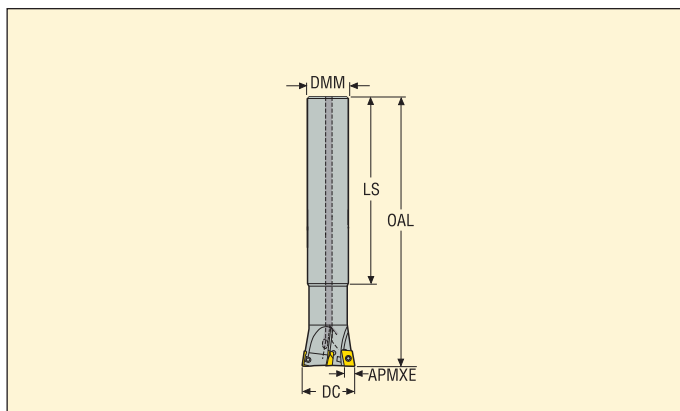
| SMG | MP1500 | | | | MP2500 | | | | MP3000 | | | | T350M | | | | F40M | | | |
|-----|--------|-----|-----|-----|--------|-----|-----|-----|--------|-----|-----|-----|-------|-----|-----|-----|------|------|------|------|
| | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% |
| P1 | 300 | 335 | 355 | 390 | 265 | 295 | 315 | 345 | 250 | 280 | 300 | 325 | 255 | 285 | 305 | 330 | 200 | 225 | 240 | 260 |
| P2 | 295 | 325 | 350 | 375 | 260 | 290 | 310 | 335 | 245 | 275 | 290 | 315 | 250 | 280 | 295 | 320 | 195 | 220 | 235 | 255 |
| P3 | 260 | 290 | 305 | 335 | 230 | 255 | 270 | 295 | 215 | 240 | 255 | 280 | 215 | 240 | 255 | 275 | 175 | 195 | 205 | 225 |
| P4 | 225 | 255 | 270 | 295 | 200 | 225 | 240 | 260 | 190 | 215 | 225 | 245 | 190 | 210 | 225 | 245 | 150 | 170 | 180 | 195 |
| P5 | 215 | 240 | 260 | 280 | 190 | 215 | 230 | 250 | 180 | 205 | 215 | 235 | 185 | 205 | 220 | 240 | 145 | 160 | 175 | 190 |
| P6 | 245 | 270 | 290 | 315 | 215 | 240 | 255 | 280 | 205 | 230 | 245 | 265 | 210 | 235 | 250 | 270 | 165 | 180 | 195 | 210 |
| P7 | 230 | 255 | 275 | 295 | 205 | 225 | 240 | 260 | 195 | 215 | 230 | 250 | 195 | 220 | 235 | 255 | 155 | 170 | 185 | 200 |
| P8 | 215 | 240 | 260 | 280 | 190 | 215 | 230 | 250 | 180 | 205 | 215 | 235 | 180 | 200 | 215 | 235 | 145 | 160 | 175 | 190 |
| P11 | 225 | 250 | 265 | 290 | 200 | 220 | 235 | 255 | 185 | 210 | 225 | 240 | 190 | 215 | 225 | 245 | 150 | 165 | 180 | 195 |
| P12 | 150 | 165 | 175 | 190 | 130 | 145 | 155 | 170 | 125 | 140 | 150 | 160 | 125 | 140 | 150 | 160 | 100 | 110 | 120 | 130 |
| M1 | — | — | — | — | 185 | 210 | 220 | 240 | 185 | 205 | 220 | 235 | 190 | 215 | 230 | 250 | 160 | 175 | 190 | 205 |
| M2 | — | — | — | — | 155 | 175 | 185 | 200 | 150 | 170 | 180 | 195 | 160 | 180 | 190 | 205 | 130 | 145 | 155 | 170 |
| M3 | — | — | — | — | 125 | 140 | 150 | 165 | 125 | 140 | 150 | 160 | 130 | 145 | 155 | 165 | 110 | 120 | 130 | 140 |
| M4 | — | — | — | — | 100 | 115 | 120 | 130 | 100 | 110 | 120 | 130 | 100 | 110 | 115 | 120 | 85 | 95 | 105 | 110 |
| M5 | — | — | — | — | 85 | 95 | 100 | 110 | 85 | 95 | 100 | 105 | 85 | 95 | 100 | 110 | 70 | 80 | 85 | 90 |
| K1 | 230 | 260 | 275 | 300 | 205 | 230 | 245 | 265 | 195 | 215 | 230 | 250 | — | — | — | — | 155 | 175 | 185 | 200 |
| K2 | 205 | 230 | 245 | 265 | 180 | 205 | 215 | 235 | 175 | 195 | 205 | 225 | — | — | — | — | 140 | 155 | 165 | 180 |
| K3 | 175 | 195 | 205 | 225 | 155 | 170 | 185 | 200 | 145 | 165 | 175 | 190 | — | — | — | — | 115 | 130 | 140 | 150 |
| K4 | 165 | 185 | 200 | 215 | 145 | 165 | 175 | 190 | 140 | 155 | 165 | 180 | — | — | — | — | 110 | 125 | 135 | 145 |
| K5 | 100 | 115 | 120 | 130 | 90 | 100 | 105 | 115 | 85 | 95 | 100 | 110 | — | — | — | — | 70 | 75 | 80 | 90 |
| K6 | 145 | 165 | 175 | 190 | 130 | 145 | 155 | 165 | 125 | 135 | 145 | 160 | — | — | — | — | 100 | 110 | 115 | 125 |
| K7 | 130 | 145 | 155 | 170 | 115 | 130 | 135 | 150 | 110 | 120 | 130 | 140 | — | — | — | — | 85 | 95 | 105 | 110 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1150 | 1275 | 1375 | 1475 |
| N2 | — | — | — | — | — | — | — | — | 580 | 650 | 690 | 750 | — | — | — | — | 465 | 520 | 550 | 600 |
| N3 | — | — | — | — | — | — | — | — | 390 | 435 | 460 | 500 | — | — | — | — | 310 | 345 | 370 | 400 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 355 | 395 | 420 | 455 |
| S1 | — | — | — | — | — | — | — | — | 47 | 50 | 55 | 60 | 47 | 55 | 55 | 60 | 40 | 45 | 48 | 50 |
| S2 | — | — | — | — | — | — | — | — | 38 | 42 | 45 | 48 | 38 | 42 | 45 | 49 | 32 | 36 | 39 | 42 |
| S3 | — | — | — | — | — | — | — | — | 33 | 37 | 39 | 42 | 33 | 37 | 40 | 43 | 28 | 32 | 34 | 37 |
| S11 | — | — | — | — | — | — | — | — | 65 | 70 | 75 | 80 | 65 | 75 | 80 | 85 | 55 | 60 | 65 | 70 |
| S12 | — | — | — | — | — | — | — | — | 44 | 49 | 50 | 55 | 45 | 50 | 55 | 60 | 38 | 42 | 45 | 49 |
| S13 | — | — | — | — | — | — | — | — | 26 | 29 | 31 | 34 | 27 | 30 | 32 | 34 | 23 | 25 | 27 | 29 |
| H5 | 49 | 55 | 60 | 65 | 40 | 44 | 47 | 50 | 39 | 43 | 46 | 50 | 42 | 46 | 49 | 55 | 33 | 37 | 39 | 43 |
| H8 | 55 | 60 | 65 | 70 | 43 | 48 | 50 | 55 | 42 | 47 | 50 | 55 | 44 | 50 | 55 | 55 | 36 | 40 | 43 | 46 |
| H11 | 65 | 70 | 75 | 80 | 50 | 55 | 60 | 65 | 49 | 55 | 60 | 65 | 55 | 60 | 65 | 70 | 42 | 47 | 50 | 55 |
| H12 | 95 | 105 | 115 | 125 | 85 | 95 | 100 | 110 | 80 | 90 | 95 | 105 | 80 | 90 | 95 | 100 | 65 | 70 | 75 | 85 |
| H21 | 55 | 60 | 65 | 70 | 43 | 48 | 50 | 55 | 42 | 47 | 50 | 55 | 44 | 50 | 55 | 55 | 36 | 40 | 43 | 46 |

| SMG | MK1500 | | | | MK2050 | | | | MS2050 | | | | MS2500 | | | | H15 | | | |
|-----|--------|-----|-----|-----|--------|-----|-----|-----|--------|-----|-----|-----|--------|-----|-----|-----|------|------|------|------|
| | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% |
| P1 | — | — | — | — | 260 | 295 | 310 | 340 | 250 | 280 | 300 | 325 | 290 | 325 | 345 | 375 | — | — | — | — |
| P2 | — | — | — | — | 255 | 285 | 305 | 330 | 245 | 275 | 290 | 315 | 285 | 315 | 335 | 365 | — | — | — | — |
| P3 | — | — | — | — | 225 | 250 | 270 | 290 | 215 | 240 | 255 | 275 | 250 | 280 | 295 | 320 | — | — | — | — |
| P4 | — | — | — | — | 200 | 220 | 235 | 255 | 190 | 210 | 225 | 245 | 220 | 245 | 260 | 285 | — | — | — | — |
| P5 | — | — | — | — | 190 | 210 | 225 | 245 | 185 | 205 | 215 | 235 | 210 | 235 | 250 | 270 | — | — | — | — |
| P6 | — | — | — | — | 210 | 235 | 255 | 275 | 205 | 230 | 245 | 265 | 235 | 265 | 280 | 305 | — | — | — | — |
| P7 | — | — | — | — | 200 | 225 | 240 | 260 | 195 | 215 | 230 | 250 | 220 | 250 | 265 | 285 | — | — | — | — |
| P8 | — | — | — | — | 190 | 210 | 225 | 245 | 180 | 200 | 215 | 230 | 210 | 235 | 250 | 270 | — | — | — | — |
| P11 | — | — | — | — | 195 | 215 | 230 | 250 | 190 | 210 | 225 | 245 | 215 | 240 | 255 | 280 | — | — | — | — |
| P12 | — | — | — | — | 130 | 145 | 155 | 165 | 125 | 140 | 150 | 160 | 145 | 160 | 170 | 185 | — | — | — | — |
| M1 | — | — | — | — | — | — | — | — | 200 | 220 | 235 | 255 | 205 | 225 | 240 | 260 | — | — | — | — |
| M2 | — | — | — | — | — | — | — | — | 165 | 185 | 195 | 210 | 170 | 185 | 200 | 215 | — | — | — | — |
| M3 | — | — | — | — | — | — | — | — | 135 | 150 | 160 | 170 | 140 | 155 | 165 | 175 | — | — | — | — |
| M4 | — | — | — | — | — | — | — | — | 105 | 115 | 125 | 135 | 110 | 125 | 130 | 140 | — | — | — | — |
| M5 | — | — | — | — | — | — | — | — | 90 | 100 | 105 | 110 | 90 | 105 | 110 | 120 | — | — | — | — |
| K1 | 290 | 325 | 345 | 375 | 275 | 305 | 325 | 355 | — | — | — | — | — | — | — | — | — | — | — | — |
| K2 | 260 | 290 | 305 | 335 | 245 | 275 | 290 | 315 | — | — | — | — | — | — | — | — | — | — | — | — |
| K3 | 220 | 245 | 260 | 280 | 205 | 230 | 245 | 265 | — | — | — | — | — | — | — | — | — | — | — | — |
| K4 | 210 | 235 | 250 | 270 | 200 | 220 | 235 | 255 | — | — | — | — | — | — | — | — | — | — | — | — |
| K5 | 125 | 140 | 150 | 165 | 120 | 135 | 145 | 155 | — | — | — | — | — | — | — | — | — | — | — | — |
| K6 | 185 | 205 | 220 | 235 | 175 | 195 | 205 | 225 | — | — | — | — | — | — | — | — | — | — | — | — |
| K7 | 165 | 180 | 195 | 210 | 155 | 170 | 185 | 200 | — | — | — | — | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1350 | 1525 | 1625 | 1750 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 550 | 610 | 650 | 710 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 365 | 410 | 435 | 470 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 420 | 465 | 495 | 540 |
| S1 | — | — | — | — | — | — | — | — | 49 | 55 | 60 | 65 | 55 | 60 | 65 | 70 | — | — | — | — |
| S2 | — | — | — | — | — | — | — | — | 39 | 44 | 47 | 50 | 43 | 48 | 50 | 55 | — | — | — | — |
| S3 | — | — | — | — | — | — | — | — | 35 | 39 | 41 | 45 | 38 | 42 | 45 | 49 | — | — | — | — |
| S11 | — | — | — | — | — | — | — | — | 70 | 75 | 80 | 85 | 75 | 80 | 85 | 95 | — | — | — | — |
| S12 | — | — | — | — | — | — | — | — | 47 | 50 | 55 | 60 | 50 | 55 | 60 | 65 | — | — | — | — |
| S13 | — | — | — | — | — | — | — | — | 28 | 31 | 33 | 35 | 30 | 34 | 36 | 39 | — | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

R217.79-XO12



- For insert selection and cutting data recommendations, see page(s) 325-326
- For complete insert programme, see page(s) 684
- For ISO attribute explanation, see page 15



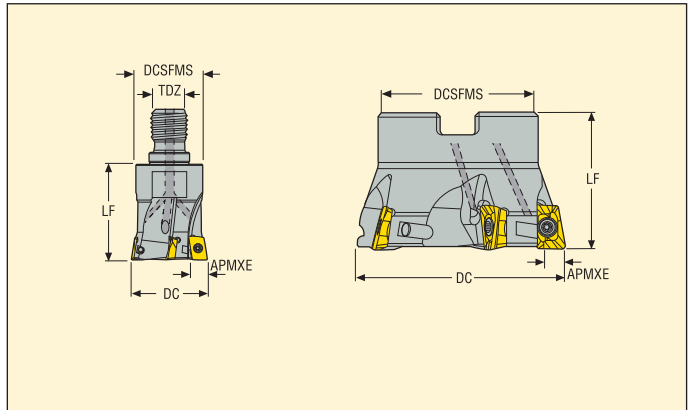
| Designation | Type of mounting | Dimensions in mm | | | | | | | | Insert |
|-------------------------|------------------|------------------|------|------|-------|-------|---|-----|-------|----------|
| | | APMXE | DC | DMM | LS | OAL | | | | |
| R217.79-2025.0-XO12-2AN | Cylindrical | 7,0 | 25,0 | 20,0 | 170,0 | 200,0 | 2 | 0,5 | 20800 | XO..1204 |
| R217.79-2532.0-XO12-3AN | Cylindrical | 7,0 | 32,0 | 25,0 | 215,0 | 250,0 | 3 | 0,9 | 18400 | XO..1204 |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.79-.. | DOUBLE-T | C03507-T10P | H4B-T10P | 2,0 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217.79-XO12



- For insert selection and cutting data recommendations, see page(s) 325-326
- For complete insert programme, see page(s) 684
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|--------------------------|------------------|------------------|------|--------|------|-----|------|---|-----|-------|----------|
| | | APMXE | DC | DCSFMS | DCB | TDZ | LF | | | | |
| R217.79-1025.RE-XO12-2AN | Combimaster | 7,0 | 25,0 | 18,5 | - | M10 | 28,0 | 2 | 0,6 | 20800 | XO..1204 |
| R217.79-1225.RE-XO12-2AN | Combimaster | 7,0 | 25,0 | 23,0 | - | M12 | 30,0 | 2 | 0,1 | 20800 | XO..1204 |
| R217.79-1232.RE-XO12-3AN | Combimaster | 7,0 | 32,0 | 23,0 | - | M12 | 30,0 | 3 | 0,2 | 18400 | XO..1204 |
| R217.79-1632.RE-XO12-2AN | Combimaster | 7,0 | 32,0 | 30,0 | - | M16 | 40,0 | 2 | 0,2 | 18400 | XO..1204 |
| R217.79-1632.RE-XO12-3AN | Combimaster | 7,0 | 32,0 | 30,0 | - | M16 | 40,0 | 3 | 0,2 | 18400 | XO..1204 |
| R217.79-1640.RE-XO12-3AN | Combimaster | 7,0 | 40,0 | 30,0 | - | M16 | 40,0 | 3 | 0,3 | 16400 | XO..1204 |
| R217.79-2040.RE-XO12.3A | Combimaster | 7,0 | 40,0 | 36,5 | - | M20 | 40,0 | 3 | 0,4 | 16400 | XO..1204 |
| R217.79-2040.RE-XO12.4A | Combimaster | 7,0 | 40,0 | 36,5 | - | M20 | 40,0 | 4 | 0,4 | 16400 | XO..1204 |
| R220.79-0040-XO12-3AN | Arbor | 7,0 | 40,0 | 35,0 | 16,0 | - | 40,0 | 3 | 0,2 | 16400 | XO..1204 |
| R220.79-0040-XO12-4AN | Arbor | 7,0 | 40,0 | 35,0 | 16,0 | - | 40,0 | 4 | 0,2 | 16400 | XO..1204 |
| R220.79-0050-XO12-4AN | Arbor | 7,0 | 50,0 | 42,0 | 22,0 | - | 40,0 | 4 | 0,3 | 14800 | XO..1204 |
| R220.79-0063-XO12-5AN | Arbor | 7,0 | 63,0 | 47,0 | 22,0 | - | 40,0 | 5 | 0,5 | 13200 | XO..1204 |
| | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.79-.. | DOUBLE-T | C03507-T10P | H4B-T10P | - | 2,0 |
| R220.79-0040 | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S8X30 | 2,0 |
| R220.79-0050-0063 | DOUBLE-T | C03509-T10P | H4B-T10P | 220.17-692 | 2,0 |
| | | | | | |
| | | | | | |

Please check availability in current price and stock-list

Torque keys, see page 732

R217.79-XO12- Insert selection

| SMG | | f_z | a_{so} | | | |
|-----|--------------------------|-------|----------|-----|-----|-----|
| | | | 100% | 70% | 50% | 30% |
| P1 | XOMX120408TR-ME08 F40M | 0,14 | 5,0 | 5,0 | 5,0 | 6,0 |
| P2 | XOMX120408TR-ME08 F40M | 0,14 | 5,0 | 5,0 | 5,0 | 6,0 |
| P3 | XOMX120408TR-ME08 MP2500 | 0,14 | 5,0 | 5,0 | 5,0 | 6,0 |
| P4 | XOMX120408TR-ME08 MP2500 | 0,13 | 5,0 | 5,0 | 5,0 | 6,0 |
| P5 | XOMX120408TR-ME08 MP2500 | 0,13 | 5,0 | 5,0 | 5,0 | 6,0 |
| P6 | XOMX120408TR-ME08 MP2500 | 0,13 | 5,0 | 5,0 | 5,0 | 6,0 |
| P7 | XOMX120408TR-M12 MP2500 | 0,15 | 5,0 | 5,0 | 5,0 | 6,0 |
| P8 | XOMX120408TR-M12 MP2500 | 0,16 | 5,0 | 5,0 | 5,0 | 6,0 |
| P11 | XOMX120408TR-M12 MP2500 | 0,15 | 5,0 | 5,0 | 5,0 | 6,0 |
| P12 | XOMX120408TR-M12 MP2500 | 0,11 | 4,0 | 4,0 | 4,0 | 4,5 |
| M1 | XOMX120408TR-ME08 MP2500 | 0,14 | 5,0 | 5,0 | 5,0 | 6,0 |
| M2 | XOMX120408TR-ME08 MP2500 | 0,13 | 5,0 | 5,0 | 5,0 | 6,0 |
| M3 | XOMX120408TR-ME08 MP2500 | 0,10 | 4,0 | 4,0 | 4,0 | 4,5 |
| M4 | XOEX120408R-M07 T350M | 0,075 | 3,0 | 3,0 | 3,0 | 3,5 |
| M5 | XOEX120408R-M07 T350M | 0,075 | 3,0 | 3,0 | 3,0 | 3,5 |
| K1 | XOMX120408TR-M12 MK1500 | 0,17 | 5,0 | 5,0 | 5,0 | 6,0 |
| K2 | XOMX120408TR-M12 MK1500 | 0,16 | 5,0 | 5,0 | 5,0 | 6,0 |
| K3 | XOMX120408TR-M12 MK1500 | 0,16 | 5,0 | 5,0 | 5,0 | 6,0 |
| K4 | XOMX120408TR-M12 MK1500 | 0,16 | 5,0 | 5,0 | 5,0 | 6,0 |
| K5 | XOMX120408TR-M12 MK1500 | 0,14 | 5,0 | 5,0 | 5,0 | 6,0 |
| K6 | XOMX120408TR-M12 MK1500 | 0,16 | 5,0 | 5,0 | 5,0 | 6,0 |
| K7 | XOMX120408TR-M12 MP1500 | 0,14 | 5,0 | 5,0 | 5,0 | 6,0 |
| N1 | XOEX120408FR-E06 H15 | 0,13 | 5,0 | 5,0 | 5,0 | 6,0 |
| N2 | XOEX120408FR-E06 F40M | 0,13 | 5,0 | 5,0 | 5,0 | 6,0 |
| N3 | XOEX120408FR-E06 F40M | 0,13 | 5,0 | 5,0 | 5,0 | 6,0 |
| N11 | XOEX120408FR-E06 F40M | 0,13 | 5,0 | 5,0 | 5,0 | 6,0 |
| S1 | XOEX120408R-M07 T350M | 0,075 | 3,0 | 3,0 | 3,0 | 3,5 |
| S2 | XOEX120408R-M07 T350M | 0,075 | 3,0 | 3,0 | 3,0 | 3,5 |
| S3 | XOEX120408R-M07 F40M | 0,070 | 3,0 | 3,0 | 3,0 | 3,5 |
| S11 | XOEX120408R-M07 MS2050 | 0,085 | 3,5 | 3,5 | 3,5 | 4,0 |
| S12 | XOEX120408R-M07 MS2050 | 0,085 | 3,5 | 3,5 | 3,5 | 4,0 |
| S13 | XOEX120408R-M07 MS2050 | 0,075 | 3,0 | 3,0 | 3,0 | 3,5 |
| H5 | XOMX120408TR-D14 MP1500 | 0,12 | 4,0 | 4,0 | 4,0 | 4,5 |
| H8 | XOMX120408TR-D14 MP1500 | 0,095 | 3,5 | 3,5 | 3,5 | 4,0 |
| H11 | XOEX120431R-M07 T350M | 0,070 | 4,0 | 4,0 | 4,0 | 4,5 |
| H12 | XOEX120431R-M07 T350M | 0,055 | 3,5 | 3,5 | 3,5 | 4,0 |
| H21 | XOMX120408TR-D14 MP1500 | 0,095 | 3,5 | 3,5 | 3,5 | 4,0 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

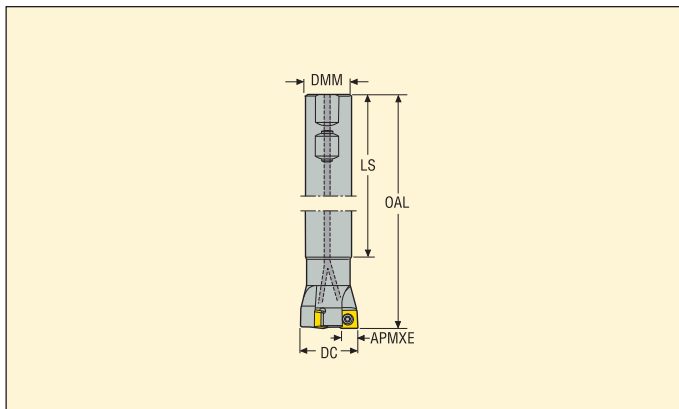
All cutting data are start values

R217.79-XO12 – Cutting data v_c = (m/min)

| SMG | MP1500 | | | | MP2500 | | | | MP3000 | | | | T350M | | | | F40M | | | |
|-----|--------|-----|-----|-----|--------|-----|-----|-----|--------|-----|-----|-----|-------|-----|-----|-----|------|------|------|------|
| | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% |
| P1 | 260 | 290 | 310 | 335 | 230 | 260 | 275 | 295 | 220 | 245 | 260 | 280 | 250 | 275 | 295 | 320 | 200 | 220 | 235 | 255 |
| P2 | 255 | 285 | 300 | 325 | 225 | 250 | 265 | 290 | 215 | 240 | 255 | 275 | 240 | 270 | 285 | 310 | 190 | 215 | 230 | 245 |
| P3 | 225 | 250 | 265 | 285 | 195 | 220 | 235 | 255 | 185 | 210 | 220 | 240 | 210 | 230 | 245 | 265 | 165 | 185 | 195 | 215 |
| P4 | 195 | 220 | 235 | 250 | 175 | 195 | 205 | 225 | 165 | 185 | 195 | 210 | 185 | 205 | 220 | 235 | 150 | 165 | 180 | 190 |
| P5 | 185 | 210 | 225 | 240 | 165 | 185 | 195 | 215 | 155 | 175 | 185 | 200 | 180 | 200 | 215 | 230 | 145 | 160 | 170 | 185 |
| P6 | 215 | 240 | 255 | 275 | 190 | 210 | 225 | 245 | 180 | 200 | 215 | 230 | 200 | 225 | 240 | 260 | 160 | 180 | 190 | 205 |
| P7 | 205 | 225 | 240 | 260 | 180 | 200 | 215 | 230 | 170 | 190 | 200 | 220 | 190 | 215 | 225 | 245 | 150 | 170 | 180 | 195 |
| P8 | 185 | 210 | 225 | 240 | 165 | 185 | 195 | 215 | 155 | 175 | 185 | 200 | 175 | 195 | 210 | 225 | 140 | 155 | 165 | 180 |
| P11 | 195 | 220 | 235 | 255 | 175 | 195 | 205 | 225 | 165 | 185 | 195 | 210 | 185 | 205 | 220 | 240 | 145 | 165 | 175 | 190 |
| P12 | 130 | 145 | 155 | 165 | 115 | 130 | 135 | 150 | 110 | 120 | 130 | 140 | 120 | 135 | 145 | 155 | 95 | 110 | 115 | 125 |
| M1 | — | — | — | — | 160 | 180 | 195 | 210 | 160 | 180 | 190 | 205 | 185 | 210 | 220 | 240 | 155 | 175 | 185 | 200 |
| M2 | — | — | — | — | 135 | 150 | 160 | 170 | 130 | 145 | 155 | 170 | 155 | 175 | 185 | 200 | 130 | 145 | 155 | 165 |
| M3 | — | — | — | — | 115 | 125 | 135 | 145 | 110 | 125 | 130 | 145 | 125 | 140 | 150 | 160 | 105 | 120 | 125 | 135 |
| M4 | — | — | — | — | 90 | 100 | 105 | 115 | 85 | 95 | 105 | 110 | 100 | 110 | 115 | 125 | 85 | 95 | 100 | 105 |
| M5 | — | — | — | — | 75 | 80 | 85 | 95 | 70 | 80 | 85 | 95 | 80 | 90 | 95 | 105 | 70 | 75 | 80 | 90 |
| K1 | 200 | 225 | 240 | 260 | 180 | 200 | 210 | 230 | 170 | 190 | 200 | 215 | — | — | — | — | 150 | 170 | 180 | 195 |
| K2 | 180 | 200 | 210 | 230 | 155 | 175 | 185 | 200 | 150 | 165 | 175 | 190 | — | — | — | — | 135 | 150 | 160 | 175 |
| K3 | 150 | 170 | 180 | 195 | 135 | 150 | 160 | 170 | 125 | 140 | 150 | 160 | — | — | — | — | 115 | 130 | 135 | 145 |
| K4 | 145 | 160 | 170 | 185 | 125 | 140 | 150 | 165 | 120 | 135 | 145 | 155 | — | — | — | — | 110 | 120 | 130 | 140 |
| K5 | 90 | 100 | 105 | 115 | 80 | 90 | 95 | 100 | 75 | 85 | 90 | 95 | — | — | — | — | 65 | 75 | 80 | 85 |
| K6 | 125 | 140 | 150 | 160 | 110 | 125 | 135 | 145 | 105 | 120 | 125 | 135 | — | — | — | — | 95 | 110 | 115 | 125 |
| K7 | 115 | 130 | 135 | 145 | 100 | 115 | 120 | 130 | 95 | 105 | 115 | 125 | — | — | — | — | 85 | 95 | 100 | 110 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1100 | 1250 | 1325 | 1425 |
| N2 | — | — | — | — | — | — | — | — | 495 | 550 | 590 | 630 | — | — | — | — | 450 | 500 | 530 | 580 |
| N3 | — | — | — | — | — | — | — | — | 330 | 365 | 390 | 425 | — | — | — | — | 300 | 335 | 355 | 385 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 340 | 380 | 405 | 440 |
| S1 | — | — | — | — | — | — | — | — | 40 | 45 | 48 | 50 | 46 | 50 | 55 | 60 | 39 | 43 | 46 | 50 |
| S2 | — | — | — | — | — | — | — | — | 33 | 36 | 39 | 42 | 37 | 41 | 44 | 47 | 31 | 35 | 37 | 40 |
| S3 | — | — | — | — | — | — | — | — | 29 | 32 | 34 | 37 | 32 | 36 | 38 | 42 | 27 | 31 | 33 | 35 |
| S11 | — | — | — | — | — | — | — | — | 55 | 65 | 65 | 75 | 65 | 70 | 75 | 80 | 55 | 60 | 65 | 70 |
| S12 | — | — | — | — | — | — | — | — | 39 | 44 | 46 | 50 | 44 | 49 | 50 | 55 | 37 | 42 | 45 | 48 |
| S13 | — | — | — | — | — | — | — | — | 23 | 25 | 27 | 29 | 26 | 29 | 31 | 33 | 22 | 24 | 26 | 28 |
| H5 | 43 | 48 | 50 | 55 | 35 | 39 | 41 | 45 | 34 | 38 | 40 | 43 | 40 | 45 | 48 | 50 | 32 | 36 | 38 | 42 |
| H8 | 47 | 55 | 55 | 60 | 38 | 42 | 45 | 49 | 37 | 41 | 44 | 48 | 43 | 48 | 50 | 55 | 35 | 39 | 41 | 45 |
| H11 | 55 | 60 | 65 | 70 | 44 | 49 | 50 | 55 | 43 | 48 | 50 | 55 | 50 | 55 | 60 | 65 | 41 | 46 | 49 | 55 |
| H12 | 85 | 95 | 100 | 110 | 75 | 85 | 90 | 95 | 70 | 80 | 85 | 90 | 75 | 85 | 90 | 100 | 60 | 70 | 75 | 80 |
| H21 | 47 | 55 | 55 | 60 | 38 | 42 | 45 | 49 | 37 | 41 | 44 | 48 | 43 | 48 | 50 | 55 | 35 | 39 | 41 | 45 |

| SMG | MK1500 | | | | MK2050 | | | | MS2050 | | | | MS2500 | | | | H15 | | | |
|-----|--------|-----|-----|-----|--------|-----|-----|-----|--------|-----|-----|-----|--------|-----|-----|-----|------|------|------|------|
| | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% |
| P1 | — | — | — | — | 225 | 255 | 270 | 290 | 235 | 265 | 280 | 305 | 310 | 345 | 370 | 400 | — | — | — | — |
| P2 | — | — | — | — | 220 | 245 | 265 | 285 | 230 | 260 | 275 | 295 | 305 | 340 | 360 | 390 | — | — | — | — |
| P3 | — | — | — | — | 195 | 215 | 230 | 250 | 200 | 220 | 235 | 255 | 260 | 290 | 310 | 335 | — | — | — | — |
| P4 | — | — | — | — | 170 | 190 | 205 | 220 | 175 | 195 | 210 | 225 | 230 | 255 | 275 | 295 | — | — | — | — |
| P5 | — | — | — | — | 165 | 180 | 195 | 210 | 170 | 190 | 205 | 220 | 225 | 250 | 270 | 290 | — | — | — | — |
| P6 | — | — | — | — | 185 | 210 | 225 | 240 | 195 | 215 | 230 | 250 | 255 | 280 | 300 | 325 | — | — | — | — |
| P7 | — | — | — | — | 175 | 195 | 210 | 225 | 180 | 205 | 215 | 235 | 240 | 265 | 285 | 305 | — | — | — | — |
| P8 | — | — | — | — | 165 | 180 | 195 | 210 | 165 | 185 | 200 | 215 | 220 | 245 | 260 | 280 | — | — | — | — |
| P11 | — | — | — | — | 170 | 190 | 205 | 220 | 175 | 200 | 210 | 225 | 230 | 260 | 275 | 300 | — | — | — | — |
| P12 | — | — | — | — | 115 | 125 | 135 | 145 | 115 | 130 | 140 | 150 | 150 | 170 | 180 | 195 | — | — | — | — |
| M1 | — | — | — | — | — | — | — | — | 185 | 210 | 220 | 240 | 215 | 240 | 260 | 280 | — | — | — | — |
| M2 | — | — | — | — | — | — | — | — | 155 | 175 | 185 | 200 | 180 | 200 | 215 | 230 | — | — | — | — |
| M3 | — | — | — | — | — | — | — | — | 125 | 140 | 150 | 160 | 145 | 160 | 170 | 185 | — | — | — | — |
| M4 | — | — | — | — | — | — | — | — | 100 | 110 | 115 | 125 | 115 | 125 | 135 | 145 | — | — | — | — |
| M5 | — | — | — | — | — | — | — | — | 80 | 90 | 95 | 105 | 95 | 105 | 115 | 120 | — | — | — | — |
| K1 | 250 | 280 | 300 | 325 | 240 | 265 | 285 | 305 | — | — | — | — | — | — | — | — | — | — | — | — |
| K2 | 225 | 250 | 265 | 285 | 210 | 235 | 250 | 270 | — | — | — | — | — | — | — | — | — | — | — | — |
| K3 | 190 | 210 | 225 | 240 | 180 | 200 | 215 | 230 | — | — | — | — | — | — | — | — | — | — | — | — |
| K4 | 180 | 200 | 215 | 230 | 170 | 190 | 205 | 220 | — | — | — | — | — | — | — | — | — | — | — | — |
| K5 | 110 | 125 | 135 | 145 | 105 | 120 | 125 | 135 | — | — | — | — | — | — | — | — | — | — | — | — |
| K6 | 160 | 175 | 190 | 205 | 150 | 170 | 180 | 195 | — | — | — | — | — | — | — | — | — | — | — | — |
| K7 | 145 | 160 | 170 | 185 | 135 | 150 | 160 | 175 | — | — | — | — | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1250 | 1400 | 1475 | 1600 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 500 | 560 | 600 | 650 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 335 | 375 | 400 | 430 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 385 | 430 | 455 | 495 |
| S1 | — | — | — | — | — | — | — | — | 46 | 50 | 55 | 60 | 55 | 60 | 65 | 70 | — | — | — | — |
| S2 | — | — | — | — | — | — | — | — | 37 | 41 | 44 | 47 | 45 | 50 | 55 | 60 | — | — | — | — |
| S3 | — | — | — | — | — | — | — | — | 32 | 36 | 38 | 42 | 39 | 44 | 47 | 50 | — | — | — | — |
| S11 | — | — | — | — | — | — | — | — | 65 | 70 | 75 | 80 | 75 | 85 | 90 | 100 | — | — | — | — |
| S12 | — | — | — | — | — | — | — | — | 44 | 49 | 50 | 55 | 55 | 60 | 65 | 70 | — | — | — | — |
| S13 | — | — | — | — | — | — | — | — | 26 | 29 | 31 | 33 | 31 | 35 | 37 | 40 | — | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

R217.79-12



- For insert selection and cutting data recommendations, see page(s) 330-331
- For complete insert programme, see page(s) 658
- For ISO attribute explanation, see page 15

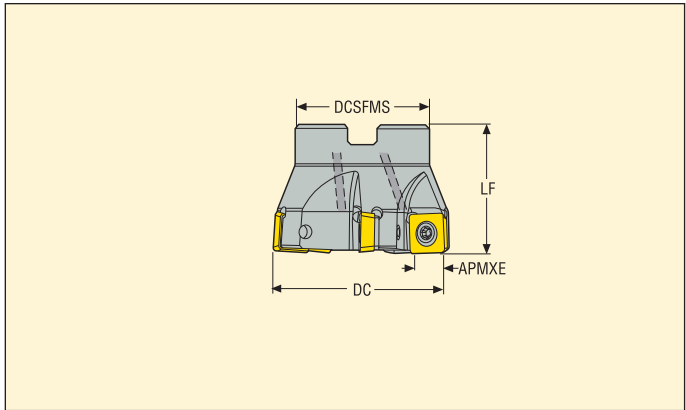
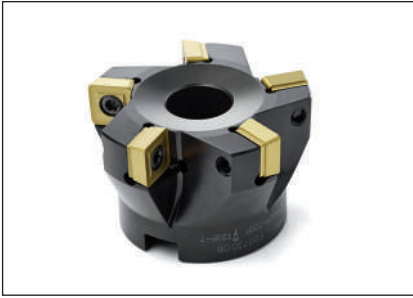
| Designation | Type of mounting | Dimensions in mm | | | | | | | | Insert |
|--------------------|------------------|------------------|------|------|-------|-------|---|-----|-------|----------|
| | | APMXE | DC | DMM | LS | OAL | | | | |
| R217.79-2532.3-12A | Cyl.-Weldon | 11,0 | 32,0 | 25,0 | 150,0 | 200,0 | 2 | 0,7 | 12100 | SC..1206 |
| R217.79-3240.3-12A | Cyl.-Weldon | 11,0 | 40,0 | 32,0 | 150,0 | 200,0 | 3 | 1,1 | 10800 | SC..1206 |
| | | | | | | | | | | |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.79-.. | DOUBLE-T | C45011-T20P | H6B-T20P | 3,5 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.79-12



- For insert selection and cutting data recommendations, see page(s) 330-331
- For complete insert programme, see page(s) 658
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | Insert |
|------------------|------------------|------------------|-------|--------|------|------|---|-----|------|----------|
| | | APMXE | DC | DCSFMS | DCB | LF | | | | |
| R220.79-0050-12A | Arbor | 11,0 | 50,0 | 42,0 | 22,0 | 40,0 | 4 | 0,3 | 9700 | SC..1206 |
| R220.79-0063-12A | Arbor | 11,0 | 63,0 | 47,0 | 22,0 | 40,0 | 5 | 0,5 | 8600 | SC..1206 |
| R220.79-0080-12A | Arbor | 11,0 | 80,0 | 62,0 | 27,0 | 50,0 | 6 | 1,0 | 7600 | SC..1206 |
| R220.79-0100-12A | Arbor | 11,0 | 100,0 | 77,0 | 32,0 | 50,0 | 7 | 1,6 | 7000 | SC..1206 |
| R220.79-0125-12 | Arbor | 11,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 2,9 | 6300 | SC..1206 |
| | | | | | | | | | | |
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Spare Parts

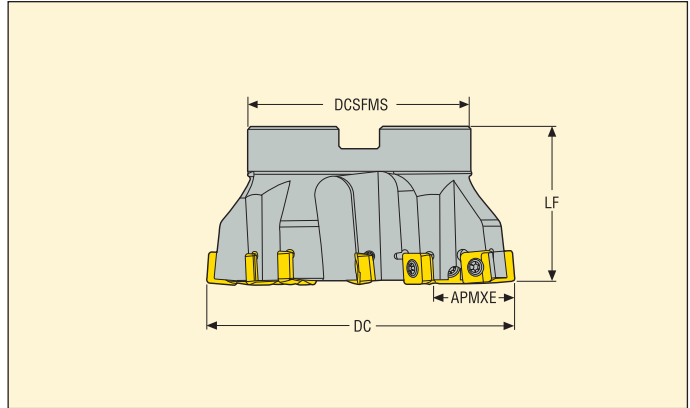
| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.79-0050-0063 | DOUBLE-T | C45011-T20P | H6B-T20P | 220.17-692 | 3,5 |
| R220.79-0080 | DOUBLE-T | C45011-T20P | H6B-T20P | - | 3,5 |
| R220.79-0100-0125 | DOUBLE-T | C45011-T20P | H6B-T20PL | - | 3,5 |
| | | | | | |
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| | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.79-12



- For insert selection and cutting data recommendations, see page(s) 330-331
- For complete insert programme, see page(s) 658
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | Insert |
|-----------------|------------------|------------------|-------|--------|------|------|----|-----|------|----------|
| | | APMX | DC | DCSFMS | DCB | LF | | | | |
| R220.79-0100-20 | Arbor | 20,0 | 100,0 | 77,0 | 32,0 | 50,0 | 8 | 1,3 | 7000 | SC..1206 |
| R220.79-8160-40 | Arbor | 40,0 | 160,0 | 90,0 | 40,0 | 64,0 | 16 | 4,0 | 5600 | SC..1206 |
| | | | | | | | | | | |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|--------------|----------------|--------------|------------|-------------------|
| | | | | |
| R220.79-0100 | DOUBLE-T | C45011-T20P | H6B-T20PL | 5,0 |
| R220.79-8160 | DOUBLE-T | C45011-T20P | H6B-T20PL | 5,0 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217.79-12- Insert selection

| SMG | | f_z | a_{so} | | | |
|-----|-------------------------|-------|----------|-----|-----|-----|
| | | | 100% | 70% | 50% | 30% |
| P1 | SCET120612T-M11 F40M | 0,15 | 8,0 | 8,0 | 8,0 | 9,0 |
| P2 | SCET120612T-M11 F40M | 0,16 | 8,0 | 8,0 | 8,0 | 9,0 |
| P3 | SCET120612T-M11 F40M | 0,15 | 8,0 | 8,0 | 8,0 | 9,0 |
| P4 | SCET120612T-M11 MP2500 | 0,15 | 8,0 | 8,0 | 8,0 | 9,0 |
| P5 | SCET120612T-M11 MP2500 | 0,14 | 8,0 | 8,0 | 8,0 | 9,0 |
| P6 | SCET120612T-M11 MP2500 | 0,14 | 8,0 | 8,0 | 8,0 | 9,0 |
| P7 | SCET120612T-M11 MP2500 | 0,14 | 8,0 | 8,0 | 8,0 | 9,0 |
| P8 | SCET120612T-M11 MP2500 | 0,15 | 8,0 | 8,0 | 8,0 | 9,0 |
| P11 | SCET120612T-M11 MP2500 | 0,14 | 8,0 | 8,0 | 8,0 | 9,0 |
| P12 | SCET120612T-M11 MP2500 | 0,095 | 6,0 | 6,0 | 6,0 | 7,0 |
| M1 | SCET120612T-M14 T350M | 0,20 | 8,0 | 8,0 | 8,0 | 9,0 |
| M2 | SCET120612T-M14 T350M | 0,18 | 8,0 | 8,0 | 8,0 | 9,0 |
| M3 | SCET120612T-M14 T350M | 0,15 | 6,0 | 6,0 | 6,0 | 7,0 |
| M4 | SCET120612T-M14 T350M | 0,13 | 4,5 | 4,5 | 4,5 | 5,0 |
| M5 | SCET120612T-M14 T350M | 0,13 | 4,5 | 4,5 | 4,5 | 5,0 |
| K1 | SCET120612T-M14 MK1500 | 0,20 | 8,0 | 8,0 | 8,0 | 9,0 |
| K2 | SCET120612T-M14 MK1500 | 0,18 | 8,0 | 8,0 | 8,0 | 9,0 |
| K3 | SCET120612T-M14 MK1500 | 0,18 | 8,0 | 8,0 | 8,0 | 9,0 |
| K4 | SCET120612T-M14 MK1500 | 0,18 | 8,0 | 8,0 | 8,0 | 9,0 |
| K5 | SCET120612T-M14 MK1500 | 0,16 | 8,0 | 8,0 | 8,0 | 9,0 |
| K6 | SCET120612T-M14 MK1500 | 0,18 | 8,0 | 8,0 | 8,0 | 9,0 |
| K7 | SCET120612T-MD15 MP1500 | 0,18 | 8,0 | 8,0 | 8,0 | 9,0 |
| N1 | SCET120612T-M11 F40M | 0,20 | 8,0 | 8,0 | 8,0 | 9,0 |
| N2 | SCET120612T-M11 F40M | 0,20 | 8,0 | 8,0 | 8,0 | 9,0 |
| N3 | SCET120612T-M11 F40M | 0,20 | 8,0 | 8,0 | 8,0 | 9,0 |
| N11 | SCET120612T-M11 F40M | 0,20 | 8,0 | 8,0 | 8,0 | 9,0 |
| S1 | SCET120612T-M14 T350M | 0,13 | 4,5 | 4,5 | 4,5 | 5,0 |
| S2 | SCET120612T-M14 T350M | 0,13 | 4,5 | 4,5 | 4,5 | 5,0 |
| S3 | SCET120612T-M14 T350M | 0,12 | 4,5 | 4,5 | 4,5 | 5,0 |
| S11 | SCET120612T-M14 F40M | 0,15 | 5,0 | 5,0 | 5,0 | 6,0 |
| S12 | SCET120612T-M14 F40M | 0,15 | 5,0 | 5,0 | 5,0 | 6,0 |
| S13 | SCET120612T-M14 F40M | 0,13 | 4,5 | 4,5 | 4,5 | 5,0 |
| H5 | SCET120612T-MD15 MP1500 | 0,13 | 6,0 | 6,0 | 6,0 | 7,0 |
| H8 | SCET120612T-MD15 MP1500 | 0,10 | 5,0 | 5,0 | 5,0 | 6,0 |
| H11 | SCET120612T-MD15 T350M | 0,13 | 6,0 | 6,0 | 6,0 | 7,0 |
| H12 | SCET120612T-MD15 T350M | 0,10 | 5,0 | 5,0 | 5,0 | 6,0 |
| H21 | SCET120612T-MD15 MP1500 | 0,10 | 5,0 | 5,0 | 5,0 | 6,0 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R217.79-12 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | | MP2500 | | | | T350M | | | | F40M | | | | MK1500 | | | |
|-----|--------|-----|-----|-----|--------|-----|-----|-----|-------|-----|-----|-----|------|------|------|------|--------|-----|-----|-----|
| | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% | 100% | 70% | 50% | 30% |
| P1 | 285 | 320 | 340 | 365 | 255 | 280 | 300 | 325 | 200 | 225 | 240 | 260 | 175 | 195 | 210 | 225 | — | — | — | — |
| P2 | 270 | 305 | 325 | 350 | 240 | 270 | 285 | 310 | 195 | 220 | 235 | 250 | 170 | 190 | 200 | 220 | — | — | — | — |
| P3 | 240 | 265 | 285 | 310 | 210 | 235 | 250 | 270 | 170 | 190 | 205 | 220 | 150 | 165 | 175 | 190 | — | — | — | — |
| P4 | 210 | 235 | 250 | 270 | 185 | 210 | 220 | 240 | 150 | 170 | 180 | 195 | 130 | 145 | 155 | 170 | — | — | — | — |
| P5 | 205 | 230 | 245 | 265 | 180 | 205 | 215 | 235 | 145 | 165 | 175 | 190 | 130 | 145 | 150 | 165 | — | — | — | — |
| P6 | 230 | 260 | 275 | 295 | 205 | 230 | 245 | 265 | 165 | 185 | 195 | 210 | 145 | 160 | 170 | 185 | — | — | — | — |
| P7 | 220 | 245 | 260 | 280 | 195 | 215 | 230 | 250 | 155 | 175 | 185 | 200 | 135 | 150 | 160 | 175 | — | — | — | — |
| P8 | 200 | 225 | 240 | 260 | 180 | 200 | 210 | 230 | 145 | 160 | 170 | 185 | 125 | 140 | 150 | 160 | — | — | — | — |
| P11 | 210 | 235 | 250 | 270 | 185 | 210 | 225 | 240 | 150 | 170 | 180 | 195 | 130 | 145 | 155 | 170 | — | — | — | — |
| P12 | 140 | 160 | 170 | 185 | 125 | 140 | 150 | 160 | 105 | 115 | 125 | 135 | 90 | 100 | 105 | 115 | — | — | — | — |
| M1 | — | — | — | — | 175 | 195 | 205 | 225 | 150 | 170 | 180 | 195 | 135 | 155 | 165 | 175 | — | — | — | — |
| M2 | — | — | — | — | 145 | 165 | 175 | 190 | 125 | 140 | 150 | 165 | 115 | 130 | 135 | 150 | — | — | — | — |
| M3 | — | — | — | — | 120 | 135 | 145 | 155 | 105 | 115 | 125 | 135 | 95 | 105 | 110 | 120 | — | — | — | — |
| M4 | — | — | — | — | 95 | 105 | 115 | 125 | 85 | 90 | 100 | 105 | 75 | 85 | 90 | 95 | — | — | — | — |
| M5 | — | — | — | — | 80 | 90 | 95 | 105 | 70 | 75 | 80 | 90 | 65 | 70 | 75 | 80 | — | — | — | — |
| K1 | 215 | 240 | 255 | 275 | 190 | 215 | 225 | 245 | — | — | — | — | 135 | 150 | 160 | 175 | 250 | 280 | 300 | 325 |
| K2 | 195 | 220 | 230 | 250 | 175 | 195 | 205 | 220 | — | — | — | — | 120 | 135 | 145 | 155 | 225 | 255 | 270 | 290 |
| K3 | 165 | 185 | 195 | 210 | 145 | 165 | 175 | 190 | — | — | — | — | 105 | 115 | 120 | 130 | 190 | 215 | 230 | 245 |
| K4 | 155 | 175 | 185 | 205 | 140 | 155 | 165 | 180 | — | — | — | — | 100 | 110 | 115 | 125 | 185 | 205 | 220 | 235 |
| K5 | 95 | 105 | 115 | 125 | 85 | 95 | 100 | 110 | — | — | — | — | 60 | 70 | 70 | 80 | 115 | 125 | 135 | 145 |
| K6 | 140 | 155 | 165 | 180 | 125 | 135 | 145 | 160 | — | — | — | — | 85 | 95 | 105 | 110 | 160 | 180 | 190 | 210 |
| K7 | 125 | 135 | 145 | 160 | 110 | 120 | 130 | 140 | — | — | — | — | 80 | 85 | 90 | 100 | 145 | 160 | 175 | 185 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 970 | 1075 | 1150 | 1250 | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 390 | 435 | 465 | 510 | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 260 | 290 | 310 | 335 | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 300 | 335 | 355 | 385 | — | — | — | — |
| S1 | — | — | — | — | — | — | — | — | 39 | 43 | 46 | 50 | 35 | 39 | 42 | 45 | — | — | — | — |
| S2 | — | — | — | — | — | — | — | — | 31 | 35 | 37 | 40 | 28 | 32 | 34 | 37 | — | — | — | — |
| S3 | — | — | — | — | — | — | — | — | 27 | 31 | 33 | 36 | 25 | 28 | 30 | 32 | — | — | — | — |
| S11 | — | — | — | — | — | — | — | — | 55 | 60 | 65 | 70 | 48 | 55 | 55 | 60 | — | — | — | — |
| S12 | — | — | — | — | — | — | — | — | 37 | 41 | 44 | 47 | 33 | 37 | 40 | 43 | — | — | — | — |
| S13 | — | — | — | — | — | — | — | — | 22 | 24 | 26 | 28 | 20 | 22 | 24 | 26 | — | — | — | — |
| H5 | 47 | 55 | 55 | 60 | 38 | 42 | 45 | 49 | 34 | 38 | 41 | 44 | 30 | 33 | 35 | 38 | — | — | — | — |
| H8 | 50 | 55 | 60 | 65 | 41 | 46 | 49 | 55 | 37 | 41 | 44 | 48 | 32 | 36 | 38 | 41 | — | — | — | — |
| H11 | 60 | 65 | 70 | 75 | 48 | 55 | 60 | 60 | 44 | 49 | 50 | 55 | 38 | 42 | 45 | 49 | — | — | — | — |
| H12 | 90 | 100 | 110 | 115 | 80 | 90 | 95 | 105 | 65 | 75 | 80 | 85 | 60 | 65 | 70 | 75 | — | — | — | — |
| H21 | 50 | 55 | 60 | 65 | 41 | 46 | 49 | 55 | 37 | 41 | 44 | 48 | 32 | 36 | 38 | 41 | — | — | — | — |

Ball nose cutters for copy milling - Selection Table

| Cutter | Insert | Material suitability | | | | | | Corner radius (mm) | | | | No. of cutting edges | Cutter diameter available (mm)/max depth of cut | | | | | | | | See page | | |
|---------------------------|-------------------------|----------------------|---|---|---|---|---|--------------------|---|---|---|----------------------|---|----|----|----|----|----|----|----|----------|--|----|
| | | P | M | K | N | S | H | | | | | | 12 | 16 | 20 | 25 | 30 | 32 | 40 | 50 | | | |
| R218.20 | 218.20-060 | ■ | ■ | ■ | ▣ | ■ | - | 6.0 | ■ | □ | ▣ | 2 | 10 | | | | | | | | | | |
| | 218.20-080 | ■ | ■ | ■ | ▣ | ■ | ▣ | 8.0 | ■ | ▣ | ▣ | 2 | 14 | | | | | | | | | | |
| | 218.20-100 | ■ | ■ | ■ | ▣ | ■ | ▣ | 10.0 | ■ | ■ | ▣ | 2 | | 18 | | | | | | | | | |
| | 218.20-125 | ■ | ■ | ■ | ▣ | ■ | ▣ | 12.5 | ■ | ■ | ▣ | 2 | | | 22 | | | | | | | | |
| | 218.20-150 | ■ | ■ | ■ | ▣ | ■ | ▣ | 15.0 | ▣ | ■ | ▣ | 2 | | | | 27 | | | | | | | |
| | 218.20-160 | ■ | ■ | ■ | ▣ | ■ | ▣ | 16.0 | ▣ | ■ | ▣ | 2 | | | | | 28 | | | | | | |
| | 218.20-200 | ■ | ■ | ■ | ▣ | ■ | - | 20.0 | □ | ■ | ▣ | 2 | | | | | | | | | 35 | | |
| | 218.20-250 | ■ | ■ | ■ | ▣ | ■ | - | 25.0 | □ | ■ | ▣ | 2 | | | | | | | | | | | 44 |
| R218.20 long cutting edge | 218.20-150 / SPMT10 | ■ | ■ | ■ | ▣ | ■ | ▣ | 15.0 | ▣ | ■ | ▣ | 2/4 | | | | 45 | | | | | | | |
| | 218.20-160 / SPMT10 | ■ | ■ | ■ | ▣ | ■ | ▣ | 16.0 | ▣ | ■ | ▣ | 2/4 | | | | | 54 | | | | | | |
| | 218.20-200 / SC..12 | ■ | ■ | ■ | ▣ | ■ | - | 20.0 | □ | ■ | ▣ | 2/4 | | | | | | | | | 60 | | |
| | 218.20-250 / SC..12 | ■ | ■ | ■ | ▣ | ■ | - | 25.0 | □ | ■ | ▣ | 2/4 | | | | | | | | | | | 70 |

374-376

| | | | |
|--------------------|---|---|--|
| 1st choice | ■ | High speed machine with low Power/torque | |
| Alternative choice | ▣ | Strong stable machine with rigid connection | |
| Possible choice | □ | Unstable condition suitability | |
| Not recommended | - | | |

x indicates the maximum depth of cut

x

Ball nose cutters for copy milling - Selection Table

| Insert | Insert | Material suitability | | | | | | Corner radius (mm) | | | | No. of cutting edges | Cutter diameter available (mm) / max depth of cut | | | | | | | See page |
|-------------|-----------------------|----------------------|---|---|---|---|---|--------------------|---|---|---|----------------------|---|----|----|----|----|----|---------|----------|
| | | P | M | K | N | S | H | | | | | | 16 | 20 | 25 | 30 | 32 | 40 | 50 | |
| R218.19 | 218.19-080/SPMX06 | ■ | ☑ | ■ | ☑ | ■ | ☑ | 8.0 | ■ | ☑ | ■ | 3/4 | 17 | | | | | | 399-400 | |
| | 218.19-100/SPMX07 | ■ | ☑ | ■ | ☑ | ■ | ☑ | 10.0 | ■ | ■ | ■ | 3/4 | | 16 | | | | | | |
| | 218.19-125/SPMX09 | ■ | ☑ | ■ | ☑ | ■ | ☑ | 16.0 | ■ | ■ | ■ | 3/4 | | | 26 | | | | | |
| | 218.19-160/SPMT10 | ■ | ☑ | ■ | ☑ | ■ | ☑ | 16.0 | ☑ | ■ | ■ | 3/4 | | | | | 30 | 36 | | |
| R218.19 HFA | 218.19-125 | ■ | ■ | ■ | ☑ | ■ | ☑ | 12.5 | ■ | ■ | ■ | 3 | | | 14 | | | | 401 | |
| | 218.19-160 | ■ | ■ | ■ | ☑ | ■ | ☑ | 16.0 | ☑ | ■ | ■ | 3 | | | | | 18 | | | |
| | 218.19-200 | ■ | ■ | ■ | ☑ | ■ | □ | 20.0 | □ | ■ | ■ | 3 | | | | | | 25 | | |

| | | | |
|--------------------|---|---|--|
| 1st choice | ■ | High speed machine with low Power/torque | |
| Alternative choice | ☑ | Strong stable machine with rigid connection | |
| Possible choice | □ | Unstable condition suitability | |
| Not recommended | - | | |

x indicates the maximum depth of cut

| |
|---|
| x |
|---|

Round insert cutters

| Insert | a_p max | a_p rec. | Material suitability | | | | | | | | | |
|-----------------------------|-----------|------------|----------------------|---|---|---|---|---|---|---|---|---|
| | | | P | M | K | N | S | H | | | | |
| Round 5 | 2,5 | 1 | ■ | ▣ | ■ | □ | ■ | ■ | ■ | ▣ | ■ | □ |
| Round 6 | 3 | 1 | ■ | ■ | ■ | ■ | ▣ | ■ | ■ | ▣ | ■ | □ |
| Round 7 | 3,5 | 1,5 | ■ | ▣ | ■ | ■ | ▣ | ■ | ■ | ▣ | ■ | □ |
| Round 8 | 4 | 1,5 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ▣ | ■ | ▣ |
| Round 10 | 5 | 2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ▣ |
| Round 12 | 6 | 3 | ■ | ■ | ■ | ■ | ■ | ■ | □ | ■ | ■ | ▣ |
| Round 16 | 8 | 5 | ■ | ■ | ■ | - | ■ | ▣ | - | ■ | ■ | ▣ |
| Round 20 | 10 | 6 | ■ | ■ | ■ | - | ■ | □ | - | ■ | ■ | ▣ |
| Round 12 R217/220,28 | 6 | 3 | ■ | ■ | ■ | □ | ■ | ▣ | □ | ■ | □ | ▣ |

| | | | | | | |
|--------------------|---|---|--|------------------|--|--|
| 1st choice | ■ | High speed machine with low Power/Torque | | Ramping ability | | a_p max = Maximum depth of cut possible |
| Alternative choice | ▣ | Strong stable machine with rigid connection | | Plunging ability | | a_p rec. = Recommended depth of cut for optimal result |
| Possible choice | □ | Unstable condition suitability | | | | |
| Not recommended | - | | | | | |

Round insert cutters

| Insert | Applica- tion | Cutter diameter available (mm)/number of teeth | | | | | | | | | | | | | | | | | | | Page | | | | | | | | |
|-------------|------------------|--|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|------|----|-----|-----|-----|-----|-----|-----|---------|
| | | 10 | 12 | 15 | 16 | 20 | 24 | 25 | 32 | 35 | 40 | 42 | 44 | 50 | 52 | 63 | 66 | 80 | 83 | 84 | | 92 | 100 | 112 | 125 | 137 | 160 | 200 | |
| Round 5 | | 2 | 3 | 4 | | 5 | | | | | | | | | | | | | | | | | | | | | | | 340-341 |
| Round 6 | | | 2 | | 3 | 4 | | 5 | 6 | | 8 | | | | | | | | | | | | | | | | | | 344-345 |
| Round 7 | | | | | 3 | 4 | | 5 | | | | | | | | | | | | | | | | | | | | | 348 |
| Round 8 | | | | | | 2 | | 3 | | | | | | 5 | | | | | | | | | | | | | | | 351-352 |
| | | | | | 2 | 3 | | 4 | 5 | | 6 | | | 7 | | | | | | | | | | | | | | | |
| Round 10 | | | | | | | | | | | 3 | | | 4 | | | | | | | | | | | | | | | 355-356 |
| | | | | | | | 2 | 3 | | 4 | 5 | | | | | | | | | | | | | | | | | | |
| Round 12 | | | | | | | | | | | 3 | 3 | | 4 | 4 | 4 | 5 | | 6 | | 6 | | | 7 | | 8 | | | 359-363 |
| | | | | | | | | | | | | | | | | 6 | 6 | 7 | | | | 7 | | | | | | | |
| | | | | | | | | 2 | 3 | 4 | 4 | 5 | | | 5 | 5 | 7 | | 8 | | | | 9 | | 11 | | | | |
| Round 16 | | | | | | | | | | | | | | | | 4 | 5 | 5 | | 5 | | 6 | | 6 | | | | | 366 |
| | | | | | | | | | 2 | | 3 | | | 3 | 4 | 5 | 6 | 6 | | | | 7 | | 8 | | 9 | | | |
| Round 20 | | | | | | | | | | | | | | | | | | | 4 | 4 | | 5 | | 5 | | 6 | | | 369-371 |
| | | | | | | | | | | 1 | | 2 | | 3 | | 4 | | 5 | | | | 6 | | 7 | | | | 8 | |
| Round 12 | | | | | | | | | | | | | | 5 | 5 | 6 | 7 | 8 | | | | 10 | | | | | | | 369-371 |
| R217/220.28 | | | | | | | | | | 3 | | 4 | | 6 | | 8 | | | | | | 12 | | | | | | | |

x indicates number of teeth (first choice)

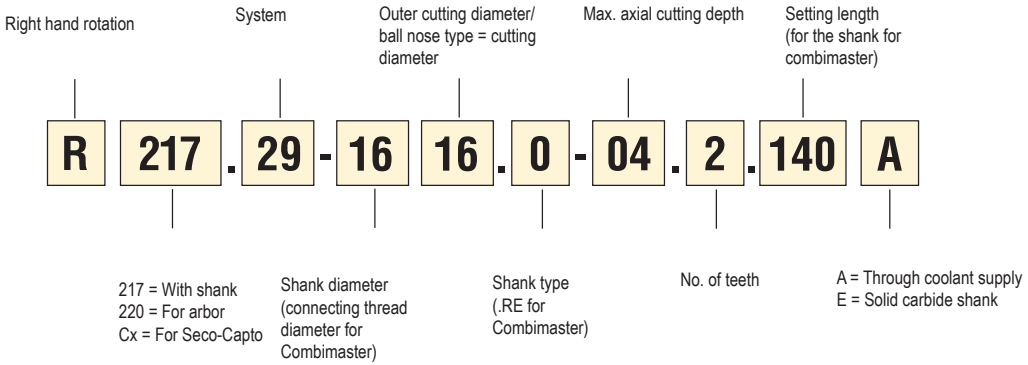
x indicates number of teeth

- Coarse pitch-troublesooter for unstable conditions and long overhang
- Normal pitch-alternative choice
- Close pitch-basic choice for productivity

Milling cutters

In milling Seco uses product specific designation systems, there is no ISO system available for cutters. See example below.

Code key for copy milling cutter 217/220.29



Dimensions of mounting

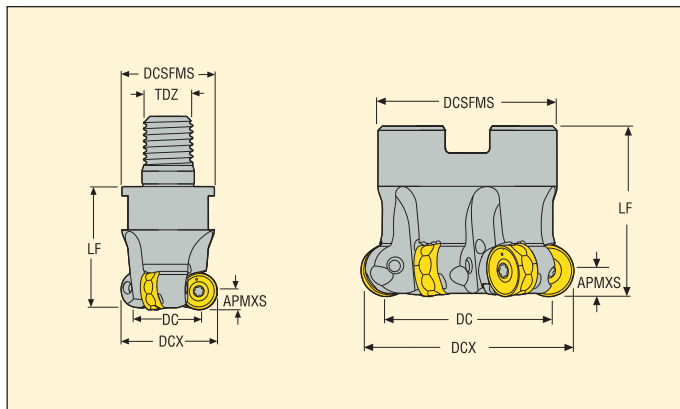
| | Dimensions in mm | | | | | | Spindle-nose |
|--|------------------|-----|------|-----|-------|-------|--------------|
| | DCSFMS | DCB | KWW | C | DBC1 | DBC2 | |
| | | | | | | | |
| | 30-35 | 16 | 8,4 | 5,6 | - | - | - |
| | 42-47 | 22 | 10,4 | 6,3 | - | - | - |
| | 48-62 | 27 | 12,4 | 7 | - | - | - |
| | 60-90 | 32 | 14,4 | 8 | - | - | - |
| | 90-130 | 40 | 16,4 | 9 | 66,7 | - | (8xxx) |
| | 130-270 | 60 | 25,7 | 14 | 101,6 | 177,8 | (8xxx) |
| | | | | | | | |
| | | | | | | | |

For a more exact DCSFMS and DCB measurement, see each product table.

R220.28-06



- For insert selection and cutting data recommendations, see page(s) 338-339
- For complete insert programme, see page(s) 655
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | | | Insert |
|-----------------------|------------------|------------------|-------|------|------|--------|-----|------|-------|-------|-------|----|-----|-------|----------|
| | | APMXS | DCX | DC | DCB | DCSFMS | TDZ | LF | | | | | | | |
| R217.28-1632.RE-06.3A | Combimaster | 6,0 | 32,0 | 20,1 | – | 30,0 | M16 | 40,0 | 0,4 | 52,0 | 62,0 | 3 | 0,2 | 15600 | RNMU12.. |
| R220.28-0040-06.4A | Arbor | 6,0 | 40,0 | 28,0 | 16,0 | 35,0 | – | 40,0 | 0,54 | 68,0 | 78,0 | 4 | 0,2 | 14000 | RNMU12.. |
| R217.28-2040.RE-06.4A | Combimaster | 6,0 | 40,0 | 28,0 | – | 36,5 | M20 | 45,0 | 0,54 | 68,0 | 78,0 | 4 | 0,4 | 14000 | RNMU12.. |
| R220.28-0050-06.5A | Arbor | 6,0 | 50,0 | 38,0 | 22,0 | 42,0 | – | 40,0 | 0,62 | 88,0 | 98,0 | 5 | 0,3 | 12500 | RNMU12.. |
| R220.28-0050-06.6A | Arbor | 6,0 | 50,0 | 38,0 | 22,0 | 42,0 | – | 40,0 | 0,62 | 88,0 | 98,0 | 6 | 0,3 | 12500 | RNMU12.. |
| R220.28-0052-06.5A | Arbor | 6,0 | 52,0 | 40,0 | 22,0 | 47,0 | – | 40,0 | 0,6 | 92,0 | 102,0 | 5 | 0,4 | 12300 | RNMU12.. |
| R220.28-0063-06.6A | Arbor | 6,0 | 63,0 | 51,0 | 22,0 | 47,0 | – | 40,0 | 0,47 | 114,0 | 124,0 | 6 | 0,4 | 11200 | RNMU12.. |
| R220.28-0063-06.8A | Arbor | 6,0 | 63,0 | 51,0 | 22,0 | 47,0 | – | 40,0 | 0,47 | 114,0 | 124,0 | 8 | 0,5 | 10000 | RNMU12.. |
| R220.28-0066-06.7A | Arbor | 6,0 | 66,0 | 54,0 | 27,0 | 62,0 | – | 50,0 | 0,45 | 120,0 | 130,0 | 7 | 0,8 | 10900 | RNMU12.. |
| R220.28-0080-06.8A | Arbor | 6,0 | 80,0 | 67,9 | 27,0 | 62,0 | – | 50,0 | 0,53 | 148,0 | 158,0 | 8 | 1,0 | 10000 | RNMU12.. |
| R220.28-0100-06.10A | Arbor | 6,0 | 100,0 | 88,0 | 32,0 | 77,0 | – | 50,0 | 0,11 | 188,0 | 198,0 | 10 | 1,6 | 8800 | RNMU12.. |
| R220.28-0100-06.12A | Arbor | 6,0 | 100,0 | 88,0 | 32,0 | 77,0 | – | 50,0 | 0,11 | 188,0 | 198,0 | 12 | 1,6 | 8800 | RNMU12.. |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.28-... | DOUBLE-T | C04009-T15P | H4B-T15P | – | 3,5 |
| R220.28-0040-0063 | DOUBLE-T | C04009-T15P | H4B-T15P | 220.17-692 | 3,5 |
| R220.28-0066 | DOUBLE-T | C04009-T15P | H4B-T15P | MC6S12X40 | 3,5 |
| R220.28-0080 | DOUBLE-T | C04009-T15P | H4B-T15P | MC6S12X40 | 3,5 |
| R220.28-0100 | DOUBLE-T | C04009-T15P | H4B-T15PL | 950E1645 | 3,5 |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.28-06 – Insert selection

| SMG | | a_p | f_z | | | |
|-----|------------------------|-------|-------|------|------|------|
| | | | 100% | 70% | 30% | 10% |
| P1 | RNMU1204M0-ME10 T350M | 2,5 | 0,30 | 0,30 | 0,34 | 0,50 |
| P2 | RNMU1204M0-ME10 T350M | 2,5 | 0,32 | 0,32 | 0,34 | 0,50 |
| P3 | RNMU1204M0-ME10 T350M | 2,5 | 0,30 | 0,30 | 0,32 | 0,50 |
| P4 | RNMU1204M0T-M10 MP2500 | 2,5 | 0,28 | 0,28 | 0,32 | 0,48 |
| P5 | RNMU1204M0T-M10 MP2500 | 2,5 | 0,28 | 0,28 | 0,30 | 0,48 |
| P6 | RNMU1204M0T-M10 MP2500 | 2,5 | 0,28 | 0,28 | 0,30 | 0,46 |
| P7 | RNMU1204M0T-M10 MP2500 | 2,5 | 0,28 | 0,28 | 0,30 | 0,46 |
| P8 | RNMU1204M0T-M10 MP2050 | 2,5 | 0,30 | 0,30 | 0,32 | 0,50 |
| P11 | RNMU1204M0T-M10 MP2050 | 2,5 | 0,28 | 0,28 | 0,30 | 0,46 |
| P12 | RNMU1204M0T-M10 MS2500 | 1,9 | 0,22 | 0,22 | 0,24 | 0,36 |
| M1 | RNMU1204M0-ME10 T350M | 2,5 | 0,32 | 0,32 | 0,34 | 0,50 |
| M2 | RNMU1204M0-ME10 T350M | 2,5 | 0,28 | 0,28 | 0,30 | 0,48 |
| M3 | RNMU1204M0-ME10 T350M | 1,9 | 0,26 | 0,26 | 0,28 | 0,44 |
| M4 | RNMU1204M0T-M10 T350M | 1,4 | 0,26 | 0,26 | 0,28 | 0,44 |
| M5 | RNMU1204M0T-M10 T350M | 1,4 | 0,26 | 0,26 | 0,28 | 0,44 |
| K1 | RNMU1204M0T-M10 MK2050 | 2,5 | 0,32 | 0,32 | 0,34 | 0,50 |
| K2 | RNMU1204M0T-M10 MK2050 | 2,5 | 0,28 | 0,28 | 0,30 | 0,48 |
| K3 | RNMU1204M0T-M10 MK2050 | 2,5 | 0,28 | 0,28 | 0,30 | 0,48 |
| K4 | RNMU1204M0T-M10 MK2050 | 2,5 | 0,28 | 0,28 | 0,30 | 0,48 |
| K5 | RNMU1204M0T-M10 MK2050 | 2,5 | 0,26 | 0,26 | 0,28 | 0,42 |
| K6 | RNMU1204M0T-M10 MK2050 | 2,5 | 0,28 | 0,28 | 0,30 | 0,48 |
| K7 | RNMU1204M0T-M10 MK2050 | 2,5 | 0,26 | 0,26 | 0,28 | 0,42 |
| N1 | RNMU1204M0-ME10 F40M | 2,5 | 0,40 | 0,40 | 0,44 | 0,65 |
| N2 | RNMU1204M0-ME10 F40M | 2,5 | 0,40 | 0,40 | 0,44 | 0,65 |
| N3 | RNMU1204M0-ME10 F40M | 2,5 | 0,40 | 0,40 | 0,44 | 0,65 |
| N11 | RNMU1204M0-ME10 F40M | 2,5 | 0,40 | 0,40 | 0,44 | 0,65 |
| S1 | RNMU1204M0T-M10 MS2500 | 1,4 | 0,26 | 0,26 | 0,28 | 0,44 |
| S2 | RNMU1204M0T-M10 MS2500 | 1,4 | 0,26 | 0,26 | 0,28 | 0,44 |
| S3 | RNMU1204M0T-M10 MS2500 | 1,4 | 0,24 | 0,24 | 0,26 | 0,42 |
| S11 | RNMU1204M0T-M10 MS2050 | 1,7 | 0,28 | 0,28 | 0,30 | 0,46 |
| S12 | RNMU1204M0T-M10 MS2050 | 1,7 | 0,28 | 0,28 | 0,30 | 0,46 |
| S13 | RNMU1204M0T-M10 MS2050 | 1,4 | 0,26 | 0,26 | 0,28 | 0,44 |
| H5 | RNMU1204M0T-M10 MP2500 | 1,9 | 0,22 | 0,22 | 0,24 | 0,36 |
| H8 | RNMU1204M0T-M10 MP2500 | 1,7 | 0,18 | 0,18 | 0,19 | 0,30 |
| H11 | RNMU1204M0T-M10 MP2500 | 1,9 | 0,22 | 0,22 | 0,24 | 0,36 |
| H12 | RNMU1204M0T-M10 MP2500 | 1,7 | 0,18 | 0,18 | 0,19 | 0,30 |
| H21 | RNMU1204M0T-M10 MP2500 | 1,7 | 0,18 | 0,18 | 0,19 | 0,30 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

R217/220.28-06 – Cutting data $v_c =$ (m/min)

| SMG | MP2050 | | | | MP2500 | | | | T350M | | | | F40M | | | |
|-----|--------|-----|-----|-----|--------|-----|-----|-----|-------|-----|-----|-----|------|------|------|------|
| | 100% | 70% | 30% | 10% | 100% | 70% | 30% | 10% | 100% | 70% | 30% | 10% | 100% | 70% | 30% | 10% |
| P1 | 285 | 325 | 395 | 470 | 290 | 330 | 405 | 480 | 255 | 290 | 350 | 415 | 230 | 260 | 320 | 380 |
| P2 | 275 | 310 | 385 | 450 | 280 | 315 | 390 | 460 | 245 | 275 | 340 | 400 | 220 | 250 | 310 | 365 |
| P3 | 240 | 270 | 330 | 400 | 245 | 275 | 335 | 405 | 215 | 240 | 295 | 355 | 195 | 220 | 270 | 325 |
| P4 | 215 | 245 | 295 | 350 | 220 | 250 | 305 | 355 | 190 | 215 | 265 | 310 | 175 | 195 | 240 | 285 |
| P5 | 205 | 235 | 285 | 335 | 210 | 235 | 290 | 340 | 180 | 205 | 250 | 295 | 165 | 190 | 230 | 270 |
| P6 | 230 | 260 | 320 | 375 | 235 | 265 | 325 | 385 | 205 | 230 | 285 | 335 | 185 | 210 | 260 | 305 |
| P7 | 220 | 245 | 300 | 355 | 220 | 250 | 305 | 360 | 195 | 220 | 265 | 315 | 175 | 200 | 245 | 290 |
| P8 | 200 | 230 | 280 | 335 | 205 | 230 | 285 | 340 | 180 | 205 | 245 | 295 | 165 | 185 | 225 | 270 |
| P11 | 210 | 240 | 290 | 345 | 215 | 245 | 295 | 350 | 190 | 215 | 260 | 305 | 170 | 195 | 235 | 280 |
| P12 | 140 | 155 | 190 | 225 | 140 | 160 | 190 | 225 | 125 | 140 | 165 | 200 | 110 | 125 | 150 | 180 |
| M1 | 195 | 220 | 275 | 325 | 200 | 225 | 285 | 330 | 185 | 210 | 265 | 310 | 180 | 200 | 250 | 295 |
| M2 | 165 | 185 | 225 | 270 | 170 | 190 | 235 | 275 | 155 | 180 | 215 | 255 | 150 | 170 | 205 | 245 |
| M3 | 135 | 150 | 180 | 215 | 135 | 150 | 185 | 220 | 125 | 140 | 175 | 205 | 120 | 135 | 165 | 195 |
| M4 | 105 | 115 | 140 | 170 | 105 | 120 | 145 | 170 | 100 | 110 | 135 | 160 | 95 | 105 | 130 | 155 |
| M5 | 85 | 95 | 115 | 140 | 90 | 100 | 120 | 145 | 85 | 95 | 110 | 135 | 80 | 90 | 105 | 130 |
| K1 | 215 | 245 | 305 | 355 | 220 | 250 | 310 | 365 | 190 | 220 | 270 | 315 | 175 | 200 | 245 | 290 |
| K2 | 195 | 220 | 270 | 320 | 200 | 225 | 275 | 325 | 175 | 195 | 240 | 280 | 160 | 180 | 220 | 260 |
| K3 | 165 | 185 | 230 | 270 | 170 | 190 | 230 | 275 | 145 | 165 | 200 | 240 | 135 | 150 | 185 | 220 |
| K4 | 160 | 180 | 220 | 255 | 160 | 180 | 220 | 260 | 140 | 160 | 195 | 230 | 130 | 145 | 175 | 210 |
| K5 | 95 | 110 | 130 | 155 | 95 | 110 | 135 | 160 | 85 | 95 | 115 | 140 | 80 | 90 | 105 | 125 |
| K6 | 140 | 155 | 190 | 225 | 140 | 160 | 195 | 230 | 125 | 140 | 170 | 200 | 110 | 125 | 155 | 185 |
| K7 | 125 | 140 | 170 | 200 | 125 | 140 | 170 | 205 | 110 | 125 | 150 | 180 | 100 | 110 | 135 | 165 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1300 | 1475 | 1800 | 2125 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 520 | 590 | 730 | 860 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 350 | 395 | 485 | 570 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 400 | 450 | 550 | 650 |
| S1 | 50 | 55 | 70 | 80 | — | — | — | — | 46 | 50 | 65 | 75 | 44 | 50 | 60 | 70 |
| S2 | 41 | 46 | 55 | 65 | — | — | — | — | 37 | 42 | 50 | 60 | 36 | 40 | 48 | 60 |
| S3 | 36 | 40 | 48 | 60 | — | — | — | — | 33 | 37 | 44 | 55 | 31 | 35 | 42 | 50 |
| S11 | 70 | 80 | 95 | 115 | — | — | — | — | 65 | 70 | 90 | 105 | 60 | 70 | 85 | 100 |
| S12 | 48 | 55 | 65 | 80 | — | — | — | — | 44 | 50 | 60 | 70 | 42 | 48 | 60 | 70 |
| S13 | 28 | 32 | 39 | 46 | — | — | — | — | 26 | 29 | 35 | 42 | 25 | 28 | 34 | 40 |
| H5 | 41 | 47 | 55 | 65 | 42 | 48 | 60 | 70 | 41 | 46 | 55 | 65 | 37 | 42 | 50 | 60 |
| H8 | 44 | 50 | 60 | 70 | 45 | 50 | 60 | 75 | 43 | 49 | 60 | 70 | 40 | 45 | 55 | 65 |
| H11 | 55 | 60 | 70 | 85 | 55 | 60 | 75 | 85 | 50 | 60 | 70 | 85 | 47 | 55 | 65 | 75 |
| H12 | 90 | 100 | 120 | 140 | 90 | 100 | 120 | 145 | 80 | 90 | 105 | 125 | 70 | 80 | 95 | 115 |
| H21 | 44 | 50 | 60 | 70 | 45 | 50 | 60 | 75 | 43 | 49 | 60 | 70 | 40 | 45 | 55 | 65 |

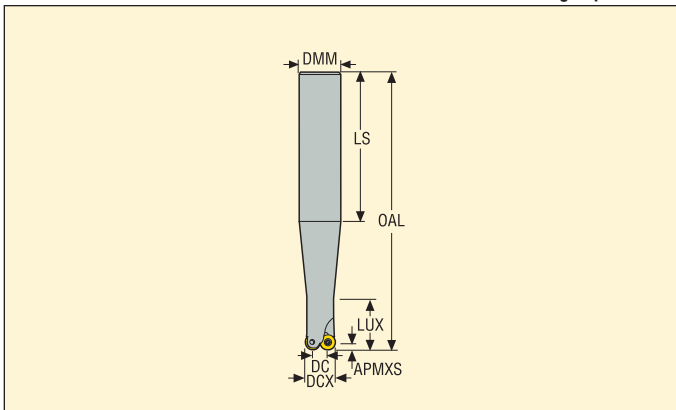
| SMG | MK2050 | | | | MS2050 | | | | MS2500 | | | |
|-----|--------|-----|-----|-----|--------|-----|-----|-----|--------|-----|-----|-----|
| | 100% | 70% | 30% | 10% | 100% | 70% | 30% | 10% | 100% | 70% | 30% | 10% |
| P1 | 285 | 320 | 395 | 465 | — | — | — | — | 315 | 355 | 435 | 520 |
| P2 | 270 | 305 | 380 | 450 | — | — | — | — | 300 | 340 | 425 | 495 |
| P3 | 240 | 270 | 330 | 395 | — | — | — | — | 265 | 300 | 365 | 440 |
| P4 | 215 | 240 | 295 | 350 | — | — | — | — | 235 | 270 | 325 | 385 |
| P5 | 205 | 230 | 280 | 330 | — | — | — | — | 225 | 255 | 310 | 370 |
| P6 | 230 | 260 | 315 | 375 | — | — | — | — | 255 | 285 | 350 | 415 |
| P7 | 215 | 245 | 300 | 350 | 185 | 205 | 250 | 300 | 240 | 270 | 330 | 390 |
| P8 | 200 | 225 | 275 | 330 | 170 | 190 | 235 | 280 | 220 | 250 | 305 | 370 |
| P11 | 210 | 240 | 290 | 340 | 180 | 200 | 245 | 290 | 235 | 265 | 320 | 380 |
| P12 | 135 | 155 | 185 | 220 | 115 | 130 | 160 | 185 | 150 | 175 | 205 | 245 |
| M1 | — | — | — | — | 185 | 210 | 260 | 305 | 215 | 245 | 305 | 355 |
| M2 | — | — | — | — | 155 | 175 | 215 | 255 | 180 | 205 | 250 | 295 |
| M3 | — | — | — | — | 125 | 140 | 170 | 205 | 145 | 165 | 200 | 240 |
| M4 | — | — | — | — | 100 | 110 | 135 | 160 | 115 | 130 | 155 | 185 |
| M5 | — | — | — | — | 80 | 90 | 110 | 130 | 95 | 105 | 130 | 155 |
| K1 | 295 | 330 | 410 | 485 | — | — | — | — | — | — | — | — |
| K2 | 265 | 300 | 365 | 430 | — | — | — | — | — | — | — | — |
| K3 | 225 | 255 | 310 | 365 | — | — | — | — | — | — | — | — |
| K4 | 215 | 240 | 295 | 345 | — | — | — | — | — | — | — | — |
| K5 | 130 | 145 | 180 | 215 | — | — | — | — | — | — | — | — |
| K6 | 190 | 215 | 260 | 305 | — | — | — | — | — | — | — | — |
| K7 | 165 | 190 | 230 | 270 | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | — | 46 | 50 | 60 | 75 | 55 | 65 | 75 | 90 |
| S2 | — | — | — | — | 37 | 41 | 50 | 60 | 45 | 50 | 60 | 75 |
| S3 | — | — | — | — | 32 | 36 | 44 | 50 | 39 | 44 | 55 | 65 |
| S11 | — | — | — | — | 65 | 70 | 85 | 105 | 75 | 85 | 105 | 125 |
| S12 | — | — | — | — | 44 | 49 | 60 | 70 | 55 | 60 | 75 | 85 |
| S13 | — | — | — | — | 26 | 29 | 35 | 42 | 31 | 35 | 42 | 50 |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | — | — | — | — | — | — | — | — | — | — | — | — |

R217.29-025

Cutters with round inserts, max. axial cutting depth 2,5 mm



- For insert selection and cutting data recommendations, see page(s) 342-343
- For complete insert programme, see page(s) 654
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | RMPX° | C min | C max | | KG | | Insert |
|---------------------------|------------------|------------------|------|-----|------|-------|------|-------|------|-------|-------|-------|-----|-------|----------|--------|
| | | APMXS | DCX | DC | DMM | OAL | LUX | LS | | | | | | | | |
| R217.29-1010.0-025.2.090E | Cylindrical | 2,5 | 10,0 | 5,0 | 10,0 | 130,0 | 30,0 | 100,0 | 90,0 | 13,0 | 19,37 | 2 | 0,2 | 75000 | RDH.0501 | |
| | | | | | | | | | | | | | | | | |
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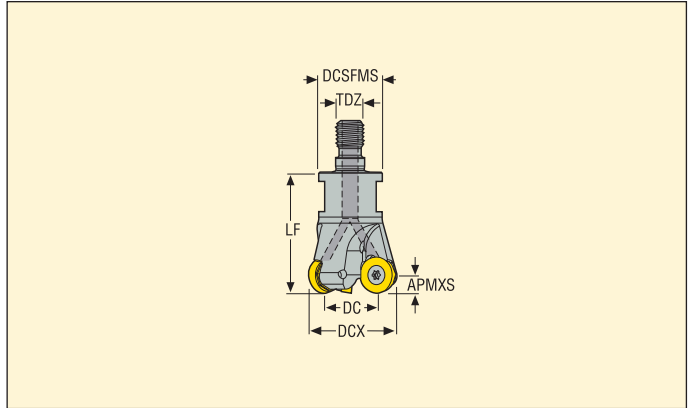
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|-----------------|--------------|-------------------|
| R217.29-.. | DOUBLE-T | C02035-T06P | H4B-T06P | 0,5 |
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Please check availability in current price and stock-list
Torque keys, see page 732

R217.29-025

Cutters with round inserts, max. axial cutting depth 2,5 mm



- For insert selection and cutting data recommendations, see page(s) 342-343
- For complete insert programme, see page(s) 654
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX ^a | C min | C max | | | | Insert |
|------------------------|------------------|------------------|------|------|--------|-----|------|-------------------|-------|-------|---|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | TDZ | LF | | | | | | | |
| R217.29-0610.RE-025.2A | Combimaster | 2,5 | 10,0 | 5,0 | 11,0 | M6 | 18,0 | 90,0 | 13,0 | 19,37 | 2 | 0,1 | 75000 | RDH.0501 |
| R217.29-0612.RE-025.3A | Combimaster | 2,5 | 12,0 | 7,0 | 11,0 | M6 | 18,0 | 13,9 | 15,6 | 23,37 | 3 | 0,1 | 65000 | RDH.0501 |
| R217.29-0812.RE-025.3A | Combimaster | 2,5 | 12,0 | 7,0 | 13,5 | M8 | 20,0 | 13,9 | 15,6 | 23,37 | 3 | 0,1 | 65000 | RDH.0501 |
| R217.29-0815.RE-025.4A | Combimaster | 2,5 | 15,0 | 10,0 | 13,5 | M8 | 20,0 | 8,4 | 19,5 | 29,37 | 4 | 0,1 | 60000 | RDH.0501 |
| R217.29-1020.RE-025.5A | Combimaster | 2,5 | 20,0 | 15,0 | 18,0 | M10 | 23,0 | 5,0 | 26,0 | 39,37 | 5 | 0,1 | 50000 | RDH.0501 |
| | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | |

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.29-.. | DOUBLE-T | C02035-T06P | H4B-T06P | 0,5 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217.29-025 – Insert selection

| SMG | | a_p | f_z | | | |
|-----|------------------------|-------|-------|-------|-------|------|
| | | | 100% | 30% | 10% | 5% |
| P1 | RDHW0501M0-MD01 F40M | 1,0 | 0,095 | 0,10 | 0,16 | 0,22 |
| P2 | RDHW0501M0-MD01 F40M | 1,0 | 0,095 | 0,10 | 0,16 | 0,22 |
| P3 | RDHW0501M0-MD01 F40M | 1,0 | 0,090 | 0,10 | 0,15 | 0,22 |
| P4 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,090 | 0,095 | 0,15 | 0,20 |
| P5 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,085 | 0,095 | 0,15 | 0,20 |
| P6 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,085 | 0,095 | 0,15 | 0,20 |
| P7 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,085 | 0,095 | 0,15 | 0,20 |
| P8 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,090 | 0,10 | 0,15 | 0,22 |
| P11 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,085 | 0,095 | 0,15 | 0,20 |
| P12 | RDHW0501M0-MD01 MP3000 | 0,75 | 0,070 | 0,075 | 0,12 | 0,16 |
| M1 | RDHW0501M0-MD01 F40M | 1,0 | 0,095 | 0,10 | 0,16 | 0,22 |
| M2 | RDHW0501M0-MD01 F40M | 1,0 | 0,085 | 0,095 | 0,15 | 0,20 |
| M3 | RDHW0501M0-MD01 F40M | 0,75 | 0,080 | 0,090 | 0,14 | 0,19 |
| M4 | RDHW0501M0-MD01 F40M | 0,60 | 0,080 | 0,085 | 0,13 | 0,19 |
| M5 | RDHW0501M0-MD01 F40M | 0,60 | 0,080 | 0,085 | 0,13 | 0,19 |
| K1 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,095 | 0,10 | 0,16 | 0,22 |
| K2 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,085 | 0,095 | 0,15 | 0,20 |
| K3 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,085 | 0,095 | 0,15 | 0,20 |
| K4 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,085 | 0,095 | 0,15 | 0,20 |
| K5 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,080 | 0,085 | 0,13 | 0,18 |
| K6 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,085 | 0,095 | 0,15 | 0,20 |
| K7 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,080 | 0,085 | 0,13 | 0,18 |
| N1 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,12 | 0,13 | 0,20 | 0,30 |
| N2 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,12 | 0,13 | 0,20 | 0,30 |
| N3 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,12 | 0,13 | 0,20 | 0,30 |
| N11 | RDHW0501M0-MD01 MP3000 | 1,0 | 0,12 | 0,13 | 0,20 | 0,30 |
| S1 | RDHW0501M0-MD01 F40M | 0,60 | 0,080 | 0,085 | 0,13 | 0,19 |
| S2 | RDHW0501M0-MD01 F40M | 0,60 | 0,080 | 0,085 | 0,13 | 0,19 |
| S3 | RDHW0501M0-MD01 F40M | 0,60 | 0,075 | 0,080 | 0,12 | 0,17 |
| S11 | RDHW0501M0-MD01 F40M | 0,65 | 0,085 | 0,095 | 0,15 | 0,20 |
| S12 | RDHW0501M0-MD01 F40M | 0,65 | 0,085 | 0,095 | 0,15 | 0,20 |
| S13 | RDHW0501M0-MD01 F40M | 0,60 | 0,080 | 0,085 | 0,13 | 0,19 |
| H5 | RDHW0501M0-MD01 MP3000 | 0,75 | 0,070 | 0,075 | 0,12 | 0,16 |
| H8 | RDHW0501M0-MD01 MP3000 | 0,65 | 0,055 | 0,060 | 0,095 | 0,13 |
| H11 | RDHW0501M0-MD01 MP3000 | 0,75 | 0,070 | 0,075 | 0,12 | 0,16 |
| H12 | RDHW0501M0-MD01 F40M | 0,65 | 0,055 | 0,060 | 0,095 | 0,13 |
| H21 | RDHW0501M0-MD01 MP3000 | 0,65 | 0,055 | 0,060 | 0,095 | 0,13 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R217.29-025 – Cutting data $v_c =$ (m/min)

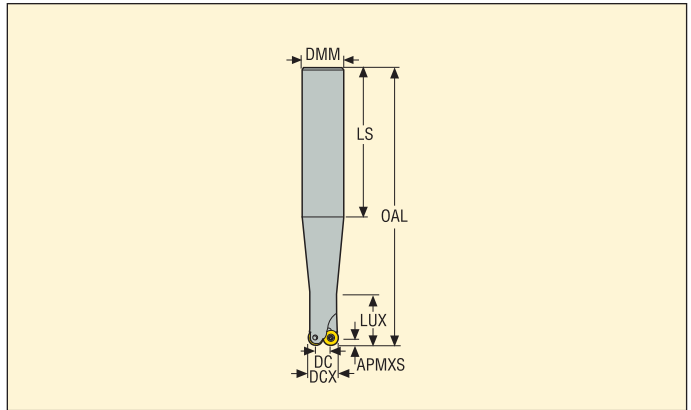
| SMG | MP3000 | | | | F40M | | | |
|-----|--------|------|------|------|------|------|------|------|
| | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% |
| P1 | 360 | 490 | 580 | 610 | 285 | 395 | 465 | 485 |
| P2 | 350 | 480 | 570 | 590 | 280 | 385 | 450 | 475 |
| P3 | 305 | 415 | 485 | 510 | 240 | 330 | 390 | 410 |
| P4 | 265 | 365 | 435 | 450 | 215 | 295 | 345 | 360 |
| P5 | 255 | 355 | 415 | 430 | 205 | 280 | 330 | 345 |
| P6 | 290 | 395 | 465 | 485 | 230 | 315 | 370 | 390 |
| P7 | 270 | 375 | 440 | 455 | 220 | 300 | 350 | 365 |
| P8 | 255 | 350 | 410 | 430 | 205 | 280 | 325 | 345 |
| P11 | 265 | 365 | 425 | 445 | 210 | 290 | 340 | 355 |
| P12 | 165 | 225 | 265 | 275 | 130 | 180 | 210 | 220 |
| M1 | 260 | 360 | 425 | 440 | 225 | 310 | 365 | 380 |
| M2 | 215 | 295 | 345 | 360 | 185 | 255 | 300 | 310 |
| M3 | 170 | 230 | 270 | 285 | 145 | 200 | 235 | 245 |
| M4 | 130 | 175 | 205 | 215 | 110 | 150 | 180 | 185 |
| M5 | 110 | 145 | 170 | 180 | 95 | 125 | 150 | 155 |
| K1 | 275 | 380 | 450 | 470 | 220 | 305 | 360 | 375 |
| K2 | 245 | 335 | 395 | 410 | 195 | 270 | 315 | 330 |
| K3 | 205 | 285 | 335 | 345 | 165 | 225 | 265 | 275 |
| K4 | 195 | 270 | 320 | 330 | 160 | 215 | 255 | 265 |
| K5 | 120 | 160 | 190 | 200 | 95 | 130 | 155 | 160 |
| K6 | 175 | 240 | 280 | 290 | 140 | 190 | 225 | 235 |
| K7 | 150 | 210 | 245 | 255 | 120 | 165 | 195 | 205 |
| N1 | 2075 | 2875 | 3375 | 3550 | 1675 | 2300 | 2700 | 2825 |
| N2 | 840 | 1150 | 1350 | 1425 | 670 | 930 | 1100 | 1150 |
| N3 | 560 | 770 | 910 | 950 | 450 | 620 | 730 | 760 |
| N11 | 640 | 880 | 1050 | 1100 | 510 | 710 | 830 | 870 |
| S1 | 60 | 80 | 95 | 100 | 50 | 70 | 85 | 85 |
| S2 | 49 | 65 | 80 | 80 | 42 | 55 | 65 | 70 |
| S3 | 42 | 55 | 65 | 70 | 36 | 49 | 60 | 60 |
| S11 | 85 | 115 | 135 | 145 | 75 | 100 | 120 | 125 |
| S12 | 60 | 80 | 95 | 100 | 50 | 70 | 80 | 85 |
| S13 | 34 | 46 | 55 | 55 | 29 | 39 | 47 | 49 |
| H5 | 50 | 70 | 80 | 85 | 44 | 60 | 70 | 75 |
| H8 | 55 | 70 | 85 | 90 | 46 | 60 | 70 | 75 |
| H11 | 65 | 90 | 105 | 110 | 55 | 75 | 90 | 95 |
| H12 | 105 | 140 | 160 | 170 | 80 | 110 | 130 | 135 |
| H21 | 55 | 70 | 85 | 90 | 46 | 60 | 70 | 75 |




R217.29-03

Cutters with round inserts, max. axial cutting depth 3 mm



- For insert selection and cutting data recommendations, see page(s) 346-347
- For complete insert programme, see page(s) 654
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max |  |  KG |  | Insert |
|--------------------------|------------------|------------------|------|------|------|-------|-------|-------|-------|-------|-------|---|--|---|----------|
| | | APMXS | DCX | DC | DMM | OAL | LUX | LS | | | | | | | |
| R217.29-1612.0-03.2.050 | Cylindrical | 3,0 | 12,0 | 6,0 | 16,0 | 110,0 | 20,0 | 60,0 | 90,0 | 15,6 | 23,25 | 2 | 0,2 | 32000 | RD..06T1 |
| R217.29-1212.0-03.2.070E | Cylindrical | 3,0 | 12,0 | 6,0 | 12,0 | 130,0 | 50,0 | 80,0 | 90,0 | 15,6 | 23,25 | 2 | 0,2 | 32000 | RD..06T1 |
| R217.29-2016.0-03.3.070 | Cylindrical | 3,0 | 16,0 | 10,0 | 20,0 | 130,0 | 30,0 | 60,0 | 15,62 | 20,8 | 31,25 | 3 | 0,3 | 28800 | RD..06T1 |
| R217.29-1616.0-03.3.100E | Cylindrical | 3,0 | 16,0 | 10,0 | 16,0 | 160,0 | 50,0 | 140,0 | 15,62 | 20,8 | 31,25 | 3 | 0,5 | 28800 | RD..06T1 |
| R217.29-1620.0-03.4.100E | Cylindrical | 3,0 | 20,0 | 14,0 | 16,0 | 160,0 | 100,0 | 140,0 | 9,84 | 26,0 | 39,25 | 4 | 0,5 | 25600 | RD..06T1 |
| | | | | | | | | | | | | | | | |
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Spare Parts

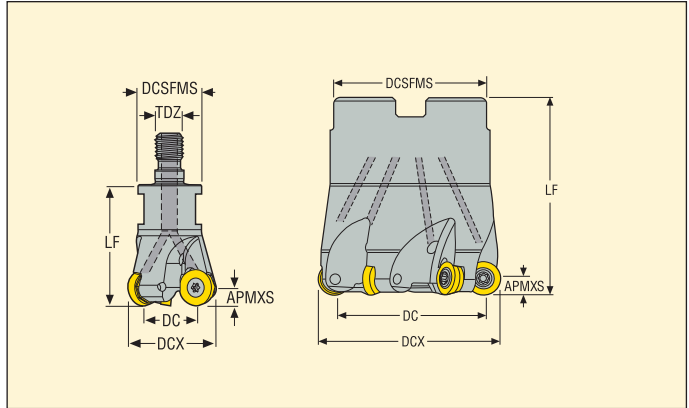
| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|-----------------|----------------|--------------|------------|-------------------|
| R217.29- ø12-16 | DOUBLE-T | C02204-T07P | H4B-T07P | 0,9 |
| R217.29- ø20-32 | DOUBLE-T | C02245-T07P | H4B-T07P | 0,9 |
| | | | | |
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| | | | | |

Please check availability in current price and stock-list

Torque keys, see page 732

R217/220.29-03

Cutters with round inserts, max. axial cutting depth 3 mm



- For insert selection and cutting data recommendations, see page(s) 346-347
- For complete insert programme, see page(s) 654
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPx ^a | C min | C max | | | | Insert |
|-----------------------|------------------|------------------|------|------|--------|------|-----|------|-------------------|-------|-------|---|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.29-0816.RE-03.3 | Combimaster | 3,0 | 16,0 | 10,0 | 13,5 | – | M8 | 23,0 | 15,62 | 20,8 | 31,25 | 3 | 0,1 | 28800 | RD..06T1 |
| R217.29-1020.RE-03.4A | Combimaster | 3,0 | 20,0 | 14,0 | 18,5 | – | M10 | 28,0 | 9,84 | 26,0 | 39,25 | 4 | 0,1 | 25600 | RD..06T1 |
| R217.29-1225.RE-03.5A | Combimaster | 3,0 | 25,0 | 19,0 | 23,0 | – | M12 | 28,0 | 6,76 | 32,5 | 49,25 | 5 | 0,1 | 23200 | RD..06T1 |
| R217.29-1632.RE-03.6A | Combimaster | 3,0 | 32,0 | 26,0 | 30,0 | – | M16 | 28,0 | 4,7 | 41,6 | 63,25 | 6 | 0,2 | 20000 | RD..06T1 |
| R217.29-1635.RE-03.7A | Combimaster | 3,0 | 35,0 | 29,0 | 30,0 | – | M16 | 28,0 | 4,16 | 45,5 | 69,25 | 7 | 0,2 | 19200 | RD..06T1 |
| R220.29-0040-03.8A | Arbor | 3,0 | 40,0 | 34,0 | 35,0 | 16,0 | – | 35,0 | 3,49 | 52,0 | 79,25 | 8 | 0,2 | 17600 | RD..06T1 |
| | | | | | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-----------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.29- ø16 | DOUBLE-T | C02204-T07P | H4B-T07P | – | 0,9 |
| R217.29- ø20-32 | DOUBLE-T | C02245-T07P | H4B-T07P | – | 0,9 |
| R220.29-0040 | DOUBLE-T | C02245-T07P | H4B-T07P | 220.17-689 | 0,9 |
| | | | | | |
| | | | | | |
| | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.29-03 – Insert selection

| SMG | | a_p | f_z | | | |
|-----|------------------------|-------|-------|-------|-------|------|
| | | | 100% | 30% | 10% | 5% |
| P1 | RDHT06T1M0-E02 F40M | 1,2 | 0,065 | 0,070 | 0,11 | 0,15 |
| P2 | RDHT06T1M0-E02 F40M | 1,2 | 0,065 | 0,070 | 0,11 | 0,15 |
| P3 | RDHT06T1M0-E02 F40M | 1,2 | 0,060 | 0,065 | 0,10 | 0,14 |
| P4 | RDHW06T1M0-MD02 MP3000 | 1,2 | 0,090 | 0,095 | 0,15 | 0,22 |
| P5 | RDHW06T1M0-MD02 MP3000 | 1,2 | 0,085 | 0,095 | 0,15 | 0,20 |
| P6 | RDHW06T1M0-MD02 MP3000 | 1,2 | 0,085 | 0,095 | 0,15 | 0,20 |
| P7 | RDHW06T1M0-MD02 MP3000 | 1,2 | 0,085 | 0,095 | 0,15 | 0,20 |
| P8 | RDHW06T1M0-MD02 MP3000 | 1,2 | 0,090 | 0,10 | 0,15 | 0,22 |
| P11 | RDHW06T1M0-MD02 MP3000 | 1,2 | 0,085 | 0,095 | 0,15 | 0,20 |
| P12 | RDHW06T1M0-MD02 MP3000 | 0,95 | 0,065 | 0,075 | 0,11 | 0,16 |
| M1 | RDHT06T1M0-E02 F40M | 1,2 | 0,065 | 0,070 | 0,11 | 0,15 |
| M2 | RDHT06T1M0-E02 F40M | 1,2 | 0,060 | 0,065 | 0,10 | 0,14 |
| M3 | RDHT06T1M0-E02 F40M | 0,95 | 0,050 | 0,055 | 0,090 | 0,12 |
| M4 | RDHW06T1M0-MD02 MP3000 | 0,65 | 0,085 | 0,090 | 0,14 | 0,20 |
| M5 | RDHW06T1M0-MD02 MP3000 | 0,65 | 0,085 | 0,090 | 0,14 | 0,20 |
| K1 | RDHW06T1M0-MD02 MK2050 | 1,2 | 0,095 | 0,10 | 0,16 | 0,22 |
| K2 | RDHW06T1M0-MD02 MK2050 | 1,2 | 0,085 | 0,095 | 0,15 | 0,20 |
| K3 | RDHW06T1M0-MD02 MK2050 | 1,2 | 0,085 | 0,095 | 0,15 | 0,20 |
| K4 | RDHW06T1M0-MD02 MK2050 | 1,2 | 0,085 | 0,095 | 0,15 | 0,20 |
| K5 | RDHW06T1M0-MD02 MK2050 | 1,2 | 0,080 | 0,085 | 0,13 | 0,18 |
| K6 | RDHW06T1M0-MD02 MK2050 | 1,2 | 0,085 | 0,095 | 0,15 | 0,20 |
| K7 | RDHW06T1M0-MD02 MK2050 | 1,2 | 0,080 | 0,085 | 0,13 | 0,18 |
| N1 | RDHT06T1M0-E02 H25 | 1,2 | 0,080 | 0,090 | 0,14 | 0,19 |
| N2 | RDHT06T1M0-E02 H25 | 1,2 | 0,080 | 0,090 | 0,14 | 0,19 |
| N3 | RDHT06T1M0-E02 H25 | 1,2 | 0,080 | 0,090 | 0,14 | 0,19 |
| N11 | RDHT06T1M0-E02 H25 | 1,2 | 0,080 | 0,090 | 0,14 | 0,19 |
| S1 | RDHW06T1M0-MD02 F40M | 0,65 | 0,085 | 0,090 | 0,14 | 0,20 |
| S2 | RDHW06T1M0-MD02 F40M | 0,65 | 0,085 | 0,090 | 0,14 | 0,20 |
| S3 | RDHW06T1M0-MD02 MP3000 | 0,65 | 0,075 | 0,085 | 0,13 | 0,18 |
| S11 | RDHW06T1M0-MD02 F40M | 0,80 | 0,085 | 0,095 | 0,14 | 0,20 |
| S12 | RDHW06T1M0-MD02 F40M | 0,80 | 0,085 | 0,095 | 0,14 | 0,20 |
| S13 | RDHW06T1M0-MD02 F40M | 0,65 | 0,085 | 0,090 | 0,14 | 0,20 |
| H5 | RDHW06T1M0-MD02 F15M | 0,95 | 0,065 | 0,075 | 0,11 | 0,16 |
| H8 | RDHW06T1M0-MD02 F15M | 0,80 | 0,055 | 0,060 | 0,095 | 0,13 |
| H11 | RDHW06T1M0-MD02 F15M | 0,95 | 0,065 | 0,075 | 0,11 | 0,16 |
| H12 | RDHW06T1M0-MD02 F40M | 0,80 | 0,055 | 0,060 | 0,095 | 0,13 |
| H21 | RDHW06T1M0-MD02 F15M | 0,80 | 0,055 | 0,060 | 0,095 | 0,13 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R217/220.29-03 – Cutting data $v_c =$ (m/min)

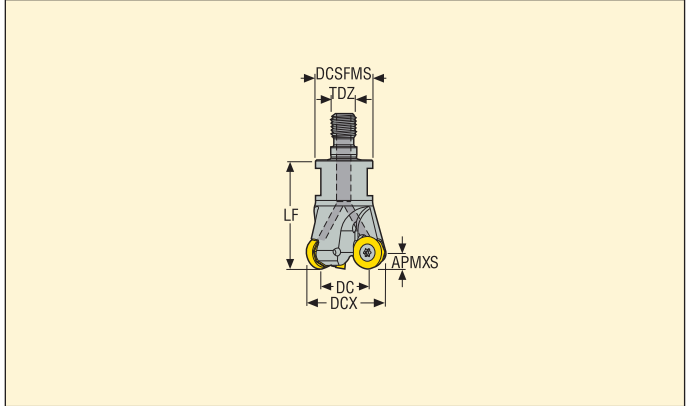
| SMG | MP3000 | | | | F15M | | | | F40M | | | | MK2050 | | | | H25 | | | |
|-----|--------|------|------|------|------|-----|-----|-----|------|------|------|------|--------|-----|-----|-----|------|------|------|------|
| | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% |
| P1 | 345 | 470 | 560 | 590 | — | — | — | — | 275 | 375 | 445 | 470 | 360 | 490 | 580 | 610 | — | — | — | — |
| P2 | 335 | 460 | 540 | 570 | — | — | — | — | 270 | 365 | 435 | 455 | 350 | 475 | 560 | 590 | — | — | — | — |
| P3 | 295 | 400 | 465 | 495 | — | — | — | — | 235 | 320 | 375 | 395 | 305 | 415 | 485 | 520 | — | — | — | — |
| P4 | 260 | 350 | 410 | 435 | — | — | — | — | 205 | 280 | 330 | 350 | 270 | 365 | 425 | 455 | — | — | — | — |
| P5 | 250 | 335 | 395 | 415 | — | — | — | — | 200 | 270 | 320 | 335 | 260 | 350 | 415 | 435 | — | — | — | — |
| P6 | 280 | 380 | 445 | 470 | — | — | — | — | 225 | 305 | 355 | 375 | 290 | 395 | 465 | 485 | — | — | — | — |
| P7 | 265 | 360 | 420 | 440 | — | — | — | — | 210 | 285 | 335 | 355 | 275 | 370 | 440 | 460 | — | — | — | — |
| P8 | 245 | 335 | 390 | 415 | — | — | — | — | 195 | 270 | 315 | 335 | 255 | 350 | 405 | 435 | — | — | — | — |
| P11 | 255 | 350 | 410 | 430 | — | — | — | — | 205 | 280 | 325 | 345 | 265 | 360 | 425 | 445 | — | — | — | — |
| P12 | 160 | 215 | 255 | 265 | — | — | — | — | 130 | 170 | 205 | 215 | 165 | 225 | 265 | 280 | — | — | — | — |
| M1 | 250 | 345 | 405 | 430 | — | — | — | — | 215 | 295 | 350 | 370 | — | — | — | — | — | — | — | — |
| M2 | 210 | 280 | 330 | 350 | — | — | — | — | 180 | 240 | 285 | 300 | — | — | — | — | — | — | — | — |
| M3 | 165 | 220 | 260 | 275 | — | — | — | — | 140 | 190 | 225 | 235 | — | — | — | — | — | — | — | — |
| M4 | 125 | 165 | 200 | 210 | — | — | — | — | 105 | 145 | 170 | 180 | — | — | — | — | — | — | — | — |
| M5 | 105 | 140 | 165 | 175 | — | — | — | — | 90 | 120 | 140 | 150 | — | — | — | — | — | — | — | — |
| K1 | 265 | 365 | 430 | 455 | 255 | 350 | 410 | 435 | 215 | 290 | 345 | 360 | 380 | 510 | 610 | 640 | — | — | — | — |
| K2 | 235 | 320 | 375 | 395 | 225 | 305 | 360 | 380 | 190 | 255 | 300 | 315 | 335 | 450 | 530 | 560 | — | — | — | — |
| K3 | 200 | 270 | 320 | 335 | 190 | 260 | 305 | 320 | 160 | 215 | 255 | 270 | 285 | 380 | 450 | 475 | — | — | — | — |
| K4 | 190 | 255 | 305 | 320 | 185 | 245 | 290 | 305 | 155 | 205 | 245 | 255 | 270 | 365 | 430 | 455 | — | — | — | — |
| K5 | 115 | 155 | 185 | 195 | 110 | 150 | 175 | 185 | 90 | 125 | 145 | 155 | 165 | 220 | 260 | 275 | — | — | — | — |
| K6 | 170 | 225 | 270 | 280 | 160 | 215 | 260 | 270 | 135 | 180 | 215 | 225 | 240 | 320 | 380 | 400 | — | — | — | — |
| K7 | 145 | 200 | 235 | 250 | 140 | 190 | 225 | 240 | 120 | 160 | 190 | 200 | 210 | 280 | 335 | 350 | — | — | — | — |
| N1 | 2025 | 2750 | 3225 | 3425 | — | — | — | — | 1625 | 2200 | 2575 | 2750 | — | — | — | — | 1875 | 2550 | 2975 | 3150 |
| N2 | 810 | 1100 | 1300 | 1375 | — | — | — | — | 650 | 890 | 1050 | 1100 | — | — | — | — | 760 | 1025 | 1200 | 1275 |
| N3 | 540 | 740 | 870 | 920 | — | — | — | — | 435 | 590 | 700 | 740 | — | — | — | — | 510 | 690 | 800 | 850 |
| N11 | 620 | 850 | 990 | 1050 | — | — | — | — | 495 | 680 | 800 | 840 | — | — | — | — | 580 | 780 | 910 | 970 |
| S1 | 60 | 80 | 95 | 100 | — | — | — | — | 50 | 65 | 80 | 85 | — | — | — | — | — | — | — | — |
| S2 | 47 | 65 | 75 | 80 | — | — | — | — | 40 | 55 | 65 | 70 | — | — | — | — | — | — | — | — |
| S3 | 41 | 55 | 65 | 70 | — | — | — | — | 35 | 47 | 55 | 60 | — | — | — | — | — | — | — | — |
| S11 | 85 | 110 | 130 | 140 | — | — | — | — | 70 | 95 | 115 | 120 | — | — | — | — | — | — | — | — |
| S12 | 55 | 75 | 90 | 95 | — | — | — | — | 49 | 65 | 80 | 85 | — | — | — | — | — | — | — | — |
| S13 | 33 | 44 | 50 | 55 | — | — | — | — | 28 | 38 | 45 | 48 | — | — | — | — | — | — | — | — |
| H5 | 50 | 65 | 80 | 85 | 50 | 70 | 80 | 85 | 43 | 55 | 70 | 70 | — | — | — | — | — | — | — | — |
| H8 | 50 | 70 | 80 | 85 | 55 | 70 | 85 | 90 | 44 | 60 | 70 | 75 | — | — | — | — | — | — | — | — |
| H11 | 65 | 85 | 100 | 105 | 65 | 85 | 105 | 110 | 55 | 75 | 85 | 90 | — | — | — | — | — | — | — | — |
| H12 | 100 | 130 | 155 | 165 | 95 | 125 | 150 | 160 | 80 | 105 | 125 | 130 | — | — | — | — | — | — | — | — |
| H21 | 50 | 70 | 80 | 85 | 55 | 70 | 85 | 90 | 44 | 60 | 70 | 75 | — | — | — | — | — | — | — | — |

R217.29-035

Cutters with round inserts, max. axial cutting depth 3,5 mm



- For insert selection and cutting data recommendations, see page(s) 349-350
- For complete insert programme, see page(s) 654
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|------------------------|------------------|------------------|------|------|--------|-----|------|-------|-------|-------|---|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | TDZ | LF | | | | | | | |
| R217.29-0816.RE-035.3A | Combimaster | 3,5 | 16,0 | 9,0 | 13,5 | M8 | 20,0 | 17,8 | 20,8 | 31,12 | 3 | 0,1 | 48000 | RDH.0702 |
| R217.29-1020.RE-035.4A | Combimaster | 3,5 | 20,0 | 13,0 | 18,5 | M10 | 23,0 | 10,4 | 26,0 | 39,12 | 4 | 0,1 | 44000 | RDH.0702 |
| R217.29-1225.RE-035.5A | Combimaster | 3,5 | 25,0 | 18,0 | 23,0 | M12 | 28,0 | 6,9 | 32,5 | 49,12 | 5 | 0,1 | 35000 | RDH.0702 |
| | | | | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.29-.. | DOUBLE-T | C02545-T07P | H4B-T07P | 0,9 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217.29-035 – Insert selection

| SMG | | a_p | f_z | | | |
|-----|-------------------------|-------|-------|-------|------|------|
| | | | 100% | 30% | 10% | 5% |
| P1 | RDHW0702M0-MD03 F40M | 1,4 | 0,13 | 0,14 | 0,22 | 0,30 |
| P2 | RDHW0702M0-MD03 F40M | 1,4 | 0,13 | 0,14 | 0,22 | 0,30 |
| P3 | RDHW0702M0-MD03 F40M | 1,4 | 0,12 | 0,13 | 0,20 | 0,28 |
| P4 | RDHW0702M0-MD03 MP3000 | 1,4 | 0,12 | 0,13 | 0,20 | 0,28 |
| P5 | RDHW0702M0-MD03 MP3000 | 1,4 | 0,12 | 0,13 | 0,20 | 0,28 |
| P6 | RDHW0702M0-MD03 MP3000 | 1,4 | 0,11 | 0,13 | 0,19 | 0,28 |
| P7 | RDHW0702M0-MD03 MP3000 | 1,4 | 0,11 | 0,13 | 0,19 | 0,28 |
| P8 | RDHW0702M0-MD03 MP3000 | 1,4 | 0,12 | 0,13 | 0,20 | 0,28 |
| P11 | RDHW0702M0-MD03 MP3000 | 1,4 | 0,11 | 0,13 | 0,19 | 0,28 |
| P12 | RDHW0702M0-MD03 MP3000 | 1,1 | 0,090 | 0,095 | 0,15 | 0,22 |
| M1 | RDHW0702M0-MD03 F40M | 1,4 | 0,13 | 0,14 | 0,22 | 0,30 |
| M2 | RDHW0702M0-MD03 F40M | 1,4 | 0,12 | 0,13 | 0,20 | 0,28 |
| M3 | RDHW0702M0-MD03 F40M | 1,1 | 0,10 | 0,11 | 0,18 | 0,24 |
| M4 | RDHW0702M0-MD03 F40M | 0,80 | 0,11 | 0,12 | 0,18 | 0,26 |
| M5 | RDHW0702M0-MD03 F40M | 0,80 | 0,11 | 0,12 | 0,18 | 0,26 |
| K1 | RDHW0702M0T-MD04 MK2050 | 1,4 | 0,13 | 0,14 | 0,22 | 0,30 |
| K2 | RDHW0702M0T-MD04 MK2050 | 1,4 | 0,12 | 0,13 | 0,20 | 0,28 |
| K3 | RDHW0702M0T-MD04 MK2050 | 1,4 | 0,12 | 0,13 | 0,20 | 0,28 |
| K4 | RDHW0702M0T-MD04 MK2050 | 1,4 | 0,12 | 0,13 | 0,20 | 0,28 |
| K5 | RDHW0702M0T-MD04 MK2050 | 1,4 | 0,10 | 0,11 | 0,18 | 0,24 |
| K6 | RDHW0702M0T-MD04 MK2050 | 1,4 | 0,12 | 0,13 | 0,20 | 0,28 |
| K7 | RDHW0702M0T-MD04 MK2050 | 1,4 | 0,10 | 0,11 | 0,18 | 0,24 |
| S1 | RDHW0702M0-MD03 F40M | 0,80 | 0,11 | 0,12 | 0,18 | 0,26 |
| S2 | RDHW0702M0-MD03 F40M | 0,80 | 0,11 | 0,12 | 0,18 | 0,26 |
| S3 | RDHW0702M0-MD03 F40M | 0,80 | 0,10 | 0,11 | 0,17 | 0,24 |
| S11 | RDHW0702M0-MD03 F40M | 0,95 | 0,11 | 0,12 | 0,19 | 0,26 |
| S12 | RDHW0702M0-MD03 F40M | 0,95 | 0,11 | 0,12 | 0,19 | 0,26 |
| S13 | RDHW0702M0-MD03 F40M | 0,80 | 0,11 | 0,12 | 0,18 | 0,26 |
| H5 | RDHW0702M0T-MD04 F15M | 1,1 | 0,090 | 0,095 | 0,15 | 0,22 |
| H8 | RDHW0702M0T-MD04 F15M | 0,95 | 0,075 | 0,080 | 0,12 | 0,17 |
| H11 | RDHW0702M0T-MD04 F15M | 1,1 | 0,090 | 0,095 | 0,15 | 0,22 |
| H12 | RDHW0702M0-MD03 F40M | 0,95 | 0,075 | 0,080 | 0,12 | 0,17 |
| H21 | RDHW0702M0T-MD04 F15M | 0,95 | 0,075 | 0,080 | 0,12 | 0,17 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

R217.29-035 – Cutting data $v_c =$ (m/min)

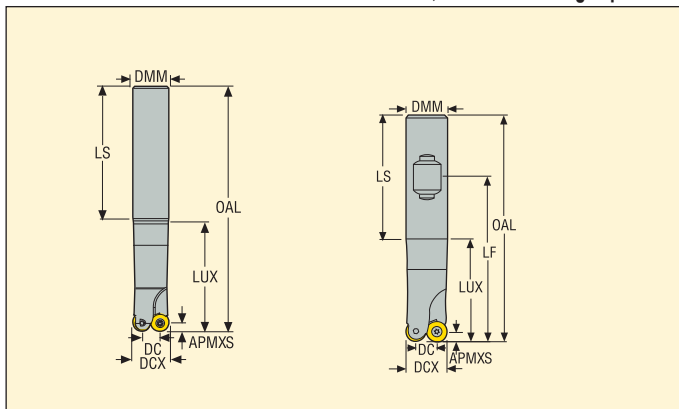
| SMG | MP3000 | | | | F15M | | | | F40M | | | | MK2050 | | | |
|-----|--------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|--------|-----|-----|-----|
| | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% |
| P1 | 335 | 485 | 560 | 580 | — | — | — | — | 270 | 385 | 450 | 465 | 350 | 500 | 590 | 610 |
| P2 | 330 | 465 | 550 | 570 | — | — | — | — | 260 | 370 | 440 | 455 | 340 | 480 | 570 | 590 |
| P3 | 285 | 405 | 480 | 490 | — | — | — | — | 230 | 325 | 380 | 390 | 300 | 420 | 495 | 510 |
| P4 | 255 | 355 | 420 | 435 | — | — | — | — | 200 | 285 | 335 | 350 | 265 | 370 | 435 | 455 |
| P5 | 240 | 340 | 400 | 415 | — | — | — | — | 195 | 275 | 320 | 335 | 250 | 355 | 420 | 435 |
| P6 | 275 | 390 | 450 | 470 | — | — | — | — | 220 | 310 | 360 | 375 | 285 | 405 | 470 | 485 |
| P7 | 260 | 365 | 425 | 440 | — | — | — | — | 210 | 295 | 340 | 355 | 270 | 380 | 440 | 460 |
| P8 | 240 | 340 | 400 | 410 | — | — | — | — | 195 | 275 | 320 | 330 | 250 | 355 | 420 | 425 |
| P11 | 255 | 355 | 415 | 430 | — | — | — | — | 200 | 285 | 330 | 345 | 265 | 370 | 430 | 445 |
| P12 | 160 | 220 | 260 | 270 | — | — | — | — | 125 | 175 | 210 | 215 | 165 | 230 | 270 | 280 |
| M1 | 245 | 345 | 410 | 425 | — | — | — | — | 210 | 300 | 355 | 365 | — | — | — | — |
| M2 | 200 | 285 | 335 | 350 | — | — | — | — | 175 | 245 | 290 | 300 | — | — | — | — |
| M3 | 165 | 225 | 265 | 275 | — | — | — | — | 140 | 195 | 230 | 235 | — | — | — | — |
| M4 | 125 | 170 | 205 | 210 | — | — | — | — | 105 | 150 | 175 | 180 | — | — | — | — |
| M5 | 105 | 145 | 170 | 175 | — | — | — | — | 90 | 125 | 145 | 150 | — | — | — | — |
| K1 | 260 | 365 | 435 | 450 | 250 | 355 | 415 | 430 | 210 | 295 | 350 | 360 | 370 | 520 | 620 | 640 |
| K2 | 230 | 325 | 380 | 395 | 220 | 310 | 365 | 380 | 185 | 260 | 305 | 315 | 325 | 460 | 540 | 560 |
| K3 | 195 | 275 | 325 | 335 | 185 | 265 | 310 | 320 | 155 | 220 | 260 | 270 | 275 | 390 | 455 | 475 |
| K4 | 185 | 260 | 310 | 320 | 175 | 250 | 295 | 305 | 150 | 210 | 245 | 255 | 260 | 370 | 435 | 455 |
| K5 | 115 | 160 | 190 | 195 | 110 | 155 | 180 | 185 | 90 | 130 | 150 | 155 | 160 | 230 | 265 | 275 |
| K6 | 165 | 230 | 270 | 280 | 155 | 220 | 260 | 270 | 130 | 185 | 215 | 225 | 230 | 325 | 385 | 400 |
| K7 | 145 | 205 | 240 | 250 | 140 | 195 | 230 | 240 | 115 | 165 | 190 | 200 | 205 | 290 | 340 | 350 |
| S1 | 60 | 80 | 95 | 100 | — | — | — | — | 50 | 70 | 80 | 85 | — | — | — | — |
| S2 | 46 | 65 | 75 | 80 | — | — | — | — | 40 | 55 | 65 | 70 | — | — | — | — |
| S3 | 41 | 55 | 65 | 70 | — | — | — | — | 35 | 49 | 55 | 60 | — | — | — | — |
| S11 | 80 | 115 | 135 | 140 | — | — | — | — | 70 | 100 | 115 | 120 | — | — | — | — |
| S12 | 55 | 80 | 95 | 95 | — | — | — | — | 49 | 70 | 80 | 85 | — | — | — | — |
| S13 | 32 | 45 | 55 | 55 | — | — | — | — | 28 | 39 | 46 | 48 | — | — | — | — |
| H5 | 49 | 70 | 80 | 85 | 50 | 70 | 85 | 85 | 42 | 60 | 70 | 70 | — | — | — | — |
| H8 | 50 | 70 | 85 | 85 | 55 | 75 | 85 | 90 | 44 | 60 | 70 | 75 | — | — | — | — |
| H11 | 65 | 85 | 105 | 105 | 65 | 90 | 105 | 110 | 55 | 75 | 90 | 90 | — | — | — | — |
| H12 | 100 | 135 | 160 | 165 | 95 | 130 | 155 | 160 | 80 | 110 | 130 | 130 | — | — | — | — |
| H21 | 50 | 70 | 85 | 85 | 55 | 75 | 85 | 90 | 44 | 60 | 70 | 75 | — | — | — | — |

R217.29-04

Cutters with round inserts, max. axial cutting depth 4 mm



- For insert selection and cutting data recommendations, see page(s) 353-354
- For complete insert programme, see page(s) 654
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | | | Insert |
|--------------------------|------------------|------------------|------|-----|------|-------|-------|------|-------|-------|-------|---|-----|-------|----------|
| | | APMXS | DCX | DC | DMM | OAL | LUX | LS | | | | | | | |
| R217.29-1616.0-04.2.050 | Cylindrical | 4,0 | 16,0 | 8,0 | 16,0 | 110,0 | 50,0 | 60,0 | 90,0 | 20,8 | 31,0 | 2 | 0,2 | 36200 | RD..0803 |
| R217.29-1616.0-04.2.100E | Cylindrical | 4,0 | 16,0 | 8,0 | 16,0 | 160,0 | 100,0 | 95,0 | 90,0 | 20,8 | 31,0 | 2 | 0,5 | 36200 | RD..0803 |
| R217.29-1616.3-04.2.040 | Cyl.-Weldon | 4,0 | 16,0 | 8,0 | 16,0 | 88,0 | 38,0 | 48,0 | 90,0 | 20,8 | 31,0 | 2 | 0,2 | 36200 | RD..0803 |
| | | | | | | | | | | | | | | | |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.69-..Dia 16 | DOUBLE-T | C02505-T08P | H4B-T08P | 1,2 |
| | | | | |
| | | | | |
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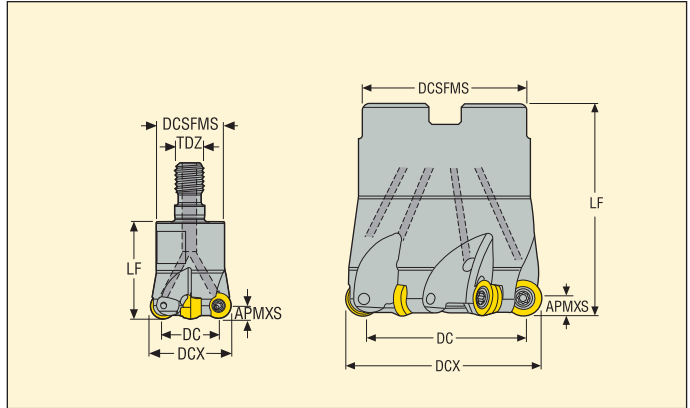
Please check availability in current price and stock-list
 Torque keys, see page 732

R217/220.29-04

Cutters with round inserts, max. axial cutting depth 4 mm



- For insert selection and cutting data recommendations, see page(s) 353-354
- For complete insert programme, see page(s) 654
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | | | Insert |
|-----------------------|------------------|------------------|------|------|--------|------|-----|------|-------|-------|-------|---|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.29-0816.RE-04.2 | Combimaster | 4,0 | 16,0 | 8,0 | 13,5 | – | M8 | 23,0 | 90,0 | 20,8 | 31,0 | 2 | 0,1 | 36200 | RD..0803 |
| R217.29-1020.RE-04.2A | Combimaster | 4,0 | 20,0 | 12,0 | 18,5 | – | M10 | 28,0 | 16,43 | 26,0 | 39,0 | 2 | 0,1 | 32400 | RD..0803 |
| R217.29-1020.RE-04.3A | Combimaster | 4,0 | 20,0 | 12,0 | 18,5 | – | M10 | 28,0 | 16,43 | 26,0 | 39,0 | 3 | 0,1 | 32400 | RD..0803 |
| R217.29-1225.RE-04.4A | Combimaster | 4,0 | 25,0 | 17,0 | 23,0 | – | M12 | 30,0 | 10,01 | 32,5 | 49,0 | 4 | 0,1 | 29000 | RD..0803 |
| R217.29-1632.RE-04.5A | Combimaster | 4,0 | 32,0 | 24,0 | 30,0 | – | M16 | 40,0 | 6,51 | 41,6 | 63,0 | 5 | 0,2 | 26100 | RD..0803 |
| R217.29-1640.RE-04.6A | Combimaster | 4,0 | 40,0 | 32,0 | 30,0 | – | M16 | 40,0 | 4,66 | 52,0 | 79,0 | 6 | 0,3 | 23300 | RD..0803 |
| R217.29-2040.RE-04.6A | Combimaster | 4,0 | 40,0 | 32,0 | 36,5 | – | M20 | 40,0 | 4,66 | 52,0 | 79,0 | 6 | 0,4 | 23300 | RD..0803 |
| R220.29-0050-04.5A | Arbor | 4,0 | 50,0 | 42,0 | 42,0 | 22,0 | – | 40,0 | 3,44 | 65,0 | 99,0 | 5 | 0,4 | 17300 | RD..0803 |
| R220.29-0050-04.7A | Arbor | 4,0 | 50,0 | 42,0 | 42,0 | 22,0 | – | 40,0 | 3,44 | 65,0 | 99,0 | 7 | 0,4 | 17300 | RD..0803 |
| | | | | | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|--------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.69-...ø16 | DOUBLE-T | C02505-T08P | H4B-T08P | – | 1,2 |
| R217.29-...ø 20-40 | DOUBLE-T | C02506-T08P | H4B-T08P | – | 1,2 |
| R217.29-2040-04 | DOUBLE-T | C02506-T08P | H4B-T08P | – | 1,2 |
| R220.29-...0050 | DOUBLE-T | C02506-T08P | H4B-T08P | 220.17-692 | 1,2 |
| | | | | | |
| | | | | | |

Please check availability in current price and stock-list

Torque keys, see page 732

R217220.29-04 – Insert selection

| SMG | | a _p | f _z | | | |
|-----|-------------------------|----------------|----------------|-------|------|------|
| | | | 100% | 30% | 10% | 5% |
| P1 | RDHT0803M0-E03 T350M | 1,5 | 0,095 | 0,11 | 0,16 | 0,22 |
| P2 | RDHT0803M0-E03 T350M | 1,5 | 0,10 | 0,11 | 0,17 | 0,22 |
| P3 | RDHT0803M0-E03 T350M | 1,5 | 0,095 | 0,10 | 0,16 | 0,22 |
| P4 | RDKW0803M0T-MD05 MS2500 | 1,5 | 0,15 | 0,17 | 0,26 | 0,36 |
| P5 | RDKW0803M0T-MD05 MS2500 | 1,5 | 0,15 | 0,16 | 0,26 | 0,34 |
| P6 | RDKW0803M0T-MD05 MS2500 | 1,5 | 0,15 | 0,16 | 0,24 | 0,34 |
| P7 | RDKW0803M0T-MD05 MS2500 | 1,5 | 0,15 | 0,16 | 0,24 | 0,34 |
| P8 | RDKW0803M0T-MD05 MP2500 | 1,5 | 0,16 | 0,17 | 0,26 | 0,36 |
| P11 | RDKW0803M0T-MD05 MS2500 | 1,5 | 0,15 | 0,16 | 0,24 | 0,34 |
| P12 | RDKW0803M0T-MD05 MS2500 | 1,3 | 0,11 | 0,12 | 0,18 | 0,26 |
| M1 | RDHW0803M0-MD03 F40M | 1,5 | 0,13 | 0,14 | 0,22 | 0,30 |
| M2 | RDHW0803M0-MD03 F40M | 1,5 | 0,12 | 0,13 | 0,20 | 0,28 |
| M3 | RDHW0803M0-MD03 F40M | 1,3 | 0,10 | 0,11 | 0,17 | 0,24 |
| M4 | RDHW0803M0-MD03 F40M | 0,95 | 0,11 | 0,12 | 0,18 | 0,24 |
| M5 | RDHW0803M0-MD03 F40M | 0,95 | 0,11 | 0,12 | 0,18 | 0,24 |
| K1 | RDKW0803M0T-MD05 MK2050 | 1,5 | 0,17 | 0,18 | 0,28 | 0,38 |
| K2 | RDKW0803M0T-MD05 MK2050 | 1,5 | 0,15 | 0,16 | 0,26 | 0,34 |
| K3 | RDKW0803M0T-MD05 MK2050 | 1,5 | 0,15 | 0,16 | 0,26 | 0,34 |
| K4 | RDKW0803M0T-MD05 MK2050 | 1,5 | 0,15 | 0,16 | 0,26 | 0,34 |
| K5 | RDKW0803M0T-MD05 MK2050 | 1,5 | 0,14 | 0,15 | 0,22 | 0,32 |
| K6 | RDKW0803M0T-MD05 MK2050 | 1,5 | 0,15 | 0,16 | 0,26 | 0,34 |
| K7 | RDKW0803M0T-MD05 MK2050 | 1,5 | 0,14 | 0,15 | 0,22 | 0,32 |
| N1 | RDHT0803M0-E03 H25 | 1,5 | 0,13 | 0,14 | 0,22 | 0,30 |
| N2 | RDHT0803M0-E03 H25 | 1,5 | 0,13 | 0,14 | 0,22 | 0,30 |
| N3 | RDHT0803M0-E03 H25 | 1,5 | 0,13 | 0,14 | 0,22 | 0,30 |
| N11 | RDHT0803M0-E03 H25 | 1,5 | 0,13 | 0,14 | 0,22 | 0,30 |
| S1 | RDHW0803M0-MD03 F40M | 0,95 | 0,11 | 0,12 | 0,18 | 0,24 |
| S2 | RDHW0803M0-MD03 F40M | 0,95 | 0,11 | 0,12 | 0,18 | 0,24 |
| S3 | RDHW0803M0-MD03 F40M | 0,95 | 0,10 | 0,11 | 0,16 | 0,22 |
| S11 | RDHW0803M0-MD03 MS2050 | 1,1 | 0,11 | 0,12 | 0,19 | 0,26 |
| S12 | RDHW0803M0-MD03 MS2050 | 1,1 | 0,11 | 0,12 | 0,19 | 0,26 |
| S13 | RDHW0803M0-MD03 MS2050 | 0,95 | 0,11 | 0,12 | 0,18 | 0,24 |
| H5 | RDKW0803M0T-MD05 F15M | 1,3 | 0,11 | 0,12 | 0,18 | 0,26 |
| H8 | RDKW0803M0T-MD05 F15M | 1,1 | 0,090 | 0,10 | 0,15 | 0,22 |
| H11 | RDKW0803M0T-MD05 F15M | 1,3 | 0,11 | 0,12 | 0,18 | 0,26 |
| H12 | RDHW0803M0-MD03 F40M | 1,1 | 0,075 | 0,080 | 0,12 | 0,17 |
| H21 | RDKW0803M0T-MD05 F15M | 1,1 | 0,090 | 0,10 | 0,15 | 0,22 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

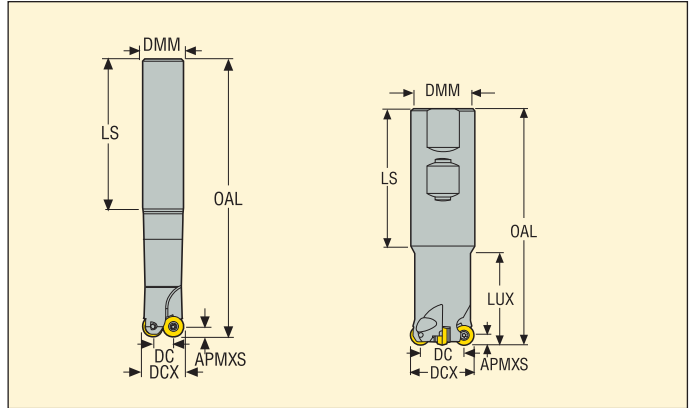
All cutting data are start values

R217.29-05

Cutters with round inserts, max. axial cutting depth 5 mm



- For insert selection and cutting data recommendations, see page(s) 357-358
- For complete insert programme, see page(s) 654
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX* | C min | C max | | | | Insert |
|--------------------------|------------------|------------------|------|------|------|-------|-------|-------|-------|-------|-------|---|-----|-------|----------|
| | | APMXS | DCX | DC | DMM | OAL | LUX | LS | | | | | | | |
| R217.29-1620.0-05.2.100E | Cylindrical | 5,0 | 20,0 | 10,0 | 16,0 | 160,0 | 112,0 | 140,0 | 90,0 | 26,0 | 38,75 | 2 | 0,5 | 27400 | RD..10T3 |
| R217.29-2520.3-05.2.070 | Cyl.-Weldon | 5,0 | 20,0 | 10,0 | 25,0 | 126,0 | 55,0 | 66,0 | 90,0 | 26,0 | 38,75 | 2 | 0,5 | 27400 | RD..10T3 |
| R217.29-2025.0-05.2.120 | Cylindrical | 5,0 | 25,0 | 15,0 | 20,0 | 170,0 | 120,0 | 140,0 | 17,25 | 32,5 | 48,75 | 2 | 0,5 | 24400 | RD..10T3 |
| R217.29-2525.3-05.3.050 | Cyl.-Weldon | 5,0 | 25,0 | 15,0 | 25,0 | 106,0 | 40,0 | 66,0 | 17,25 | 32,5 | 48,75 | 3 | 0,4 | 24400 | RD..10T3 |
| R217.29-3232.3-05.4.060 | Cyl.-Weldon | 5,0 | 32,0 | 22,0 | 32,0 | 120,0 | 50,0 | 70,0 | 10,02 | 41,6 | 62,75 | 4 | 0,7 | 21600 | RD..10T3 |
| | | | | | | | | | | | | | | | |
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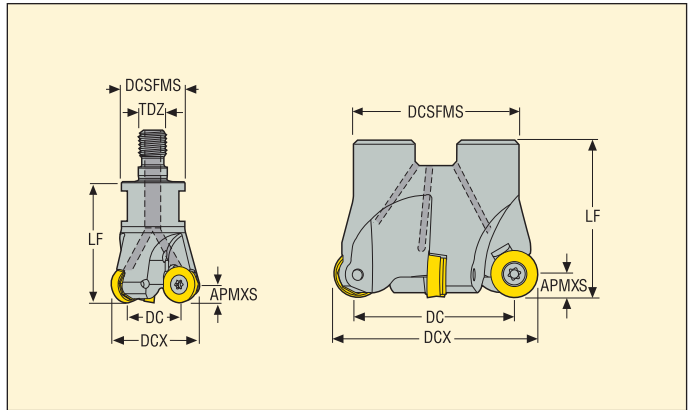
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.29-..Ø16-20 | DOUBLE-T | C03006-T09P | H4B-T09P | 2,0 |
| R217.29-..Ø25-40 | DOUBLE-T | C03007-T09P | H4B-T09P | 2,0 |
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Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.29-05

Cutters with round inserts, max. axial cutting depth 5 mm



- For insert selection and cutting data recommendations, see page(s) 357-358
- For complete insert programme, see page(s) 654
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | KG | | Insert |
|-----------------------|------------------|------------------|------|------|--------|------|-----|------|-------|-------|-------|---|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.29-1020.RE-05.2A | Combimaster | 5,0 | 20,0 | 10,0 | 18,5 | – | M10 | 28,0 | 90,0 | 26,0 | 38,75 | 2 | 0,1 | 27400 | RD..10T3 |
| R217.29-1225.RE-05.2A | Combimaster | 5,0 | 25,0 | 15,0 | 23,0 | – | M12 | 30,0 | 17,25 | 32,5 | 48,75 | 2 | 0,1 | 24400 | RD..10T3 |
| R217.29-1225.RE-05.3A | Combimaster | 5,0 | 25,0 | 15,0 | 23,0 | – | M12 | 30,0 | 17,25 | 32,5 | 48,75 | 3 | 0,1 | 24400 | RD..10T3 |
| R217.29-1232.RE-05.4A | Combimaster | 5,0 | 32,0 | 22,0 | 23,0 | – | M12 | 30,0 | 10,02 | 41,6 | 62,75 | 4 | 0,1 | 21600 | RD..10T3 |
| R217.29-1632.RE-05.3A | Combimaster | 5,0 | 32,0 | 22,0 | 30,0 | – | M16 | 40,0 | 10,02 | 41,6 | 63,0 | 3 | 0,3 | 21600 | RD..10T3 |
| R217.29-1632.RE-05.4A | Combimaster | 5,0 | 32,0 | 22,0 | 30,0 | – | M16 | 40,0 | 10,02 | 41,6 | 63,0 | 4 | 0,2 | 21600 | RD..10T3 |
| R217.29-1635.RE-05.5A | Combimaster | 5,0 | 35,0 | 25,0 | 30,0 | – | M16 | 40,0 | 8,51 | 45,5 | 68,75 | 5 | 0,3 | 20700 | RD..10T3 |
| R217.29-1640.RE-05.4A | Combimaster | 5,0 | 40,0 | 30,0 | 30,0 | – | M16 | 40,0 | 6,81 | 52,0 | 78,75 | 4 | 0,3 | 19300 | RD..10T3 |
| R217.29-1640.RE-05.5A | Combimaster | 5,0 | 40,0 | 30,0 | 30,0 | – | M16 | 40,0 | 6,81 | 52,0 | 78,75 | 5 | 0,3 | 19300 | RD..10T3 |
| R217.29-2040.RE-05.5A | Combimaster | 5,0 | 40,0 | 30,0 | 36,5 | – | M20 | 40,0 | 6,81 | 52,0 | 78,75 | 5 | 0,3 | 19300 | RD..10T3 |
| R220.29-0040-05.3A | Arbor | 5,0 | 40,0 | 30,0 | 35,0 | 16,0 | – | 40,0 | 6,81 | 52,0 | 78,75 | 3 | 0,3 | 19300 | RD..10T3 |
| R220.29-0040-05.5A | Arbor | 5,0 | 40,0 | 30,0 | 35,0 | 16,0 | – | 40,0 | 6,81 | 52,0 | 78,75 | 5 | 0,2 | 19300 | RD..10T3 |
| R217.29-2042.RE-05.5A | Combimaster | 5,0 | 42,0 | 32,0 | 36,5 | – | M20 | 40,0 | 6,31 | 54,6 | 82,75 | 5 | 0,4 | 18800 | RD..10T3 |
| R217.29-2042.RE-05.6A | Combimaster | 5,0 | 42,0 | 32,0 | 36,5 | – | M20 | 40,0 | 6,31 | 54,6 | 82,75 | 6 | 0,4 | 18800 | RD..10T3 |
| R217.29-1642.RE-05.5A | Combimaster | 5,0 | 42,0 | 32,0 | 30,0 | – | M16 | 40,0 | 6,31 | 54,6 | 82,75 | 5 | 0,3 | 18800 | RD..10T3 |
| R220.29-0050-05.4A | Arbor | 5,0 | 50,0 | 40,0 | 42,0 | 22,0 | – | 40,0 | 4,87 | 65,0 | 98,75 | 4 | 0,3 | 17300 | RD..10T3 |
| R220.29-0050-05.6A | Arbor | 5,0 | 50,0 | 40,0 | 42,0 | 22,0 | – | 40,0 | 4,87 | 65,0 | 98,75 | 6 | 0,3 | 17300 | RD..10T3 |

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.29-...Ø16-20 | DOUBLE-T | C03006-T09P | H4B-T09P | – | 2,0 |
| R217.29-...Ø25-42 | DOUBLE-T | C03007-T09P | H4B-T09P | – | 2,0 |
| R220.29-0040 | DOUBLE-T | C03007-T09P | H4B-T09P | 220.17-689 | 2,0 |
| R220.29-0050 | DOUBLE-T | C03007-T09P | H4B-T09P | 220.17-692 | 2,0 |

Please check availability in current price and stock-list

Torque keys, see page 732

R217/220.29-05 – Insert selection

| SMG | | a_p | f_z | | | |
|-----|-------------------------|-------|-------|------|------|------|
| | | | 100% | 30% | 10% | 5% |
| P1 | RDHT10T3M0T-M05 T350M | 2,0 | 0,16 | 0,17 | 0,26 | 0,36 |
| P2 | RDHT10T3M0T-M05 T350M | 2,0 | 0,16 | 0,17 | 0,26 | 0,38 |
| P3 | RDHT10T3M0T-M05 T350M | 2,0 | 0,15 | 0,17 | 0,26 | 0,36 |
| P4 | RDHT10T3M0T-M05 MS2500 | 2,0 | 0,15 | 0,16 | 0,24 | 0,34 |
| P5 | RDHT10T3M0T-M05 MS2500 | 2,0 | 0,15 | 0,16 | 0,24 | 0,34 |
| P6 | RDHT10T3M0T-M05 MS2500 | 2,0 | 0,14 | 0,16 | 0,24 | 0,34 |
| P7 | RDKW10T3M0T-MD06 MS2500 | 2,0 | 0,17 | 0,19 | 0,30 | 0,40 |
| P8 | RDKW10T3M0T-MD06 MP2500 | 2,0 | 0,18 | 0,20 | 0,30 | 0,42 |
| P11 | RDKW10T3M0T-MD06 MS2500 | 2,0 | 0,17 | 0,19 | 0,30 | 0,40 |
| P12 | RDKW10T3M0T-MD06 MS2500 | 1,5 | 0,14 | 0,15 | 0,22 | 0,32 |
| M1 | RDHT10T3M0T-M05 T350M | 2,0 | 0,16 | 0,17 | 0,26 | 0,38 |
| M2 | RDHT10T3M0T-M05 T350M | 2,0 | 0,15 | 0,16 | 0,24 | 0,34 |
| M3 | RDHT10T3M0T-M05 T350M | 1,5 | 0,13 | 0,15 | 0,22 | 0,32 |
| M4 | RDHT10T3M0T-M05 T350M | 1,2 | 0,13 | 0,14 | 0,22 | 0,30 |
| M5 | RDHT10T3M0T-M05 T350M | 1,2 | 0,13 | 0,14 | 0,22 | 0,30 |
| K1 | RDKW10T3M0T-MD06 MK2050 | 2,0 | 0,19 | 0,20 | 0,32 | 0,44 |
| K2 | RDKW10T3M0T-MD06 MK2050 | 2,0 | 0,17 | 0,19 | 0,30 | 0,40 |
| K3 | RDKW10T3M0T-MD06 MK2050 | 2,0 | 0,17 | 0,19 | 0,30 | 0,40 |
| K4 | RDKW10T3M0T-MD06 MK2050 | 2,0 | 0,17 | 0,19 | 0,30 | 0,40 |
| K5 | RDKW10T3M0T-MD06 MK2050 | 2,0 | 0,16 | 0,17 | 0,26 | 0,36 |
| K6 | RDKW10T3M0T-MD06 MP1500 | 2,0 | 0,17 | 0,19 | 0,30 | 0,40 |
| K7 | RDKW10T3M0T-MD06 MP1500 | 2,0 | 0,16 | 0,17 | 0,26 | 0,36 |
| N1 | RDHT10T3M0-E04 H25 | 2,0 | 0,16 | 0,18 | 0,28 | 0,38 |
| N2 | RDHT10T3M0-E04 H25 | 2,0 | 0,16 | 0,18 | 0,28 | 0,38 |
| N3 | RDHT10T3M0-E04 H25 | 2,0 | 0,16 | 0,18 | 0,28 | 0,38 |
| N11 | RDHT10T3M0-E04 H25 | 2,0 | 0,16 | 0,18 | 0,28 | 0,38 |
| S1 | RDHT10T3M0T-M07 MS2500 | 1,2 | 0,18 | 0,20 | 0,30 | 0,44 |
| S2 | RDHT10T3M0T-M07 MS2500 | 1,2 | 0,18 | 0,20 | 0,30 | 0,44 |
| S3 | RDHT10T3M0T-M05 MS2500 | 1,2 | 0,12 | 0,13 | 0,20 | 0,28 |
| S11 | RDHT10T3M0T-M05 MS2050 | 1,4 | 0,14 | 0,15 | 0,24 | 0,32 |
| S12 | RDHT10T3M0T-M05 MS2050 | 1,4 | 0,14 | 0,15 | 0,24 | 0,32 |
| S13 | RDHT10T3M0T-M05 MS2050 | 1,2 | 0,13 | 0,14 | 0,22 | 0,30 |
| H5 | RDHW10T3M0T-MD06 MH1000 | 1,5 | 0,14 | 0,15 | 0,22 | 0,32 |
| H8 | RDHW10T3M0T-MD06 MH1000 | 1,4 | 0,11 | 0,12 | 0,18 | 0,26 |
| H11 | RDHW10T3M0T-MD06 MH1000 | 1,5 | 0,14 | 0,15 | 0,22 | 0,32 |
| H12 | RDHT10T3M0T-M07 T350M | 1,4 | 0,13 | 0,14 | 0,22 | 0,30 |
| H21 | RDHW10T3M0T-MD06 MH1000 | 1,4 | 0,11 | 0,12 | 0,18 | 0,26 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

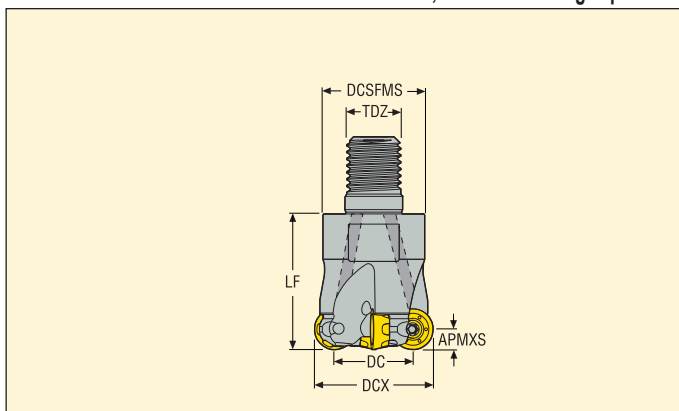
All cutting data are start values

R217.29I-06

Cutters with round inserts, max. axial cutting depth 6 mm



- For insert selection and cutting data recommendations, see page(s) 364-365
- For complete insert programme, see page(s) 656
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX ^a | C min | C max | | | | Insert |
|------------------------|------------------|------------------|------|------|--------|-----|------|-------------------|-------|-------|---|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | TDZ | LF | | | | | | | |
| R217.29I-1225.RE-06.2A | Combimaster | 6,0 | 25,0 | 13,0 | 23,0 | M12 | 35,0 | 13,0 | 32,5 | 48,5 | 2 | 1,0 | 17700 | RP..1204 |
| R217.29I-1232.RE-06.3A | Combimaster | 6,0 | 32,0 | 20,0 | 23,0 | M16 | 40,0 | 7,0 | 41,6 | 62,5 | 3 | 0,2 | 15600 | RP..1204 |
| R217.29I-1632.RE-06.3A | Combimaster | 6,0 | 32,0 | 20,0 | 30,0 | M16 | 40,0 | 7,0 | 41,6 | 62,5 | 3 | 0,2 | 15600 | RP..1204 |
| R217.29I-1635.RE-06.3A | Combimaster | 6,0 | 35,0 | 23,0 | 30,0 | M16 | 40,0 | 10,0 | 45,5 | 68,5 | 3 | 0,2 | 15000 | RP..1204 |
| R217.29I-1635.RE-06.4A | Combimaster | 6,0 | 35,0 | 23,0 | 30,0 | M16 | 40,0 | 6,0 | 45,5 | 68,5 | 4 | 0,2 | 15000 | RP..1204 |
| R217.29I-1640.RE-06.3A | Combimaster | 6,0 | 40,0 | 28,0 | 30,0 | M16 | 40,0 | 8,0 | 52,0 | 78,5 | 3 | 0,2 | 14000 | RP..1204 |
| R217.29I-1640.RE-06.4A | Combimaster | 6,0 | 40,0 | 28,0 | 30,0 | M16 | 40,0 | 8,0 | 52,0 | 78,5 | 4 | 0,2 | 14000 | RP..1204 |
| R217.29I-2040.RE06.4A | Combimaster | 6,0 | 40,0 | 28,0 | 36,5 | M20 | 45,0 | 8,0 | 52,0 | 78,5 | 4 | 0,4 | 14000 | RP..1204 |
| R217.29I-1642.RE-06.5A | Combimaster | 6,0 | 42,0 | 30,0 | 30,0 | M16 | 40,0 | 4,0 | 54,6 | 82,5 | 5 | 0,3 | 13600 | RP..1204 |
| R217.29I-2042.RE-06.5A | Combimaster | 6,0 | 42,0 | 30,0 | 36,5 | M20 | 45,0 | 4,2 | 54,6 | 82,5 | 5 | 0,4 | 13600 | RP..1204 |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Screw | Key (T-handle) | Key | Insert screw | Insert key | Torque value (Nm) |
|----------------------|-------------|----------------|--------|--------------|------------|-------------------|
| R217.29I-25/35-4A/42 | SX2035-T05P | DOUBLE-T | T05P-2 | C03508-T15P | H4B-T15P | 3,5 |
| R217.29I-32/35-3A/40 | SX2035-T05P | DOUBLE-T | T05P-2 | C03509-T15P | H4B-T15P | 3,5 |
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Please check availability in current price and stock-list

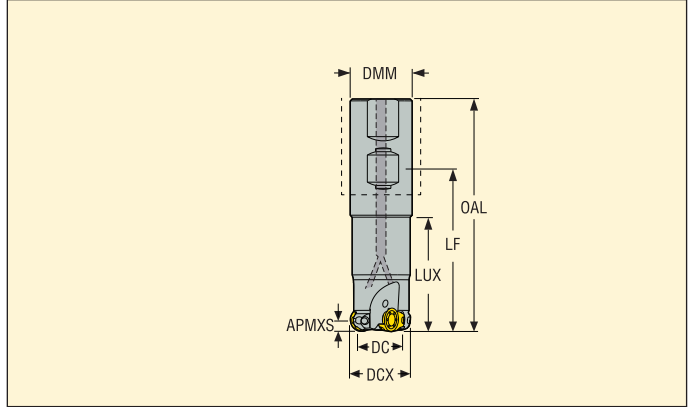
Torque keys, see page 732

R217.29I-06

Cutters with round inserts, max. axial cutting depth 6 mm



- For insert selection and cutting data recommendations, see page(s) 364-365
- For complete insert programme, see page(s) 656
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | KG | | Insert |
|---------------------------|------------------|------------------|------|------|------|-------|------|------|-------|-------|-------|---|-----|-------|----------|
| | | APMXS | DCX | DC | DMM | OAL | LUX | LS | | | | | | | |
| R217.29I-2525.3-06.2.050A | Cyl.-Weldon | 6,0 | 25,0 | 13,0 | 25,0 | 106,0 | 21,6 | 46,0 | 13,0 | 32,5 | 48,5 | 2 | 0,4 | 17700 | RP..1204 |
| R217.29I-3232.3-06.3.060A | Cyl.-Weldon | 6,0 | 32,0 | 20,0 | 32,0 | 120,0 | 26,6 | 60,0 | 7,0 | 41,6 | 62,5 | 3 | 0,7 | 15600 | RP..1204 |
| R217.29I-3240.3-06-055.4A | Cyl.-Weldon | 6,0 | 40,0 | 28,0 | 32,0 | 115,0 | 55,0 | 60,0 | 8,0 | 52,0 | 78,5 | 4 | 0,6 | 14000 | RP..1204 |
| R217.29I-3240.3-06.4.075A | Cyl.-Weldon | 6,0 | 40,0 | 28,0 | 32,0 | 135,0 | 72,0 | 60,0 | 8,0 | 52,0 | 78,5 | 4 | 0,8 | 14000 | RP..1204 |
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Centre coolant hole possibility by removing centre screw

Spare Parts

| For cutter | Screw | Key (T-handle) | Key | Insert screw | Insert key | Centre screw | Torque value (Nm) |
|-----------------------|-------------|----------------|--------|--------------|------------|--------------|-------------------|
| R217.29I-.. Ø25 | SX2035-T05P | DOUBLE-T | T05P-2 | C03508-T15P | H4B-T15P | – | 3,5 |
| R217.29I-.. Ø32-40 | SX2035-T05P | DOUBLE-T | T05P-2 | C03509-T15P | H4B-T15P | – | 3,5 |
| R217.29I-.. Ø32-40-4A | SX2035-T05P | DOUBLE-T | T05P-2 | C03509-T15P | H4B-T15P | SH3040 | 3,5 |
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Please check availability in current price and stock-list

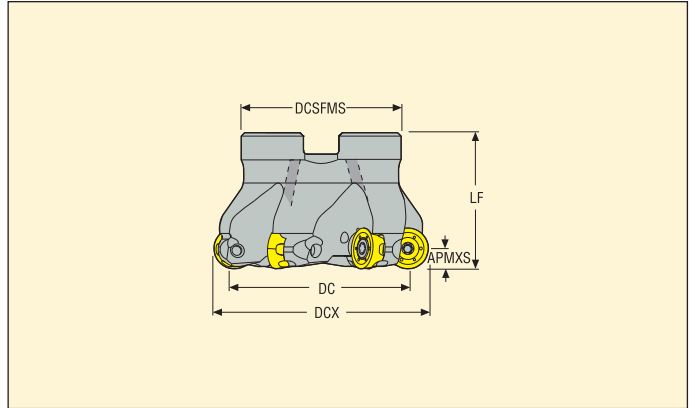
Torque keys, see page 732

R220.29I-06

Cutters with round inserts, max. axial cutting depth 6 mm



- For insert selection and cutting data recommendations, see page(s) 364-365
- For complete insert programme, see page(s) 656
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX* | C min | C max | | | | Insert |
|---------------------|------------------|------------------|------|------|--------|------|------|-------|-------|-------|---|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | | | | |
| R220.29I-0040-06.4A | Arbor | 6,0 | 40,0 | 28,0 | 35,0 | 16,0 | 40,0 | 8,0 | 52,0 | 78,5 | 4 | 0,2 | 14000 | RP..1204 |
| R220.29I-0044-06.4A | Arbor | 6,0 | 44,0 | 32,0 | 35,0 | 16,0 | 40,0 | 7,9 | 76,0 | 86,0 | 4 | 0,2 | 13300 | RP..1204 |
| R220.29I-0050-06.4A | Arbor | 6,0 | 50,0 | 38,0 | 42,0 | 22,0 | 40,0 | 5,5 | 65,0 | 98,5 | 4 | 0,3 | 12500 | RP..1204 |
| R220.29I-0050-06.5A | Arbor | 6,0 | 50,0 | 38,0 | 42,0 | 22,0 | 40,0 | 5,5 | 65,0 | 98,5 | 5 | 0,3 | 12500 | RP..1204 |
| R220.29I-0052-06.4A | Arbor | 6,0 | 52,0 | 40,0 | 42,0 | 22,0 | 40,0 | 5,0 | 67,6 | 102,5 | 4 | 0,3 | 12300 | RP..1204 |
| R220.29I-0052-06.5A | Arbor | 6,0 | 52,0 | 40,0 | 42,0 | 22,0 | 40,0 | 5,0 | 67,6 | 102,5 | 5 | 0,3 | 12300 | RP..1204 |
| R220.29I-0063-06.5A | Arbor | 6,0 | 63,0 | 51,0 | 47,0 | 22,0 | 40,0 | 4,0 | 81,9 | 124,5 | 5 | 0,4 | 11200 | RP..1204 |
| R220.29I-0063-06.6A | Arbor | 6,0 | 63,0 | 51,0 | 47,0 | 22,0 | 40,0 | 4,0 | 81,9 | 124,5 | 6 | 0,5 | 11200 | RP..1204 |
| R220.29I-0063-06.7A | Arbor | 6,0 | 63,0 | 51,0 | 47,0 | 22,0 | 40,0 | 3,0 | 81,9 | 124,5 | 7 | 0,5 | 11200 | RP..1204 |

Spare Parts

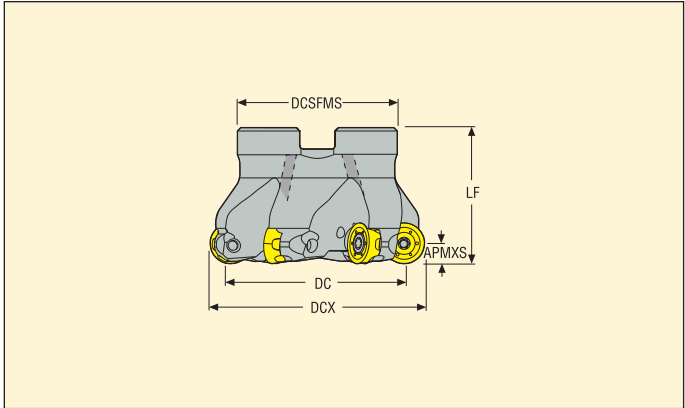
| For cutter | Screw | Key (T-handle) | Key | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|--------------------|-------------|----------------|--------|--------------|------------|-------------|-------------------|
| | | | | | | | |
| R220.29I-.. Ø40 | SX2035-T05P | DOUBLE-T | T05P-2 | C03509-T15P | H4B-T15P | 220.17-689 | 3,5 |
| R220.29I-.. Ø44 | SX2035-T05P | DOUBLE-T | T05P-2 | C03509-T15P | H4B-T15P | 220.17-689 | 3,5 |
| R220.29I-.. Ø50-63 | SX2035-T05P | DOUBLE-T | T05P-2 | C03509-T15P | H4B-T15P | 220.17-692 | 3,5 |

Please check availability in current price and stock-list

Torque keys, see page 732

R220.291-06

Cutters with round inserts, max. axial cutting depth 6 mm



- For insert selection and cutting data recommendations, see page(s) 364-365
- For complete insert programme, see page(s) 656
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|----------------------|------------------|------------------|-------|-------|--------|------|------|-------|-------|-------|----|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | | | | |
| R220.291-0066-06.6A | Arbor | 6,0 | 66,0 | 54,0 | 50,0 | 27,0 | 50,0 | 3,5 | 85,8 | 130,5 | 6 | 0,6 | 10900 | RP..1204 |
| R220.291-0080-06.6A | Arbor | 6,0 | 80,0 | 68,0 | 62,0 | 27,0 | 50,0 | 3,0 | 104,0 | 158,5 | 6 | 1,0 | 10000 | RP..1204 |
| R220.291-0080-06.7A | Arbor | 6,0 | 80,0 | 68,0 | 62,0 | 27,0 | 50,0 | 3,0 | 104,0 | 158,5 | 7 | 1,0 | 10000 | RP..1204 |
| R220.291-0080-06.8A | Arbor | 6,0 | 80,0 | 68,0 | 62,0 | 27,0 | 50,0 | 2,0 | 104,0 | 158,5 | 8 | 1,0 | 10000 | RP..1204 |
| R220.291-0084-06.6A | Arbor | 6,0 | 84,0 | 72,0 | 77,0 | 32,0 | 50,0 | 2,5 | 156,0 | 166,0 | 6 | 1,2 | 9500 | RP..1204 |
| R220.291-0092-06.7A | Arbor | 6,0 | 92,0 | 80,0 | 77,0 | 32,0 | 50,0 | 2,5 | 119,6 | 182,5 | 7 | 1,4 | 9200 | RP..1204 |
| R220.291-0100-06.9A | Arbor | 6,0 | 100,0 | 88,0 | 77,0 | 32,0 | 50,0 | 2,0 | 130,0 | 198,5 | 9 | 1,6 | 8800 | RP..1204 |
| R220.291-0112-06.7A | Arbor | 6,0 | 112,0 | 100,0 | 77,0 | 32,0 | 63,0 | 1,5 | 145,6 | 222,5 | 7 | 1,8 | 8400 | RP..1204 |
| R220.291-0125-06.11A | Arbor | 6,0 | 125,0 | 113,0 | 90,0 | 40,0 | 63,0 | 1,5 | 162,5 | 248,5 | 11 | 3,1 | 8000 | RP..1204 |
| R220.291-0137-06.8A | Arbor | 6,0 | 137,0 | 125,0 | 90,0 | 40,0 | 63,0 | 1,5 | 178,1 | 272,5 | 8 | 3,3 | 7600 | RP..1204 |
| | | | | | | | | | | | | | | |
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Spare Parts

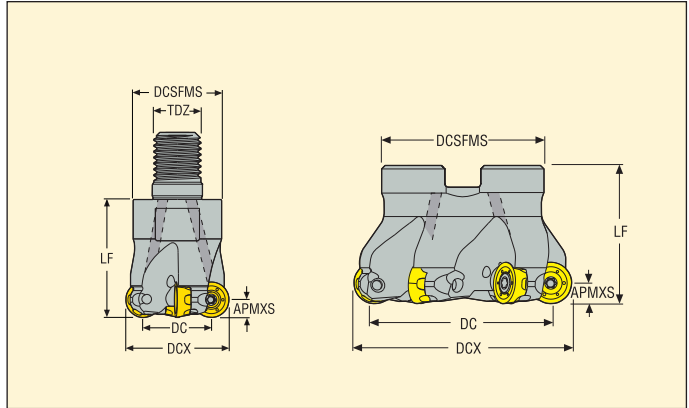
| For cutter | Screw | Key (T-handle) | Key | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|----------------------|-------------|----------------|--------|--------------|------------|-------------|-------------------|
| | | | | | | | |
| R220.291-..-Ø66-80 | SX2035-T05P | DOUBLE-T | T05P-2 | C03509-T15P | H4B-T15P | MC6S12X35 | 3,5 |
| R220.29-0084-06 | SX2035-T05P | DOUBLE-T | T05P-2 | C03509-T15P | H4B-T15P | 950E1645 | 3,5 |
| R220.291-..-Ø92-112 | SX2035-T05P | DOUBLE-T | T05P-2 | C03509-T15P | H4B-T15PL | 950E1645 | 3,5 |
| R220.291-..-Ø125-137 | SX2035-T05P | DOUBLE-T | T05P-2 | C03509-T15P | H4B-T15PL | MC6S20X50 | 3,5 |
| | | | | | | | |
| | | | | | | | |

Please check availability in current price and stock-list

Torque keys, see page 732

R217/220.29B-06 – For blade machining

Cutters with round inserts, max. axial cutting depth 6 mm



- For insert selection and cutting data recommendations, see page(s) 364-365
- For complete insert programme, see page(s) 656
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX ^a | C min | C max | | | | Insert |
|------------------------|------------------|------------------|------|------|--------|------|-----|------|-------------------|-------|-------|---|-----|-------|--------|
| | | APMXS | DCX | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.29B-1632.RE-06.3A | Combimaster | 6,0 | 32,0 | 20,0 | 30,0 | – | M16 | 40,0 | 4,5 | 41,6 | 62,5 | 3 | 0,2 | 15600 | RP..12 |
| R220.29B-0040-06.4A | Arbor | 6,0 | 40,0 | 28,0 | 35,0 | 16,0 | – | 40,0 | 5,0 | 52,0 | 78,5 | 4 | 0,2 | 14000 | RP..12 |
| R220.29B-0050-06.5A | Arbor | 6,0 | 50,0 | 38,0 | 42,0 | 22,0 | – | 40,0 | 5,0 | 65,0 | 98,5 | 5 | 0,3 | 12500 | RP..12 |
| R220.29B-0052-06.5A | Arbor | 6,0 | 52,0 | 38,0 | 42,0 | 22,0 | – | 40,0 | 5,0 | 67,6 | 102,5 | 5 | 0,3 | 12300 | RP..12 |
| R220.29B-0063-06.6A | Arbor | 6,0 | 63,0 | 51,0 | 47,0 | 22,0 | – | 40,0 | 4,0 | 81,9 | 124,5 | 6 | 0,5 | 11200 | RP..12 |
| R220.29B-0063-06.7A | Arbor | 6,0 | 63,0 | 51,0 | 47,0 | 22,0 | – | 40,0 | 4,0 | 81,9 | 124,5 | 7 | 0,5 | 11200 | RP..12 |
| | | | | | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Screw | Key (T-handle) | Key | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|-------------|----------------|--------|--------------|------------|-------------|-------------------|
| | | | | | | | |
| R217.29-.. | SX2035-T05P | DOUBLE-T | T05P-2 | C03509-T15P | H4B-T15P | – | 3,5 |
| R220.29-0040 | SX2035-T05P | DOUBLE-T | T05P-2 | C03509-T15P | H4B-T15P | 220.17-689 | 3,5 |
| R220.29-0050-0063 | SX2035-T05P | DOUBLE-T | T05P-2 | C03509-T15P | H4B-T15P | 220.17-692 | 3,5 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.29-06 – Insert selection

| SMG | | a_p | f_z | | | |
|-----|---------------------------|-------|-------|------|------|------|
| | | | 100% | 30% | 10% | 5% |
| P1 | RPHT1204M0T-6-M08 T350M | 2,5 | 0,24 | 0,26 | 0,42 | 0,60 |
| P2 | RPHT1204M0T-6-M08 T350M | 2,5 | 0,26 | 0,28 | 0,42 | 0,60 |
| P3 | RPHT1204M0T-6-M08 T350M | 2,5 | 0,24 | 0,26 | 0,40 | 0,55 |
| P4 | RPHT1204M0T-6-M08 T350M | 2,5 | 0,24 | 0,26 | 0,40 | 0,55 |
| P5 | RPKT1204M0T-6-M15 MP2500 | 2,5 | 0,42 | 0,46 | 0,75 | 1,0 |
| P6 | RPKT1204M0T-6-M15 MP2500 | 2,5 | 0,42 | 0,46 | 0,70 | 1,0 |
| P7 | RPKT1204M0T-6-M15 MP2500 | 2,5 | 0,42 | 0,46 | 0,70 | 1,0 |
| P8 | RPHT1204M0T-6-M13 MS2500 | 2,5 | 0,38 | 0,42 | 0,65 | 0,95 |
| P11 | RPHT1204M0T-6-M08 MP2500 | 2,5 | 0,22 | 0,24 | 0,38 | 0,55 |
| P12 | RPHT1204M0T-4-M13 MS2500 | 1,9 | 0,28 | 0,32 | 0,48 | 0,70 |
| M1 | RPHT1204M0T-6-ME07 T350M | 2,5 | 0,22 | 0,24 | 0,36 | 0,50 |
| M2 | RPHT1204M0T-6-ME07 T350M | 2,5 | 0,20 | 0,22 | 0,34 | 0,46 |
| M3 | RPHT1204M0T-6-ME07 T350M | 1,9 | 0,18 | 0,20 | 0,30 | 0,42 |
| M4 | RPHT1204M0T-6-M08 T350M | 1,4 | 0,22 | 0,24 | 0,36 | 0,50 |
| M5 | RPHT1204M0T-6-M08 T350M | 1,4 | 0,22 | 0,24 | 0,36 | 0,50 |
| K1 | RPKT1204M0T-6-M15 MK2050 | 2,5 | 0,46 | 0,50 | 0,80 | 1,1 |
| K2 | RPKT1204M0T-6-M15 MK2050 | 2,5 | 0,42 | 0,46 | 0,75 | 1,0 |
| K3 | RPKT1204M0T-6-M15 MK2050 | 2,5 | 0,42 | 0,46 | 0,75 | 1,0 |
| K4 | RPKT1204M0T-6-M15 MK2050 | 2,5 | 0,42 | 0,46 | 0,75 | 1,0 |
| K5 | RPKT1204M0T-6-M15 MK2050 | 2,5 | 0,38 | 0,42 | 0,65 | 0,90 |
| K6 | RPKT1204M0T-6-M15 MK2050 | 2,5 | 0,42 | 0,46 | 0,75 | 1,0 |
| K7 | RPKT1204M0T-6-M15 MK2050 | 2,5 | 0,38 | 0,42 | 0,65 | 0,90 |
| N1 | RPHT1204M0-6-E05 H25 | 2,5 | 0,20 | 0,22 | 0,34 | 0,46 |
| N2 | RPHT1204M0-6-E05 H25 | 2,5 | 0,20 | 0,22 | 0,34 | 0,46 |
| N3 | RPHT1204M0-6-E05 H25 | 2,5 | 0,20 | 0,22 | 0,34 | 0,46 |
| N11 | RPHT1204M0-6-E05 H25 | 2,5 | 0,20 | 0,22 | 0,34 | 0,46 |
| S1 | RPHT1204M0T-6-M13 MS2500 | 1,4 | 0,34 | 0,38 | 0,60 | 0,85 |
| S2 | RPHT1204M0T-6-M13 MS2500 | 1,4 | 0,34 | 0,38 | 0,60 | 0,85 |
| S3 | RPHT1204M0T-6-M13 MS2500 | 1,4 | 0,32 | 0,36 | 0,55 | 0,75 |
| S11 | RPHT1204M0T-6-M13 MS2050 | 1,7 | 0,36 | 0,40 | 0,60 | 0,85 |
| S12 | RPHT1204M0T-6-M13 MS2050 | 1,7 | 0,36 | 0,40 | 0,60 | 0,85 |
| S13 | RPHT1204M0T-6-M13 MS2050 | 1,4 | 0,34 | 0,38 | 0,60 | 0,85 |
| H5 | RPHW1204M0T-6-MD12 MH1000 | 1,9 | 0,26 | 0,30 | 0,44 | 0,65 |
| H8 | RPHW1204M0T-6-MD12 MH1000 | 1,7 | 0,22 | 0,24 | 0,36 | 0,50 |
| H11 | RPHW1204M0T-6-MD12 MH1000 | 1,9 | 0,26 | 0,30 | 0,44 | 0,65 |
| H12 | RPHT1204M0T-6-M13 T350M | 1,7 | 0,24 | 0,26 | 0,40 | 0,55 |
| H21 | RPHW1204M0T-6-MD12 MH1000 | 1,7 | 0,22 | 0,24 | 0,36 | 0,50 |

SMG = Seco material group

f_z = mm/tooth

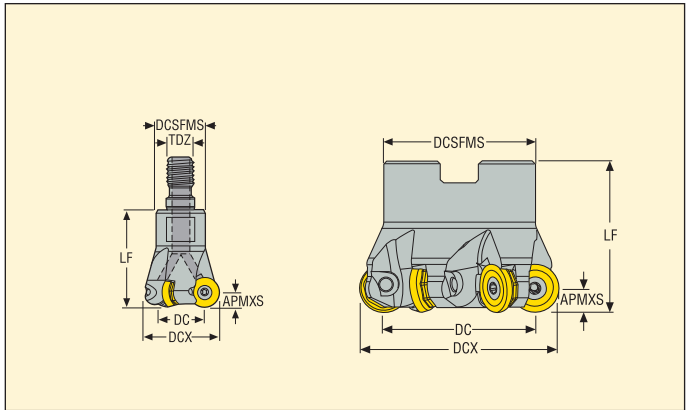
v_c = m/min

a_p/DC = %

All cutting data are start values

R217/220.29-08

Cutters with round inserts, max. axial cutting depth 8 mm



- For insert selection and cutting data recommendations, see page(s) 367-368
- For complete insert programme, see page(s) 656
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | | | Insert |
|-----------------------|------------------|------------------|-------|-------|--------|------|-----|------|-------|-------|-------|---|-----|-------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.29-1632.RE-08.2A | Combimaster | 8,0 | 32,0 | 16,0 | 30,0 | – | M16 | 40,0 | 90,0 | 41,6 | 62,0 | 2 | 0,2 | 12200 | RP..1605 |
| R217.29-1640.RE-08.3A | Combimaster | 8,0 | 40,0 | 24,0 | 30,0 | – | M16 | 40,0 | 20,0 | 52,0 | 78,0 | 3 | 0,3 | 10900 | RP..1605 |
| R217.29-2040.RE08.3A | Combimaster | 8,0 | 40,0 | 24,0 | 36,5 | – | M20 | 45,0 | 20,0 | 52,0 | 78,0 | 3 | 0,3 | 10900 | RP..1605 |
| R220.29-0050-08.3A | Arbor | 8,0 | 50,0 | 34,0 | 42,0 | 22,0 | – | 50,0 | 15,5 | 65,0 | 98,0 | 3 | 0,4 | 9700 | RP..1605 |
| R220.29-0052-08.4A | Arbor | 8,0 | 52,0 | 36,0 | 42,0 | 22,0 | – | 50,0 | 13,0 | 67,6 | 102,0 | 4 | 0,2 | 9600 | RP..1605 |
| R220.29-0063-08.4A | Arbor | 8,0 | 63,0 | 47,0 | 47,0 | 22,0 | – | 50,0 | 9,5 | 81,9 | 124,0 | 4 | 0,6 | 8700 | RP..1605 |
| R220.29-0063-08.5A | Arbor | 8,0 | 63,0 | 47,0 | 47,0 | 22,0 | – | 50,0 | 9,5 | 81,9 | 124,0 | 5 | 0,6 | 8700 | RP..1605 |
| R220.29-0066-08.5A | Arbor | 8,0 | 66,0 | 50,0 | 50,0 | 27,0 | – | 50,0 | 8,5 | 85,8 | 130,0 | 5 | 0,6 | 8400 | RP..1605 |
| R220.29-0066-08.6A | Arbor | 8,0 | 66,0 | 50,0 | 50,0 | 27,0 | – | 50,0 | 3,23 | 85,8 | 130,0 | 6 | 0,6 | 8400 | RP..1605 |
| R220.29-0080-08.5A | Arbor | 8,0 | 80,0 | 64,0 | 62,0 | 27,0 | – | 50,0 | 6,0 | 104,0 | 158,0 | 5 | 1,0 | 7700 | RP..1605 |
| R220.29-0080-08.6A | Arbor | 8,0 | 80,0 | 64,0 | 62,0 | 27,0 | – | 50,0 | 6,0 | 104,0 | 158,0 | 6 | 0,9 | 7700 | RP..1605 |
| R220.29-0084-08.5A | Arbor | 8,0 | 84,0 | 68,0 | 77,0 | 32,0 | – | 50,0 | 5,8 | 109,2 | 166,0 | 5 | 1,2 | 7500 | RP..1605 |
| R220.29-0100-08.6MA | Arbor | 8,0 | 100,0 | 84,0 | 77,0 | 32,0 | – | 50,0 | 5,0 | 130,0 | 198,0 | 6 | 1,4 | 6800 | RP..1605 |
| R220.29-0100-08.7A | Arbor | 8,0 | 100,0 | 84,0 | 77,0 | 32,0 | – | 50,0 | 5,0 | 130,0 | 198,0 | 7 | 1,4 | 6800 | RP..1605 |
| R220.29-0125-08.6MA | Arbor | 8,0 | 125,0 | 109,0 | 90,0 | 40,0 | – | 63,0 | 3,5 | 162,5 | 248,0 | 6 | 2,8 | 6100 | RP..1605 |
| R220.29-0125-08.8A | Arbor | 8,0 | 125,0 | 109,0 | 90,0 | 40,0 | – | 63,0 | 3,5 | 162,5 | 248,0 | 8 | 3,1 | 6100 | RP..1605 |
| R220.29-8160-08.9 | Arbor | 8,0 | 160,0 | 144,0 | 90,0 | 40,0 | – | 63,0 | – | 208,0 | 318,0 | 9 | 4,1 | 5400 | RP..1605 |

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Shim screw | Key (T-handle) | Key | Insert shim | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-----------------------|------------|----------------|-------|-------------|--------------|------------|-------------|-------------------|
| R217.29-08-2A | – | DOUBLE-T | – | – | C05010-T20P | H6B-T20P | – | 5,0 |
| R217/220.29-0040-0052 | – | DOUBLE-T | – | – | C05013-T20P | H6B-T20P | – | 5,0 |
| R220.29-0063 | – | DOUBLE-T | – | – | C05013-T20P | H6B-T20P | 220.17-692 | 5,0 |
| R220.29-0066-0088 | – | DOUBLE-T | – | – | C05013-T20P | H6B-T20P | MC6S12X35 | 5,0 |
| R220.29-0084-08 | – | DOUBLE-T | – | – | C05013-T20P | H6B-T20P | 950E1645 | 5,0 |
| R220.29-0100-8160-M | CA5010 | DOUBLE-T | H05-4 | SRP1604M0 | C05018-T20P | H6B-T20PL | – | 5,0 |
| R220.29-0100-8160 | – | DOUBLE-T | – | – | C05013-T20P | H6B-T20PL | – | 5,0 |

Please check availability in current price and stock-list

Torque keys, see page 732

R217/220.29-08 – Insert selection

| SMG | | a_p | f_z | | | |
|-----|------------------------|-------|-------|------|------|------|
| | | | 100% | 30% | 10% | 5% |
| P1 | RPHT1605M0T-ME11 T350M | 3,0 | 0,36 | 0,38 | 0,60 | 0,85 |
| P2 | RPHT1605M0T-ME11 T350M | 3,0 | 0,36 | 0,40 | 0,60 | 0,85 |
| P3 | RPHT1605M0T-ME11 T350M | 3,0 | 0,34 | 0,38 | 0,60 | 0,80 |
| P4 | RPHT1605M0T-M18 MS2500 | 3,0 | 0,46 | 0,50 | 0,80 | 1,1 |
| P5 | RPHT1605M0T-M18 MS2500 | 3,0 | 0,44 | 0,50 | 0,75 | 1,1 |
| P6 | RPHT1605M0T-M18 MS2500 | 3,0 | 0,44 | 0,48 | 0,75 | 1,1 |
| P7 | RPHT1605M0T-M18 MS2500 | 3,0 | 0,44 | 0,48 | 0,75 | 1,1 |
| P8 | RPHT1605M0T-M18 MP2500 | 3,0 | 0,46 | 0,50 | 0,80 | 1,1 |
| P11 | RPHT1605M0T-M18 MS2500 | 3,0 | 0,44 | 0,48 | 0,75 | 1,1 |
| P12 | RPHT1605M0T-M18 MS2500 | 2,5 | 0,34 | 0,36 | 0,55 | 0,80 |
| M1 | RPHT1605M0T-M12 T350M | 3,0 | 0,40 | 0,44 | 0,65 | 0,95 |
| M2 | RPHT1605M0T-M12 T350M | 3,0 | 0,36 | 0,40 | 0,60 | 0,85 |
| M3 | RPHT1605M0T-M12 T350M | 2,5 | 0,32 | 0,34 | 0,55 | 0,75 |
| M4 | RPHT1605M0T-M12 T350M | 1,9 | 0,32 | 0,34 | 0,55 | 0,75 |
| M5 | RPHT1605M0T-M12 T350M | 1,9 | 0,32 | 0,34 | 0,55 | 0,75 |
| K1 | RPHT1605M0T-M18 MK2050 | 3,0 | 0,50 | 0,55 | 0,85 | 1,2 |
| K2 | RPHT1605M0T-M18 MK2050 | 3,0 | 0,44 | 0,50 | 0,75 | 1,1 |
| K3 | RPHT1605M0T-M18 MK2050 | 3,0 | 0,44 | 0,50 | 0,75 | 1,1 |
| K4 | RPHT1605M0T-M18 MK2050 | 3,0 | 0,44 | 0,50 | 0,75 | 1,1 |
| K5 | RPHT1605M0T-M18 MK2050 | 3,0 | 0,40 | 0,44 | 0,70 | 1,0 |
| K6 | RPHT1605M0T-M18 MK2050 | 3,0 | 0,44 | 0,50 | 0,75 | 1,1 |
| K7 | RPHT1605M0T-M18 MK2050 | 3,0 | 0,40 | 0,44 | 0,70 | 1,0 |
| N1 | RPHT1605M0T-ME11 F40M | 3,0 | 0,46 | 0,50 | 0,80 | 1,1 |
| N2 | RPHT1605M0T-ME11 F40M | 3,0 | 0,46 | 0,50 | 0,80 | 1,1 |
| N3 | RPHT1605M0T-ME11 F40M | 3,0 | 0,46 | 0,50 | 0,80 | 1,1 |
| N11 | RPHT1605M0T-ME11 F40M | 3,0 | 0,46 | 0,50 | 0,80 | 1,1 |
| S1 | RPHT1605M0T-M12 MS2500 | 1,9 | 0,32 | 0,34 | 0,55 | 0,75 |
| S2 | RPHT1605M0T-M12 MS2500 | 1,9 | 0,32 | 0,34 | 0,55 | 0,75 |
| S3 | RPHT1605M0T-M12 MS2500 | 1,9 | 0,30 | 0,32 | 0,50 | 0,70 |
| S11 | RPHT1605M0T-M12 MS2050 | 2,0 | 0,36 | 0,38 | 0,60 | 0,85 |
| S12 | RPHT1605M0T-M12 MS2050 | 2,0 | 0,36 | 0,38 | 0,60 | 0,85 |
| S13 | RPHT1605M0T-M12 MS2050 | 1,9 | 0,32 | 0,34 | 0,55 | 0,75 |
| H5 | RPKW1605M0T-MD20 F15M | 2,5 | 0,44 | 0,48 | 0,75 | 1,1 |
| H8 | RPKW1605M0T-MD20 F15M | 2,0 | 0,38 | 0,42 | 0,65 | 0,90 |
| H11 | RPKW1605M0T-MD20 F15M | 2,5 | 0,44 | 0,48 | 0,75 | 1,1 |
| H12 | RPHT1605M0T-M12 T350M | 2,0 | 0,22 | 0,26 | 0,38 | 0,55 |
| H21 | RPKW1605M0T-MD20 F15M | 2,0 | 0,38 | 0,42 | 0,65 | 0,90 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

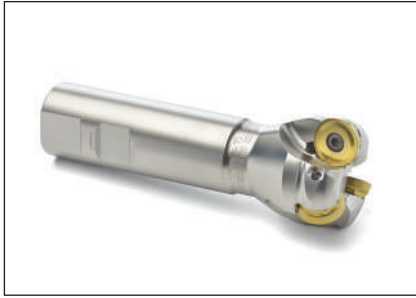
R217/220.29-08 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | | MP2050 | | | | MP2500 | | | | T350M | | | | F40M | | | |
|-----|--------|-----|-----|-----|--------|-----|-----|-----|--------|-----|-----|-----|-------|-----|-----|-----|------|------|------|------|
| | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% |
| P1 | 310 | 440 | 520 | 550 | 290 | 410 | 490 | 510 | 275 | 390 | 460 | 485 | 275 | 385 | 460 | 480 | 240 | 335 | 400 | 420 |
| P2 | 300 | 430 | 510 | 530 | 280 | 395 | 475 | 500 | 265 | 380 | 450 | 470 | 265 | 375 | 445 | 470 | 230 | 325 | 385 | 410 |
| P3 | 265 | 375 | 445 | 465 | 245 | 345 | 415 | 430 | 235 | 330 | 395 | 415 | 235 | 330 | 390 | 405 | 205 | 285 | 340 | 350 |
| P4 | 235 | 330 | 395 | 410 | 220 | 310 | 365 | 385 | 205 | 290 | 350 | 365 | 205 | 290 | 345 | 365 | 180 | 250 | 300 | 315 |
| P5 | 225 | 320 | 375 | 390 | 210 | 295 | 350 | 370 | 200 | 280 | 330 | 345 | 200 | 275 | 330 | 345 | 175 | 240 | 285 | 300 |
| P6 | 255 | 360 | 420 | 450 | 235 | 330 | 395 | 415 | 225 | 315 | 375 | 395 | 225 | 315 | 375 | 390 | 195 | 275 | 325 | 340 |
| P7 | 240 | 335 | 395 | 425 | 220 | 310 | 375 | 390 | 210 | 300 | 350 | 375 | 210 | 300 | 355 | 370 | 185 | 260 | 305 | 320 |
| P8 | 225 | 315 | 375 | 390 | 205 | 290 | 350 | 360 | 195 | 280 | 330 | 345 | 195 | 275 | 330 | 340 | 170 | 240 | 285 | 295 |
| P11 | 230 | 330 | 385 | 410 | 215 | 305 | 360 | 380 | 205 | 290 | 340 | 365 | 205 | 290 | 345 | 355 | 180 | 250 | 300 | 310 |
| P12 | 150 | 215 | 255 | 270 | 145 | 195 | 235 | 245 | 135 | 190 | 225 | 240 | 135 | 185 | 220 | 235 | 115 | 160 | 190 | 205 |
| M1 | — | — | — | — | 200 | 285 | 340 | 355 | 190 | 275 | 325 | 340 | 205 | 290 | 340 | 360 | 185 | 265 | 310 | 330 |
| M2 | — | — | — | — | 165 | 235 | 280 | 295 | 160 | 225 | 265 | 280 | 170 | 240 | 285 | 300 | 155 | 215 | 255 | 270 |
| M3 | — | — | — | — | 135 | 190 | 225 | 240 | 130 | 180 | 220 | 230 | 140 | 190 | 230 | 240 | 125 | 175 | 210 | 220 |
| M4 | — | — | — | — | 105 | 145 | 175 | 185 | 100 | 140 | 170 | 180 | 105 | 150 | 180 | 185 | 95 | 135 | 160 | 170 |
| M5 | — | — | — | — | 90 | 120 | 145 | 155 | 85 | 120 | 140 | 150 | 90 | 125 | 150 | 155 | 80 | 115 | 135 | 140 |
| K1 | 235 | 340 | 400 | 420 | 220 | 310 | 375 | 395 | 210 | 300 | 355 | 375 | — | — | — | — | 185 | 260 | 305 | 325 |
| K2 | 215 | 300 | 355 | 370 | 200 | 280 | 335 | 350 | 190 | 270 | 315 | 330 | — | — | — | — | 165 | 230 | 270 | 285 |
| K3 | 180 | 255 | 300 | 315 | 170 | 235 | 280 | 295 | 160 | 225 | 265 | 280 | — | — | — | — | 140 | 195 | 230 | 240 |
| K4 | 175 | 245 | 290 | 300 | 160 | 225 | 270 | 280 | 155 | 215 | 255 | 265 | — | — | — | — | 135 | 185 | 220 | 230 |
| K5 | 105 | 150 | 175 | 185 | 100 | 140 | 165 | 170 | 95 | 135 | 155 | 165 | — | — | — | — | 80 | 115 | 135 | 140 |
| K6 | 150 | 215 | 255 | 265 | 140 | 200 | 240 | 250 | 135 | 190 | 225 | 235 | — | — | — | — | 115 | 160 | 195 | 205 |
| K7 | 135 | 190 | 225 | 235 | 125 | 180 | 210 | 220 | 120 | 170 | 200 | 210 | — | — | — | — | 105 | 145 | 175 | 180 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1350 | 1900 | 2275 | 2375 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 540 | 770 | 920 | 960 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 365 | 510 | 610 | 640 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 415 | 590 | 700 | 730 |
| S1 | — | — | — | — | 50 | 70 | 85 | 90 | — | — | — | — | 50 | 70 | 85 | 85 | 45 | 65 | 75 | 80 |
| S2 | — | — | — | — | 41 | 55 | 70 | 70 | — | — | — | — | 40 | 55 | 65 | 70 | 36 | 50 | 60 | 65 |
| S3 | — | — | — | — | 36 | 50 | 60 | 65 | — | — | — | — | 36 | 49 | 60 | 60 | 33 | 44 | 55 | 55 |
| S11 | — | — | — | — | 70 | 100 | 120 | 125 | — | — | — | — | 70 | 95 | 115 | 120 | 65 | 90 | 105 | 110 |
| S12 | — | — | — | — | 49 | 70 | 85 | 90 | — | — | — | — | 48 | 65 | 80 | 85 | 44 | 60 | 75 | 75 |
| S13 | — | — | — | — | 29 | 40 | 48 | 50 | — | — | — | — | 28 | 39 | 47 | 49 | 25 | 35 | 42 | 45 |
| H5 | 50 | 70 | 85 | 90 | 43 | 60 | 70 | 75 | 41 | 55 | 70 | 70 | 45 | 60 | 75 | 75 | 39 | 55 | 65 | 65 |
| H8 | 55 | 75 | 90 | 95 | 46 | 65 | 75 | 80 | 44 | 60 | 75 | 75 | 47 | 65 | 80 | 80 | 41 | 55 | 70 | 70 |
| H11 | 65 | 90 | 110 | 115 | 55 | 75 | 90 | 95 | 50 | 75 | 85 | 90 | 55 | 80 | 95 | 100 | 49 | 70 | 80 | 85 |
| H12 | 100 | 135 | 165 | 170 | 90 | 125 | 150 | 155 | 85 | 120 | 145 | 150 | 85 | 120 | 140 | 150 | 75 | 105 | 120 | 130 |
| H21 | 55 | 75 | 90 | 95 | 46 | 65 | 75 | 80 | 44 | 60 | 75 | 75 | 47 | 65 | 80 | 80 | 41 | 55 | 70 | 70 |

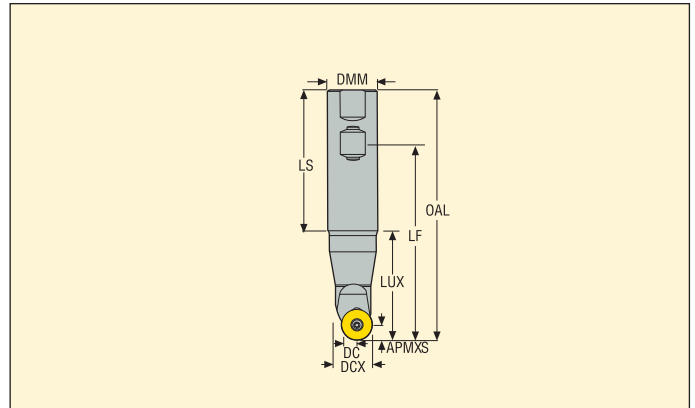
| SMG | MK2050 | | | | MM4500 | | | | MS2050 | | | | MS2500 | | | |
|-----|--------|-----|-----|-----|--------|-----|-----|-----|--------|-----|-----|-----|--------|-----|-----|-----|
| | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% |
| P1 | 220 | 315 | 375 | 390 | 195 | 270 | 325 | 340 | — | — | — | — | 325 | 455 | 540 | 570 |
| P2 | 215 | 310 | 365 | 380 | 190 | 265 | 315 | 330 | — | — | — | — | 310 | 440 | 530 | 550 |
| P3 | 190 | 265 | 320 | 330 | 165 | 230 | 275 | 285 | — | — | — | — | 270 | 385 | 460 | 475 |
| P4 | 165 | 235 | 280 | 295 | 145 | 205 | 245 | 255 | — | — | — | — | 245 | 345 | 405 | 430 |
| P5 | 160 | 230 | 270 | 285 | 140 | 195 | 230 | 245 | — | — | — | — | 230 | 325 | 390 | 410 |
| P6 | 180 | 260 | 300 | 320 | 160 | 225 | 265 | 275 | — | — | — | — | 260 | 365 | 440 | 460 |
| P7 | 170 | 245 | 285 | 300 | 150 | 210 | 250 | 260 | 190 | 265 | 315 | 330 | 245 | 345 | 415 | 435 |
| P8 | 160 | 225 | 270 | 275 | 140 | 195 | 230 | 240 | 175 | 245 | 295 | 305 | 230 | 320 | 385 | 400 |
| P11 | 165 | 235 | 275 | 290 | 145 | 205 | 240 | 250 | 180 | 255 | 305 | 320 | 240 | 335 | 400 | 420 |
| P12 | 110 | 155 | 185 | 195 | 95 | 130 | 155 | 165 | 120 | 165 | 200 | 210 | 160 | 215 | 260 | 275 |
| M1 | — | — | — | — | 160 | 225 | 270 | 285 | 190 | 270 | 325 | 340 | 225 | 315 | 380 | 395 |
| M2 | — | — | — | — | 135 | 185 | 220 | 235 | 160 | 225 | 270 | 280 | 185 | 260 | 315 | 325 |
| M3 | — | — | — | — | 110 | 150 | 180 | 190 | 130 | 180 | 215 | 230 | 150 | 210 | 250 | 265 |
| M4 | — | — | — | — | 85 | 115 | 140 | 145 | 100 | 140 | 170 | 175 | 115 | 160 | 195 | 205 |
| M5 | — | — | — | — | 70 | 95 | 115 | 120 | 85 | 115 | 140 | 145 | 95 | 135 | 165 | 170 |
| K1 | 230 | 335 | 395 | 410 | — | — | — | — | — | — | — | — | — | — | — | — |
| K2 | 205 | 295 | 350 | 365 | — | — | — | — | — | — | — | — | — | — | — | — |
| K3 | 175 | 250 | 295 | 310 | — | — | — | — | — | — | — | — | — | — | — | — |
| K4 | 165 | 240 | 280 | 295 | — | — | — | — | — | — | — | — | — | — | — | — |
| K5 | 100 | 145 | 175 | 180 | — | — | — | — | — | — | — | — | — | — | — | — |
| K6 | 145 | 210 | 245 | 260 | — | — | — | — | — | — | — | — | — | — | — | — |
| K7 | 130 | 190 | 225 | 235 | — | — | — | — | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | — | 26 | 36 | 43 | 45 | 47 | 65 | 80 | 80 | 55 | 80 | 95 | 100 |
| S2 | — | — | — | — | 21 | 29 | 34 | 36 | 38 | 50 | 65 | 65 | 46 | 65 | 75 | 80 |
| S3 | — | — | — | — | 18 | 25 | 30 | 32 | 33 | 46 | 55 | 60 | 40 | 55 | 70 | 70 |
| S11 | — | — | — | — | 36 | 50 | 60 | 65 | 65 | 90 | 110 | 115 | 80 | 110 | 135 | 140 |
| S12 | — | — | — | — | 33 | 46 | 55 | 60 | 45 | 65 | 75 | 80 | 55 | 75 | 90 | 100 |
| S13 | — | — | — | — | 19 | 27 | 32 | 34 | 26 | 36 | 44 | 46 | 32 | 44 | 55 | 55 |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

R217.29-10

Cutters with round inserts, max. axial cutting depth 10 mm



- For insert selection and cutting data recommendations, see page(s) 372-373
- For complete insert programme, see page(s) 657
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | | | Insert |
|-------------------------|------------------|------------------|------|------|------|-------|------|------|-------|-------|-------|---|-----|------|---------|
| | | APMXS | DCX | DC | DMM | OAL | LUX | LS | | | | | | | |
| R217.29-3250.3-10.3.080 | Cyl.-Weldon | 10,0 | 50,0 | 30,0 | 32,0 | 140,0 | 79,0 | 87,0 | 9,5 | 65,0 | 97,5 | 3 | 1,0 | 6500 | RP.2006 |
| | | | | | | | | | | | | | | | |
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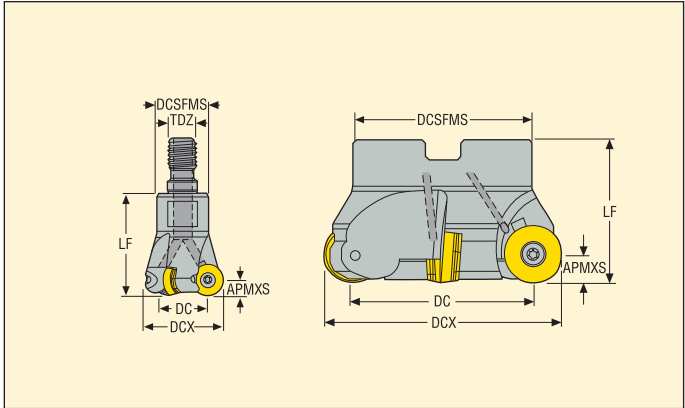
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|-----------------|--------------|-------------------|
| R217.29-.. | DOUBLE-T | C05013-T20P | H6B-T20P | 5,0 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.29-10

Cutters with round inserts, max. axial cutting depth 10 mm



- For insert selection and cutting data recommendations, see page(s) 372-373
- For complete insert programme, see page(s) 657
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | | | Insert |
|-----------------------|------------------|------------------|------|------|--------|------|-----|------|-------|-------|-------|---|-----|------|----------|
| | | APMXS | DCX | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.29-1640.RE-10.2A | Combimaster | 10,0 | 40,0 | 20,0 | 30,0 | – | M16 | 40,0 | 40,0 | 52,0 | 77,5 | 2 | 0,3 | 8400 | RP..2006 |
| R217.29-2040.RE-10.2A | Combimaster | 10,0 | 40,0 | 20,0 | 36,5 | – | M20 | 40,0 | 40,0 | 52,0 | 77,5 | 2 | 0,3 | 8400 | RP..2006 |
| R220.29-0063-10.4A | Arbor | 10,0 | 63,0 | 43,0 | 47,0 | 22,0 | – | 50,0 | 6,0 | 81,9 | 123,5 | 4 | 0,5 | 5800 | RP..2006 |
| R220.29-0080-10.4MA | Arbor | 10,0 | 80,0 | 60,0 | 62,0 | 27,0 | – | 50,0 | 6,5 | 104,0 | 157,5 | 4 | 0,9 | 2100 | RP..2006 |
| R220.29-0080-10.5A | Arbor | 10,0 | 80,0 | 60,0 | 62,0 | 27,0 | – | 50,0 | 6,5 | 104,0 | 157,5 | 5 | 0,9 | 2100 | RP..2006 |
| R220.29-0083-10.4MA | Arbor | 10,0 | 83,0 | 63,0 | 62,0 | 27,0 | – | 50,0 | 6,2 | 107,9 | 163,5 | 4 | 0,9 | 5000 | RP..2006 |
| | | | | | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Shim screw | Shim key | Key (T-handle) | Insert shim | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-----------------|------------|-----------|----------------|-------------|--------------|------------|-------------|-------------------|
| R217.29-.. | | | | | | | | |
| | – | – | DOUBLE-T | – | C05013-T20P | H6B-T20P | – | 5,0 |
| R217.29-2040-10 | – | – | DOUBLE-T | – | C05013-T20P | H6B-T20P | – | 5,0 |
| R220.29-0063 | – | – | DOUBLE-T | – | C05013-T20P | H6B-T20P | 220.17-692 | 5,0 |
| R220.29-0080M | CA5010 | H6B-H5.0L | DOUBLE-T | SRP2004M0 | C05018-T20P | H6B-T20P | MC6S12X35 | 5,0 |
| R220.29-0080A | – | – | DOUBLE-T | – | C05013-T20P | H6B-T20P | MC6S12X35 | 5,0 |
| R220.29-0083M | CA5010 | H6B-H5.0L | DOUBLE-T | SRP2004M0 | C05018-T20P | H6B-T20PL | MC6S12X35 | 5,0 |

Please check availability in current price and stock-list

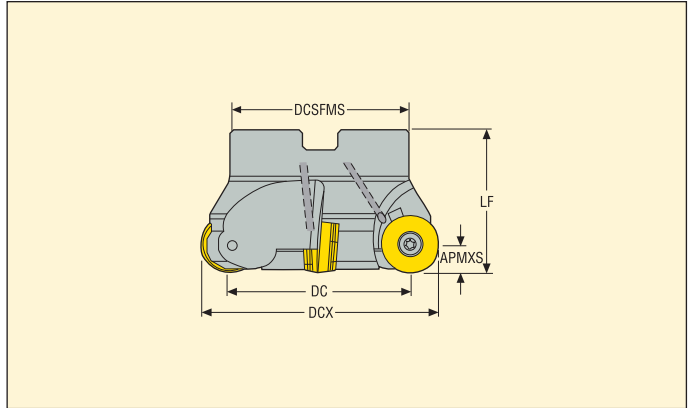
Torque keys, see page 732

R220.29-10

Cutters with round inserts, max. axial cutting depth 10 mm



- For insert selection and cutting data recommendations, see page(s) 372-373
- For complete insert programme, see page(s) 657
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX* | C min | C max | | | | Insert |
|---------------------|------------------|------------------|-------|-------|--------|------|-----|------|-------|-------|-------|---|------|------|---------|
| | | APMXS | DCX | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R220.29-0100-10.5MA | Arbor | 10,0 | 100,0 | 80,0 | 77,0 | 32,0 | - | 50,0 | 4,7 | 130,0 | 197,5 | 5 | 1,4 | 4500 | RP.2006 |
| R220.29-0100-10.6A | Arbor | 10,0 | 100,0 | 80,0 | 77,0 | 32,0 | - | 50,0 | 4,7 | 130,0 | 197,5 | 6 | 1,3 | 4500 | RP.2006 |
| R220.29-0125-10.5MA | Arbor | 10,0 | 125,0 | 105,0 | 90,0 | 40,0 | - | 63,0 | 3,47 | 162,5 | 247,5 | 5 | 2,9 | 4000 | RP.2006 |
| R220.29-0125-10.7A | Arbor | 10,0 | 125,0 | 105,0 | 90,0 | 40,0 | - | 63,0 | 3,47 | 162,5 | 247,5 | 7 | 2,7 | 4000 | RP.2006 |
| R220.29-8160-10.6M | Arbor | 10,0 | 160,0 | 140,0 | 90,0 | 40,0 | - | 63,0 | - | 208,0 | 317,5 | 6 | 4,1 | 3600 | RP.2006 |
| R220.29-8200-10.8M | Arbor | 10,0 | 200,0 | 180,0 | 130,0 | 60,0 | - | 63,0 | - | 260,0 | 397,5 | 8 | 6,0 | 3200 | RP.2006 |
| R220.29-8250-10.9M | Arbor | 10,0 | 250,0 | 230,0 | 130,0 | 60,0 | - | 63,0 | - | 325,0 | 497,5 | 9 | 11,1 | 2900 | RP.2006 |
| | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | |

Spare Parts

| For cutter | Shim screw | Shim key | Key (T-handle) | Insert shim | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|--------------------|------------|-----------|----------------|-------------|--------------|------------|-------------|-------------------|
| R220.29-0100M | CA5010 | H6B-H5.0L | DOUBLE-T | SRP2004M0 | C05018-T20P | H6B-T20PL | MLC6S16X35 | 5,0 |
| R220.29-0100 | - | - | DOUBLE-T | - | C05013-T20P | H6B-T20PL | MLC6S16X35 | 5,0 |
| R220.29-0125M | CA5010 | H6B-H5.0L | DOUBLE-T | SRP2004M0 | C05018-T20P | H6B-T20PL | MLC6S20X40 | 5,0 |
| R220.29-0125A | - | - | DOUBLE-T | - | C05013-T20P | H6B-T20PL | MLC6S20X40 | 5,0 |
| R220.29-8160M | CA5010 | - | DOUBLE-T | SRP2004M0 | C05018-T20P | H6B-T20PL | H6B-H5.0L | 5,0 |
| R220.29-8200-8250M | CA5010 | H6B-H5.0L | DOUBLE-T | SRP2004M0 | C05018-T20P | H6B-T20PL | - | 5,0 |

Please check availability in current price and stock-list

Torque keys, see page 732

R217/220.29-10 – Insert selection

| SMG | | a_p | f_z | | | |
|-----|-------------------------|-------|-------|------|------|------|
| | | | 100% | 30% | 10% | 5% |
| P1 | RPHT2006M0T-ME12 T350M | 4,0 | 0,38 | 0,42 | 0,65 | 0,90 |
| P2 | RPHT2006M0T-ME12 T350M | 4,0 | 0,38 | 0,42 | 0,65 | 0,90 |
| P3 | RPHT2006M0T-ME12 T350M | 4,0 | 0,36 | 0,40 | 0,60 | 0,85 |
| P4 | RPKT2006M0T-M20 MS2500 | 4,0 | 0,44 | 0,48 | 0,75 | 1,1 |
| P5 | RPKT2006M0T-M20 MS2500 | 4,0 | 0,44 | 0,48 | 0,75 | 1,0 |
| P6 | RPKT2006M0T-M20 MS2500 | 4,0 | 0,44 | 0,48 | 0,75 | 1,0 |
| P7 | RPKT2006M0T-M20 MS2500 | 4,0 | 0,44 | 0,48 | 0,75 | 1,0 |
| P8 | RPKT2006M0T-M20 MP2500 | 4,0 | 0,46 | 0,50 | 0,75 | 1,1 |
| P11 | RPKT2006M0T-M20 MS2500 | 4,0 | 0,44 | 0,48 | 0,75 | 1,0 |
| P12 | RPKT2006M0T-M20 MS2500 | 3,0 | 0,34 | 0,38 | 0,60 | 0,80 |
| M1 | RPHT2006M0T-ME12 T350M | 4,0 | 0,38 | 0,42 | 0,65 | 0,90 |
| M2 | RPHT2006M0T-ME12 T350M | 4,0 | 0,34 | 0,38 | 0,60 | 0,85 |
| M3 | RPHT2006M0T-ME12 T350M | 3,0 | 0,32 | 0,36 | 0,55 | 0,75 |
| M4 | RPHT2006M0T-ME12 T350M | 2,5 | 0,30 | 0,34 | 0,50 | 0,75 |
| M5 | RPHT2006M0T-ME12 T350M | 2,5 | 0,30 | 0,34 | 0,50 | 0,75 |
| K1 | RPKT2006M0T-M20 MK2050 | 4,0 | 0,48 | 0,50 | 0,80 | 1,2 |
| K2 | RPKT2006M0T-M20 MK2050 | 4,0 | 0,44 | 0,48 | 0,75 | 1,0 |
| K3 | RPKT2006M0T-M20 MK2050 | 4,0 | 0,44 | 0,48 | 0,75 | 1,0 |
| K4 | RPKT2006M0T-M20 MK2050 | 4,0 | 0,44 | 0,48 | 0,75 | 1,0 |
| K5 | RPKT2006M0T-M20 MK2050 | 4,0 | 0,40 | 0,42 | 0,65 | 0,95 |
| K6 | RPKT2006M0T-M20 MK2050 | 4,0 | 0,44 | 0,48 | 0,75 | 1,0 |
| K7 | RPKT2006M0T-M20 MK2050 | 4,0 | 0,40 | 0,42 | 0,65 | 0,95 |
| S1 | RPHT2006M0T-ME12 MS2500 | 2,5 | 0,30 | 0,34 | 0,50 | 0,75 |
| S2 | RPHT2006M0T-ME12 MS2500 | 2,5 | 0,30 | 0,34 | 0,50 | 0,75 |
| S3 | RPKT2006M0T-M15 MS2500 | 2,5 | 0,36 | 0,40 | 0,60 | 0,85 |
| S11 | RPHT2006M0T-ME12 MS2050 | 3,0 | 0,32 | 0,36 | 0,55 | 0,75 |
| S12 | RPHT2006M0T-ME12 MS2050 | 3,0 | 0,32 | 0,36 | 0,55 | 0,75 |
| S13 | RPHT2006M0T-ME12 MS2050 | 2,5 | 0,30 | 0,34 | 0,50 | 0,75 |
| H5 | RPKW2006M0T-MD22 F15M | 3,0 | 0,50 | 0,55 | 0,85 | 1,2 |
| H8 | RPKW2006M0T-MD22 F15M | 3,0 | 0,38 | 0,42 | 0,65 | 0,90 |
| H11 | RPKW2006M0T-MD22 F15M | 3,0 | 0,50 | 0,55 | 0,85 | 1,2 |
| H12 | RPKT2006M0T-M15 T350M | 3,0 | 0,26 | 0,28 | 0,44 | 0,60 |
| H21 | RPKW2006M0T-MD22 F15M | 3,0 | 0,38 | 0,42 | 0,65 | 0,90 |

SMG = Seco material group

f_z = mm/tooth

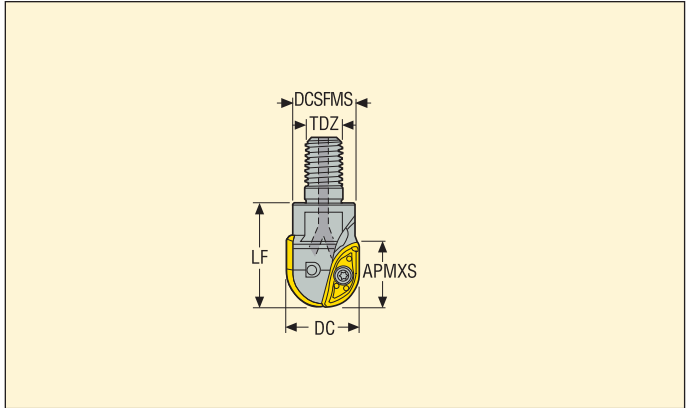
v_c = m/min

a_e/DC = %

All cutting data are start values

R218.20

90° ball nose cutters dia 12-50



- For insert selection and cutting data recommendations, see page(s) 380-398
- For complete insert programme, see page(s) 689
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | RMPX° | | | | () | = No of inserts |
|---------------------|------------------|------------------|------|--------|-----|-------|-------|---|-----|-------|---------|-----------------|
| | | APMXS | DC | DCSFMS | TDZ | LF | | | | | | |
| R218.20-0612.RE-10A | Combimaster | 10,0 | 12,0 | 11,0 | M6 | 20,0 | 45,0 | 2 | 0,1 | 30000 | -060(2) | |
| R218.20-0812.RE-10A | Combimaster | 10,0 | 12,0 | 13,5 | M8 | 23,0 | 45,0 | 2 | 0,1 | 30000 | -060(2) | |
| R218.20-0816.RE-14A | Combimaster | 14,0 | 16,0 | 13,5 | M8 | 23,0 | 45,0 | 2 | 0,1 | 28500 | -080(2) | |
| R218.20-1016.RE-14A | Combimaster | 14,0 | 16,0 | 18,0 | M10 | 28,0 | 45,0 | 2 | 0,1 | 28500 | -080(2) | |
| R218.20-1020.RE-18A | Combimaster | 18,0 | 20,0 | 18,0 | M10 | 28,0 | 45,0 | 2 | 0,1 | 20200 | -100(2) | |
| R218.20-1220.RE-18A | Combimaster | 18,0 | 20,0 | 21,5 | M12 | 35,0 | 45,0 | 2 | 0,2 | 20200 | -100(2) | |
| R218.20-1225.RE-22A | Combimaster | 22,0 | 25,0 | 21,5 | M12 | 35,0 | 45,0 | 2 | 0,1 | 16900 | -125(2) | |
| R218.20-1630.RE-26A | Combimaster | 27,0 | 30,0 | 28,5 | M16 | 40,0 | 45,0 | 2 | 0,2 | 12500 | -150(2) | |
| R218.20-1632.RE-28A | Combimaster | 28,0 | 32,0 | 28,5 | M16 | 40,0 | 45,0 | 2 | 0,3 | 10900 | -160(2) | |
| R218.20-1640.RE-35A | Combimaster | 35,0 | 40,0 | 34,0 | M16 | 50,0 | 45,0 | 2 | 0,3 | 7200 | -200(2) | |
| R218.20-2040.RE-35A | Combimaster | 35,0 | 40,0 | 36,5 | M20 | 54,9 | 45,0 | 2 | 0,3 | 7200 | -200(2) | |
| R218.20-2050.RE-44A | Combimaster | 44,0 | 50,0 | 36,5 | M20 | 64,87 | 45,0 | 2 | 0,4 | 5000 | -250(2) | |

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|--------------------|----------------|--------------|------------|-------------------|
| R218.20-.. Ø 12 | DOUBLE-T | C01805-T06P | H4B-T06P | 0,5 |
| R218.20-.. Ø 16 | DOUBLE-T | C02506-T08P | H4B-T08P | 1,2 |
| R218.20-.. Ø 20 | DOUBLE-T | C03007-T09P | H4B-T09P | 2,0 |
| R218.20-.. Ø 25-30 | DOUBLE-T | C04009-T15P | H4B-T15P | 3,5 |
| R218.20-.. Ø 32 | DOUBLE-T | C04011-T15P | H4B-T15P | 3,5 |
| R218.20-..1640 | DOUBLE-T | C05013-T20P | H6B-T20PL | 5,0 |
| R218.20-..2040 | DOUBLE-T | C05013-T20P | H6B-T20P | 5,0 |
| R218.20-.. Ø 50 | DOUBLE-T | C06018-T25P | H6B-T25P | 8,0 |

Please check availability in current price and stock-list

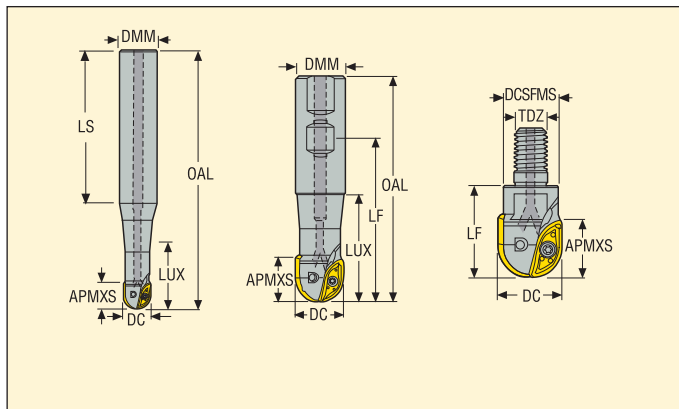
Torque keys, see page 732

R218.20

90° ball nose cutters dia 12-32



- For insert selection and cutting data recommendations, see page(s) 380-398
- For complete insert programme, see page(s) 676, 689
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | | KG | | () = No of inserts | |
|------------------------|------------------|------------------|------|------|--------|-------|------|--------|-------|-----|-------|---------|--------------------|--|
| | | APMXS | DC | DMM | LF | OAL | LUX | 218.20 | | | | | SPMT | |
| R218.20-1612.0-10.112A | Cylindrical | | 12,0 | 16,0 | – | 160,0 | 25,0 | 45,0 | 0 | 0,2 | 30000 | -060(2) | | |
| R218.20-2016.0-14.070A | Cylindrical | 14,0 | 16,0 | 20,0 | – | 120,0 | 36,0 | 45,0 | 2 | 0,3 | 28500 | -080(2) | – | |
| R218.20-1616.0-14.105E | Cylindrical | 14,0 | 16,0 | 16,0 | – | 165,0 | 49,0 | 45,0 | 2 | 0,5 | 28500 | -080(2) | – | |
| R218.20-2520.3-18.070A | Cyl.-Weldon | 18,0 | 20,0 | 25,0 | 93,94 | 126,0 | 54,0 | 45,0 | 2 | 0,4 | 20200 | -100(2) | – | |
| R218.20-2520.0-18.120A | Cylindrical | 18,0 | 20,0 | 25,0 | – | 176,0 | 54,0 | 45,0 | 2 | 0,5 | 20200 | -100(2) | – | |
| R218.20-3225.0-22.160A | Cylindrical | 22,0 | 25,0 | 32,0 | – | 220,0 | 68,0 | 45,0 | 2 | 1,1 | 16900 | -125(2) | – | |
| R218.20-2525.3-22.060A | Cyl.-Weldon | 22,0 | 25,0 | 25,0 | 83,96 | 116,0 | 56,0 | 45,0 | 2 | 0,4 | 16900 | -125(2) | – | |
| R218.20-2525.3-22.080A | Cyl.-Weldon | 22,0 | 25,0 | 25,0 | 103,96 | 136,0 | 75,5 | 45,0 | 2 | 0,5 | 16900 | -125(2) | – | |
| R218.20-3230.3-45.100A | Cyl.-Weldon | 44,0 | 30,0 | 32,0 | 123,93 | 160,0 | 71,0 | 45,0 | 4 | 0,8 | 12500 | -150(2) | SPMT10(2) | |
| R218.20-3230.0-26.160A | Cylindrical | 27,0 | 30,0 | 32,0 | – | 220,0 | 73,0 | 45,0 | 2 | 1,1 | 12500 | -150(2) | – | |
| R218.20-3232.3-28.070A | Cyl.-Weldon | 28,0 | 32,0 | 32,0 | 93,92 | 130,0 | 68,0 | 45,0 | 2 | 0,7 | 10900 | -160(2) | – | |
| R218.20-3232.3-28.100A | Cyl.-Weldon | 28,0 | 32,0 | 32,0 | 123,92 | 160,0 | 89,0 | 45,0 | 2 | 0,8 | 10900 | -160(2) | – | |
| R218.20-3232.3-54.100A | Cyl.-Weldon | 54,0 | 32,0 | 32,0 | 123,92 | 160,0 | 89,0 | 45,0 | 5 | 0,8 | 10900 | -160(2) | SPMT10(3) | |
| R218.20-3232.0-28.160A | Cylindrical | 28,0 | 32,0 | 32,0 | – | 220,0 | 90,0 | 45,0 | 2 | 1,2 | 10900 | -160(2) | – | |

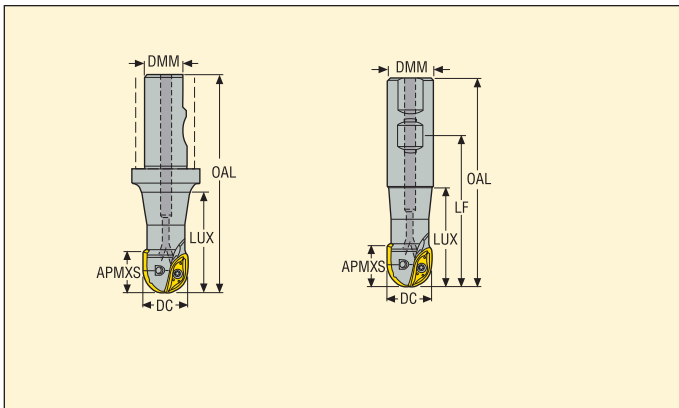
Spare Parts

| For cutter | Key (T-handle) | Insert screw periph | Insert screw centre | Insert key | Torque value centre and periphery screw Nm |
|--------------------|----------------|---------------------|---------------------|------------|--|
| | | | | | |
| R218.20-1612 | DOUBLE-T | – | C01805-T06P | H4B-T06P | 0,5 |
| R218.20.. Ø16 | DOUBLE-T | – | C02506-T08P | H4B-T08P | 1,2 |
| R218.20.. Ø20 | DOUBLE-T | – | C03007-T09P | H4B-T09P | 2,0 |
| R218.20.. Ø25 | DOUBLE-T | – | C04009-T15P | H4B-T15P | 3,5 |
| R218.20.. Ø30-100A | DOUBLE-T | C03508-T15P | C04009-T15P | H4B-T15P | 3,5 |
| R218.20.. Ø30 | DOUBLE-T | – | C04009-T15P | H4B-T15P | 3,5 |
| R218.20.. Ø32 | DOUBLE-T | – | C04011-T15P | H4B-T15P | 3,5 |
| R218.20.. Ø32-100A | DOUBLE-T | C03508-T15P | C04011-T15P | H4B-T15P | 3,5 |

Please check availability in current price and stock-list
Torque keys, see page 732

R218.20

90° ball nose cutters dia 40-50



- For insert selection and cutting data recommendations, see page(s) 380-398
- For complete insert programme, see page(s) 676, 658
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | | | | () = No of inserts | |
|------------------------|------------------|------------------|------|------|--------|--------|-------|-------|---|-----|------|--------------------|------|
| | | APMXS | DC | DMM | LF | OAL | LUX | | | | | 218.20 | SCE. |
| R218.20-3240.3S-60.100 | Seco-Weldon | 60,0 | 40,0 | 32,0 | – | 159,4 | 89,0 | 45,0 | 5 | 1,0 | 7200 | -200(2) | 3 |
| R218.20-3250.3S-70.100 | Seco-Weldon | 70,0 | 50,0 | 32,0 | – | 159,37 | 91,0 | 45,0 | 5 | 1,2 | 3700 | -250(2) | 3 |
| R218.20-5050.3-70.150 | Cyl.-Weldon | 70,0 | 50,0 | 50,0 | 184,87 | 229,87 | 149,0 | 45,0 | 5 | 2,9 | 3700 | -250(2) | 3 |
| | | | | | | | | | | | | | |
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Spare Parts

| For cutter | Key periphery | Key (T-handle) | Insert screw periph | Insert screw centre | Insert key | Torque value centre screw Nm | Torque value periphery screw Nm |
|---------------|---------------|----------------|---------------------|---------------------|------------|------------------------------|---------------------------------|
| | | | | | | | |
| R218.20.. Ø40 | – | DOUBLE-T | C45011-T20P | C05013-T20P | H6B-T20P | 5,0 | 5,0 |
| R218.20.. Ø50 | H6B-T20P | DOUBLE-T | C45011-T20P | C06018-T25P | H6B-T25P | 8,0 | 5,0 |
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Please check availability in current price and stock-list
Torque keys, see page 732

R218.20-060 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|-------|-------|
| | | | 100% | 50% | 30% |
| P1 | 218.20-060ER-ME03 F40M | 6,0 | 0,044 | 0,044 | 0,048 |
| P2 | 218.20-060ER-ME03 F40M | 6,0 | 0,046 | 0,046 | 0,048 |
| P3 | 218.20-060ER-ME03 F40M | 6,0 | 0,044 | 0,044 | 0,046 |
| P4 | 218.20-060ER-ME03 F40M | 6,0 | 0,042 | 0,042 | 0,046 |
| P5 | 218.20-060ER-ME03 F40M | 6,0 | 0,042 | 0,042 | 0,044 |
| P6 | 218.20-060ER-ME03 F40M | 6,0 | 0,042 | 0,042 | 0,044 |
| P7 | 218.20-060ER-ME03 F40M | 6,0 | 0,042 | 0,042 | 0,044 |
| P8 | 218.20-060ER-ME03 F40M | 6,0 | 0,044 | 0,044 | 0,046 |
| P11 | 218.20-060ER-ME03 F40M | 6,0 | 0,042 | 0,042 | 0,044 |
| P12 | 218.20-060ER-ME03 F40M | 6,0 | 0,028 | 0,028 | 0,030 |
| M1 | 218.20-060ER-ME03 F40M | 6,0 | 0,046 | 0,046 | 0,048 |
| M2 | 218.20-060ER-ME03 F40M | 6,0 | 0,042 | 0,042 | 0,044 |
| M3 | 218.20-060ER-ME03 F40M | 6,0 | 0,034 | 0,034 | 0,036 |
| M4 | 218.20-060ER-ME03 F40M | 6,0 | 0,030 | 0,030 | 0,030 |
| M5 | 218.20-060ER-ME03 F40M | 6,0 | 0,030 | 0,030 | 0,030 |
| K1 | 218.20-060ER-ME03 F40M | 6,0 | 0,046 | 0,046 | 0,048 |
| K2 | 218.20-060ER-ME03 F40M | 6,0 | 0,042 | 0,042 | 0,044 |
| K3 | 218.20-060ER-ME03 F40M | 6,0 | 0,042 | 0,042 | 0,044 |
| K4 | 218.20-060ER-ME03 F40M | 6,0 | 0,042 | 0,042 | 0,044 |
| K5 | 218.20-060ER-ME03 F40M | 6,0 | 0,038 | 0,038 | 0,040 |
| K6 | 218.20-060ER-ME03 F40M | 6,0 | 0,042 | 0,042 | 0,044 |
| K7 | 218.20-060ER-ME03 F40M | 6,0 | 0,038 | 0,038 | 0,040 |
| N1 | 218.20-060ER-ME03 F40M | 6,0 | 0,060 | 0,060 | 0,060 |
| N2 | 218.20-060ER-ME03 F40M | 6,0 | 0,060 | 0,060 | 0,060 |
| N3 | 218.20-060ER-ME03 F40M | 6,0 | 0,060 | 0,060 | 0,060 |
| N11 | 218.20-060ER-ME03 F40M | 6,0 | 0,060 | 0,060 | 0,060 |
| S1 | 218.20-060ER-ME03 F40M | 6,0 | 0,030 | 0,030 | 0,030 |
| S2 | 218.20-060ER-ME03 F40M | 6,0 | 0,030 | 0,030 | 0,030 |
| S3 | 218.20-060ER-ME03 F40M | 6,0 | 0,026 | 0,026 | 0,028 |
| S11 | 218.20-060ER-ME03 MS2050 | 6,0 | 0,034 | 0,034 | 0,036 |
| S12 | 218.20-060ER-ME03 MS2050 | 6,0 | 0,034 | 0,034 | 0,036 |
| S13 | 218.20-060ER-ME03 MS2050 | 6,0 | 0,030 | 0,030 | 0,030 |
| H5 | 218.20-060ER-ME03 F40M | 6,0 | 0,028 | 0,028 | 0,030 |
| H8 | 218.20-060ER-ME03 F40M | 6,0 | 0,022 | 0,022 | 0,022 |
| H11 | 218.20-060ER-ME03 F40M | 6,0 | 0,028 | 0,028 | 0,030 |
| H12 | 218.20-060ER-ME03 F40M | 6,0 | 0,022 | 0,022 | 0,022 |
| H21 | 218.20-060ER-ME03 F40M | 6,0 | 0,022 | 0,022 | 0,022 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R218.20-060 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|-------|-------|
| | | | 30% | 10% | 5% |
| P1 | 218.20-060ER-ME03 F40M | 6,0 | 0,048 | 0,065 | 0,085 |
| P2 | 218.20-060ER-ME03 F40M | 6,0 | 0,048 | 0,070 | 0,085 |
| P3 | 218.20-060ER-ME03 F40M | 6,0 | 0,046 | 0,065 | 0,080 |
| P4 | 218.20-060ER-ME03 F40M | 6,0 | 0,046 | 0,065 | 0,080 |
| P5 | 218.20-060ER-ME03 F40M | 6,0 | 0,044 | 0,060 | 0,080 |
| P6 | 218.20-060ER-ME03 F40M | 6,0 | 0,044 | 0,060 | 0,075 |
| P7 | 218.20-060ER-ME03 F40M | 6,0 | 0,044 | 0,060 | 0,075 |
| P8 | 218.20-060ER-ME03 F40M | 6,0 | 0,046 | 0,065 | 0,080 |
| P11 | 218.20-060ER-ME03 F40M | 6,0 | 0,044 | 0,060 | 0,075 |
| P12 | 218.20-060ER-ME03 F40M | 5,0 | 0,030 | 0,040 | 0,048 |
| M1 | 218.20-060ER-ME03 F40M | 6,0 | 0,048 | 0,070 | 0,085 |
| M2 | 218.20-060ER-ME03 F40M | 6,0 | 0,044 | 0,060 | 0,080 |
| M3 | 218.20-060ER-ME03 F40M | 5,0 | 0,036 | 0,048 | 0,055 |
| M4 | 218.20-060ER-ME03 F40M | 3,5 | 0,032 | 0,040 | 0,044 |
| M5 | 218.20-060ER-ME03 F40M | 3,5 | 0,032 | 0,040 | 0,044 |
| K1 | 218.20-060ER-ME03 F40M | 6,0 | 0,048 | 0,070 | 0,085 |
| K2 | 218.20-060ER-ME03 F40M | 6,0 | 0,044 | 0,060 | 0,080 |
| K3 | 218.20-060ER-ME03 F40M | 6,0 | 0,044 | 0,060 | 0,080 |
| K4 | 218.20-060ER-ME03 F40M | 6,0 | 0,044 | 0,060 | 0,080 |
| K5 | 218.20-060ER-ME03 F40M | 6,0 | 0,040 | 0,055 | 0,070 |
| K6 | 218.20-060ER-ME03 F40M | 6,0 | 0,044 | 0,060 | 0,080 |
| K7 | 218.20-060ER-ME03 F40M | 6,0 | 0,040 | 0,055 | 0,070 |
| N1 | 218.20-060ER-ME03 F40M | 6,0 | 0,060 | 0,090 | 0,11 |
| N2 | 218.20-060ER-ME03 F40M | 6,0 | 0,060 | 0,090 | 0,11 |
| N3 | 218.20-060ER-ME03 F40M | 6,0 | 0,060 | 0,090 | 0,11 |
| N11 | 218.20-060ER-ME03 F40M | 6,0 | 0,060 | 0,090 | 0,11 |
| S1 | 218.20-060ER-ME03 F40M | 3,5 | 0,032 | 0,040 | 0,044 |
| S2 | 218.20-060ER-ME03 F40M | 3,5 | 0,032 | 0,040 | 0,044 |
| S3 | 218.20-060ER-ME03 F40M | 3,5 | 0,030 | 0,038 | 0,042 |
| S11 | 218.20-060ER-ME03 MS2050 | 4,0 | 0,036 | 0,046 | 0,055 |
| S12 | 218.20-060ER-ME03 MS2050 | 4,0 | 0,036 | 0,046 | 0,055 |
| S13 | 218.20-060ER-ME03 MS2050 | 3,5 | 0,032 | 0,040 | 0,044 |
| H5 | 218.20-060ER-ME03 F40M | 5,0 | 0,030 | 0,040 | 0,048 |
| H8 | 218.20-060ER-ME03 F40M | 4,0 | 0,024 | 0,030 | 0,034 |
| H11 | 218.20-060ER-ME03 F40M | 5,0 | 0,030 | 0,040 | 0,048 |
| H12 | 218.20-060ER-ME03 F40M | 4,0 | 0,024 | 0,030 | 0,034 |
| H21 | 218.20-060ER-ME03 F40M | 4,0 | 0,024 | 0,030 | 0,034 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

R218.20-060 – Cutting data $v_c =$ (m/min)

| SMG | F40M | | | | | MS2050 | | | | |
|-----|------|------|------|------|------|--------|-----|-----|-----|-----|
| | 100% | 50% | 30% | 10% | 5% | 100% | 50% | 30% | 10% | 5% |
| P1 | 305 | 360 | 395 | 470 | 520 | 335 | 395 | 435 | 520 | 570 |
| P2 | 295 | 350 | 385 | 455 | 510 | 325 | 385 | 425 | 500 | 560 |
| P3 | 255 | 300 | 335 | 395 | 440 | 280 | 330 | 365 | 435 | 480 |
| P4 | 230 | 265 | 295 | 350 | 385 | 250 | 295 | 325 | 385 | 425 |
| P5 | 215 | 255 | 280 | 335 | 370 | 240 | 280 | 310 | 370 | 405 |
| P6 | 245 | 285 | 315 | 375 | 415 | 270 | 315 | 350 | 415 | 460 |
| P7 | 230 | 270 | 300 | 355 | 395 | 255 | 295 | 330 | 390 | 430 |
| P8 | 215 | 255 | 280 | 330 | 370 | 235 | 280 | 310 | 365 | 405 |
| P11 | 225 | 265 | 290 | 345 | 380 | 245 | 290 | 320 | 380 | 420 |
| M1 | 240 | 280 | 310 | 365 | 405 | 265 | 310 | 340 | 405 | 450 |
| M2 | 195 | 230 | 255 | 300 | 330 | 215 | 255 | 280 | 335 | 365 |
| M3 | 160 | 190 | 210 | 235 | 260 | 175 | 210 | 230 | 260 | 285 |
| M4 | 130 | 145 | 160 | 180 | 195 | 140 | 160 | 180 | 195 | 215 |
| M5 | 110 | 120 | 135 | 150 | 165 | 120 | 135 | 150 | 165 | 180 |
| K1 | 235 | 275 | 305 | 360 | 400 | — | — | — | — | — |
| K2 | 205 | 240 | 270 | 320 | 350 | — | — | — | — | — |
| K3 | 175 | 205 | 225 | 270 | 295 | — | — | — | — | — |
| K4 | 165 | 195 | 215 | 260 | 280 | — | — | — | — | — |
| K5 | 100 | 120 | 130 | 155 | 170 | — | — | — | — | — |
| K6 | 145 | 170 | 190 | 225 | 250 | — | — | — | — | — |
| K7 | 130 | 150 | 165 | 200 | 220 | — | — | — | — | — |
| N1 | 1775 | 2075 | 2325 | 2750 | 3050 | — | — | — | — | — |
| N2 | 720 | 840 | 940 | 1100 | 1225 | — | — | — | — | — |
| N3 | 475 | 560 | 630 | 740 | 820 | — | — | — | — | — |
| N11 | 550 | 640 | 720 | 850 | 940 | — | — | — | — | — |
| S1 | 60 | 70 | 75 | 85 | 90 | 65 | 75 | 85 | 90 | 100 |
| S2 | 49 | 55 | 60 | 65 | 75 | 55 | 60 | 65 | 75 | 80 |
| S3 | 42 | 48 | 55 | 60 | 65 | 46 | 55 | 60 | 65 | 70 |
| S11 | 85 | 95 | 105 | 120 | 130 | 95 | 105 | 120 | 130 | 145 |
| S12 | 60 | 65 | 75 | 80 | 90 | 65 | 75 | 80 | 90 | 100 |
| S13 | 34 | 39 | 43 | 47 | 50 | 37 | 42 | 47 | 50 | 55 |
| H5 | 48 | 55 | 65 | 70 | 75 | — | — | — | — | — |
| H8 | 50 | 60 | 65 | 70 | 80 | — | — | — | — | — |
| H11 | 60 | 75 | 80 | 90 | 100 | — | — | — | — | — |
| H12 | 90 | 105 | 115 | 130 | 140 | — | — | — | — | — |
| H21 | 50 | 60 | 65 | 70 | 80 | — | — | — | — | — |

R218.20-080 – Insert selection – Roughing

| SMG | | f_z | | | |
|-----|--------------------------|-------|-------|-------|-------|
| | | 100% | 30% | 20% | 15% |
| P1 | 218.20-080ER-ME04 F40M | 0,10 | 0,11 | 0,13 | 0,14 |
| P2 | 218.20-080ER-ME04 F40M | 0,11 | 0,11 | 0,13 | 0,14 |
| P3 | 218.20-080ER-ME04 F40M | 0,10 | 0,11 | 0,12 | 0,13 |
| P4 | 218.20-080ER-M04 F25M | 0,10 | 0,11 | 0,12 | 0,13 |
| P5 | 218.20-080ER-M04 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| P6 | 218.20-080ER-M04 F25M | 0,095 | 0,10 | 0,11 | 0,13 |
| P7 | 218.20-080ER-M04 F25M | 0,095 | 0,10 | 0,11 | 0,13 |
| P8 | 218.20-080ER-M04 F25M | 0,10 | 0,11 | 0,12 | 0,13 |
| P11 | 218.20-080ER-M04 F25M | 0,095 | 0,10 | 0,11 | 0,13 |
| P12 | 218.20-080ER-M04 F25M | 0,070 | 0,070 | 0,080 | 0,085 |
| M1 | 218.20-080ER-ME04 F40M | 0,11 | 0,11 | 0,13 | 0,14 |
| M2 | 218.20-080ER-ME04 F40M | 0,095 | 0,10 | 0,12 | 0,13 |
| M3 | 218.20-080ER-ME04 F40M | 0,080 | 0,085 | 0,095 | 0,10 |
| M4 | 218.20-080ER-ME04 F40M | 0,075 | 0,075 | 0,080 | 0,085 |
| M5 | 218.20-080ER-M04 F40M | 0,075 | 0,075 | 0,080 | 0,085 |
| K1 | 218.20-080ER-M04 F25M | 0,11 | 0,11 | 0,13 | 0,14 |
| K2 | 218.20-080ER-M04 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| K3 | 218.20-080ER-M04 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| K4 | 218.20-080ER-M04 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| K5 | 218.20-080ER-M04 F25M | 0,085 | 0,095 | 0,10 | 0,11 |
| K6 | 218.20-080ER-M04 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| K7 | 218.20-080ER-M04 F25M | 0,085 | 0,095 | 0,10 | 0,11 |
| N1 | 218.20-080ER-ME04 F40M | 0,14 | 0,14 | 0,16 | 0,18 |
| N2 | 218.20-080ER-ME04 F40M | 0,14 | 0,14 | 0,16 | 0,18 |
| N3 | 218.20-080ER-ME04 F40M | 0,14 | 0,14 | 0,16 | 0,18 |
| N11 | 218.20-080ER-ME04 F40M | 0,14 | 0,14 | 0,16 | 0,18 |
| S1 | 218.20-080ER-ME04 T350M | 0,075 | 0,075 | 0,080 | 0,085 |
| S2 | 218.20-080ER-ME04 T350M | 0,075 | 0,075 | 0,080 | 0,085 |
| S3 | 218.20-080ER-ME04 T350M | 0,070 | 0,070 | 0,075 | 0,080 |
| S11 | 218.20-080ER-ME04 MS2050 | 0,046 | 0,048 | 0,055 | 0,055 |
| S12 | 218.20-080ER-ME04 MS2050 | 0,046 | 0,048 | 0,055 | 0,055 |
| S13 | 218.20-080ER-ME04 MS2050 | 0,042 | 0,044 | 0,046 | 0,050 |
| H5 | 218.20-080ER-M04 F25M | 0,070 | 0,070 | 0,080 | 0,085 |
| H8 | 218.20-080ER-M04 F25M | 0,055 | 0,055 | 0,060 | 0,065 |
| H11 | 218.20-080ER-M04 F25M | 0,070 | 0,070 | 0,080 | 0,085 |
| H12 | 218.20-080ER-M04 F25M | 0,055 | 0,055 | 0,060 | 0,065 |
| H21 | 218.20-080ER-M04 F25M | 0,055 | 0,055 | 0,060 | 0,065 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.20-080 – Insert selection – Semi-finishing

| SMG | | f _z | | | |
|-----|--------------------------|----------------|-------|-------|-------|
| | | 15% | 12% | 10% | 8% |
| P1 | 218.20-080ER-ME04 F40M | 0,14 | 0,15 | 0,16 | 0,17 |
| P2 | 218.20-080ER-ME04 F40M | 0,14 | 0,15 | 0,16 | 0,17 |
| P3 | 218.20-080ER-ME04 F40M | 0,13 | 0,14 | 0,15 | 0,16 |
| P4 | 218.20-080ER-M04 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| P5 | 218.20-080ER-M04 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| P6 | 218.20-080ER-M04 F25M | 0,13 | 0,14 | 0,14 | 0,16 |
| P7 | 218.20-080ER-M04 F25M | 0,13 | 0,14 | 0,14 | 0,16 |
| P8 | 218.20-080ER-M04 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| P11 | 218.20-080ER-M04 F25M | 0,13 | 0,14 | 0,14 | 0,16 |
| P12 | 218.20-080ER-M04 F25M | 0,085 | 0,090 | 0,095 | 0,10 |
| M1 | 218.20-080ER-ME04 F40M | 0,14 | 0,15 | 0,16 | 0,17 |
| M2 | 218.20-080ER-ME04 F40M | 0,13 | 0,14 | 0,15 | 0,16 |
| M3 | 218.20-080ER-ME04 F40M | 0,10 | 0,11 | 0,11 | 0,12 |
| M4 | 218.20-080ER-ME04 F40M | 0,085 | 0,090 | 0,095 | 0,10 |
| M5 | 218.20-080ER-ME04 F40M | 0,085 | 0,090 | 0,095 | 0,10 |
| K1 | 218.20-080ER-M04 F25M | 0,14 | 0,15 | 0,16 | 0,17 |
| K2 | 218.20-080ER-M04 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| K3 | 218.20-080ER-M04 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| K4 | 218.20-080ER-M04 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| K5 | 218.20-080ER-M04 F25M | 0,11 | 0,12 | 0,13 | 0,14 |
| K6 | 218.20-080ER-M04 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| K7 | 218.20-080ER-M04 F25M | 0,11 | 0,12 | 0,13 | 0,14 |
| N1 | 218.20-080ER-ME04 F40M | 0,18 | 0,19 | 0,20 | 0,22 |
| N2 | 218.20-080ER-ME04 F40M | 0,18 | 0,19 | 0,20 | 0,22 |
| N3 | 218.20-080ER-ME04 F40M | 0,18 | 0,19 | 0,20 | 0,22 |
| N11 | 218.20-080ER-ME04 F40M | 0,18 | 0,19 | 0,20 | 0,22 |
| S1 | 218.20-080ER-ME04 T350M | 0,085 | 0,090 | 0,095 | 0,10 |
| S2 | 218.20-080ER-ME04 T350M | 0,085 | 0,090 | 0,095 | 0,10 |
| S3 | 218.20-080ER-ME04 T350M | 0,080 | 0,085 | 0,090 | 0,090 |
| S11 | 218.20-080ER-ME04 MS2050 | 0,055 | 0,060 | 0,065 | 0,065 |
| S12 | 218.20-080ER-ME04 MS2050 | 0,055 | 0,060 | 0,065 | 0,065 |
| S13 | 218.20-080ER-ME04 MS2050 | 0,050 | 0,050 | 0,055 | 0,055 |
| H5 | 218.20-080ER-M04 F25M | 0,085 | 0,090 | 0,095 | 0,10 |
| H8 | 218.20-080ER-M04 F25M | 0,065 | 0,070 | 0,070 | 0,075 |
| H11 | 218.20-080ER-M04 F25M | 0,085 | 0,090 | 0,095 | 0,10 |
| H12 | 218.20-080ER-M04 F25M | 0,065 | 0,070 | 0,070 | 0,075 |
| H21 | 218.20-080ER-M04 F25M | 0,065 | 0,070 | 0,070 | 0,075 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R218.20-080 – Cutting data $v_c =$ (m/min)

| SMG | T350M | | | | | F25M | | | | | F40M | | | | | MM4500 | | | | | MS2050 | | | | |
|-----|-------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|------|------|------|------|--------|-----|-----|-----|-----|--------|-----|-----|-----|-----|
| | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% |
| P1 | 285 | 370 | 395 | 440 | 495 | 265 | 345 | 365 | 410 | 460 | 250 | 320 | 340 | 385 | 430 | 195 | 255 | 270 | 305 | 335 | 305 | 395 | 425 | 470 | 520 |
| P2 | 270 | 360 | 385 | 430 | 480 | 250 | 335 | 355 | 400 | 445 | 235 | 315 | 335 | 375 | 420 | 185 | 245 | 260 | 295 | 330 | 295 | 385 | 410 | 460 | 510 |
| P3 | 240 | 310 | 335 | 375 | 415 | 220 | 290 | 310 | 350 | 385 | 210 | 270 | 290 | 325 | 365 | 165 | 210 | 230 | 255 | 285 | 255 | 335 | 355 | 400 | 440 |
| P4 | 210 | 275 | 295 | 330 | 365 | 195 | 255 | 275 | 305 | 340 | 185 | 240 | 255 | 285 | 320 | 145 | 185 | 200 | 225 | 250 | 230 | 295 | 315 | 350 | 385 |
| P5 | 205 | 265 | 280 | 315 | 355 | 190 | 245 | 260 | 295 | 330 | 175 | 230 | 245 | 275 | 310 | 140 | 180 | 195 | 215 | 240 | 215 | 280 | 300 | 335 | 375 |
| P6 | 230 | 300 | 320 | 360 | 400 | 210 | 280 | 300 | 335 | 370 | 200 | 260 | 280 | 310 | 345 | 155 | 205 | 220 | 245 | 270 | 245 | 315 | 340 | 380 | 420 |
| P7 | 215 | 280 | 305 | 340 | 375 | 200 | 260 | 280 | 315 | 350 | 190 | 245 | 265 | 295 | 325 | 145 | 195 | 210 | 230 | 255 | 230 | 300 | 320 | 360 | 395 |
| P8 | 200 | 260 | 280 | 315 | 350 | 185 | 240 | 260 | 295 | 325 | 175 | 225 | 245 | 275 | 305 | 140 | 180 | 195 | 215 | 240 | 215 | 280 | 300 | 335 | 370 |
| P11 | 210 | 275 | 295 | 330 | 365 | 195 | 255 | 275 | 305 | 340 | 180 | 240 | 255 | 285 | 315 | 145 | 190 | 200 | 225 | 250 | 225 | 290 | 310 | 350 | 385 |
| P12 | 135 | 185 | 185 | 205 | 230 | 125 | 170 | 170 | 190 | 215 | 120 | 160 | 160 | 180 | 200 | 95 | 125 | 125 | 140 | 160 | 145 | 190 | 195 | 215 | 240 |
| M1 | 210 | 280 | 295 | 330 | 370 | — | — | — | — | — | 190 | 255 | 270 | 300 | 335 | 160 | 210 | 225 | 255 | 280 | 240 | 310 | 330 | 370 | 410 |
| M2 | 175 | 230 | 245 | 270 | 305 | — | — | — | — | — | 160 | 210 | 220 | 245 | 275 | 135 | 175 | 185 | 205 | 230 | 195 | 255 | 270 | 300 | 335 |
| M3 | 145 | 190 | 195 | 215 | 240 | — | — | — | — | — | 130 | 175 | 175 | 195 | 220 | 110 | 145 | 150 | 165 | 185 | 160 | 210 | 215 | 240 | 260 |
| M4 | 120 | 150 | 150 | 170 | 185 | — | — | — | — | — | 105 | 135 | 135 | 150 | 170 | 90 | 115 | 115 | 130 | 140 | 130 | 165 | 165 | 180 | 200 |
| M5 | 100 | 125 | 125 | 140 | 155 | — | — | — | — | — | 90 | 115 | 115 | 125 | 140 | 75 | 95 | 95 | 105 | 115 | 110 | 135 | 135 | 150 | 165 |
| K1 | — | — | — | — | — | 200 | 265 | 280 | 315 | 355 | 185 | 250 | 265 | 295 | 330 | — | — | — | — | — | — | — | — | — | — |
| K2 | — | — | — | — | — | 180 | 235 | 250 | 280 | 310 | 170 | 220 | 235 | 260 | 295 | — | — | — | — | — | — | — | — | — | — |
| K3 | — | — | — | — | — | 150 | 200 | 210 | 235 | 265 | 140 | 185 | 195 | 220 | 250 | — | — | — | — | — | — | — | — | — | — |
| K4 | — | — | — | — | — | 145 | 190 | 200 | 225 | 250 | 135 | 180 | 190 | 210 | 235 | — | — | — | — | — | — | — | — | — | — |
| K5 | — | — | — | — | — | 90 | 115 | 125 | 140 | 155 | 85 | 105 | 115 | 130 | 145 | — | — | — | — | — | — | — | — | — | — |
| K6 | — | — | — | — | — | 130 | 165 | 175 | 200 | 220 | 120 | 155 | 165 | 185 | 210 | — | — | — | — | — | — | — | — | — | — |
| K7 | — | — | — | — | — | 115 | 145 | 160 | 175 | 195 | 105 | 135 | 150 | 165 | 185 | — | — | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | 1400 | 1850 | 2000 | 2225 | 2475 | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | 560 | 750 | 800 | 900 | 1000 | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | 375 | 500 | 540 | 600 | 670 | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | 430 | 570 | 610 | 690 | 760 | — | — | — | — | — | — | — | — | — | — |
| S1 | 55 | 70 | 70 | 80 | 85 | 55 | 70 | 70 | 75 | 85 | 50 | 65 | 65 | 70 | 80 | 27 | 35 | 35 | 39 | 43 | 60 | 75 | 75 | 85 | 95 |
| S2 | 44 | 55 | 55 | 65 | 70 | 43 | 55 | 55 | 60 | 65 | 40 | 50 | 50 | 55 | 65 | 22 | 28 | 28 | 31 | 35 | 49 | 60 | 60 | 70 | 75 |
| S3 | 39 | 50 | 49 | 55 | 60 | 37 | 48 | 48 | 55 | 60 | 35 | 45 | 45 | 50 | 55 | 19 | 25 | 25 | 27 | 30 | 42 | 55 | 55 | 60 | 65 |
| S11 | 75 | 100 | 100 | 110 | 120 | 75 | 95 | 95 | 105 | 120 | 70 | 90 | 90 | 100 | 110 | 38 | 49 | 49 | 55 | 60 | 85 | 110 | 110 | 120 | 130 |
| S12 | 50 | 70 | 70 | 75 | 85 | 50 | 65 | 65 | 75 | 80 | 48 | 60 | 60 | 70 | 75 | 35 | 45 | 45 | 50 | 55 | 60 | 75 | 75 | 85 | 90 |
| S13 | 31 | 40 | 39 | 44 | 49 | 30 | 38 | 38 | 43 | 47 | 28 | 36 | 36 | 40 | 44 | 21 | 26 | 26 | 29 | 32 | 34 | 43 | 43 | 47 | 50 |
| H5 | 45 | 60 | 60 | 70 | 75 | 42 | 55 | 55 | 65 | 70 | 40 | 55 | 55 | 60 | 65 | — | — | — | — | — | — | — | — | — | — |
| H8 | 49 | 65 | 65 | 70 | 80 | 46 | 60 | 60 | 65 | 75 | 43 | 55 | 55 | 65 | 70 | — | — | — | — | — | — | — | — | — | — |
| H11 | 60 | 80 | 80 | 85 | 100 | 55 | 70 | 75 | 80 | 90 | 50 | 65 | 70 | 75 | 85 | — | — | — | — | — | — | — | — | — | — |
| H12 | 90 | 115 | 115 | 130 | 145 | 80 | 110 | 110 | 120 | 130 | 75 | 100 | 100 | 110 | 125 | — | — | — | — | — | — | — | — | — | — |
| H21 | 49 | 65 | 65 | 70 | 80 | 46 | 60 | 60 | 65 | 75 | 43 | 55 | 55 | 65 | 70 | — | — | — | — | — | — | — | — | — | — |

R218.20-100 – Insert selection – Roughing

| SMG | | f _z | | | |
|-----|--------------------------|----------------|-------|-------|-------|
| | | 100% | 30% | 20% | 15% |
| P1 | 218.20-100ER-ME05 F40M | 0,10 | 0,11 | 0,13 | 0,14 |
| P2 | 218.20-100ER-ME05 F40M | 0,10 | 0,11 | 0,13 | 0,14 |
| P3 | 218.20-100ER-ME05 F40M | 0,10 | 0,11 | 0,12 | 0,13 |
| P4 | 218.20-100ER-M05 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| P5 | 218.20-100ER-M05 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| P6 | 218.20-100ER-M05 F25M | 0,095 | 0,10 | 0,11 | 0,13 |
| P7 | 218.20-100ER-M05 F25M | 0,095 | 0,10 | 0,11 | 0,13 |
| P8 | 218.20-100ER-M05 F25M | 0,10 | 0,11 | 0,12 | 0,13 |
| P11 | 218.20-100ER-M05 F25M | 0,095 | 0,10 | 0,11 | 0,13 |
| P12 | 218.20-100ER-M05 F25M | 0,065 | 0,070 | 0,080 | 0,085 |
| M1 | 218.20-100ER-ME05 F40M | 0,10 | 0,11 | 0,13 | 0,14 |
| M2 | 218.20-100ER-ME05 F40M | 0,095 | 0,10 | 0,12 | 0,13 |
| M3 | 218.20-100ER-ME05 F40M | 0,080 | 0,085 | 0,095 | 0,10 |
| M4 | 218.20-100ER-ME05 F40M | 0,075 | 0,075 | 0,080 | 0,085 |
| M5 | 218.20-100ER-M05 F40M | 0,075 | 0,075 | 0,080 | 0,085 |
| K1 | 218.20-100ER-M05 F25M | 0,10 | 0,11 | 0,13 | 0,14 |
| K2 | 218.20-100ER-M05 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| K3 | 218.20-100ER-M05 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| K4 | 218.20-100ER-M05 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| K5 | 218.20-100ER-M05 F25M | 0,085 | 0,090 | 0,10 | 0,12 |
| K6 | 218.20-100ER-M05 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| K7 | 218.20-100ER-M05 F25M | 0,085 | 0,090 | 0,10 | 0,12 |
| N1 | 218.20-100ER-ME05 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| N2 | 218.20-100ER-ME05 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| N3 | 218.20-100ER-ME05 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| N11 | 218.20-100ER-ME05 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| S1 | 218.20-100ER-ME05 F40M | 0,075 | 0,075 | 0,080 | 0,085 |
| S2 | 218.20-100ER-ME05 F40M | 0,075 | 0,075 | 0,080 | 0,085 |
| S3 | 218.20-100ER-ME05 F40M | 0,070 | 0,070 | 0,075 | 0,080 |
| S11 | 218.20-100ER-ME05 MS2050 | 0,060 | 0,060 | 0,065 | 0,070 |
| S12 | 218.20-100ER-ME05 MS2050 | 0,060 | 0,060 | 0,065 | 0,070 |
| S13 | 218.20-100ER-ME05 MS2050 | 0,055 | 0,055 | 0,060 | 0,060 |
| H5 | 218.20-100ER-M05 F25M | 0,065 | 0,070 | 0,080 | 0,085 |
| H8 | 218.20-100ER-M05 F25M | 0,055 | 0,055 | 0,060 | 0,065 |
| H11 | 218.20-100ER-M05 F25M | 0,065 | 0,070 | 0,080 | 0,085 |
| H12 | 218.20-100ER-M05 F25M | 0,055 | 0,055 | 0,060 | 0,065 |
| H21 | 218.20-100ER-M05 F25M | 0,055 | 0,055 | 0,060 | 0,065 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R218.20-100 – Insert selection – Semi-finishing

| SMG | | f_z | | | |
|-----|--------------------------|-------|-------|-------|-------|
| | | 15% | 12% | 10% | 8% |
| P1 | 218.20-100ER-ME05 F40M | 0,14 | 0,15 | 0,16 | 0,18 |
| P2 | 218.20-100ER-ME05 F40M | 0,14 | 0,15 | 0,16 | 0,18 |
| P3 | 218.20-100ER-ME05 F40M | 0,13 | 0,14 | 0,15 | 0,17 |
| P4 | 218.20-100ER-M05 F25M | 0,13 | 0,14 | 0,15 | 0,17 |
| P5 | 218.20-100ER-M05 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| P6 | 218.20-100ER-M05 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| P7 | 218.20-100ER-M05 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| P8 | 218.20-100ER-M05 F25M | 0,13 | 0,14 | 0,15 | 0,17 |
| P11 | 218.20-100ER-M05 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| P12 | 218.20-100ER-M05 F25M | 0,085 | 0,090 | 0,095 | 0,10 |
| M1 | 218.20-100ER-ME05 F40M | 0,14 | 0,15 | 0,16 | 0,18 |
| M2 | 218.20-100ER-ME05 F40M | 0,13 | 0,14 | 0,15 | 0,16 |
| M3 | 218.20-100ER-ME05 F40M | 0,10 | 0,11 | 0,11 | 0,12 |
| M4 | 218.20-100ER-ME05 F40M | 0,085 | 0,090 | 0,095 | 0,10 |
| M5 | 218.20-100ER-ME05 F40M | 0,085 | 0,090 | 0,095 | 0,10 |
| K1 | 218.20-100ER-M05 F25M | 0,14 | 0,15 | 0,16 | 0,18 |
| K2 | 218.20-100ER-M05 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| K3 | 218.20-100ER-M05 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| K4 | 218.20-100ER-M05 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| K5 | 218.20-100ER-M05 F25M | 0,12 | 0,13 | 0,13 | 0,15 |
| K6 | 218.20-100ER-M05 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| K7 | 218.20-100ER-M05 F25M | 0,12 | 0,13 | 0,13 | 0,15 |
| N1 | 218.20-100ER-ME05 F40M | 0,18 | 0,20 | 0,20 | 0,22 |
| N2 | 218.20-100ER-ME05 F40M | 0,18 | 0,20 | 0,20 | 0,22 |
| N3 | 218.20-100ER-ME05 F40M | 0,18 | 0,20 | 0,20 | 0,22 |
| N11 | 218.20-100ER-ME05 F40M | 0,18 | 0,20 | 0,20 | 0,22 |
| S1 | 218.20-100ER-ME05 F40M | 0,085 | 0,090 | 0,095 | 0,10 |
| S2 | 218.20-100ER-ME05 F40M | 0,085 | 0,090 | 0,095 | 0,10 |
| S3 | 218.20-100ER-ME05 F40M | 0,080 | 0,085 | 0,085 | 0,090 |
| S11 | 218.20-100ER-ME05 MS2050 | 0,070 | 0,075 | 0,080 | 0,085 |
| S12 | 218.20-100ER-ME05 MS2050 | 0,070 | 0,075 | 0,080 | 0,085 |
| S13 | 218.20-100ER-ME05 MS2050 | 0,060 | 0,065 | 0,065 | 0,070 |
| H5 | 218.20-100ER-M05 F25M | 0,085 | 0,090 | 0,095 | 0,10 |
| H8 | 218.20-100ER-M05 F25M | 0,065 | 0,070 | 0,070 | 0,075 |
| H11 | 218.20-100ER-M05 F25M | 0,085 | 0,090 | 0,095 | 0,10 |
| H12 | 218.20-100ER-M05 F25M | 0,065 | 0,070 | 0,070 | 0,075 |
| H21 | 218.20-100ER-M05 F25M | 0,065 | 0,070 | 0,070 | 0,075 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

R218.20-100 – Cutting data $v_c =$ (m/min)

| SMG | F25M | | | | | F40M | | | | | MM4500 | | | | | MS2050 | | | | |
|-----|------|-----|-----|-----|-----|------|------|------|------|------|--------|-----|-----|-----|-----|--------|-----|-----|-----|-----|
| | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% |
| P1 | 260 | 340 | 360 | 405 | 450 | 240 | 310 | 330 | 370 | 410 | 195 | 250 | 265 | 300 | 335 | 280 | 365 | 390 | 440 | 480 |
| P2 | 255 | 330 | 350 | 395 | 430 | 230 | 300 | 320 | 360 | 395 | 185 | 245 | 260 | 290 | 320 | 270 | 355 | 380 | 420 | 465 |
| P3 | 215 | 285 | 305 | 345 | 375 | 200 | 260 | 280 | 315 | 345 | 160 | 210 | 225 | 255 | 280 | 235 | 310 | 330 | 365 | 405 |
| P4 | 195 | 255 | 270 | 300 | 330 | 175 | 235 | 245 | 275 | 305 | 145 | 190 | 200 | 225 | 245 | 210 | 270 | 290 | 325 | 355 |
| P5 | 185 | 245 | 255 | 290 | 320 | 170 | 225 | 235 | 265 | 295 | 135 | 180 | 190 | 215 | 235 | 200 | 260 | 280 | 310 | 340 |
| P6 | 205 | 275 | 295 | 325 | 360 | 190 | 250 | 270 | 295 | 330 | 155 | 205 | 220 | 240 | 265 | 225 | 295 | 315 | 345 | 385 |
| P7 | 195 | 260 | 280 | 305 | 340 | 180 | 235 | 255 | 280 | 310 | 145 | 190 | 205 | 225 | 250 | 215 | 280 | 300 | 325 | 360 |
| P8 | 185 | 240 | 255 | 290 | 315 | 165 | 220 | 235 | 265 | 290 | 135 | 175 | 190 | 215 | 235 | 200 | 260 | 280 | 310 | 340 |
| P11 | 190 | 250 | 270 | 295 | 330 | 175 | 230 | 245 | 270 | 300 | 140 | 185 | 200 | 220 | 245 | 210 | 270 | 290 | 320 | 350 |
| P12 | 130 | 170 | 170 | 190 | 210 | 120 | 155 | 155 | 175 | 190 | 95 | 125 | 125 | 140 | 155 | 135 | 180 | 180 | 200 | 220 |
| M1 | — | — | — | — | — | 185 | 245 | 260 | 290 | 315 | 160 | 210 | 225 | 250 | 275 | 220 | 285 | 305 | 340 | 375 |
| M2 | — | — | — | — | — | 150 | 200 | 210 | 240 | 265 | 130 | 175 | 185 | 205 | 225 | 180 | 235 | 250 | 280 | 305 |
| M3 | — | — | — | — | — | 130 | 170 | 170 | 190 | 210 | 110 | 145 | 145 | 165 | 180 | 150 | 200 | 200 | 220 | 245 |
| M4 | — | — | — | — | — | 105 | 135 | 130 | 145 | 160 | 90 | 115 | 115 | 125 | 140 | 125 | 155 | 150 | 170 | 185 |
| M5 | — | — | — | — | — | 90 | 110 | 110 | 120 | 135 | 75 | 95 | 95 | 105 | 115 | 105 | 130 | 125 | 140 | 155 |
| K1 | 200 | 260 | 275 | 310 | 340 | 185 | 240 | 255 | 285 | 310 | — | — | — | — | — | — | — | — | — | — |
| K2 | 175 | 230 | 245 | 275 | 305 | 160 | 210 | 225 | 250 | 280 | — | — | — | — | — | — | — | — | — | — |
| K3 | 150 | 195 | 205 | 230 | 255 | 135 | 180 | 190 | 210 | 235 | — | — | — | — | — | — | — | — | — | — |
| K4 | 140 | 185 | 195 | 220 | 245 | 130 | 170 | 180 | 200 | 225 | — | — | — | — | — | — | — | — | — | — |
| K5 | 85 | 115 | 120 | 135 | 150 | 80 | 105 | 110 | 125 | 135 | — | — | — | — | — | — | — | — | — | — |
| K6 | 125 | 165 | 175 | 195 | 215 | 115 | 150 | 160 | 180 | 200 | — | — | — | — | — | — | — | — | — | — |
| K7 | 110 | 145 | 155 | 175 | 190 | 100 | 135 | 145 | 160 | 175 | — | — | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | 1350 | 1800 | 1925 | 2150 | 2325 | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | 550 | 720 | 770 | 870 | 940 | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | 365 | 480 | 520 | 580 | 630 | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | 420 | 550 | 590 | 660 | 720 | — | — | — | — | — | — | — | — | — | — |
| S1 | 55 | 70 | 65 | 75 | 80 | 50 | 65 | 60 | 70 | 75 | 28 | 36 | 35 | 39 | 43 | 55 | 75 | 70 | 80 | 85 |
| S2 | 44 | 55 | 55 | 60 | 65 | 40 | 50 | 49 | 55 | 60 | 23 | 29 | 28 | 31 | 34 | 46 | 60 | 55 | 65 | 70 |
| S3 | 38 | 48 | 47 | 50 | 60 | 35 | 44 | 43 | 48 | 55 | 20 | 25 | 24 | 27 | 30 | 40 | 50 | 50 | 55 | 60 |
| S11 | 75 | 95 | 95 | 105 | 115 | 65 | 85 | 85 | 95 | 105 | 38 | 49 | 48 | 55 | 60 | 75 | 100 | 100 | 110 | 125 |
| S12 | 50 | 65 | 65 | 70 | 80 | 46 | 60 | 60 | 65 | 75 | 35 | 46 | 45 | 50 | 55 | 55 | 70 | 70 | 75 | 85 |
| S13 | 30 | 39 | 38 | 42 | 46 | 28 | 35 | 34 | 39 | 42 | 21 | 27 | 26 | 29 | 32 | 32 | 41 | 40 | 44 | 49 |
| H5 | 43 | 55 | 55 | 65 | 70 | 39 | 50 | 50 | 60 | 65 | — | — | — | — | — | — | — | — | — | — |
| H8 | 45 | 60 | 60 | 65 | 70 | 42 | 55 | 55 | 60 | 65 | — | — | — | — | — | — | — | — | — | — |
| H11 | 55 | 70 | 70 | 80 | 90 | 50 | 65 | 65 | 75 | 80 | — | — | — | — | — | — | — | — | — | — |
| H12 | 80 | 105 | 105 | 120 | 130 | 75 | 100 | 95 | 110 | 120 | — | — | — | — | — | — | — | — | — | — |
| H21 | 45 | 60 | 60 | 65 | 70 | 42 | 55 | 55 | 60 | 65 | — | — | — | — | — | — | — | — | — | — |

R218.20-125 – Insert selection – Roughing

| SMG | | f_z | | | |
|-----|--------------------------|-------|-------|-------|-------|
| | | 100% | 30% | 20% | 15% |
| P1 | 218.20-125ER-ME07 F40M | 0,10 | 0,11 | 0,12 | 0,14 |
| P2 | 218.20-125ER-ME07 F40M | 0,11 | 0,11 | 0,13 | 0,14 |
| P3 | 218.20-125ER-ME07 F40M | 0,10 | 0,11 | 0,12 | 0,13 |
| P4 | 218.20-125ER-M07 F25M | 0,10 | 0,10 | 0,12 | 0,13 |
| P5 | 218.20-125ER-M07 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| P6 | 218.20-125ER-M07 F25M | 0,095 | 0,10 | 0,11 | 0,13 |
| P7 | 218.20-125ER-M07 F25M | 0,095 | 0,10 | 0,11 | 0,13 |
| P8 | 218.20-125ER-M07 F25M | 0,10 | 0,11 | 0,12 | 0,13 |
| P11 | 218.20-125ER-M07 F25M | 0,095 | 0,10 | 0,11 | 0,13 |
| P12 | 218.20-125ER-M07 F25M | 0,065 | 0,070 | 0,080 | 0,085 |
| M1 | 218.20-125ER-ME07 F40M | 0,11 | 0,11 | 0,13 | 0,14 |
| M2 | 218.20-125ER-ME07 F40M | 0,095 | 0,10 | 0,12 | 0,13 |
| M3 | 218.20-125ER-ME07 F40M | 0,080 | 0,085 | 0,090 | 0,10 |
| M4 | 218.20-125ER-ME07 F40M | 0,075 | 0,075 | 0,080 | 0,085 |
| M5 | 218.20-125ER-M07 F40M | 0,075 | 0,075 | 0,080 | 0,085 |
| K1 | 218.20-125ER-M07 F25M | 0,11 | 0,11 | 0,13 | 0,14 |
| K2 | 218.20-125ER-M07 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| K3 | 218.20-125ER-M07 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| K4 | 218.20-125ER-M07 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| K5 | 218.20-125ER-M07 F25M | 0,085 | 0,095 | 0,10 | 0,11 |
| K6 | 218.20-125ER-M07 F25M | 0,095 | 0,10 | 0,12 | 0,13 |
| K7 | 218.20-125ER-M07 F25M | 0,085 | 0,095 | 0,10 | 0,11 |
| N1 | 218.20-125ER-ME07 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| N2 | 218.20-125ER-ME07 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| N3 | 218.20-125ER-ME07 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| N11 | 218.20-125ER-ME07 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| S1 | 218.20-125ER-ME07 F40M | 0,075 | 0,075 | 0,080 | 0,085 |
| S2 | 218.20-125ER-ME07 F40M | 0,075 | 0,075 | 0,080 | 0,085 |
| S3 | 218.20-125ER-ME07 F40M | 0,070 | 0,070 | 0,075 | 0,080 |
| S11 | 218.20-125ER-ME07 MS2050 | 0,085 | 0,085 | 0,095 | 0,10 |
| S12 | 218.20-125ER-ME07 MS2050 | 0,085 | 0,085 | 0,095 | 0,10 |
| S13 | 218.20-125ER-ME07 MS2050 | 0,075 | 0,075 | 0,080 | 0,085 |
| H5 | 218.20-125ER-M07 F25M | 0,065 | 0,070 | 0,080 | 0,085 |
| H8 | 218.20-125ER-M07 F25M | 0,055 | 0,055 | 0,060 | 0,065 |
| H11 | 218.20-125ER-M07 F25M | 0,065 | 0,070 | 0,080 | 0,085 |
| H12 | 218.20-125ER-M07 F25M | 0,055 | 0,055 | 0,060 | 0,065 |
| H21 | 218.20-125ER-M07 F25M | 0,055 | 0,055 | 0,060 | 0,065 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.20-125 – Insert selection – Semi-finishing

| SMG | | f _z | | | |
|-----|--------------------------|----------------|-------|-------|-------|
| | | 15% | 12% | 10% | 8% |
| P1 | 218.20-125ER-ME07 F40M | 0,14 | 0,15 | 0,16 | 0,17 |
| P2 | 218.20-125ER-ME07 F40M | 0,14 | 0,15 | 0,16 | 0,17 |
| P3 | 218.20-125ER-ME07 F40M | 0,13 | 0,14 | 0,15 | 0,17 |
| P4 | 218.20-125ER-M07 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| P5 | 218.20-125ER-M07 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| P6 | 218.20-125ER-M07 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| P7 | 218.20-125ER-M07 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| P8 | 218.20-125ER-M07 F25M | 0,13 | 0,14 | 0,15 | 0,17 |
| P11 | 218.20-125ER-M07 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| P12 | 218.20-125ER-M07 F25M | 0,085 | 0,090 | 0,095 | 0,10 |
| M1 | 218.20-125ER-ME07 F40M | 0,14 | 0,15 | 0,16 | 0,17 |
| M2 | 218.20-125ER-ME07 F40M | 0,13 | 0,14 | 0,15 | 0,16 |
| M3 | 218.20-125ER-ME07 F40M | 0,10 | 0,11 | 0,11 | 0,12 |
| M4 | 218.20-125ER-ME07 F40M | 0,085 | 0,090 | 0,095 | 0,10 |
| M5 | 218.20-125ER-ME07 F40M | 0,085 | 0,090 | 0,095 | 0,10 |
| K1 | 218.20-125ER-M07 F25M | 0,14 | 0,15 | 0,16 | 0,17 |
| K2 | 218.20-125ER-M07 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| K3 | 218.20-125ER-M07 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| K4 | 218.20-125ER-M07 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| K5 | 218.20-125ER-M07 F25M | 0,11 | 0,12 | 0,13 | 0,14 |
| K6 | 218.20-125ER-M07 F25M | 0,13 | 0,14 | 0,15 | 0,16 |
| K7 | 218.20-125ER-M07 F25M | 0,11 | 0,12 | 0,13 | 0,14 |
| N1 | 218.20-125ER-ME07 F40M | 0,18 | 0,19 | 0,20 | 0,22 |
| N2 | 218.20-125ER-ME07 F40M | 0,18 | 0,19 | 0,20 | 0,22 |
| N3 | 218.20-125ER-ME07 F40M | 0,18 | 0,19 | 0,20 | 0,22 |
| N11 | 218.20-125ER-ME07 F40M | 0,18 | 0,19 | 0,20 | 0,22 |
| S1 | 218.20-125ER-ME07 F40M | 0,085 | 0,090 | 0,095 | 0,10 |
| S2 | 218.20-125ER-ME07 F40M | 0,085 | 0,090 | 0,095 | 0,10 |
| S3 | 218.20-125ER-ME07 F40M | 0,080 | 0,085 | 0,090 | 0,090 |
| S11 | 218.20-125ER-ME07 MS2050 | 0,10 | 0,10 | 0,11 | 0,12 |
| S12 | 218.20-125ER-ME07 MS2050 | 0,10 | 0,10 | 0,11 | 0,12 |
| S13 | 218.20-125ER-ME07 MS2050 | 0,085 | 0,090 | 0,095 | 0,10 |
| H5 | 218.20-125ER-M07 F25M | 0,085 | 0,090 | 0,095 | 0,10 |
| H8 | 218.20-125ER-M07 F25M | 0,065 | 0,070 | 0,070 | 0,075 |
| H11 | 218.20-125ER-M07 F25M | 0,085 | 0,090 | 0,095 | 0,10 |
| H12 | 218.20-125ER-M07 F25M | 0,065 | 0,070 | 0,070 | 0,075 |
| H21 | 218.20-125ER-M07 F25M | 0,065 | 0,070 | 0,070 | 0,075 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R218.20-125 – Cutting data $v_c =$ (m/min)

| SMG | F25M | | | | | F40M | | | | | MM4500 | | | | | MS2050 | | | | |
|-----|------|-----|-----|-----|-----|------|------|------|------|------|--------|-----|-----|-----|-----|--------|-----|-----|-----|-----|
| | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% |
| P1 | 260 | 340 | 370 | 405 | 455 | 255 | 335 | 360 | 395 | 445 | 205 | 270 | 290 | 320 | 360 | 280 | 365 | 395 | 435 | 485 |
| P2 | 250 | 330 | 350 | 395 | 440 | 245 | 325 | 345 | 385 | 430 | 200 | 265 | 280 | 315 | 350 | 270 | 355 | 380 | 425 | 475 |
| P3 | 220 | 285 | 310 | 345 | 385 | 215 | 280 | 300 | 335 | 375 | 175 | 225 | 245 | 275 | 305 | 235 | 305 | 330 | 370 | 410 |
| P4 | 195 | 255 | 270 | 305 | 335 | 190 | 250 | 265 | 295 | 330 | 155 | 205 | 215 | 240 | 265 | 210 | 275 | 290 | 325 | 365 |
| P5 | 185 | 245 | 260 | 290 | 320 | 180 | 240 | 255 | 285 | 315 | 150 | 195 | 205 | 230 | 255 | 200 | 265 | 280 | 310 | 345 |
| P6 | 210 | 275 | 295 | 325 | 365 | 205 | 270 | 290 | 320 | 355 | 165 | 220 | 235 | 260 | 290 | 225 | 295 | 320 | 350 | 395 |
| P7 | 200 | 260 | 280 | 305 | 345 | 195 | 255 | 275 | 300 | 335 | 155 | 205 | 220 | 245 | 275 | 215 | 280 | 300 | 330 | 370 |
| P8 | 185 | 240 | 260 | 290 | 320 | 180 | 235 | 255 | 285 | 315 | 145 | 190 | 205 | 230 | 255 | 200 | 260 | 280 | 310 | 345 |
| P11 | 190 | 250 | 270 | 300 | 335 | 190 | 245 | 265 | 290 | 330 | 150 | 200 | 215 | 235 | 265 | 205 | 270 | 290 | 320 | 360 |
| P12 | 130 | 170 | 170 | 190 | 210 | 125 | 165 | 165 | 185 | 205 | 100 | 135 | 135 | 150 | 165 | 140 | 180 | 185 | 205 | 225 |
| M1 | — | — | — | — | — | 195 | 260 | 275 | 310 | 345 | 170 | 225 | 240 | 270 | 300 | 215 | 285 | 305 | 345 | 380 |
| M2 | — | — | — | — | — | 165 | 215 | 230 | 255 | 285 | 140 | 185 | 195 | 220 | 245 | 180 | 235 | 250 | 280 | 310 |
| M3 | — | — | — | — | — | 135 | 180 | 185 | 205 | 225 | 120 | 155 | 160 | 175 | 195 | 150 | 200 | 200 | 225 | 250 |
| M4 | — | — | — | — | — | 110 | 145 | 140 | 155 | 175 | 95 | 125 | 120 | 135 | 150 | 120 | 160 | 155 | 175 | 190 |
| M5 | — | — | — | — | — | 95 | 120 | 120 | 130 | 145 | 80 | 105 | 100 | 115 | 125 | 100 | 130 | 130 | 145 | 160 |
| K1 | 195 | 265 | 280 | 315 | 350 | 195 | 255 | 275 | 305 | 340 | — | — | — | — | — | — | — | — | — | — |
| K2 | 175 | 230 | 245 | 275 | 305 | 175 | 225 | 240 | 270 | 300 | — | — | — | — | — | — | — | — | — | — |
| K3 | 150 | 195 | 210 | 235 | 260 | 145 | 190 | 205 | 230 | 255 | — | — | — | — | — | — | — | — | — | — |
| K4 | 145 | 190 | 200 | 220 | 245 | 140 | 185 | 195 | 215 | 240 | — | — | — | — | — | — | — | — | — | — |
| K5 | 85 | 115 | 125 | 135 | 150 | 85 | 110 | 120 | 135 | 145 | — | — | — | — | — | — | — | — | — | — |
| K6 | 125 | 165 | 175 | 195 | 215 | 125 | 160 | 170 | 190 | 215 | — | — | — | — | — | — | — | — | — | — |
| K7 | 110 | 145 | 155 | 175 | 190 | 110 | 140 | 155 | 170 | 190 | — | — | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | 1475 | 1925 | 2050 | 2300 | 2550 | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | 590 | 780 | 830 | 930 | 1025 | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | 395 | 520 | 550 | 620 | 690 | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | 450 | 590 | 630 | 710 | 790 | — | — | — | — | — | — | — | — | — | — |
| S1 | 55 | 70 | 65 | 75 | 85 | 50 | 65 | 65 | 75 | 80 | 29 | 38 | 37 | 42 | 46 | 55 | 75 | 70 | 80 | 90 |
| S2 | 43 | 55 | 55 | 60 | 65 | 42 | 55 | 55 | 60 | 65 | 24 | 30 | 30 | 33 | 37 | 46 | 60 | 60 | 65 | 70 |
| S3 | 37 | 48 | 47 | 55 | 60 | 36 | 47 | 46 | 50 | 55 | 21 | 27 | 26 | 29 | 32 | 40 | 50 | 50 | 55 | 65 |
| S11 | 75 | 95 | 95 | 105 | 115 | 70 | 90 | 95 | 105 | 115 | 40 | 50 | 55 | 60 | 65 | 80 | 100 | 100 | 115 | 125 |
| S12 | 50 | 65 | 65 | 75 | 80 | 49 | 65 | 65 | 70 | 80 | 37 | 48 | 49 | 55 | 60 | 55 | 70 | 70 | 80 | 85 |
| S13 | 30 | 38 | 38 | 42 | 47 | 29 | 38 | 37 | 41 | 46 | 22 | 28 | 28 | 31 | 34 | 32 | 41 | 41 | 45 | 50 |
| H5 | 43 | 55 | 55 | 65 | 70 | 42 | 55 | 55 | 60 | 70 | — | — | — | — | — | — | — | — | — | — |
| H8 | 46 | 60 | 60 | 65 | 75 | 45 | 60 | 60 | 65 | 70 | — | — | — | — | — | — | — | — | — | — |
| H11 | 55 | 70 | 70 | 80 | 90 | 55 | 70 | 70 | 80 | 85 | — | — | — | — | — | — | — | — | — | — |
| H12 | 85 | 105 | 105 | 120 | 130 | 80 | 105 | 105 | 115 | 130 | — | — | — | — | — | — | — | — | — | — |
| H21 | 46 | 60 | 60 | 65 | 75 | 45 | 60 | 60 | 65 | 70 | — | — | — | — | — | — | — | — | — | — |

R218.20-150 – Insert selection – Roughing

| SMG | | | f_z | | | |
|-----|--------------------------|----------------------|-------|-------|-------|-------|
| | | | 100% | 30% | 20% | 15% |
| P1 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,15 | 0,16 | 0,18 | 0,20 |
| P2 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,15 | 0,16 | 0,18 | 0,20 |
| P3 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,14 | 0,15 | 0,17 | 0,19 |
| P4 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,14 | 0,15 | 0,17 | 0,19 |
| P5 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,13 | 0,15 | 0,17 | 0,18 |
| P6 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| P7 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| P8 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,14 | 0,15 | 0,17 | 0,19 |
| P11 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| P12 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,095 | 0,10 | 0,11 | 0,12 |
| M1 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,15 | 0,16 | 0,18 | 0,20 |
| M2 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,13 | 0,15 | 0,17 | 0,18 |
| M3 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,11 | 0,12 | 0,13 | 0,15 |
| M4 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,10 | 0,11 | 0,12 | 0,12 |
| M5 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,10 | 0,11 | 0,12 | 0,12 |
| K1 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,15 | 0,16 | 0,18 | 0,20 |
| K2 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,13 | 0,15 | 0,17 | 0,18 |
| K3 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,13 | 0,15 | 0,17 | 0,18 |
| K4 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,13 | 0,15 | 0,17 | 0,18 |
| K5 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,12 | 0,13 | 0,15 | 0,17 |
| K6 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,13 | 0,15 | 0,17 | 0,18 |
| K7 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,12 | 0,13 | 0,15 | 0,17 |
| N1 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,24 | 0,26 |
| N2 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,24 | 0,26 |
| N3 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,24 | 0,26 |
| N11 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,24 | 0,26 |
| S1 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,10 | 0,11 | 0,12 | 0,12 |
| S2 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,10 | 0,11 | 0,12 | 0,12 |
| S3 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,095 | 0,10 | 0,11 | 0,12 |
| S11 | 218.20-150ER-ME07 MS2050 | SPMT100408T-M08 F40M | 0,080 | 0,085 | 0,090 | 0,10 |
| S12 | 218.20-150ER-ME07 MS2050 | SPMT100408T-M08 F40M | 0,080 | 0,085 | 0,090 | 0,10 |
| S13 | 218.20-150ER-ME07 MS2050 | SPMT100408T-M08 F40M | 0,070 | 0,075 | 0,080 | 0,085 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.20-150 – Insert selection – Semi-finishing

| SMG | | | f _z | | | |
|-----|--------------------------|----------------------|----------------|-------|-------|------|
| | | | 15% | 12% | 10% | 8% |
| P1 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,20 | 0,22 | 0,24 | 0,26 |
| P2 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,20 | 0,22 | 0,24 | 0,26 |
| P3 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,22 | 0,24 |
| P4 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,22 | 0,24 |
| P5 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,18 | 0,20 | 0,22 | 0,24 |
| P6 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,18 | 0,20 | 0,22 | 0,24 |
| P7 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,18 | 0,20 | 0,22 | 0,24 |
| P8 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,22 | 0,24 |
| P11 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,18 | 0,20 | 0,22 | 0,24 |
| P12 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,12 | 0,13 | 0,14 | 0,15 |
| M1 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,20 | 0,22 | 0,24 | 0,26 |
| M2 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,18 | 0,20 | 0,22 | 0,24 |
| M3 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,15 | 0,16 | 0,17 | 0,18 |
| M4 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,12 | 0,13 | 0,14 | 0,14 |
| M5 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,12 | 0,13 | 0,14 | 0,14 |
| K1 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,20 | 0,22 | 0,24 | 0,26 |
| K2 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,18 | 0,20 | 0,22 | 0,24 |
| K3 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,18 | 0,20 | 0,22 | 0,24 |
| K4 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,18 | 0,20 | 0,22 | 0,24 |
| K5 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,17 | 0,18 | 0,19 | 0,22 |
| K6 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,18 | 0,20 | 0,22 | 0,24 |
| K7 | 218.20-150ER-M08 F40M | SPMT100408T-M08 F40M | 0,17 | 0,18 | 0,19 | 0,22 |
| N1 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,26 | 0,28 | 0,30 | 0,34 |
| N2 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,26 | 0,28 | 0,30 | 0,34 |
| N3 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,26 | 0,28 | 0,30 | 0,34 |
| N11 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,26 | 0,28 | 0,30 | 0,34 |
| S1 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,12 | 0,13 | 0,14 | 0,14 |
| S2 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,12 | 0,13 | 0,14 | 0,14 |
| S3 | 218.20-150ER-ME07 F40M | SPMT100408T-M08 F40M | 0,12 | 0,12 | 0,13 | 0,13 |
| S11 | 218.20-150ER-ME07 MS2050 | SPMT100408T-M08 F40M | 0,10 | 0,11 | 0,11 | 0,12 |
| S12 | 218.20-150ER-ME07 MS2050 | SPMT100408T-M08 F40M | 0,10 | 0,11 | 0,11 | 0,12 |
| S13 | 218.20-150ER-ME07 MS2050 | SPMT100408T-M08 F40M | 0,085 | 0,090 | 0,095 | 0,10 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.20-150 – Cutting data $v_c =$ (m/min)

| SMG | F40M | | | | | MM4500 | | | | | MS2050 | | | | |
|-----|------|------|------|------|------|--------|-----|-----|-----|-----|--------|-----|-----|-----|-----|
| | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% |
| P1 | 220 | 290 | 315 | 355 | 390 | 170 | 225 | 240 | 270 | 295 | 270 | 350 | 380 | 420 | 465 |
| P2 | 215 | 285 | 305 | 340 | 380 | 165 | 215 | 235 | 260 | 290 | 255 | 340 | 365 | 410 | 455 |
| P3 | 190 | 250 | 265 | 295 | 330 | 145 | 190 | 205 | 225 | 250 | 225 | 295 | 320 | 355 | 390 |
| P4 | 165 | 220 | 235 | 260 | 290 | 125 | 165 | 180 | 200 | 220 | 200 | 265 | 280 | 315 | 350 |
| P5 | 160 | 210 | 225 | 250 | 280 | 120 | 160 | 170 | 190 | 210 | 190 | 255 | 265 | 300 | 330 |
| P6 | 180 | 235 | 255 | 285 | 315 | 135 | 180 | 195 | 220 | 240 | 215 | 285 | 305 | 335 | 375 |
| P7 | 170 | 220 | 240 | 270 | 300 | 130 | 170 | 185 | 205 | 230 | 205 | 270 | 290 | 315 | 350 |
| P8 | 160 | 210 | 225 | 250 | 280 | 120 | 160 | 170 | 190 | 210 | 190 | 245 | 265 | 300 | 330 |
| P11 | 165 | 215 | 235 | 265 | 290 | 125 | 165 | 180 | 200 | 220 | 200 | 260 | 280 | 310 | 340 |
| P12 | 115 | 150 | 150 | 165 | 185 | 85 | 115 | 115 | 130 | 140 | 130 | 175 | 175 | 195 | 215 |
| M1 | 175 | 230 | 245 | 270 | 305 | 140 | 185 | 200 | 220 | 245 | 205 | 275 | 290 | 330 | 365 |
| M2 | 145 | 190 | 200 | 225 | 250 | 115 | 155 | 165 | 185 | 205 | 175 | 225 | 240 | 270 | 300 |
| M3 | 125 | 160 | 165 | 180 | 200 | 100 | 130 | 135 | 150 | 165 | 145 | 190 | 195 | 215 | 240 |
| M4 | 100 | 130 | 125 | 140 | 155 | 80 | 105 | 100 | 115 | 125 | 115 | 150 | 150 | 165 | 185 |
| M5 | 85 | 105 | 105 | 115 | 130 | 70 | 85 | 85 | 95 | 105 | 100 | 125 | 125 | 140 | 150 |
| K1 | 170 | 225 | 240 | 270 | 300 | — | — | — | — | — | — | — | — | — | — |
| K2 | 150 | 200 | 215 | 235 | 265 | — | — | — | — | — | — | — | — | — | — |
| K3 | 130 | 170 | 180 | 200 | 225 | — | — | — | — | — | — | — | — | — | — |
| K4 | 120 | 160 | 170 | 190 | 215 | — | — | — | — | — | — | — | — | — | — |
| K5 | 75 | 100 | 105 | 120 | 130 | — | — | — | — | — | — | — | — | — | — |
| K6 | 105 | 140 | 150 | 170 | 185 | — | — | — | — | — | — | — | — | — | — |
| K7 | 95 | 125 | 135 | 150 | 170 | — | — | — | — | — | — | — | — | — | — |
| N1 | 1275 | 1675 | 1775 | 2000 | 2225 | — | — | — | — | — | — | — | — | — | — |
| N2 | 510 | 680 | 720 | 810 | 900 | — | — | — | — | — | — | — | — | — | — |
| N3 | 340 | 450 | 480 | 540 | 600 | — | — | — | — | — | — | — | — | — | — |
| N11 | 390 | 520 | 550 | 620 | 690 | — | — | — | — | — | — | — | — | — | — |
| S1 | 47 | 60 | 60 | 65 | 70 | 25 | 32 | 31 | 35 | 39 | 55 | 70 | 70 | 80 | 85 |
| S2 | 38 | 48 | 47 | 55 | 60 | 20 | 26 | 25 | 28 | 31 | 44 | 55 | 55 | 60 | 70 |
| S3 | 33 | 42 | 41 | 46 | 50 | 18 | 22 | 22 | 24 | 27 | 38 | 50 | 49 | 55 | 60 |
| S11 | 65 | 85 | 85 | 90 | 100 | 34 | 44 | 44 | 49 | 55 | 75 | 100 | 100 | 110 | 120 |
| S12 | 44 | 60 | 55 | 65 | 70 | 31 | 41 | 41 | 45 | 50 | 55 | 70 | 70 | 75 | 85 |
| S13 | 26 | 34 | 33 | 37 | 41 | 19 | 24 | 23 | 26 | 29 | 31 | 40 | 39 | 44 | 48 |

R218.20-160 – Insert selection – Roughing

| SMG | | | f _z | | | |
|-----|--------------------------|----------------------|----------------|-------|-------|-------|
| | | | 100% | 30% | 20% | 15% |
| P1 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,14 | 0,16 | 0,18 | 0,20 |
| P2 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,15 | 0,16 | 0,18 | 0,20 |
| P3 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,14 | 0,15 | 0,17 | 0,19 |
| P4 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,13 | 0,15 | 0,17 | 0,19 |
| P5 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,13 | 0,14 | 0,17 | 0,19 |
| P6 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| P7 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| P8 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,14 | 0,15 | 0,17 | 0,19 |
| P11 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,13 | 0,14 | 0,16 | 0,18 |
| P12 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,090 | 0,10 | 0,11 | 0,12 |
| M1 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,15 | 0,16 | 0,18 | 0,20 |
| M2 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,13 | 0,14 | 0,17 | 0,19 |
| M3 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,11 | 0,12 | 0,13 | 0,15 |
| M4 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,10 | 0,10 | 0,12 | 0,13 |
| M5 | 218.20-160ER-M08 F40M | SPMT100408T-M08 F40M | 0,10 | 0,10 | 0,12 | 0,13 |
| K1 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F25M | 0,15 | 0,16 | 0,18 | 0,20 |
| K2 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F25M | 0,13 | 0,14 | 0,17 | 0,19 |
| K3 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F25M | 0,13 | 0,14 | 0,17 | 0,19 |
| K4 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F25M | 0,13 | 0,14 | 0,17 | 0,19 |
| K5 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F25M | 0,12 | 0,13 | 0,15 | 0,17 |
| K6 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F25M | 0,13 | 0,14 | 0,17 | 0,19 |
| K7 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F25M | 0,12 | 0,13 | 0,15 | 0,17 |
| N1 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F25M | 0,18 | 0,20 | 0,24 | 0,26 |
| N2 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F25M | 0,18 | 0,20 | 0,24 | 0,26 |
| N3 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F25M | 0,18 | 0,20 | 0,24 | 0,26 |
| N11 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F25M | 0,18 | 0,20 | 0,24 | 0,26 |
| S1 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,10 | 0,10 | 0,12 | 0,13 |
| S2 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,10 | 0,10 | 0,12 | 0,13 |
| S3 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,090 | 0,095 | 0,11 | 0,12 |
| S11 | 218.20-160ER-ME08 MS2050 | SPMT100408T-M08 F40M | 0,090 | 0,095 | 0,11 | 0,12 |
| S12 | 218.20-160ER-ME08 MS2050 | SPMT100408T-M08 F40M | 0,090 | 0,095 | 0,11 | 0,12 |
| S13 | 218.20-160ER-ME08 MS2050 | SPMT100408T-M08 F40M | 0,080 | 0,085 | 0,090 | 0,10 |
| H5 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F25M | 0,090 | 0,10 | 0,11 | 0,12 |
| H8 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F25M | 0,070 | 0,075 | 0,085 | 0,095 |
| H11 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F25M | 0,090 | 0,10 | 0,11 | 0,12 |
| H12 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F25M | 0,070 | 0,075 | 0,085 | 0,095 |
| H21 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F25M | 0,070 | 0,075 | 0,085 | 0,095 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

R218.20-160 – Insert selection – Semi-finishing

| SMG | | | f_z | | | |
|-----|--------------------------|----------------------|-------|------|------|------|
| | | | 15% | 12% | 10% | 8% |
| P1 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,20 | 0,22 | 0,24 | 0,26 |
| P2 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,20 | 0,22 | 0,24 | 0,26 |
| P3 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,19 | 0,22 | 0,24 | 0,26 |
| P4 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,22 | 0,26 |
| P5 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,22 | 0,24 |
| P6 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,18 | 0,20 | 0,22 | 0,24 |
| P7 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,18 | 0,20 | 0,22 | 0,24 |
| P8 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,19 | 0,22 | 0,24 | 0,26 |
| P11 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,18 | 0,20 | 0,22 | 0,24 |
| P12 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,12 | 0,14 | 0,15 | 0,16 |
| M1 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,20 | 0,22 | 0,24 | 0,26 |
| M2 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,22 | 0,24 |
| M3 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,15 | 0,16 | 0,17 | 0,19 |
| M4 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,13 | 0,13 | 0,14 | 0,15 |
| M5 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,13 | 0,13 | 0,14 | 0,15 |
| K1 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,20 | 0,22 | 0,24 | 0,26 |
| K2 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,22 | 0,24 |
| K3 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,22 | 0,24 |
| K4 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,22 | 0,24 |
| K5 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,17 | 0,18 | 0,20 | 0,22 |
| K6 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,19 | 0,20 | 0,22 | 0,24 |
| K7 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,17 | 0,18 | 0,20 | 0,22 |
| N1 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,26 | 0,28 | 0,32 | 0,34 |
| N2 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,26 | 0,28 | 0,32 | 0,34 |
| N3 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,26 | 0,28 | 0,32 | 0,34 |
| N11 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,26 | 0,28 | 0,32 | 0,34 |
| S1 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,13 | 0,13 | 0,14 | 0,15 |
| S2 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,13 | 0,13 | 0,14 | 0,15 |
| S3 | 218.20-160ER-ME08 F40M | SPMT100408T-M08 F40M | 0,12 | 0,12 | 0,13 | 0,14 |
| S11 | 218.20-160ER-ME08 MS2050 | SPMT100408T-M08 F40M | 0,12 | 0,13 | 0,13 | 0,14 |
| S12 | 218.20-160ER-ME08 MS2050 | SPMT100408T-M08 F40M | 0,12 | 0,13 | 0,13 | 0,14 |
| S13 | 218.20-160ER-ME08 MS2050 | SPMT100408T-M08 F40M | 0,10 | 0,11 | 0,11 | 0,12 |
| H5 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,12 | 0,14 | 0,15 | 0,16 |
| H8 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,095 | 0,10 | 0,11 | 0,12 |
| H11 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,12 | 0,14 | 0,15 | 0,16 |
| H12 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,095 | 0,10 | 0,11 | 0,12 |
| H21 | 218.20-160ER-M08 F25M | SPMT100408T-M08 F40M | 0,095 | 0,10 | 0,11 | 0,12 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.20-160 – Cutting data $v_c =$ (m/min)

| SMG | F25M | | | | | F40M | | | | | MM4500 | | | | | MS2050 | | | | |
|-----|------|-----|-----|-----|-----|------|------|------|------|------|--------|-----|-----|-----|-----|--------|-----|-----|-----|-----|
| | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% |
| P1 | 230 | 300 | 325 | 370 | 400 | 220 | 290 | 315 | 355 | 390 | 180 | 235 | 255 | 290 | 315 | 260 | 340 | 365 | 410 | 450 |
| P2 | 225 | 295 | 315 | 350 | 390 | 215 | 285 | 305 | 340 | 380 | 175 | 230 | 250 | 275 | 305 | 250 | 330 | 350 | 395 | 440 |
| P3 | 195 | 260 | 275 | 310 | 340 | 190 | 250 | 265 | 295 | 330 | 155 | 200 | 215 | 240 | 270 | 220 | 290 | 305 | 340 | 385 |
| P4 | 170 | 225 | 245 | 270 | 300 | 165 | 220 | 235 | 260 | 290 | 135 | 175 | 190 | 210 | 235 | 195 | 255 | 275 | 305 | 340 |
| P5 | 165 | 215 | 230 | 260 | 295 | 160 | 210 | 225 | 250 | 285 | 130 | 170 | 180 | 205 | 230 | 185 | 245 | 265 | 290 | 320 |
| P6 | 185 | 245 | 265 | 295 | 330 | 180 | 235 | 255 | 285 | 315 | 145 | 190 | 205 | 235 | 255 | 210 | 270 | 295 | 325 | 360 |
| P7 | 175 | 230 | 250 | 280 | 310 | 170 | 220 | 240 | 270 | 300 | 135 | 180 | 195 | 220 | 245 | 195 | 255 | 280 | 310 | 340 |
| P8 | 165 | 215 | 230 | 260 | 290 | 160 | 210 | 225 | 250 | 280 | 130 | 170 | 180 | 205 | 225 | 185 | 245 | 260 | 290 | 320 |
| P11 | 170 | 225 | 245 | 270 | 300 | 165 | 215 | 235 | 265 | 290 | 135 | 175 | 190 | 215 | 235 | 190 | 250 | 270 | 300 | 330 |
| P12 | 120 | 155 | 155 | 175 | 190 | 115 | 150 | 150 | 170 | 185 | 90 | 120 | 120 | 135 | 150 | 130 | 170 | 170 | 195 | 210 |
| M1 | — | — | — | — | — | 175 | 230 | 245 | 275 | 305 | 150 | 200 | 215 | 235 | 265 | 205 | 265 | 285 | 315 | 355 |
| M2 | — | — | — | — | — | 145 | 190 | 200 | 225 | 255 | 125 | 160 | 175 | 195 | 220 | 165 | 220 | 235 | 260 | 290 |
| M3 | — | — | — | — | — | 125 | 160 | 165 | 180 | 200 | 105 | 140 | 140 | 155 | 175 | 145 | 185 | 185 | 210 | 235 |
| M4 | — | — | — | — | — | 100 | 130 | 125 | 140 | 155 | 85 | 110 | 110 | 120 | 135 | 115 | 145 | 145 | 160 | 180 |
| M5 | — | — | — | — | — | 85 | 105 | 105 | 115 | 130 | 70 | 90 | 90 | 100 | 110 | 95 | 125 | 120 | 135 | 150 |
| K1 | 175 | 235 | 250 | 275 | 310 | 170 | 225 | 240 | 270 | 300 | — | — | — | — | — | — | — | — | — | — |
| K2 | 155 | 205 | 220 | 245 | 280 | 150 | 200 | 215 | 235 | 270 | — | — | — | — | — | — | — | — | — | — |
| K3 | 130 | 175 | 185 | 210 | 235 | 130 | 170 | 180 | 200 | 225 | — | — | — | — | — | — | — | — | — | — |
| K4 | 125 | 165 | 180 | 200 | 225 | 120 | 160 | 170 | 190 | 215 | — | — | — | — | — | — | — | — | — | — |
| K5 | 80 | 100 | 110 | 120 | 135 | 75 | 100 | 105 | 120 | 130 | — | — | — | — | — | — | — | — | — | — |
| K6 | 110 | 145 | 155 | 175 | 200 | 105 | 140 | 150 | 170 | 190 | — | — | — | — | — | — | — | — | — | — |
| K7 | 100 | 130 | 140 | 155 | 175 | 95 | 125 | 135 | 150 | 170 | — | — | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | 1275 | 1675 | 1775 | 2000 | 2225 | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | 510 | 680 | 720 | 810 | 900 | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | 340 | 450 | 480 | 540 | 600 | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | 390 | 520 | 550 | 620 | 690 | — | — | — | — | — | — | — | — | — | — |
| S1 | 48 | 60 | 60 | 70 | 75 | 46 | 60 | 60 | 65 | 70 | 26 | 34 | 33 | 37 | 41 | 55 | 70 | 70 | 75 | 85 |
| S2 | 39 | 50 | 49 | 55 | 60 | 37 | 48 | 47 | 55 | 60 | 21 | 27 | 27 | 30 | 33 | 43 | 55 | 55 | 60 | 65 |
| S3 | 34 | 44 | 43 | 48 | 55 | 33 | 42 | 41 | 46 | 50 | 19 | 24 | 23 | 26 | 29 | 38 | 49 | 48 | 55 | 60 |
| S11 | 65 | 85 | 85 | 95 | 105 | 65 | 85 | 85 | 90 | 100 | 36 | 47 | 47 | 50 | 55 | 75 | 95 | 95 | 105 | 120 |
| S12 | 45 | 60 | 60 | 65 | 75 | 44 | 60 | 55 | 65 | 70 | 33 | 43 | 43 | 48 | 55 | 50 | 65 | 65 | 75 | 80 |
| S13 | 27 | 35 | 34 | 38 | 42 | 26 | 34 | 33 | 37 | 41 | 20 | 25 | 25 | 28 | 31 | 30 | 39 | 38 | 42 | 47 |
| H5 | 39 | 50 | 50 | 60 | 65 | 38 | 49 | 50 | 55 | 60 | — | — | — | — | — | — | — | — | — | — |
| H8 | 42 | 55 | 55 | 60 | 65 | 41 | 55 | 55 | 60 | 65 | — | — | — | — | — | — | — | — | — | — |
| H11 | 50 | 65 | 65 | 75 | 80 | 48 | 65 | 65 | 70 | 80 | — | — | — | — | — | — | — | — | — | — |
| H12 | 75 | 100 | 100 | 110 | 120 | 75 | 95 | 95 | 105 | 115 | — | — | — | — | — | — | — | — | — | — |
| H21 | 42 | 55 | 55 | 60 | 65 | 41 | 55 | 55 | 60 | 65 | — | — | — | — | — | — | — | — | — | — |

R218.20-200 – Insert selection – Roughing

| SMG | | | f_z | | | |
|-----|--------------------------|------------------------|-------|------|------|------|
| | | | 100% | 30% | 20% | 15% |
| P1 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,20 | 0,22 | 0,26 | 0,28 |
| P2 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,20 | 0,22 | 0,26 | 0,28 |
| P3 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,19 | 0,22 | 0,24 | 0,26 |
| P4 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,19 | 0,20 | 0,24 | 0,26 |
| P5 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,19 | 0,20 | 0,24 | 0,26 |
| P6 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,19 | 0,20 | 0,22 | 0,26 |
| P7 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,19 | 0,20 | 0,22 | 0,26 |
| P8 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,19 | 0,22 | 0,24 | 0,26 |
| P11 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,19 | 0,20 | 0,22 | 0,26 |
| P12 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,13 | 0,14 | 0,16 | 0,17 |
| M1 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,20 | 0,22 | 0,26 | 0,28 |
| M2 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,19 | 0,20 | 0,24 | 0,26 |
| M3 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,15 | 0,17 | 0,18 | 0,20 |
| M4 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,14 | 0,15 | 0,16 | 0,17 |
| M5 | 218.20-200ER-M10 F40M | SCET120612T-M14 T350M | 0,14 | 0,15 | 0,16 | 0,17 |
| N1 | 218.20-200ER-ME10 F40M | SCET120612T-M11 F40M | 0,26 | 0,28 | 0,32 | 0,36 |
| N2 | 218.20-200ER-ME10 F40M | SCET120612T-M11 F40M | 0,26 | 0,28 | 0,32 | 0,36 |
| N3 | 218.20-200ER-ME10 F40M | SCET120612T-M11 F40M | 0,26 | 0,28 | 0,32 | 0,36 |
| N11 | 218.20-200ER-ME10 F40M | SCET120612T-M11 F40M | 0,26 | 0,28 | 0,32 | 0,36 |
| S1 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,14 | 0,15 | 0,16 | 0,17 |
| S2 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,14 | 0,15 | 0,16 | 0,17 |
| S3 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,13 | 0,14 | 0,15 | 0,16 |
| S11 | 218.20-200ER-ME10 MS2050 | SCET120612T-M14 MS2050 | 0,11 | 0,12 | 0,13 | 0,14 |
| S12 | 218.20-200ER-ME10 MS2050 | SCET120612T-M14 MS2050 | 0,11 | 0,12 | 0,13 | 0,14 |
| S13 | 218.20-200ER-ME10 MS2050 | SCET120612T-M14 MS2050 | 0,10 | 0,11 | 0,12 | 0,12 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.20-200 – Insert selection – Semi-finishing

| SMG | | | f _z | | | |
|-----|--------------------------|------------------------|----------------|------|------|------|
| | | | 15% | 12% | 10% | 8% |
| P1 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,28 | 0,30 | 0,34 | 0,36 |
| P2 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,28 | 0,32 | 0,34 | 0,38 |
| P3 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,26 | 0,30 | 0,32 | 0,34 |
| P4 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,26 | 0,28 | 0,32 | 0,34 |
| P5 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,26 | 0,28 | 0,30 | 0,34 |
| P6 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,26 | 0,28 | 0,30 | 0,34 |
| P7 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,26 | 0,28 | 0,30 | 0,34 |
| P8 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,26 | 0,30 | 0,32 | 0,34 |
| P11 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,26 | 0,28 | 0,30 | 0,34 |
| P12 | 218.20-200ER-M10 F40M | SCET120612T-M11 MP2500 | 0,17 | 0,19 | 0,20 | 0,22 |
| M1 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,28 | 0,32 | 0,34 | 0,38 |
| M2 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,26 | 0,28 | 0,30 | 0,34 |
| M3 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,20 | 0,22 | 0,24 | 0,26 |
| M4 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,17 | 0,18 | 0,19 | 0,20 |
| M5 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,17 | 0,18 | 0,19 | 0,20 |
| N1 | 218.20-200ER-ME10 F40M | SCET120612T-M14 F40M | 0,36 | 0,40 | 0,42 | 0,48 |
| N2 | 218.20-200ER-ME10 F40M | SCET120612T-M14 F40M | 0,36 | 0,40 | 0,42 | 0,48 |
| N3 | 218.20-200ER-ME10 F40M | SCET120612T-M14 F40M | 0,36 | 0,40 | 0,42 | 0,48 |
| N11 | 218.20-200ER-ME10 F40M | SCET120612T-M14 F40M | 0,36 | 0,40 | 0,42 | 0,48 |
| S1 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,17 | 0,18 | 0,19 | 0,20 |
| S2 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,17 | 0,18 | 0,19 | 0,20 |
| S3 | 218.20-200ER-ME10 F40M | SCET120612T-M14 T350M | 0,16 | 0,17 | 0,18 | 0,19 |
| S11 | 218.20-200ER-ME10 MS2050 | SCET120612T-M14 MS2050 | 0,14 | 0,15 | 0,16 | 0,17 |
| S12 | 218.20-200ER-ME10 MS2050 | SCET120612T-M14 MS2050 | 0,14 | 0,15 | 0,16 | 0,17 |
| S13 | 218.20-200ER-ME10 MS2050 | SCET120612T-M14 MS2050 | 0,12 | 0,13 | 0,14 | 0,15 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.20-200 – Cutting data v_c = (m/min)

| SMG | F40M | | | | | MM4500 | | | | | MS2050 | | | | |
|-----|------|------|------|------|------|--------|-----|-----|-----|-----|--------|-----|-----|-----|-----|
| | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% |
| P1 | 205 | 270 | 290 | 325 | 365 | 165 | 220 | 235 | 260 | 295 | 245 | 320 | 345 | 390 | 435 |
| P2 | 195 | 260 | 280 | 315 | 350 | 160 | 210 | 225 | 255 | 280 | 240 | 315 | 335 | 375 | 415 |
| P3 | 170 | 225 | 245 | 275 | 305 | 140 | 180 | 200 | 225 | 245 | 210 | 275 | 295 | 330 | 365 |
| P4 | 150 | 205 | 215 | 245 | 270 | 125 | 165 | 175 | 195 | 220 | 185 | 240 | 260 | 290 | 320 |
| P5 | 145 | 195 | 205 | 230 | 260 | 120 | 160 | 165 | 190 | 210 | 175 | 230 | 245 | 275 | 310 |
| P6 | 165 | 220 | 235 | 260 | 290 | 135 | 175 | 190 | 210 | 235 | 195 | 260 | 280 | 315 | 350 |
| P7 | 155 | 205 | 225 | 245 | 275 | 125 | 165 | 180 | 200 | 220 | 185 | 245 | 265 | 300 | 330 |
| P8 | 145 | 190 | 205 | 230 | 255 | 115 | 155 | 165 | 190 | 205 | 175 | 230 | 245 | 275 | 305 |
| P11 | 150 | 200 | 215 | 240 | 265 | 120 | 160 | 175 | 195 | 215 | 180 | 235 | 260 | 290 | 320 |
| P12 | 105 | 140 | 140 | 155 | 170 | 85 | 110 | 110 | 125 | 140 | 125 | 165 | 165 | 185 | 205 |
| M1 | 155 | 210 | 225 | 255 | 280 | 135 | 180 | 195 | 220 | 240 | 190 | 255 | 270 | 300 | 335 |
| M2 | 130 | 175 | 185 | 210 | 235 | 115 | 150 | 160 | 180 | 200 | 160 | 210 | 225 | 250 | 280 |
| M3 | 115 | 150 | 150 | 170 | 190 | 95 | 130 | 130 | 145 | 160 | 135 | 175 | 180 | 200 | 220 |
| M4 | 90 | 120 | 115 | 130 | 145 | 80 | 100 | 100 | 115 | 125 | 110 | 140 | 140 | 155 | 170 |
| M5 | 75 | 100 | 100 | 110 | 120 | 65 | 85 | 85 | 95 | 105 | 90 | 120 | 115 | 130 | 145 |
| N1 | 1150 | 1525 | 1650 | 1825 | 2025 | — | — | — | — | — | — | — | — | — | — |
| N2 | 470 | 620 | 660 | 740 | 820 | — | — | — | — | — | — | — | — | — | — |
| N3 | 310 | 410 | 440 | 490 | 550 | — | — | — | — | — | — | — | — | — | — |
| N11 | 355 | 470 | 500 | 560 | 620 | — | — | — | — | — | — | — | — | — | — |
| S1 | 43 | 55 | 55 | 60 | 70 | 24 | 31 | 31 | 35 | 38 | 50 | 65 | 65 | 70 | 80 |
| S2 | 35 | 44 | 44 | 50 | 55 | 20 | 25 | 25 | 28 | 31 | 41 | 55 | 50 | 60 | 65 |
| S3 | 30 | 40 | 39 | 43 | 48 | 17 | 22 | 22 | 24 | 27 | 36 | 47 | 46 | 50 | 55 |
| S11 | 60 | 75 | 75 | 85 | 95 | 33 | 43 | 43 | 48 | 55 | 70 | 90 | 90 | 100 | 110 |
| S12 | 41 | 55 | 50 | 60 | 65 | 31 | 40 | 40 | 44 | 50 | 48 | 65 | 65 | 70 | 80 |
| S13 | 24 | 31 | 31 | 35 | 38 | 18 | 23 | 23 | 26 | 29 | 29 | 37 | 36 | 41 | 45 |

R218.20-250 – Insert selection – Roughing

| SMG | | | f_z | | | |
|-----|--------------------------|------------------------|-------|------|------|------|
| | | | 100% | 30% | 20% | 15% |
| P1 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,18 | 0,19 | 0,22 | 0,24 |
| P2 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,18 | 0,19 | 0,22 | 0,24 |
| P3 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,17 | 0,18 | 0,20 | 0,22 |
| P4 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,19 | 0,20 | 0,24 | 0,26 |
| P5 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,19 | 0,20 | 0,24 | 0,26 |
| P6 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,19 | 0,20 | 0,22 | 0,26 |
| P7 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,19 | 0,20 | 0,22 | 0,26 |
| P8 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,20 | 0,22 | 0,24 | 0,26 |
| P11 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,19 | 0,20 | 0,22 | 0,26 |
| P12 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,13 | 0,14 | 0,16 | 0,17 |
| M1 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,18 | 0,19 | 0,22 | 0,24 |
| M2 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,16 | 0,17 | 0,20 | 0,22 |
| M3 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,13 | 0,14 | 0,16 | 0,17 |
| M4 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,12 | 0,13 | 0,14 | 0,15 |
| M5 | 218.20-250TR-M14 F40M | SCET120612T-M14 T350M | 0,14 | 0,15 | 0,16 | 0,17 |
| N1 | 218.20-250ER-ME12 F40M | SCET120612T-M11 F40M | 0,22 | 0,24 | 0,28 | 0,30 |
| N2 | 218.20-250ER-ME12 F40M | SCET120612T-M11 F40M | 0,22 | 0,24 | 0,28 | 0,30 |
| N3 | 218.20-250ER-ME12 F40M | SCET120612T-M11 F40M | 0,22 | 0,24 | 0,28 | 0,30 |
| N11 | 218.20-250ER-ME12 F40M | SCET120612T-M11 F40M | 0,22 | 0,24 | 0,28 | 0,30 |
| S1 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,12 | 0,13 | 0,14 | 0,15 |
| S2 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,12 | 0,13 | 0,14 | 0,15 |
| S3 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,12 | 0,12 | 0,13 | 0,14 |
| S11 | 218.20-250ER-ME12 MS2050 | SCET120612T-M14 MS2050 | 0,14 | 0,14 | 0,16 | 0,17 |
| S12 | 218.20-250ER-ME12 MS2050 | SCET120612T-M14 MS2050 | 0,14 | 0,14 | 0,16 | 0,17 |
| S13 | 218.20-250ER-ME12 MS2050 | SCET120612T-M14 MS2050 | 0,12 | 0,13 | 0,14 | 0,15 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.20-250 – Insert selection – Semi-finishing

| SMG | | | f _z | | | |
|-----|--------------------------|------------------------|----------------|------|------|------|
| | | | 15% | 12% | 10% | 8% |
| P1 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,24 | 0,26 | 0,28 | 0,30 |
| P2 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,24 | 0,26 | 0,28 | 0,30 |
| P3 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,22 | 0,24 | 0,26 | 0,30 |
| P4 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,26 | 0,28 | 0,30 | 0,34 |
| P5 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,26 | 0,28 | 0,30 | 0,32 |
| P6 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,26 | 0,28 | 0,30 | 0,32 |
| P7 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,26 | 0,28 | 0,30 | 0,32 |
| P8 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,26 | 0,30 | 0,32 | 0,34 |
| P11 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,26 | 0,28 | 0,30 | 0,32 |
| P12 | 218.20-250TR-M14 F40M | SCET120612T-M11 MP2500 | 0,17 | 0,18 | 0,20 | 0,22 |
| M1 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,24 | 0,26 | 0,28 | 0,30 |
| M2 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,22 | 0,24 | 0,26 | 0,28 |
| M3 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,17 | 0,19 | 0,20 | 0,22 |
| M4 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,15 | 0,16 | 0,16 | 0,17 |
| M5 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,15 | 0,16 | 0,16 | 0,17 |
| N1 | 218.20-250ER-ME12 F40M | SCET120612T-M14 F40M | 0,30 | 0,34 | 0,36 | 0,40 |
| N2 | 218.20-250ER-ME12 F40M | SCET120612T-M14 F40M | 0,30 | 0,34 | 0,36 | 0,40 |
| N3 | 218.20-250ER-ME12 F40M | SCET120612T-M14 F40M | 0,30 | 0,34 | 0,36 | 0,40 |
| N11 | 218.20-250ER-ME12 F40M | SCET120612T-M14 F40M | 0,30 | 0,34 | 0,36 | 0,40 |
| S1 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,15 | 0,16 | 0,16 | 0,17 |
| S2 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,15 | 0,16 | 0,16 | 0,17 |
| S3 | 218.20-250ER-ME12 F40M | SCET120612T-M14 T350M | 0,14 | 0,15 | 0,15 | 0,16 |
| S11 | 218.20-250ER-ME12 MS2050 | SCET120612T-M14 MS2050 | 0,17 | 0,18 | 0,19 | 0,20 |
| S12 | 218.20-250ER-ME12 MS2050 | SCET120612T-M14 MS2050 | 0,17 | 0,18 | 0,19 | 0,20 |
| S13 | 218.20-250ER-ME12 MS2050 | SCET120612T-M14 MS2050 | 0,15 | 0,16 | 0,16 | 0,17 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

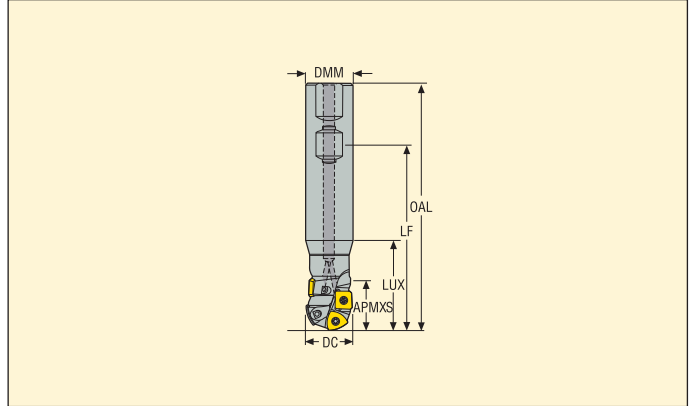
All cutting data are start values

R218.20-250 – Cutting data v_c = (m/min)

| SMG | F40M | | | | | MM4500 | | | | | MS2050 | | | | |
|-----|------|------|------|------|------|--------|-----|-----|-----|-----|--------|-----|-----|-----|-----|
| | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% | 100% | 30% | 20% | 10% | 5% |
| P1 | 200 | 255 | 270 | 305 | 325 | 160 | 210 | 220 | 245 | 265 | 220 | 280 | 295 | 335 | 360 |
| P2 | 195 | 245 | 265 | 295 | 315 | 155 | 200 | 215 | 240 | 255 | 215 | 270 | 290 | 325 | 350 |
| P3 | 170 | 215 | 230 | 255 | 275 | 140 | 175 | 190 | 205 | 225 | 185 | 235 | 255 | 280 | 305 |
| P4 | 150 | 190 | 205 | 230 | 245 | 120 | 155 | 165 | 185 | 195 | 165 | 210 | 225 | 250 | 270 |
| P5 | 145 | 185 | 195 | 215 | 235 | 120 | 150 | 160 | 175 | 190 | 160 | 200 | 215 | 240 | 260 |
| P6 | 165 | 205 | 220 | 245 | 265 | 130 | 165 | 180 | 200 | 215 | 180 | 225 | 245 | 270 | 290 |
| P7 | 155 | 195 | 210 | 230 | 250 | 125 | 160 | 170 | 185 | 200 | 170 | 215 | 230 | 255 | 275 |
| P8 | 145 | 180 | 195 | 215 | 230 | 115 | 145 | 160 | 175 | 190 | 155 | 200 | 215 | 235 | 255 |
| P11 | 150 | 190 | 205 | 225 | 245 | 120 | 155 | 165 | 180 | 195 | 165 | 210 | 225 | 245 | 265 |
| P12 | 105 | 125 | 130 | 145 | 160 | 85 | 100 | 105 | 115 | 130 | 115 | 140 | 145 | 160 | 175 |
| M1 | 155 | 200 | 210 | 235 | 255 | 135 | 170 | 185 | 205 | 220 | 170 | 220 | 235 | 260 | 280 |
| M2 | 130 | 165 | 175 | 195 | 210 | 115 | 140 | 150 | 170 | 185 | 145 | 180 | 195 | 215 | 235 |
| M3 | 110 | 135 | 140 | 155 | 170 | 95 | 115 | 120 | 135 | 145 | 125 | 150 | 155 | 170 | 185 |
| M4 | 90 | 115 | 110 | 125 | 130 | 80 | 100 | 95 | 105 | 115 | 100 | 125 | 120 | 135 | 145 |
| M5 | 75 | 95 | 90 | 100 | 110 | 65 | 80 | 80 | 90 | 95 | 85 | 105 | 100 | 110 | 120 |
| N1 | 1150 | 1450 | 1525 | 1725 | 1875 | — | — | — | — | — | — | — | — | — | — |
| N2 | 465 | 580 | 620 | 690 | 750 | — | — | — | — | — | — | — | — | — | — |
| N3 | 310 | 390 | 415 | 465 | 500 | — | — | — | — | — | — | — | — | — | — |
| N11 | 355 | 445 | 470 | 530 | 570 | — | — | — | — | — | — | — | — | — | — |
| S1 | 43 | 55 | 50 | 55 | 60 | 24 | 30 | 29 | 32 | 35 | 47 | 60 | 55 | 65 | 70 |
| S2 | 35 | 43 | 41 | 46 | 49 | 20 | 24 | 23 | 26 | 28 | 38 | 47 | 45 | 50 | 55 |
| S3 | 30 | 37 | 36 | 40 | 43 | 17 | 21 | 20 | 23 | 25 | 33 | 41 | 40 | 44 | 48 |
| S11 | 60 | 70 | 70 | 80 | 85 | 33 | 40 | 41 | 44 | 48 | 65 | 80 | 80 | 85 | 95 |
| S12 | 40 | 49 | 50 | 55 | 60 | 30 | 37 | 37 | 41 | 45 | 44 | 55 | 55 | 60 | 65 |
| S13 | 24 | 30 | 29 | 32 | 35 | 18 | 23 | 22 | 24 | 26 | 27 | 33 | 32 | 35 | 38 |

R218.19

90° ball nose cutters dia 16-32



- For insert selection and cutting data recommendations, see page(s) 402-419
- For complete insert programme, see page(s) 676-677, 688
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | () = No of inserts | | |
|-------------------------|------------------|------------------|------|------|------|-------|------|--------|-----|-------|---------|--------------------|---------|--|
| | | APMXS | DC | DMM | LF | OAL | LUX | 218.19 | | | | SPMX | SPMT | |
| R218.19-2016.3-17.050A | Cyl.-Weldon | 17,5 | 16,0 | 20,0 | 75,0 | 100,0 | 31,0 | 4 | 0,2 | 41600 | -080(2) | -0602(2) | - | |
| R218.19-2520.3-21.069A | Cyl.-Weldon | 21,6 | 20,0 | 25,0 | 93,0 | 125,0 | 31,0 | 4 | 0,4 | 26200 | -100(2) | -0703(2) | - | |
| R218.19-2525.3-26.074HA | Cyl.-Weldon | 26,6 | 25,0 | 25,0 | 98,0 | 130,0 | 46,0 | 4 | 0,4 | 21700 | -125(2) | -0903(2) | - | |
| R218.19-3232.3-30.070HA | Cyl.-Weldon | 31,2 | 32,0 | 32,0 | 94,0 | 130,0 | 46,0 | 4 | 0,7 | 14800 | -160(2) | - | 1004(2) | |
| | | | | | | | | | | | | | | |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|----------------|----------------|--------------|------------|-------------------|
| | | | | |
| R218.19-.. Ø16 | DOUBLE-T | C02205-T07P | H4B-T07P | 0,9 |
| R218.19-.. Ø20 | DOUBLE-T | C02506-T07P | H4B-T07P | 0,9 |
| R218.19-.. Ø25 | DOUBLE-T | C03006-T09P | H4B-T09P | 2,0 |
| R218.19-.. Ø32 | DOUBLE-T | C03508-T15P | H4B-T15P | 3,5 |
| | | | | |
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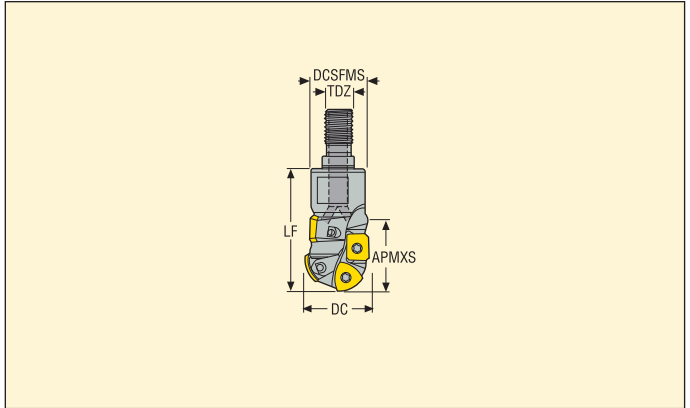
Please check availability in current price and stock-list
Torque keys, see page 732

R218.19

90° ball nose cutters dia 16-32



- For insert selection and cutting data recommendations, see page(s) 402-419
- For complete insert programme, see page(s) 676-677, 688
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | Flutes | Kg | Length | () = No of inserts | | |
|----------------------|------------------|------------------|------|--------|------|-----|--------|-----|--------|--------------------|----------|----------|
| | | APMXS | DC | DCSFMS | LF | TDZ | | | | 218.19 | SPMX | SPMT |
| R218.19-0816.RE-12A | Combimaster | 12,0 | 16,0 | 13,5 | 23,0 | M8 | 3 | 0,1 | 41600 | -080(2) | -0602 | - |
| R218.19-1020.RE-16A | Combimaster | 16,0 | 20,0 | 18,0 | 28,0 | M10 | 3 | 0,1 | 26200 | -100(2) | -0703 | - |
| R218.19-1220.RE-21A | Combimaster | 21,6 | 20,0 | 21,0 | 45,0 | M12 | 4 | 0,1 | 26200 | -100(2) | -0703(2) | - |
| R218.19-1225.RE-26HA | Combimaster | 26,6 | 25,0 | 21,0 | 45,0 | M12 | 4 | 0,1 | 21700 | -125(2) | -0903(2) | - |
| R218.19-1632.RE-36HA | Combimaster | 38,6 | 32,0 | 28,0 | 55,0 | M16 | 5 | 0,2 | 14800 | -160(2) | - | -1004(3) |
| | | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

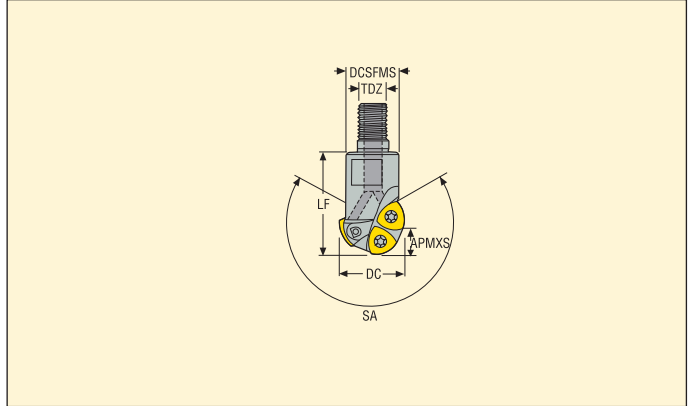
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|----------------|----------------|--------------|------------|-------------------|
| R218.19-.. Ø16 | DOUBLE-T | C02205-T07P | H4B-T07P | 0,9 |
| R218.19-.. Ø20 | DOUBLE-T | C02506-T07P | H4B-T07P | 0,9 |
| R218.19-.. Ø25 | DOUBLE-T | C03006-T09P | H4B-T09P | 2,0 |
| R218.19-.. Ø32 | DOUBLE-T | C03508-T15P | H4B-T15P | 3,5 |

Please check availability in current price and stock-list
Torque keys, see page 732

R218.19

90° ball nose cutters dia 25-40



- For insert selection and cutting data recommendations, see page(s) 402-419
- For complete insert programme, see page(s) 688
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | SA° | | | | () = No of inserts |
|-----------------------|------------------|------------------|------|--------|------|-----|-------|---|-----|-------|--------------------|
| | | APMXS | DC | DCSFMS | LF | TDZ | | | | | |
| R218.19-1225.RE-14HFA | Combimaster | 12,5 | 25,0 | 21,0 | 40,0 | M12 | 245.0 | 3 | 0,1 | 21700 | -125(3) |
| R218.19-1632.RE-18HFA | Combimaster | 16,0 | 32,0 | 28,0 | 40,0 | M16 | 237.0 | 3 | 0,2 | 14800 | -160(3) |
| R218.19-1640.RE-25HFA | Combimaster | 20,0 | 40,0 | 28,0 | 50,0 | M16 | 222.0 | 3 | 0,2 | 10400 | -200(3) |
| | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|----------------|----------------|--------------|------------|-------------------|
| | | | | |
| R218.19-.. Ø25 | DOUBLE-T | C03006-T09P | H4B-T09P | 2,0 |
| R218.19-.. Ø32 | DOUBLE-T | C03508-T15P | H4B-T15P | 3,5 |
| R218.19-.. Ø40 | DOUBLE-T | C45011-T20P | H6B-T20P | 5,0 |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R218.19-080 – Insert selection – Roughing

| SMG | | | a_p | f_z | | |
|-----|-------------------------|--------------------|-------|-------|-------|-------|
| | | | | 100% | 30% | 15% |
| P1 | 218.19-080T-M04 T350M | SPMX060204-75 F40M | 8,0 | 0,16 | 0,17 | 0,20 |
| P2 | 218.19-080T-M04 T350M | SPMX060204-75 F40M | 8,0 | 0,16 | 0,17 | 0,22 |
| P3 | 218.19-080T-M04 T350M | SPMX060204-75 F40M | 8,0 | 0,15 | 0,16 | 0,20 |
| P4 | 218.19-080T-MD04 MP2500 | SPMX060204-75 F40M | 8,0 | 0,15 | 0,16 | 0,19 |
| P5 | 218.19-080T-MD04 MP2500 | SPMX060204-75 F40M | 8,0 | 0,15 | 0,15 | 0,19 |
| P6 | 218.19-080T-MD04 MP2500 | SPMX060204-75 F40M | 8,0 | 0,14 | 0,15 | 0,19 |
| P7 | 218.19-080T-MD04 MP2500 | SPMX060204-75 F40M | 8,0 | 0,14 | 0,15 | 0,19 |
| P8 | 218.19-080T-MD04 MP2500 | SPMX060204-75 F40M | 8,0 | 0,15 | 0,16 | 0,20 |
| P11 | 218.19-080T-MD04 MS2500 | SPMX060204-75 F40M | 8,0 | 0,14 | 0,15 | 0,19 |
| P12 | 218.19-080T-MD04 MS2500 | SPMX060204-75 F40M | 6,0 | 0,10 | 0,11 | 0,13 |
| M1 | 218.19-080T-M04 T350M | SPMX060204-75 F40M | 8,0 | 0,16 | 0,17 | 0,22 |
| M2 | 218.19-080T-M04 T350M | SPMX060204-75 F40M | 8,0 | 0,15 | 0,15 | 0,19 |
| M3 | 218.19-080T-M04 T350M | SPMX060204-75 F40M | 6,0 | 0,12 | 0,13 | 0,15 |
| M4 | 218.19-080T-M04 T350M | SPMX060204-75 F40M | 4,5 | 0,11 | 0,12 | 0,13 |
| M5 | 218.19-080T-M04 T350M | SPMX060204-75 F40M | 4,5 | 0,11 | 0,12 | 0,13 |
| K1 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,16 | 0,17 | 0,22 |
| K2 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,15 | 0,15 | 0,19 |
| K3 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,15 | 0,15 | 0,19 |
| K4 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,15 | 0,15 | 0,19 |
| K5 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,13 | 0,14 | 0,17 |
| K6 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,15 | 0,15 | 0,19 |
| K7 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,13 | 0,14 | 0,17 |
| N1 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 8,0 | 0,20 | 0,22 | 0,26 |
| N2 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 8,0 | 0,20 | 0,22 | 0,26 |
| N3 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 8,0 | 0,20 | 0,22 | 0,26 |
| N11 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 8,0 | 0,20 | 0,22 | 0,26 |
| S1 | 218.19-080T-M04 T350M | SPMX060204-75 F40M | 4,5 | 0,11 | 0,12 | 0,13 |
| S2 | 218.19-080T-M04 T350M | SPMX060204-75 F40M | 4,5 | 0,11 | 0,12 | 0,13 |
| S3 | 218.19-080T-M04 T350M | SPMX060204-75 F40M | 4,5 | 0,11 | 0,11 | 0,12 |
| S11 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 5,0 | 0,13 | 0,13 | 0,15 |
| S12 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 5,0 | 0,13 | 0,13 | 0,15 |
| S13 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 4,5 | 0,11 | 0,12 | 0,13 |
| H5 | 218.19-080T-MD04 F15M | SPMX060204-75 F40M | 4,5 | 0,095 | 0,10 | 0,11 |
| H8 | 218.19-080T-MD04 F15M | SPMX060204-75 F40M | 4,0 | 0,075 | 0,075 | 0,085 |
| H11 | 218.19-080T-MD04 F15M | SPMX060204-75 F40M | 4,5 | 0,095 | 0,10 | 0,11 |
| H12 | 218.19-080T-M04 F30M | SPMX060204-75 F40M | 4,0 | 0,075 | 0,075 | 0,085 |
| H21 | 218.19-080T-MD04 F15M | SPMX060204-75 F40M | 4,0 | 0,075 | 0,075 | 0,085 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

R218.19-080 – Insert selection – Semi-finishing

| SMG | | | a_p | f_z | | | |
|-----|-----------------------|--------------------|-------|-------|-------|-------|-------|
| | | | | 15% | 12% | 10% | 8% |
| P1 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 8,0 | 0,20 | 0,22 | 0,24 | 0,26 |
| P2 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 8,0 | 0,22 | 0,22 | 0,24 | 0,26 |
| P3 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 8,0 | 0,20 | 0,22 | 0,22 | 0,24 |
| P4 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,19 | 0,22 | 0,22 | 0,24 |
| P5 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,19 | 0,20 | 0,22 | 0,24 |
| P6 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,19 | 0,20 | 0,22 | 0,24 |
| P7 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,19 | 0,20 | 0,22 | 0,24 |
| P8 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,20 | 0,22 | 0,22 | 0,24 |
| P11 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,19 | 0,20 | 0,22 | 0,24 |
| P12 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 6,0 | 0,13 | 0,13 | 0,14 | 0,15 |
| M1 | 218.19-080T-M04 F30M | SPMX060204-75 F40M | 8,0 | 0,22 | 0,22 | 0,24 | 0,26 |
| M2 | 218.19-080T-M04 F30M | SPMX060204-75 F40M | 8,0 | 0,19 | 0,20 | 0,22 | 0,24 |
| M3 | 218.19-080T-M04 F30M | SPMX060204-75 F40M | 6,0 | 0,15 | 0,16 | 0,17 | 0,17 |
| M4 | 218.19-080T-M04 F30M | SPMX060204-75 F40M | 4,5 | 0,13 | 0,14 | 0,14 | 0,15 |
| M5 | 218.19-080T-M04 F30M | SPMX060204-75 F40M | 4,5 | 0,13 | 0,14 | 0,14 | 0,15 |
| K1 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,22 | 0,22 | 0,24 | 0,26 |
| K2 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,19 | 0,20 | 0,22 | 0,24 |
| K3 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,19 | 0,20 | 0,22 | 0,24 |
| K4 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,19 | 0,20 | 0,22 | 0,24 |
| K5 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,17 | 0,19 | 0,20 | 0,22 |
| K6 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,19 | 0,20 | 0,22 | 0,24 |
| K7 | 218.19-080T-MD04 F25M | SPMX060204-75 F40M | 8,0 | 0,17 | 0,19 | 0,20 | 0,22 |
| N1 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 8,0 | 0,26 | 0,28 | 0,30 | 0,34 |
| N2 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 8,0 | 0,26 | 0,28 | 0,30 | 0,34 |
| N3 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 8,0 | 0,26 | 0,28 | 0,30 | 0,34 |
| N11 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 8,0 | 0,26 | 0,28 | 0,30 | 0,34 |
| S1 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 4,5 | 0,13 | 0,14 | 0,14 | 0,15 |
| S2 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 4,5 | 0,13 | 0,14 | 0,14 | 0,15 |
| S3 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 4,5 | 0,12 | 0,13 | 0,13 | 0,14 |
| S11 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 5,0 | 0,15 | 0,16 | 0,16 | 0,17 |
| S12 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 5,0 | 0,15 | 0,16 | 0,16 | 0,17 |
| S13 | 218.19-080T-M04 F40M | SPMX060204-75 F40M | 4,5 | 0,13 | 0,14 | 0,14 | 0,15 |
| H5 | 218.19-080T-MD04 F15M | SPMX060204-75 F40M | 4,5 | 0,11 | 0,11 | 0,12 | 0,12 |
| H8 | 218.19-080T-MD04 F15M | SPMX060204-75 F40M | 4,0 | 0,085 | 0,085 | 0,090 | 0,095 |
| H11 | 218.19-080T-MD04 F15M | SPMX060204-75 F40M | 4,5 | 0,11 | 0,11 | 0,12 | 0,12 |
| H12 | 218.19-080T-M04 F30M | SPMX060204-75 F40M | 4,0 | 0,085 | 0,085 | 0,090 | 0,095 |
| H21 | 218.19-080T-MD04 F15M | SPMX060204-75 F40M | 4,0 | 0,085 | 0,085 | 0,090 | 0,095 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.19-080 – Cutting data $v_c =$ (m/min)

| SMG | MP2500 | | | T350M | | | F15M | | | F25M | | | F40M | | | MS2500 | | |
|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|------|-----|-----|------|------|------|--------|-----|-----|
| | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% |
| P1 | 295 | 365 | 400 | 255 | 320 | 350 | — | — | — | 230 | 290 | 315 | 220 | 275 | 305 | 305 | 380 | 415 |
| P2 | 285 | 350 | 390 | 250 | 305 | 340 | — | — | — | 225 | 275 | 310 | 215 | 265 | 295 | 295 | 360 | 405 |
| P3 | 250 | 305 | 345 | 220 | 265 | 300 | — | — | — | 195 | 240 | 270 | 190 | 230 | 260 | 260 | 315 | 355 |
| P4 | 220 | 275 | 305 | 190 | 240 | 265 | — | — | — | 175 | 215 | 240 | 165 | 210 | 230 | 230 | 285 | 315 |
| P5 | 210 | 260 | 290 | 185 | 230 | 250 | — | — | — | 165 | 205 | 230 | 160 | 200 | 220 | 215 | 270 | 300 |
| P6 | 240 | 295 | 330 | 210 | 255 | 285 | — | — | — | 190 | 230 | 260 | 180 | 225 | 250 | 250 | 305 | 340 |
| P7 | 225 | 275 | 310 | 195 | 240 | 270 | — | — | — | 180 | 220 | 245 | 170 | 210 | 235 | 235 | 285 | 320 |
| P8 | 210 | 255 | 290 | 185 | 225 | 250 | — | — | — | 165 | 205 | 230 | 160 | 195 | 220 | 215 | 265 | 300 |
| P11 | 220 | 270 | 300 | 190 | 235 | 265 | — | — | — | 175 | 215 | 240 | 165 | 205 | 230 | 230 | 280 | 315 |
| P12 | 150 | 185 | 210 | 135 | 160 | 180 | — | — | — | 120 | 145 | 165 | 115 | 140 | 155 | 160 | 190 | 215 |
| M1 | 205 | 250 | 280 | 190 | 235 | 260 | — | — | — | — | — | — | 175 | 215 | 240 | 210 | 260 | 290 |
| M2 | 170 | 210 | 235 | 155 | 195 | 215 | — | — | — | — | — | — | 145 | 180 | 195 | 175 | 215 | 240 |
| M3 | 145 | 180 | 205 | 135 | 170 | 190 | — | — | — | — | — | — | 125 | 155 | 170 | 150 | 185 | 210 |
| M4 | 120 | 150 | 165 | 110 | 140 | 155 | — | — | — | — | — | — | 100 | 125 | 140 | 125 | 155 | 170 |
| M5 | 100 | 125 | 140 | 95 | 115 | 130 | — | — | — | — | — | — | 85 | 105 | 115 | 105 | 130 | 145 |
| K1 | 225 | 275 | 310 | 195 | 240 | 270 | 195 | 240 | 265 | 180 | 220 | 245 | 170 | 210 | 235 | — | — | — |
| K2 | 200 | 250 | 275 | 175 | 215 | 240 | 170 | 215 | 235 | 160 | 195 | 215 | 150 | 190 | 210 | — | — | — |
| K3 | 170 | 210 | 235 | 145 | 185 | 205 | 145 | 180 | 200 | 135 | 165 | 185 | 130 | 160 | 175 | — | — | — |
| K4 | 160 | 200 | 220 | 140 | 175 | 195 | 140 | 175 | 190 | 125 | 160 | 175 | 120 | 150 | 170 | — | — | — |
| K5 | 100 | 120 | 135 | 85 | 105 | 120 | 85 | 105 | 115 | 80 | 95 | 105 | 75 | 90 | 105 | — | — | — |
| K6 | 140 | 175 | 195 | 125 | 155 | 170 | 120 | 150 | 170 | 110 | 140 | 155 | 105 | 135 | 150 | — | — | — |
| K7 | 125 | 155 | 175 | 110 | 135 | 150 | 110 | 135 | 150 | 100 | 125 | 135 | 95 | 120 | 130 | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1275 | 1550 | 1725 | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 510 | 620 | 700 | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 345 | 415 | 470 | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 390 | 475 | 530 | — | — | — |
| S1 | — | — | — | 50 | 65 | 70 | — | — | — | — | — | — | 47 | 60 | 65 | 60 | 75 | 85 |
| S2 | — | — | — | 42 | 50 | 60 | — | — | — | — | — | — | 38 | 48 | 55 | 48 | 60 | 65 |
| S3 | — | — | — | 36 | 45 | 50 | — | — | — | — | — | — | 33 | 41 | 46 | 42 | 50 | 60 |
| S11 | — | — | — | 70 | 90 | 100 | — | — | — | — | — | — | 65 | 80 | 90 | 80 | 105 | 115 |
| S12 | — | — | — | 49 | 60 | 70 | — | — | — | — | — | — | 45 | 55 | 60 | 55 | 70 | 80 |
| S13 | — | — | — | 29 | 37 | 41 | — | — | — | — | — | — | 27 | 33 | 37 | 34 | 42 | 47 |
| H5 | 49 | 60 | 65 | 47 | 55 | 65 | 47 | 55 | 65 | — | — | — | 41 | 49 | 55 | — | — | — |
| H8 | 50 | 65 | 70 | 50 | 60 | 70 | 50 | 60 | 70 | — | — | — | 44 | 55 | 60 | — | — | — |
| H11 | 65 | 75 | 85 | 60 | 70 | 80 | 60 | 70 | 80 | — | — | — | 50 | 65 | 70 | — | — | — |
| H12 | 105 | 125 | 140 | 90 | 110 | 125 | 90 | 110 | 120 | — | — | — | 80 | 95 | 105 | — | — | — |
| H21 | 50 | 65 | 70 | 50 | 60 | 70 | 50 | 60 | 70 | — | — | — | 44 | 55 | 60 | — | — | — |

R218.19-100 – Insert selection – Roughing

| SMG | | | a_p | f_z | | |
|-----|-------------------------|--------------------|-------|-------|------|------|
| | | | | 100% | 30% | 15% |
| P1 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 14,0 | 0,22 | 0,24 | 0,30 |
| P2 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 14,0 | 0,22 | 0,24 | 0,30 |
| P3 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 14,0 | 0,20 | 0,22 | 0,28 |
| P4 | 218.19-100T-MD08 MP2500 | SPMX070304-75 F40M | 14,0 | 0,26 | 0,30 | 0,38 |
| P5 | 218.19-100T-MD08 MP2500 | SPMX070304-75 F40M | 14,0 | 0,26 | 0,28 | 0,36 |
| P6 | 218.19-100T-MD08 MP2500 | SPMX070304-75 F40M | 14,0 | 0,26 | 0,28 | 0,36 |
| P7 | 218.19-100T-MD08 MP2500 | SPMX070304-75 F40M | 14,0 | 0,26 | 0,28 | 0,36 |
| P8 | 218.19-100T-MD08 MP2500 | SPMX070304-75 F40M | 14,0 | 0,28 | 0,30 | 0,38 |
| P11 | 218.19-100T-MD08 MS2500 | SPMX070304-75 F40M | 14,0 | 0,26 | 0,28 | 0,36 |
| P12 | 218.19-100T-MD08 MS2500 | SPMX070304-75 F40M | 11,0 | 0,18 | 0,20 | 0,24 |
| M1 | 218.19-100T-M06 T350M | SPMX070304-75 F40M | 14,0 | 0,22 | 0,24 | 0,30 |
| M2 | 218.19-100T-M06 T350M | SPMX070304-75 F40M | 14,0 | 0,20 | 0,22 | 0,28 |
| M3 | 218.19-100T-M06 T350M | SPMX070304-75 F40M | 11,0 | 0,16 | 0,17 | 0,22 |
| M4 | 218.19-100T-M06 T350M | SPMX070304-75 F40M | 8,0 | 0,15 | 0,16 | 0,19 |
| M5 | 218.19-100T-M06 T350M | SPMX070304-75 F40M | 8,0 | 0,15 | 0,16 | 0,19 |
| K1 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 14,0 | 0,28 | 0,32 | 0,40 |
| K2 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 14,0 | 0,26 | 0,28 | 0,36 |
| K3 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 14,0 | 0,26 | 0,28 | 0,36 |
| K4 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 14,0 | 0,26 | 0,28 | 0,36 |
| K5 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 14,0 | 0,24 | 0,26 | 0,34 |
| K6 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 14,0 | 0,26 | 0,28 | 0,36 |
| K7 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 14,0 | 0,24 | 0,26 | 0,34 |
| N1 | 218.19-100-E06 H25 | SPMX070304-75 F40M | 14,0 | 0,28 | 0,30 | 0,38 |
| N2 | 218.19-100-E06 H25 | SPMX070304-75 F40M | 14,0 | 0,28 | 0,30 | 0,38 |
| N3 | 218.19-100-E06 H25 | SPMX070304-75 F40M | 14,0 | 0,28 | 0,30 | 0,38 |
| N11 | 218.19-100-E06 H25 | SPMX070304-75 F40M | 14,0 | 0,28 | 0,30 | 0,38 |
| S1 | 218.19-100T-M06 MS2500 | SPMX070304-75 F40M | 8,0 | 0,15 | 0,16 | 0,19 |
| S2 | 218.19-100T-M06 MS2500 | SPMX070304-75 F40M | 8,0 | 0,15 | 0,16 | 0,19 |
| S3 | 218.19-100T-M06 MS2500 | SPMX070304-75 F40M | 8,0 | 0,14 | 0,15 | 0,17 |
| S11 | 218.19-100T-M06 MS2050 | SPMX070304-75 F40M | 9,0 | 0,17 | 0,18 | 0,22 |
| S12 | 218.19-100T-M06 MS2050 | SPMX070304-75 F40M | 9,0 | 0,17 | 0,18 | 0,22 |
| S13 | 218.19-100T-M06 MS2050 | SPMX070304-75 F40M | 8,0 | 0,15 | 0,16 | 0,19 |
| H5 | 218.19-100T-MD08 F15M | SPMX070304-75 F40M | 8,0 | 0,17 | 0,18 | 0,20 |
| H8 | 218.19-100T-MD08 F15M | SPMX070304-75 F40M | 7,0 | 0,13 | 0,14 | 0,16 |
| H11 | 218.19-100T-MD08 F15M | SPMX070304-75 F40M | 8,0 | 0,17 | 0,18 | 0,20 |
| H12 | 218.19-100T-M06 MP3000 | SPMX070304-75 F40M | 7,0 | 0,10 | 0,10 | 0,12 |
| H21 | 218.19-100T-MD08 F15M | SPMX070304-75 F40M | 7,0 | 0,13 | 0,14 | 0,16 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.19-100 – Insert selection – Semi-finishing

| SMG | | | a_p | f_z | | | |
|-----|-------------------------|--------------------|-------|-------|------|------|------|
| | | | | 15% | 12% | 10% | 8% |
| P1 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 14,0 | 0,30 | 0,34 | 0,36 | 0,40 |
| P2 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 14,0 | 0,30 | 0,34 | 0,36 | 0,40 |
| P3 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 14,0 | 0,28 | 0,32 | 0,34 | 0,38 |
| P4 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 14,0 | 0,38 | 0,42 | 0,46 | 0,50 |
| P5 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 14,0 | 0,36 | 0,40 | 0,44 | 0,50 |
| P6 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 14,0 | 0,36 | 0,40 | 0,44 | 0,50 |
| P7 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 14,0 | 0,36 | 0,40 | 0,44 | 0,50 |
| P8 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 14,0 | 0,38 | 0,42 | 0,46 | 0,50 |
| P11 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 14,0 | 0,36 | 0,40 | 0,44 | 0,50 |
| P12 | 218.19-100T-MD08 MP1500 | SPMX070304-75 F40M | 11,0 | 0,24 | 0,26 | 0,28 | 0,32 |
| M1 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 14,0 | 0,30 | 0,34 | 0,36 | 0,40 |
| M2 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 14,0 | 0,28 | 0,30 | 0,34 | 0,36 |
| M3 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 11,0 | 0,22 | 0,24 | 0,26 | 0,28 |
| M4 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 8,0 | 0,19 | 0,20 | 0,20 | 0,22 |
| M5 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 8,0 | 0,19 | 0,20 | 0,20 | 0,22 |
| K1 | 218.19-100T-MD08 F25M | SPMX070304-75 F40M | 14,0 | 0,40 | 0,46 | 0,50 | 0,55 |
| K2 | 218.19-100T-MD08 F25M | SPMX070304-75 F40M | 14,0 | 0,36 | 0,40 | 0,44 | 0,50 |
| K3 | 218.19-100T-MD08 F25M | SPMX070304-75 F40M | 14,0 | 0,36 | 0,40 | 0,44 | 0,50 |
| K4 | 218.19-100T-MD08 F25M | SPMX070304-75 F40M | 14,0 | 0,36 | 0,40 | 0,44 | 0,50 |
| K5 | 218.19-100T-MD08 F25M | SPMX070304-75 F40M | 14,0 | 0,34 | 0,36 | 0,40 | 0,44 |
| K6 | 218.19-100T-MD08 F25M | SPMX070304-75 F40M | 14,0 | 0,36 | 0,40 | 0,44 | 0,50 |
| K7 | 218.19-100T-MD08 F25M | SPMX070304-75 F40M | 14,0 | 0,34 | 0,36 | 0,40 | 0,44 |
| N1 | 218.19-100-E06 H25 | SPMX070304-75 F40M | 14,0 | 0,38 | 0,44 | 0,46 | 0,50 |
| N2 | 218.19-100-E06 H25 | SPMX070304-75 F40M | 14,0 | 0,38 | 0,44 | 0,46 | 0,50 |
| N3 | 218.19-100-E06 H25 | SPMX070304-75 F40M | 14,0 | 0,38 | 0,44 | 0,46 | 0,50 |
| N11 | 218.19-100-E06 H25 | SPMX070304-75 F40M | 14,0 | 0,38 | 0,44 | 0,46 | 0,50 |
| S1 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 8,0 | 0,19 | 0,20 | 0,20 | 0,22 |
| S2 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 8,0 | 0,19 | 0,20 | 0,20 | 0,22 |
| S3 | 218.19-100T-M06 F40M | SPMX070304-75 F40M | 8,0 | 0,17 | 0,18 | 0,19 | 0,20 |
| S11 | 218.19-100T-M06 MS2050 | SPMX070304-75 F40M | 9,0 | 0,22 | 0,22 | 0,24 | 0,26 |
| S12 | 218.19-100T-M06 MS2050 | SPMX070304-75 F40M | 9,0 | 0,22 | 0,22 | 0,24 | 0,26 |
| S13 | 218.19-100T-M06 MS2050 | SPMX070304-75 F40M | 8,0 | 0,19 | 0,20 | 0,20 | 0,22 |
| H5 | 218.19-100T-MD08 F15M | SPMX070304-75 F40M | 8,0 | 0,20 | 0,22 | 0,24 | 0,24 |
| H8 | 218.19-100T-MD08 F15M | SPMX070304-75 F40M | 7,0 | 0,16 | 0,17 | 0,17 | 0,18 |
| H11 | 218.19-100T-MD08 F15M | SPMX070304-75 F40M | 8,0 | 0,20 | 0,22 | 0,24 | 0,24 |
| H12 | 218.19-100T-M06 MP3000 | SPMX070304-75 F40M | 7,0 | 0,12 | 0,12 | 0,13 | 0,14 |
| H21 | 218.19-100T-MD08 F15M | SPMX070304-75 F40M | 7,0 | 0,16 | 0,17 | 0,17 | 0,18 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.19-100 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | T350M | | | F15M | | | F25M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|------|-----|-----|------|------|------|
| | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% |
| P1 | 260 | 325 | 360 | 230 | 290 | 320 | 235 | 285 | 320 | — | — | — | 225 | 270 | 305 | 205 | 245 | 280 |
| P2 | 255 | 310 | 350 | 225 | 275 | 310 | 225 | 275 | 310 | — | — | — | 215 | 265 | 300 | 195 | 240 | 270 |
| P3 | 225 | 275 | 305 | 200 | 240 | 270 | 195 | 245 | 275 | — | — | — | 185 | 235 | 260 | 170 | 210 | 240 |
| P4 | 195 | 240 | 270 | 175 | 215 | 240 | 175 | 215 | 240 | — | — | — | 170 | 205 | 230 | 155 | 185 | 210 |
| P5 | 185 | 235 | 265 | 165 | 210 | 235 | 170 | 205 | 230 | — | — | — | 160 | 195 | 220 | 145 | 180 | 200 |
| P6 | 210 | 265 | 295 | 185 | 235 | 260 | 190 | 230 | 260 | — | — | — | 180 | 220 | 245 | 165 | 200 | 225 |
| P7 | 200 | 250 | 280 | 175 | 220 | 245 | 180 | 215 | 245 | — | — | — | 170 | 210 | 235 | 155 | 190 | 210 |
| P8 | 185 | 230 | 260 | 165 | 205 | 230 | 165 | 205 | 230 | — | — | — | 155 | 195 | 220 | 145 | 180 | 200 |
| P11 | 195 | 240 | 270 | 170 | 215 | 240 | 175 | 210 | 235 | — | — | — | 165 | 200 | 225 | 150 | 185 | 205 |
| P12 | 135 | 170 | 190 | 120 | 150 | 165 | 120 | 150 | 160 | — | — | — | 115 | 140 | 155 | 105 | 130 | 140 |
| M1 | — | — | — | 160 | 200 | 225 | 175 | 215 | 240 | — | — | — | — | — | — | 160 | 195 | 220 |
| M2 | — | — | — | 135 | 165 | 185 | 145 | 175 | 200 | — | — | — | — | — | — | 130 | 160 | 180 |
| M3 | — | — | — | 115 | 145 | 160 | 125 | 155 | 170 | — | — | — | — | — | — | 115 | 140 | 155 |
| M4 | — | — | — | 95 | 120 | 135 | 100 | 125 | 140 | — | — | — | — | — | — | 90 | 115 | 130 |
| M5 | — | — | — | 80 | 100 | 115 | 85 | 105 | 120 | — | — | — | — | — | — | 75 | 95 | 105 |
| K1 | 200 | 245 | 280 | 180 | 220 | 245 | 180 | 220 | 245 | 160 | 200 | 225 | 170 | 210 | 235 | 155 | 190 | 215 |
| K2 | 180 | 220 | 250 | 160 | 195 | 220 | 160 | 195 | 220 | 145 | 180 | 200 | 155 | 185 | 210 | 140 | 170 | 190 |
| K3 | 150 | 190 | 210 | 135 | 165 | 185 | 135 | 165 | 185 | 120 | 150 | 170 | 130 | 155 | 175 | 120 | 145 | 160 |
| K4 | 145 | 180 | 200 | 125 | 160 | 180 | 130 | 155 | 175 | 115 | 145 | 160 | 125 | 150 | 170 | 115 | 135 | 155 |
| K5 | 90 | 110 | 120 | 80 | 95 | 110 | 80 | 95 | 110 | 70 | 90 | 100 | 75 | 95 | 105 | 70 | 85 | 95 |
| K6 | 125 | 160 | 175 | 110 | 140 | 155 | 115 | 140 | 155 | 100 | 125 | 145 | 110 | 130 | 150 | 100 | 120 | 135 |
| K7 | 115 | 140 | 155 | 100 | 125 | 140 | 100 | 125 | 140 | 95 | 115 | 125 | 95 | 120 | 135 | 85 | 110 | 120 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1150 | 1400 | 1575 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 465 | 570 | 640 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 310 | 380 | 425 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 355 | 430 | 485 |
| S1 | — | — | — | — | — | — | 47 | 60 | 65 | — | — | — | 47 | 60 | 65 | 43 | 55 | 60 |
| S2 | — | — | — | — | — | — | 38 | 48 | 55 | — | — | — | 38 | 48 | 55 | 34 | 43 | 48 |
| S3 | — | — | — | — | — | — | 33 | 42 | 47 | — | — | — | 33 | 42 | 47 | 30 | 38 | 43 |
| S11 | — | — | — | — | — | — | 65 | 80 | 90 | — | — | — | 65 | 80 | 90 | 60 | 75 | 80 |
| S12 | — | — | — | — | — | — | 44 | 55 | 60 | — | — | — | 44 | 55 | 60 | 40 | 50 | 55 |
| S13 | — | — | — | — | — | — | 26 | 33 | 37 | — | — | — | 26 | 33 | 37 | 24 | 30 | 34 |
| H5 | 49 | 60 | 70 | — | — | — | 43 | 50 | 60 | 40 | 48 | 55 | 42 | 50 | 55 | 38 | 45 | 50 |
| H8 | 55 | 65 | 75 | — | — | — | 47 | 60 | 65 | 44 | 55 | 60 | 45 | 55 | 60 | 40 | 50 | 55 |
| H11 | 65 | 75 | 85 | — | — | — | 55 | 65 | 75 | 50 | 60 | 70 | 55 | 65 | 70 | 48 | 60 | 65 |
| H12 | 95 | 120 | 135 | — | — | — | 85 | 105 | 115 | 80 | 95 | 105 | 80 | 100 | 110 | 75 | 90 | 100 |
| H21 | 55 | 65 | 75 | — | — | — | 47 | 60 | 65 | 44 | 55 | 60 | 45 | 55 | 60 | 40 | 50 | 55 |

R218.19-100 – Cutting data $v_c =$ (m/min)

| SMG | MS2050 | | | MS2500 | | | H25 | | |
|-----|--------|-----|-----|--------|-----|-----|------|------|------|
| | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% |
| P1 | — | — | — | 290 | 355 | 400 | — | — | — |
| P2 | — | — | — | 285 | 345 | 390 | — | — | — |
| P3 | — | — | — | 245 | 305 | 340 | — | — | — |
| P4 | — | — | — | 220 | 270 | 300 | — | — | — |
| P5 | — | — | — | 210 | 255 | 290 | — | — | — |
| P6 | — | — | — | 235 | 290 | 325 | — | — | — |
| P7 | 170 | 210 | 235 | 225 | 270 | 305 | — | — | — |
| P8 | 155 | 195 | 220 | 205 | 255 | 290 | — | — | — |
| P11 | 165 | 200 | 225 | 220 | 265 | 295 | — | — | — |
| P12 | 115 | 140 | 155 | 150 | 185 | 205 | — | — | — |
| M1 | 175 | 215 | 240 | 205 | 250 | 280 | — | — | — |
| M2 | 145 | 175 | 200 | 170 | 205 | 230 | — | — | — |
| M3 | 125 | 155 | 170 | 145 | 180 | 195 | — | — | — |
| M4 | 100 | 125 | 140 | 115 | 145 | 165 | — | — | — |
| M5 | 85 | 105 | 120 | 100 | 125 | 135 | — | — | — |
| K1 | — | — | — | — | — | — | — | — | — |
| K2 | — | — | — | — | — | — | — | — | — |
| K3 | — | — | — | — | — | — | — | — | — |
| K4 | — | — | — | — | — | — | — | — | — |
| K5 | — | — | — | — | — | — | — | — | — |
| K6 | — | — | — | — | — | — | — | — | — |
| K7 | — | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | 1200 | 1450 | 1650 |
| N2 | — | — | — | — | — | — | 480 | 590 | 660 |
| N3 | — | — | — | — | — | — | 320 | 395 | 445 |
| N11 | — | — | — | — | — | — | 365 | 450 | 510 |
| S1 | 47 | 60 | 65 | 55 | 70 | 80 | — | — | — |
| S2 | 38 | 48 | 55 | 46 | 60 | 65 | — | — | — |
| S3 | 33 | 42 | 47 | 40 | 50 | 55 | — | — | — |
| S11 | 65 | 80 | 90 | 80 | 100 | 110 | — | — | — |
| S12 | 44 | 55 | 60 | 55 | 70 | 75 | — | — | — |
| S13 | 26 | 33 | 37 | 32 | 40 | 45 | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — |
| H21 | — | — | — | — | — | — | — | — | — |

R218.19-125 – Insert selection Roughing

| SMG | | | a_p | f_z | | |
|-----|----------------------------|--------------------|-------|-------|------|------|
| | | | | 100% | 30% | 15% |
| P1 | 218.19-125T-T3-M07 T350M | SPMX090304-75 F40M | 17,0 | 0,22 | 0,24 | 0,32 |
| P2 | 218.19-125T-T3-M07 T350M | SPMX090304-75 F40M | 17,0 | 0,24 | 0,26 | 0,32 |
| P3 | 218.19-125T-T3-M07 T350M | SPMX090304-75 F40M | 17,0 | 0,22 | 0,24 | 0,30 |
| P4 | 218.19-125T-T3-MD10 MP2500 | SPMX090304-75 F40M | 17,0 | 0,30 | 0,34 | 0,44 |
| P5 | 218.19-125T-T3-MD10 MP2500 | SPMX090304-75 F40M | 17,0 | 0,30 | 0,32 | 0,42 |
| P6 | 218.19-125T-T3-MD10 MP2500 | SPMX090304-75 F40M | 17,0 | 0,30 | 0,32 | 0,42 |
| P7 | 218.19-125T-T3-MD10 MP2500 | SPMX090304-75 F40M | 17,0 | 0,30 | 0,32 | 0,42 |
| P8 | 218.19-125T-T3-MD10 MP2500 | SPMX090304-75 F40M | 17,0 | 0,32 | 0,34 | 0,44 |
| P11 | 218.19-125T-T3-MD10 MS2500 | SPMX090304-75 F40M | 17,0 | 0,30 | 0,32 | 0,42 |
| P12 | 218.19-125T-T3-MD10 MS2500 | SPMX090304-75 F40M | 13,0 | 0,22 | 0,22 | 0,28 |
| M1 | 218.19-125T-T3-M07 T350M | SPMX090304-75 F40M | 17,0 | 0,24 | 0,26 | 0,32 |
| M2 | 218.19-125T-T3-M07 T350M | SPMX090304-75 F40M | 17,0 | 0,22 | 0,24 | 0,30 |
| M3 | 218.19-125T-T3-M07 T350M | SPMX090304-75 F40M | 13,0 | 0,18 | 0,19 | 0,24 |
| M4 | 218.19-125T-T3-M07 T350M | SPMX090304-75 F40M | 10,0 | 0,16 | 0,17 | 0,20 |
| M5 | 218.19-125T-T3-M07 T350M | SPMX090304-75 F40M | 10,0 | 0,16 | 0,17 | 0,20 |
| K1 | 218.19-125T-T3-MD10 MK2050 | SPMX090304-75 F40M | 17,0 | 0,34 | 0,36 | 0,46 |
| K2 | 218.19-125T-T3-MD10 MK2050 | SPMX090304-75 F40M | 17,0 | 0,30 | 0,32 | 0,42 |
| K3 | 218.19-125T-T3-MD10 MK2050 | SPMX090304-75 F40M | 17,0 | 0,30 | 0,32 | 0,42 |
| K4 | 218.19-125T-T3-MD10 MK2050 | SPMX090304-75 F40M | 17,0 | 0,30 | 0,32 | 0,42 |
| K5 | 218.19-125T-T3-MD10 MK2050 | SPMX090304-75 F40M | 17,0 | 0,28 | 0,30 | 0,38 |
| K6 | 218.19-125T-T3-MD10 MK2050 | SPMX090304-75 F40M | 17,0 | 0,30 | 0,32 | 0,42 |
| K7 | 218.19-125T-T3-MD10 MK2050 | SPMX090304-75 F40M | 17,0 | 0,28 | 0,30 | 0,38 |
| N1 | 218.19-125-T3-E06 H25 | SPMX090304-75 F40M | 17,0 | 0,26 | 0,28 | 0,36 |
| N2 | 218.19-125-T3-E06 H25 | SPMX090304-75 F40M | 17,0 | 0,26 | 0,28 | 0,36 |
| N3 | 218.19-125-T3-E06 H25 | SPMX090304-75 F40M | 17,0 | 0,26 | 0,28 | 0,36 |
| N11 | 218.19-125-T3-E06 H25 | SPMX090304-75 F40M | 17,0 | 0,26 | 0,28 | 0,36 |
| S1 | 218.19-125T-T3-M07 MS2500 | SPMX090304-75 F40M | 10,0 | 0,16 | 0,17 | 0,20 |
| S2 | 218.19-125T-T3-M07 MS2500 | SPMX090304-75 F40M | 10,0 | 0,16 | 0,17 | 0,20 |
| S3 | 218.19-125T-T3-M07 MS2500 | SPMX090304-75 F40M | 10,0 | 0,15 | 0,16 | 0,19 |
| S11 | 218.19-125T-T3-M07 MS2050 | SPMX090304-75 F40M | 12,0 | 0,18 | 0,19 | 0,24 |
| S12 | 218.19-125T-T3-M07 MS2050 | SPMX090304-75 F40M | 12,0 | 0,18 | 0,19 | 0,24 |
| S13 | 218.19-125T-T3-M07 MS2050 | SPMX090304-75 F40M | 10,0 | 0,16 | 0,17 | 0,20 |
| H5 | 218.19-125T-T3-MD10 F15M | SPMX090304-75 F40M | 10,0 | 0,19 | 0,20 | 0,24 |
| H8 | 218.19-125T-T3-MD10 F15M | SPMX090304-75 F40M | 9,0 | 0,15 | 0,16 | 0,18 |
| H11 | 218.19-125T-T3-MD10 F15M | SPMX090304-75 F40M | 10,0 | 0,19 | 0,20 | 0,24 |
| H12 | 218.19-125T-T3-MD08 MP3000 | SPMX090304-75 F40M | 9,0 | 0,12 | 0,13 | 0,15 |
| H21 | 218.19-125T-T3-MD10 F15M | SPMX090304-75 F40M | 9,0 | 0,15 | 0,16 | 0,18 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.19-125 – Insert selection – Semi-finishing

| SMG | | | a_p | f_z | | | |
|-----|----------------------------|--------------------|-------|-------|------|------|------|
| | | | | 15% | 12% | 10% | 8% |
| P1 | 218.19-125T-T3-M07 F40M | SPMX090304-75 F40M | 17,0 | 0,32 | 0,36 | 0,38 | 0,42 |
| P2 | 218.19-125T-T3-M07 F40M | SPMX090304-75 F40M | 17,0 | 0,32 | 0,36 | 0,40 | 0,44 |
| P3 | 218.19-125T-T3-M07 F40M | SPMX090304-75 F40M | 17,0 | 0,30 | 0,34 | 0,38 | 0,42 |
| P4 | 218.19-125T-T3-MD10 MP1500 | SPMX090304-75 F40M | 17,0 | 0,44 | 0,48 | 0,50 | 0,60 |
| P5 | 218.19-125T-T3-MD10 MP1500 | SPMX090304-75 F40M | 17,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| P6 | 218.19-125T-T3-MD10 MP1500 | SPMX090304-75 F40M | 17,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| P7 | 218.19-125T-T3-MD10 MP1500 | SPMX090304-75 F40M | 17,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| P8 | 218.19-125T-T3-MD10 MP1500 | SPMX090304-75 F40M | 17,0 | 0,44 | 0,48 | 0,55 | 0,60 |
| P11 | 218.19-125T-T3-MD10 MP1500 | SPMX090304-75 F40M | 17,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| P12 | 218.19-125T-T3-MD10 MP1500 | SPMX090304-75 F40M | 13,0 | 0,28 | 0,30 | 0,32 | 0,36 |
| M1 | 218.19-125T-T3-M07 MP3000 | SPMX090304-75 F40M | 17,0 | 0,32 | 0,36 | 0,40 | 0,44 |
| M2 | 218.19-125T-T3-M07 MP3000 | SPMX090304-75 F40M | 17,0 | 0,30 | 0,32 | 0,36 | 0,40 |
| M3 | 218.19-125T-T3-M07 MP3000 | SPMX090304-75 F40M | 13,0 | 0,24 | 0,26 | 0,26 | 0,30 |
| M4 | 218.19-125T-T3-M07 MP3000 | SPMX090304-75 F40M | 10,0 | 0,20 | 0,22 | 0,22 | 0,24 |
| M5 | 218.19-125T-T3-M07 MP3000 | SPMX090304-75 F40M | 10,0 | 0,20 | 0,22 | 0,22 | 0,24 |
| K1 | 218.19-125T-T3-MD10 F25M | SPMX090304-75 F40M | 17,0 | 0,46 | 0,50 | 0,55 | 0,65 |
| K2 | 218.19-125T-T3-MD10 F25M | SPMX090304-75 F40M | 17,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| K3 | 218.19-125T-T3-MD10 F25M | SPMX090304-75 F40M | 17,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| K4 | 218.19-125T-T3-MD10 F25M | SPMX090304-75 F40M | 17,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| K5 | 218.19-125T-T3-MD10 F25M | SPMX090304-75 F40M | 17,0 | 0,38 | 0,42 | 0,46 | 0,50 |
| K6 | 218.19-125T-T3-MD10 F25M | SPMX090304-75 F40M | 17,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| K7 | 218.19-125T-T3-MD10 F25M | SPMX090304-75 F40M | 17,0 | 0,38 | 0,42 | 0,46 | 0,50 |
| N1 | 218.19-125-T3-E06 H25 | SPMX090304-75 F40M | 17,0 | 0,36 | 0,40 | 0,42 | 0,48 |
| N2 | 218.19-125-T3-E06 H25 | SPMX090304-75 F40M | 17,0 | 0,36 | 0,40 | 0,42 | 0,48 |
| N3 | 218.19-125-T3-E06 H25 | SPMX090304-75 F40M | 17,0 | 0,36 | 0,40 | 0,42 | 0,48 |
| N11 | 218.19-125-T3-E06 H25 | SPMX090304-75 F40M | 17,0 | 0,36 | 0,40 | 0,42 | 0,48 |
| S1 | 218.19-125T-T3-M07 F40M | SPMX090304-75 F40M | 10,0 | 0,20 | 0,22 | 0,22 | 0,24 |
| S2 | 218.19-125T-T3-M07 F40M | SPMX090304-75 F40M | 10,0 | 0,20 | 0,22 | 0,22 | 0,24 |
| S3 | 218.19-125T-T3-M07 F40M | SPMX090304-75 F40M | 10,0 | 0,19 | 0,20 | 0,20 | 0,22 |
| S11 | 218.19-125T-T3-M07 MS2050 | SPMX090304-75 F40M | 12,0 | 0,24 | 0,24 | 0,26 | 0,28 |
| S12 | 218.19-125T-T3-M07 MS2050 | SPMX090304-75 F40M | 12,0 | 0,24 | 0,24 | 0,26 | 0,28 |
| S13 | 218.19-125T-T3-M07 MS2050 | SPMX090304-75 F40M | 10,0 | 0,20 | 0,22 | 0,22 | 0,24 |
| H5 | 218.19-125T-T3-MD10 F15M | SPMX090304-75 F40M | 10,0 | 0,24 | 0,26 | 0,26 | 0,28 |
| H8 | 218.19-125T-T3-MD10 F15M | SPMX090304-75 F40M | 9,0 | 0,18 | 0,19 | 0,20 | 0,22 |
| H11 | 218.19-125T-T3-MD10 F15M | SPMX090304-75 F40M | 10,0 | 0,24 | 0,26 | 0,26 | 0,28 |
| H12 | 218.19-125T-T3-M07 MP3000 | SPMX090304-75 F40M | 9,0 | 0,13 | 0,13 | 0,14 | 0,15 |
| H21 | 218.19-125T-T3-MD10 F15M | SPMX090304-75 F40M | 9,0 | 0,18 | 0,19 | 0,20 | 0,22 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

R218.19-125 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | T350M | | | F15M | | | F25M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|------|-----|-----|------|------|------|
| | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% |
| P1 | 230 | 295 | 330 | 205 | 260 | 295 | 215 | 280 | 310 | — | — | — | 205 | 265 | 295 | 190 | 245 | 270 |
| P2 | 220 | 285 | 325 | 195 | 255 | 285 | 205 | 265 | 300 | — | — | — | 195 | 255 | 290 | 180 | 230 | 260 |
| P3 | 195 | 250 | 280 | 170 | 225 | 250 | 180 | 235 | 265 | — | — | — | 175 | 225 | 255 | 160 | 205 | 230 |
| P4 | 175 | 220 | 250 | 155 | 195 | 225 | 160 | 205 | 235 | — | — | — | 155 | 195 | 225 | 140 | 180 | 200 |
| P5 | 165 | 215 | 240 | 145 | 190 | 215 | 155 | 200 | 220 | — | — | — | 145 | 195 | 215 | 135 | 175 | 195 |
| P6 | 185 | 245 | 270 | 165 | 215 | 240 | 175 | 225 | 250 | — | — | — | 170 | 215 | 240 | 155 | 195 | 215 |
| P7 | 175 | 230 | 255 | 155 | 205 | 225 | 165 | 215 | 235 | — | — | — | 160 | 205 | 225 | 145 | 185 | 205 |
| P8 | 165 | 210 | 235 | 145 | 190 | 210 | 155 | 195 | 220 | — | — | — | 145 | 190 | 215 | 135 | 170 | 195 |
| P11 | 170 | 225 | 250 | 150 | 195 | 220 | 160 | 210 | 230 | — | — | — | 155 | 200 | 220 | 140 | 180 | 200 |
| P12 | 120 | 150 | 170 | 105 | 135 | 150 | 110 | 140 | 155 | — | — | — | 105 | 130 | 145 | 95 | 120 | 135 |
| M1 | — | — | — | 140 | 185 | 205 | 160 | 205 | 230 | — | — | — | — | — | — | 145 | 185 | 210 |
| M2 | — | — | — | 120 | 155 | 170 | 130 | 175 | 190 | — | — | — | — | — | — | 120 | 160 | 175 |
| M3 | — | — | — | 100 | 130 | 145 | 115 | 145 | 160 | — | — | — | — | — | — | 105 | 130 | 145 |
| M4 | — | — | — | 85 | 110 | 120 | 95 | 120 | 135 | — | — | — | — | — | — | 85 | 110 | 120 |
| M5 | — | — | — | 70 | 90 | 100 | 80 | 100 | 110 | — | — | — | — | — | — | 70 | 90 | 100 |
| K1 | 175 | 230 | 255 | 155 | 200 | 225 | 165 | 210 | 240 | 140 | 185 | 205 | 155 | 200 | 230 | 140 | 185 | 210 |
| K2 | 160 | 205 | 230 | 140 | 180 | 205 | 145 | 190 | 210 | 125 | 165 | 185 | 140 | 185 | 200 | 125 | 165 | 185 |
| K3 | 135 | 175 | 195 | 120 | 155 | 170 | 125 | 160 | 180 | 110 | 140 | 155 | 115 | 155 | 170 | 105 | 140 | 155 |
| K4 | 125 | 165 | 185 | 115 | 145 | 165 | 115 | 155 | 170 | 105 | 135 | 150 | 110 | 150 | 165 | 100 | 135 | 150 |
| K5 | 80 | 100 | 115 | 70 | 90 | 100 | 75 | 95 | 105 | 65 | 80 | 90 | 70 | 90 | 100 | 65 | 80 | 90 |
| K6 | 110 | 145 | 165 | 100 | 130 | 145 | 105 | 135 | 150 | 90 | 120 | 130 | 100 | 130 | 145 | 90 | 120 | 130 |
| K7 | 100 | 130 | 145 | 90 | 115 | 130 | 95 | 120 | 135 | 80 | 105 | 115 | 90 | 115 | 130 | 80 | 105 | 120 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1050 | 1350 | 1500 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 420 | 550 | 610 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 280 | 365 | 405 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 320 | 415 | 465 |
| S1 | — | — | — | — | — | — | 45 | 55 | 60 | — | — | — | 45 | 55 | 60 | 41 | 50 | 55 |
| S2 | — | — | — | — | — | — | 36 | 46 | 50 | — | — | — | 36 | 46 | 50 | 33 | 41 | 45 |
| S3 | — | — | — | — | — | — | 31 | 40 | 44 | — | — | — | 31 | 40 | 44 | 29 | 36 | 40 |
| S11 | — | — | — | — | — | — | 60 | 75 | 85 | — | — | — | 60 | 75 | 85 | 55 | 70 | 75 |
| S12 | — | — | — | — | — | — | 41 | 50 | 55 | — | — | — | 41 | 50 | 55 | 37 | 47 | 50 |
| S13 | — | — | — | — | — | — | 25 | 32 | 35 | — | — | — | 25 | 32 | 35 | 23 | 29 | 32 |
| H5 | 45 | 55 | 60 | — | — | — | 41 | 48 | 55 | 36 | 43 | 49 | 39 | 46 | 50 | 35 | 42 | 48 |
| H8 | 49 | 60 | 65 | — | — | — | 44 | 55 | 60 | 40 | 49 | 55 | 42 | 50 | 55 | 38 | 47 | 50 |
| H11 | 55 | 70 | 75 | — | — | — | 50 | 60 | 70 | 46 | 55 | 60 | 49 | 60 | 65 | 45 | 55 | 60 |
| H12 | 90 | 110 | 120 | — | — | — | 80 | 95 | 110 | 70 | 85 | 95 | 75 | 95 | 105 | 70 | 85 | 95 |
| H21 | 49 | 60 | 65 | — | — | — | 44 | 55 | 60 | 40 | 49 | 55 | 42 | 50 | 55 | 38 | 47 | 50 |

R218.19-125 – Cutting data $v_c =$ (m/min)

| SMG | MK2050 | | | MS2050 | | | MS2500 | | | H25 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|------|------|
| | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% |
| P1 | 200 | 255 | 290 | — | — | — | 270 | 350 | 390 | — | — | — |
| P2 | 190 | 250 | 280 | — | — | — | 255 | 330 | 375 | — | — | — |
| P3 | 170 | 220 | 245 | — | — | — | 225 | 295 | 330 | — | — | — |
| P4 | 150 | 195 | 220 | — | — | — | 200 | 260 | 290 | — | — | — |
| P5 | 145 | 190 | 210 | — | — | — | 190 | 255 | 280 | — | — | — |
| P6 | 165 | 210 | 235 | — | — | — | 220 | 285 | 310 | — | — | — |
| P7 | 155 | 200 | 225 | 160 | 205 | 225 | 210 | 270 | 295 | — | — | — |
| P8 | 140 | 185 | 205 | 145 | 190 | 215 | 190 | 245 | 280 | — | — | — |
| P11 | 150 | 195 | 215 | 155 | 200 | 220 | 200 | 260 | 285 | — | — | — |
| P12 | 105 | 135 | 150 | 105 | 130 | 145 | 140 | 175 | 195 | — | — | — |
| M1 | — | — | — | 160 | 205 | 230 | 185 | 240 | 270 | — | — | — |
| M2 | — | — | — | 130 | 175 | 190 | 155 | 200 | 225 | — | — | — |
| M3 | — | — | — | 115 | 145 | 160 | 135 | 170 | 185 | — | — | — |
| M4 | — | — | — | 95 | 120 | 135 | 110 | 140 | 155 | — | — | — |
| M5 | — | — | — | 80 | 100 | 110 | 95 | 120 | 130 | — | — | — |
| K1 | 205 | 270 | 305 | — | — | — | — | — | — | — | — | — |
| K2 | 190 | 245 | 270 | — | — | — | — | — | — | — | — | — |
| K3 | 160 | 205 | 230 | — | — | — | — | — | — | — | — | — |
| K4 | 150 | 195 | 220 | — | — | — | — | — | — | — | — | — |
| K5 | 90 | 120 | 135 | — | — | — | — | — | — | — | — | — |
| K6 | 135 | 175 | 195 | — | — | — | — | — | — | — | — | — |
| K7 | 120 | 155 | 175 | — | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | 1100 | 1450 | 1600 |
| N2 | — | — | — | — | — | — | — | — | — | 450 | 580 | 650 |
| N3 | — | — | — | — | — | — | — | — | — | 300 | 385 | 435 |
| N11 | — | — | — | — | — | — | — | — | — | 340 | 440 | 495 |
| S1 | — | — | — | 45 | 55 | 60 | 55 | 70 | 75 | — | — | — |
| S2 | — | — | — | 36 | 46 | 50 | 44 | 55 | 60 | — | — | — |
| S3 | — | — | — | 31 | 40 | 44 | 38 | 49 | 55 | — | — | — |
| S11 | — | — | — | 60 | 75 | 85 | 70 | 90 | 100 | — | — | — |
| S12 | — | — | — | 41 | 50 | 55 | 50 | 65 | 70 | — | — | — |
| S13 | — | — | — | 25 | 32 | 35 | 31 | 39 | 42 | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | — | — | — | — | — | — | — | — | — | — | — | — |

R218.19-160 – Insert selection – Roughing

| SMG | | | a_p | f_z | | |
|-----|----------------------------|----------------------|-------|-------|------|------|
| | | | | 100% | 30% | 15% |
| P1 | 218.19-160T-04-M08 T350M | SPMT100408T-M08 F40M | 20,0 | 0,24 | 0,26 | 0,32 |
| P2 | 218.19-160T-04-M08 T350M | SPMT100408T-M08 F40M | 20,0 | 0,24 | 0,26 | 0,34 |
| P3 | 218.19-160T-04-M08 T350M | SPMT100408T-M08 F40M | 20,0 | 0,22 | 0,24 | 0,32 |
| P4 | 218.19-160T-04-MD11 MP2500 | SPMT100408T-M08 F40M | 20,0 | 0,30 | 0,34 | 0,42 |
| P5 | 218.19-160T-04-MD11 MP2500 | SPMT100408T-M08 F40M | 20,0 | 0,30 | 0,32 | 0,42 |
| P6 | 218.19-160T-04-MD11 MP2500 | SPMT100408T-M08 F40M | 20,0 | 0,30 | 0,32 | 0,42 |
| P7 | 218.19-160T-04-MD11 MP2500 | SPMT100408T-M08 F40M | 20,0 | 0,30 | 0,32 | 0,42 |
| P8 | 218.19-160T-04-MD11 MP2500 | SPMT100408T-M08 F40M | 20,0 | 0,32 | 0,34 | 0,44 |
| P11 | 218.19-160T-04-MD11 MS2500 | SPMT100408T-M08 F40M | 20,0 | 0,30 | 0,32 | 0,42 |
| P12 | 218.19-160T-04-MD11 MS2500 | SPMT100408T-M08 F40M | 16,0 | 0,22 | 0,22 | 0,28 |
| M1 | 218.19-160T-04-M08 T350M | SPMT100408T-M08 F40M | 20,0 | 0,24 | 0,26 | 0,34 |
| M2 | 218.19-160T-04-M08 T350M | SPMT100408T-M08 F40M | 20,0 | 0,22 | 0,24 | 0,30 |
| M3 | 218.19-160T-04-M08 T350M | SPMT100408T-M08 F40M | 16,0 | 0,18 | 0,19 | 0,24 |
| M4 | 218.19-160T-04-M08 T350M | SPMT100408T-M08 F40M | 12,0 | 0,17 | 0,17 | 0,20 |
| M5 | 218.19-160T-04-M08 T350M | SPMT100408T-M08 F40M | 12,0 | 0,17 | 0,17 | 0,20 |
| K1 | 218.19-160T-04-MD11 MK2050 | SPMT100408T-M08 F40M | 20,0 | 0,32 | 0,36 | 0,46 |
| K2 | 218.19-160T-04-MD11 MK2050 | SPMT100408T-M08 F40M | 20,0 | 0,30 | 0,32 | 0,42 |
| K3 | 218.19-160T-04-MD11 MK2050 | SPMT100408T-M08 F40M | 20,0 | 0,30 | 0,32 | 0,42 |
| K4 | 218.19-160T-04-MD11 MK2050 | SPMT100408T-M08 F40M | 20,0 | 0,30 | 0,32 | 0,42 |
| K5 | 218.19-160T-04-MD11 MK2050 | SPMT100408T-M08 F40M | 20,0 | 0,26 | 0,30 | 0,38 |
| K6 | 218.19-160T-04-MD11 MK2050 | SPMT100408T-M08 F40M | 20,0 | 0,30 | 0,32 | 0,42 |
| K7 | 218.19-160T-04-MD11 MK2050 | SPMT100408T-M08 F40M | 20,0 | 0,26 | 0,30 | 0,38 |
| N1 | 218.19-160-04-E07 H25 | SPMT100408T-M08 F40M | 20,0 | 0,26 | 0,30 | 0,38 |
| N2 | 218.19-160-04-E07 H25 | SPMT100408T-M08 F40M | 20,0 | 0,26 | 0,30 | 0,38 |
| N3 | 218.19-160-04-E07 H25 | SPMT100408T-M08 F40M | 20,0 | 0,26 | 0,30 | 0,38 |
| N11 | 218.19-160-04-E07 H25 | SPMT100408T-M08 F40M | 20,0 | 0,26 | 0,30 | 0,38 |
| S1 | 218.19-160T-04-M08 MS2500 | SPMT100408T-M08 F40M | 12,0 | 0,17 | 0,17 | 0,20 |
| S2 | 218.19-160T-04-M08 MS2500 | SPMT100408T-M08 F40M | 12,0 | 0,17 | 0,17 | 0,20 |
| S3 | 218.19-160T-04-M08 MS2500 | SPMT100408T-M08 F40M | 12,0 | 0,16 | 0,16 | 0,19 |
| S11 | 218.19-160T-04-M08 MS2050 | SPMT100408T-M08 F40M | 14,0 | 0,19 | 0,19 | 0,24 |
| S12 | 218.19-160T-04-M08 MS2050 | SPMT100408T-M08 F40M | 14,0 | 0,19 | 0,19 | 0,24 |
| S13 | 218.19-160T-04-M08 MS2050 | SPMT100408T-M08 F40M | 12,0 | 0,17 | 0,17 | 0,20 |
| H5 | 218.19-160T-04-MD11 F15M | SPMT100408T-M08 F40M | 12,0 | 0,19 | 0,20 | 0,24 |
| H8 | 218.19-160T-04-MD11 F15M | SPMT100408T-M08 F40M | 11,0 | 0,15 | 0,15 | 0,18 |
| H11 | 218.19-160T-04-MD11 F15M | SPMT100408T-M08 F40M | 12,0 | 0,19 | 0,20 | 0,24 |
| H12 | 218.19-160T-04-MD09 MP3000 | SPMT100408T-M08 F40M | 11,0 | 0,12 | 0,13 | 0,15 |
| H21 | 218.19-160T-04-MD11 F15M | SPMT100408T-M08 F40M | 11,0 | 0,15 | 0,15 | 0,18 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.19-160 – Insert selection – Semi-finishing

| SMG | | | a_p | f_z | | | |
|-----|----------------------------|----------------------|-------|-------|------|------|------|
| | | | | 15% | 12% | 10% | 8% |
| P1 | 218.19-160T-04-M08 F40M | SPMT100408T-M08 F40M | 24,0 | 0,32 | 0,36 | 0,40 | 0,44 |
| P2 | 218.19-160T-04-M08 F40M | SPMT100408T-M08 F40M | 24,0 | 0,34 | 0,36 | 0,40 | 0,44 |
| P3 | 218.19-160T-04-M08 F40M | SPMT100408T-M08 F40M | 24,0 | 0,32 | 0,34 | 0,38 | 0,42 |
| P4 | 218.19-160T-04-MD11 MP1500 | SPMT100408T-M08 F40M | 24,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| P5 | 218.19-160T-04-MD11 MP1500 | SPMT100408T-M08 F40M | 24,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| P6 | 218.19-160T-04-MD11 MP1500 | SPMT100408T-M08 F40M | 24,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| P7 | 218.19-160T-04-MD11 MP1500 | SPMT100408T-M08 F40M | 24,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| P8 | 218.19-160T-04-MD11 MP1500 | SPMT100408T-M08 F40M | 24,0 | 0,44 | 0,48 | 0,50 | 0,60 |
| P11 | 218.19-160T-04-MD11 MP1500 | SPMT100408T-M08 F40M | 24,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| P12 | 218.19-160T-04-MD11 MP1500 | SPMT100408T-M08 F40M | 19,0 | 0,28 | 0,30 | 0,34 | 0,36 |
| M1 | 218.19-160T-04-M08 MP3000 | SPMT100408T-M08 F40M | 24,0 | 0,34 | 0,36 | 0,40 | 0,44 |
| M2 | 218.19-160T-04-M08 MP3000 | SPMT100408T-M08 F40M | 24,0 | 0,30 | 0,34 | 0,36 | 0,40 |
| M3 | 218.19-160T-04-M08 MP3000 | SPMT100408T-M08 F40M | 19,0 | 0,24 | 0,26 | 0,28 | 0,30 |
| M4 | 218.19-160T-04-M08 MP3000 | SPMT100408T-M08 F40M | 15,0 | 0,20 | 0,22 | 0,24 | 0,26 |
| M5 | 218.19-160T-04-M08 MP3000 | SPMT100408T-M08 F40M | 15,0 | 0,20 | 0,22 | 0,24 | 0,26 |
| K1 | 218.19-160T-04-MD11 F25M | SPMT100408T-M08 F40M | 24,0 | 0,46 | 0,50 | 0,55 | 0,60 |
| K2 | 218.19-160T-04-MD11 F25M | SPMT100408T-M08 F40M | 24,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| K3 | 218.19-160T-04-MD11 F25M | SPMT100408T-M08 F40M | 24,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| K4 | 218.19-160T-04-MD11 F25M | SPMT100408T-M08 F40M | 24,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| K5 | 218.19-160T-04-MD11 F25M | SPMT100408T-M08 F40M | 24,0 | 0,38 | 0,42 | 0,44 | 0,50 |
| K6 | 218.19-160T-04-MD11 F25M | SPMT100408T-M08 F40M | 24,0 | 0,42 | 0,46 | 0,50 | 0,55 |
| K7 | 218.19-160T-04-MD11 F25M | SPMT100408T-M08 F40M | 24,0 | 0,38 | 0,42 | 0,44 | 0,50 |
| N1 | 218.19-160-04-E07 H25 | SPMT100408T-M08 F40M | 24,0 | 0,38 | 0,40 | 0,44 | 0,50 |
| N2 | 218.19-160-04-E07 H25 | SPMT100408T-M08 F40M | 24,0 | 0,38 | 0,40 | 0,44 | 0,50 |
| N3 | 218.19-160-04-E07 H25 | SPMT100408T-M08 F40M | 24,0 | 0,38 | 0,40 | 0,44 | 0,50 |
| N11 | 218.19-160-04-E07 H25 | SPMT100408T-M08 F40M | 24,0 | 0,38 | 0,40 | 0,44 | 0,50 |
| S1 | 218.19-160T-04-M08 F40M | SPMT100408T-M08 F40M | 15,0 | 0,20 | 0,22 | 0,24 | 0,26 |
| S2 | 218.19-160T-04-M08 F40M | SPMT100408T-M08 F40M | 15,0 | 0,20 | 0,22 | 0,24 | 0,26 |
| S3 | 218.19-160T-04-M08 F40M | SPMT100408T-M08 F40M | 15,0 | 0,19 | 0,20 | 0,22 | 0,24 |
| S11 | 218.19-160T-04-M08 MS2050 | SPMT100408T-M08 F40M | 17,0 | 0,24 | 0,26 | 0,28 | 0,30 |
| S12 | 218.19-160T-04-M08 MS2050 | SPMT100408T-M08 F40M | 17,0 | 0,24 | 0,26 | 0,28 | 0,30 |
| S13 | 218.19-160T-04-M08 MS2050 | SPMT100408T-M08 F40M | 15,0 | 0,20 | 0,22 | 0,24 | 0,26 |
| H5 | 218.19-160T-04-MD11 F15M | SPMT100408T-M08 F40M | 15,0 | 0,24 | 0,26 | 0,28 | 0,30 |
| H8 | 218.19-160T-04-MD11 F15M | SPMT100408T-M08 F40M | 13,0 | 0,18 | 0,19 | 0,20 | 0,22 |
| H11 | 218.19-160T-04-MD11 F15M | SPMT100408T-M08 F40M | 15,0 | 0,24 | 0,26 | 0,28 | 0,30 |
| H12 | 218.19-160T-04-M08 MP3000 | SPMT100408T-M08 F40M | 13,0 | 0,13 | 0,14 | 0,15 | 0,16 |
| H21 | 218.19-160T-04-MD11 F15M | SPMT100408T-M08 F40M | 13,0 | 0,18 | 0,19 | 0,20 | 0,22 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

R218.19-160 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2050 | | | MP2500 | | | MP3000 | | | F15M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|------|------|------|-----|-----|------|------|------|
| | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% |
| P1 | 225 | 295 | 330 | 230 | 300 | 340 | 200 | 260 | 295 | 225 | 290 | 330 | — | — | — | 180 | 235 | 265 |
| P2 | 220 | 280 | 315 | 225 | 295 | 335 | 195 | 250 | 280 | 220 | 285 | 320 | — | — | — | 175 | 225 | 255 |
| P3 | 195 | 245 | 280 | 200 | 260 | 295 | 170 | 220 | 250 | 195 | 250 | 275 | — | — | — | 155 | 200 | 220 |
| P4 | 170 | 220 | 250 | 175 | 230 | 260 | 150 | 195 | 220 | 170 | 220 | 250 | — | — | — | 135 | 175 | 200 |
| P5 | 160 | 210 | 235 | 170 | 220 | 245 | 145 | 190 | 210 | 160 | 210 | 235 | — | — | — | 130 | 170 | 190 |
| P6 | 180 | 240 | 270 | 190 | 250 | 275 | 160 | 210 | 240 | 180 | 240 | 265 | — | — | — | 145 | 195 | 215 |
| P7 | 170 | 225 | 255 | 180 | 235 | 260 | 150 | 200 | 225 | 170 | 230 | 250 | — | — | — | 135 | 185 | 200 |
| P8 | 160 | 210 | 235 | 170 | 220 | 240 | 145 | 185 | 210 | 160 | 210 | 235 | — | — | — | 130 | 170 | 185 |
| P11 | 165 | 220 | 245 | 175 | 230 | 255 | 150 | 195 | 220 | 165 | 220 | 245 | — | — | — | 135 | 175 | 195 |
| P12 | 115 | 150 | 165 | 120 | 150 | 170 | 105 | 130 | 145 | 115 | 145 | 165 | — | — | — | 90 | 115 | 130 |
| M1 | — | — | — | 160 | 210 | 240 | 140 | 180 | 200 | 165 | 210 | 240 | — | — | — | 140 | 180 | 205 |
| M2 | — | — | — | 135 | 175 | 195 | 115 | 150 | 170 | 135 | 175 | 200 | — | — | — | 115 | 150 | 170 |
| M3 | — | — | — | 115 | 145 | 165 | 100 | 125 | 140 | 115 | 145 | 165 | — | — | — | 100 | 125 | 140 |
| M4 | — | — | — | 95 | 120 | 135 | 80 | 105 | 120 | 95 | 120 | 135 | — | — | — | 80 | 105 | 115 |
| M5 | — | — | — | 80 | 100 | 115 | 70 | 85 | 100 | 80 | 100 | 115 | — | — | — | 70 | 85 | 100 |
| K1 | 175 | 225 | 250 | 180 | 230 | 265 | 155 | 200 | 220 | 175 | 225 | 255 | 140 | 180 | 200 | 140 | 180 | 205 |
| K2 | 155 | 200 | 225 | 160 | 205 | 235 | 135 | 180 | 200 | 155 | 200 | 225 | 125 | 160 | 180 | 125 | 160 | 180 |
| K3 | 130 | 170 | 190 | 135 | 175 | 195 | 115 | 150 | 170 | 130 | 170 | 190 | 105 | 135 | 155 | 105 | 135 | 150 |
| K4 | 125 | 165 | 180 | 130 | 165 | 190 | 110 | 145 | 160 | 125 | 160 | 180 | 100 | 130 | 145 | 100 | 130 | 145 |
| K5 | 80 | 100 | 110 | 80 | 105 | 115 | 70 | 90 | 100 | 75 | 100 | 115 | 65 | 80 | 90 | 60 | 80 | 90 |
| K6 | 110 | 145 | 160 | 115 | 145 | 165 | 95 | 125 | 140 | 110 | 140 | 160 | 90 | 115 | 130 | 90 | 115 | 130 |
| K7 | 100 | 130 | 145 | 105 | 135 | 150 | 90 | 115 | 125 | 100 | 130 | 145 | 80 | 105 | 115 | 80 | 105 | 115 |
| N1 | — | — | — | — | — | — | — | — | — | 1275 | 1650 | 1850 | — | — | — | 1025 | 1325 | 1475 |
| N2 | — | — | — | — | — | — | — | — | — | 510 | 670 | 750 | — | — | — | 410 | 540 | 600 |
| N3 | — | — | — | — | — | — | — | — | — | 340 | 445 | 500 | — | — | — | 275 | 355 | 400 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 315 | 410 | 455 |
| S1 | — | — | — | 46 | 60 | 65 | — | — | — | 44 | 55 | 65 | — | — | — | 38 | 49 | 55 |
| S2 | — | — | — | 37 | 47 | 55 | — | — | — | 36 | 45 | 50 | — | — | — | 31 | 39 | 44 |
| S3 | — | — | — | 33 | 41 | 46 | — | — | — | 31 | 40 | 45 | — | — | — | 27 | 34 | 38 |
| S11 | — | — | — | 60 | 80 | 90 | — | — | — | 60 | 75 | 85 | — | — | — | 50 | 65 | 75 |
| S12 | — | — | — | 43 | 55 | 60 | — | — | — | 41 | 50 | 60 | — | — | — | 36 | 45 | 50 |
| S13 | — | — | — | 26 | 33 | 37 | — | — | — | 25 | 32 | 36 | — | — | — | 22 | 27 | 31 |
| H5 | 43 | 50 | 60 | 40 | 48 | 55 | — | — | — | 40 | 48 | 55 | 35 | 42 | 47 | 34 | 41 | 45 |
| H8 | 47 | 55 | 65 | 43 | 50 | 60 | — | — | — | 43 | 50 | 60 | 38 | 46 | 55 | 37 | 45 | 50 |
| H11 | 55 | 65 | 75 | 50 | 60 | 70 | — | — | — | 50 | 60 | 70 | 44 | 55 | 60 | 43 | 50 | 60 |
| H12 | 85 | 105 | 115 | 85 | 105 | 120 | — | — | — | 85 | 100 | 115 | 70 | 85 | 95 | 65 | 80 | 90 |
| H21 | 47 | 55 | 65 | 43 | 50 | 60 | — | — | — | 43 | 50 | 60 | 38 | 46 | 55 | 37 | 45 | 50 |

R218.19-160 – Cutting data $v_c =$ (m/min)

| SMG | MK2050 | | | MS2050 | | | MS2500 | | | MH1000 | | | H25 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|------|------|
| | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% | 100% | 30% | 15% |
| P1 | 195 | 255 | 290 | — | — | — | 260 | 335 | 380 | — | — | — | — | — | — |
| P2 | 190 | 245 | 275 | — | — | — | 250 | 325 | 370 | — | — | — | — | — | — |
| P3 | 170 | 215 | 245 | — | — | — | 220 | 290 | 320 | — | — | — | — | — | — |
| P4 | 150 | 195 | 215 | — | — | — | 195 | 255 | 285 | — | — | — | — | — | — |
| P5 | 140 | 185 | 205 | — | — | — | 185 | 240 | 275 | — | — | — | — | — | — |
| P6 | 160 | 210 | 235 | — | — | — | 210 | 280 | 305 | — | — | — | — | — | — |
| P7 | 150 | 195 | 220 | 150 | 200 | 220 | 200 | 265 | 290 | — | — | — | — | — | — |
| P8 | 140 | 180 | 205 | 145 | 185 | 205 | 185 | 240 | 270 | — | — | — | — | — | — |
| P11 | 145 | 190 | 215 | 145 | 195 | 215 | 190 | 255 | 280 | — | — | — | — | — | — |
| P12 | 100 | 130 | 145 | 100 | 130 | 145 | 130 | 170 | 190 | — | — | — | — | — | — |
| M1 | — | — | — | 155 | 200 | 230 | 180 | 235 | 265 | — | — | — | — | — | — |
| M2 | — | — | — | 130 | 165 | 190 | 150 | 195 | 220 | — | — | — | — | — | — |
| M3 | — | — | — | 110 | 140 | 155 | 125 | 160 | 180 | — | — | — | — | — | — |
| M4 | — | — | — | 90 | 115 | 130 | 105 | 135 | 150 | — | — | — | — | — | — |
| M5 | — | — | — | 75 | 95 | 105 | 90 | 110 | 125 | — | — | — | — | — | — |
| K1 | 205 | 265 | 300 | — | — | — | — | — | — | 170 | 215 | 245 | — | — | — |
| K2 | 185 | 240 | 265 | — | — | — | — | — | — | 150 | 195 | 220 | — | — | — |
| K3 | 155 | 200 | 225 | — | — | — | — | — | — | 125 | 165 | 185 | — | — | — |
| K4 | 150 | 195 | 215 | — | — | — | — | — | — | 120 | 160 | 175 | — | — | — |
| K5 | 90 | 120 | 130 | — | — | — | — | — | — | 75 | 100 | 110 | — | — | — |
| K6 | 130 | 170 | 190 | — | — | — | — | — | — | 105 | 140 | 155 | — | — | — |
| K7 | 120 | 155 | 170 | — | — | — | — | — | — | 95 | 125 | 140 | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1075 | 1400 | 1575 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 440 | 570 | 640 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 290 | 380 | 425 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 335 | 435 | 485 |
| S1 | — | — | — | 42 | 55 | 60 | 50 | 65 | 75 | — | — | — | — | — | — |
| S2 | — | — | — | 34 | 43 | 48 | 41 | 50 | 60 | — | — | — | — | — | — |
| S3 | — | — | — | 30 | 38 | 42 | 36 | 46 | 50 | — | — | — | — | — | — |
| S11 | — | — | — | 55 | 70 | 80 | 70 | 85 | 95 | — | — | — | — | — | — |
| S12 | — | — | — | 39 | 50 | 55 | 48 | 60 | 65 | — | — | — | — | — | — |
| S13 | — | — | — | 24 | 30 | 34 | 29 | 37 | 41 | — | — | — | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — | 42 | 50 | 55 | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | 46 | 55 | 65 | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | 55 | 65 | 70 | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | 85 | 100 | 115 | — | — | — |
| H21 | — | — | — | — | — | — | — | — | — | 46 | 55 | 65 | — | — | — |

R218.19-200 – Insert selection – Roughing

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|------|------|
| | | | 100% | 30% | 15% |
| P1 | 218.19-200T-05-M10 F40M | 13,0 | 0,30 | 0,30 | 0,34 |
| P2 | 218.19-200T-05-M10 F40M | 13,0 | 0,30 | 0,30 | 0,34 |
| P3 | 218.19-200T-05-M10 F40M | 13,0 | 0,28 | 0,28 | 0,34 |
| P4 | 218.19-200T-05-M10 F25M | 13,0 | 0,28 | 0,28 | 0,32 |
| P5 | 218.19-200T-05-M10 F25M | 13,0 | 0,26 | 0,28 | 0,32 |
| P6 | 218.19-200T-05-M10 F25M | 13,0 | 0,26 | 0,28 | 0,32 |
| P7 | 218.19-200T-05-M10 F25M | 13,0 | 0,26 | 0,28 | 0,32 |
| P8 | 218.19-200T-05-M10 F25M | 13,0 | 0,28 | 0,28 | 0,34 |
| P11 | 218.19-200T-05-M10 F25M | 13,0 | 0,26 | 0,28 | 0,32 |
| P12 | 218.19-200T-05-M10 F25M | 10,0 | 0,19 | 0,20 | 0,22 |
| M1 | 218.19-200T-05-M10 F40M | 13,0 | 0,30 | 0,30 | 0,34 |
| M2 | 218.19-200T-05-M10 F40M | 13,0 | 0,26 | 0,28 | 0,32 |
| M3 | 218.19-200T-05-M10 F40M | 10,0 | 0,22 | 0,24 | 0,26 |
| M4 | 218.19-200T-05-M10 F40M | 8,0 | 0,20 | 0,20 | 0,22 |
| M5 | 218.19-200T-05-M10 F40M | 8,0 | 0,20 | 0,20 | 0,22 |
| K1 | 218.19-200T-05-M10 F25M | 13,0 | 0,30 | 0,30 | 0,34 |
| K2 | 218.19-200T-05-M10 F25M | 13,0 | 0,26 | 0,28 | 0,32 |
| K3 | 218.19-200T-05-M10 F25M | 13,0 | 0,26 | 0,28 | 0,32 |
| K4 | 218.19-200T-05-M10 F25M | 13,0 | 0,26 | 0,28 | 0,32 |
| K5 | 218.19-200T-05-M10 F25M | 13,0 | 0,24 | 0,24 | 0,28 |
| K6 | 218.19-200T-05-M10 F25M | 13,0 | 0,26 | 0,28 | 0,32 |
| K7 | 218.19-200T-05-M10 F25M | 13,0 | 0,24 | 0,24 | 0,28 |
| N1 | 218.19-200T-05-ME10 F40M | 13,0 | 0,38 | 0,38 | 0,44 |
| N2 | 218.19-200T-05-ME10 F40M | 13,0 | 0,38 | 0,38 | 0,44 |
| N3 | 218.19-200T-05-ME10 F40M | 13,0 | 0,38 | 0,38 | 0,44 |
| N11 | 218.19-200T-05-ME10 F40M | 13,0 | 0,38 | 0,38 | 0,44 |
| S1 | 218.19-200T-05-M10 F40M | 8,0 | 0,20 | 0,20 | 0,22 |
| S2 | 218.19-200T-05-M10 F40M | 8,0 | 0,20 | 0,20 | 0,22 |
| S3 | 218.19-200T-05-M10 F40M | 8,0 | 0,19 | 0,19 | 0,20 |
| S11 | 218.19-200T-05-M10 F40M | 9,0 | 0,24 | 0,24 | 0,26 |
| S12 | 218.19-200T-05-M10 F40M | 9,0 | 0,24 | 0,24 | 0,26 |
| S13 | 218.19-200T-05-M10 F40M | 8,0 | 0,20 | 0,20 | 0,22 |
| H5 | 218.19-200T-05-M10 F25M | 8,0 | 0,18 | 0,18 | 0,19 |
| H8 | 218.19-200T-05-M10 F25M | 7,0 | 0,14 | 0,14 | 0,15 |
| H11 | 218.19-200T-05-M10 F25M | 8,0 | 0,18 | 0,18 | 0,19 |
| H12 | 218.19-200T-05-M10 F25M | 7,0 | 0,14 | 0,14 | 0,15 |
| H21 | 218.19-200T-05-M10 F25M | 7,0 | 0,14 | 0,14 | 0,15 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R218.19-200 – Insert selection – Semi-finishing

| SMG | | a_p | f_z | | | |
|-----|--------------------------|-------|-------|------|------|------|
| | | | 15% | 12% | 10% | 8% |
| P1 | 218.19-200T-05-M10 F40M | 13,0 | 0,34 | 0,36 | 0,38 | 0,40 |
| P2 | 218.19-200T-05-M10 F40M | 13,0 | 0,34 | 0,36 | 0,38 | 0,40 |
| P3 | 218.19-200T-05-M10 F40M | 13,0 | 0,34 | 0,34 | 0,36 | 0,38 |
| P4 | 218.19-200T-05-M10 F25M | 13,0 | 0,32 | 0,34 | 0,36 | 0,38 |
| P5 | 218.19-200T-05-M10 F25M | 13,0 | 0,32 | 0,34 | 0,34 | 0,36 |
| P6 | 218.19-200T-05-M10 F25M | 13,0 | 0,32 | 0,34 | 0,34 | 0,36 |
| P7 | 218.19-200T-05-M10 F25M | 13,0 | 0,32 | 0,34 | 0,34 | 0,36 |
| P8 | 218.19-200T-05-M10 F25M | 13,0 | 0,34 | 0,34 | 0,36 | 0,38 |
| P11 | 218.19-200T-05-M10 F25M | 13,0 | 0,32 | 0,34 | 0,34 | 0,36 |
| P12 | 218.19-200T-05-M10 F25M | 10,0 | 0,22 | 0,22 | 0,24 | 0,24 |
| M1 | 218.19-200T-05-M10 F40M | 13,0 | 0,34 | 0,36 | 0,38 | 0,40 |
| M2 | 218.19-200T-05-M10 F40M | 13,0 | 0,32 | 0,34 | 0,34 | 0,36 |
| M3 | 218.19-200T-05-M10 F40M | 10,0 | 0,26 | 0,26 | 0,28 | 0,28 |
| M4 | 218.19-200T-05-M10 F40M | 8,0 | 0,22 | 0,24 | 0,24 | 0,24 |
| M5 | 218.19-200T-05-M10 F40M | 8,0 | 0,22 | 0,24 | 0,24 | 0,24 |
| K1 | 218.19-200T-05-M10 F25M | 13,0 | 0,34 | 0,36 | 0,38 | 0,40 |
| K2 | 218.19-200T-05-M10 F25M | 13,0 | 0,32 | 0,34 | 0,34 | 0,36 |
| K3 | 218.19-200T-05-M10 F25M | 13,0 | 0,32 | 0,34 | 0,34 | 0,36 |
| K4 | 218.19-200T-05-M10 F25M | 13,0 | 0,32 | 0,34 | 0,34 | 0,36 |
| K5 | 218.19-200T-05-M10 F25M | 13,0 | 0,28 | 0,30 | 0,32 | 0,32 |
| K6 | 218.19-200T-05-M10 F25M | 13,0 | 0,32 | 0,34 | 0,34 | 0,36 |
| K7 | 218.19-200T-05-M10 F25M | 13,0 | 0,28 | 0,30 | 0,32 | 0,32 |
| N1 | 218.19-200T-05-ME10 F40M | 13,0 | 0,44 | 0,46 | 0,48 | 0,50 |
| N2 | 218.19-200T-05-ME10 F40M | 13,0 | 0,44 | 0,46 | 0,48 | 0,50 |
| N3 | 218.19-200T-05-ME10 F40M | 13,0 | 0,44 | 0,46 | 0,48 | 0,50 |
| N11 | 218.19-200T-05-ME10 F40M | 13,0 | 0,44 | 0,46 | 0,48 | 0,50 |
| S1 | 218.19-200T-05-M10 F40M | 8,0 | 0,22 | 0,24 | 0,24 | 0,24 |
| S2 | 218.19-200T-05-M10 F40M | 8,0 | 0,22 | 0,24 | 0,24 | 0,24 |
| S3 | 218.19-200T-05-M10 F40M | 8,0 | 0,20 | 0,22 | 0,22 | 0,22 |
| S11 | 218.19-200T-05-M10 F40M | 9,0 | 0,26 | 0,26 | 0,28 | 0,28 |
| S12 | 218.19-200T-05-M10 F40M | 9,0 | 0,26 | 0,26 | 0,28 | 0,28 |
| S13 | 218.19-200T-05-M10 F40M | 8,0 | 0,22 | 0,24 | 0,24 | 0,24 |
| H5 | 218.19-200T-05-M10 F25M | 8,0 | 0,19 | 0,20 | 0,20 | 0,20 |
| H8 | 218.19-200T-05-M10 F25M | 7,0 | 0,15 | 0,15 | 0,15 | 0,16 |
| H11 | 218.19-200T-05-M10 F25M | 8,0 | 0,19 | 0,20 | 0,20 | 0,20 |
| H12 | 218.19-200T-05-M10 F25M | 7,0 | 0,15 | 0,15 | 0,15 | 0,16 |
| H21 | 218.19-200T-05-M10 F25M | 7,0 | 0,15 | 0,15 | 0,15 | 0,16 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

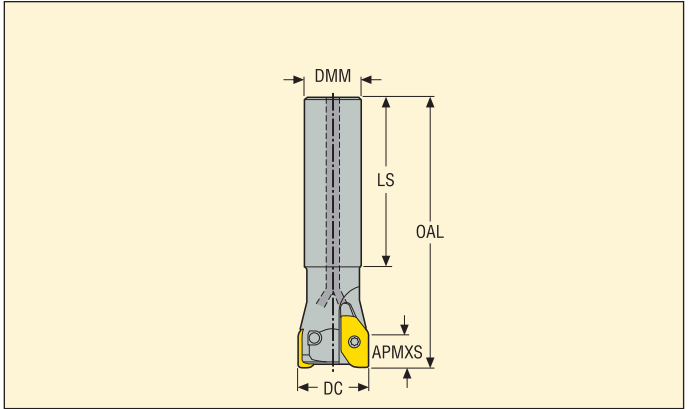
All cutting data are start values

R218.19-200 – Cutting data $v_c =$ (m/min)

| SMG | F25M | | | F40M | | |
|-----|------|-----|-----|------|------|------|
| | 100% | 30% | 15% | 100% | 30% | 15% |
| P1 | 235 | 295 | 335 | 215 | 265 | 305 |
| P2 | 230 | 280 | 320 | 205 | 255 | 290 |
| P3 | 200 | 245 | 280 | 180 | 225 | 255 |
| P4 | 175 | 215 | 250 | 160 | 195 | 225 |
| P5 | 170 | 210 | 240 | 155 | 190 | 215 |
| P6 | 195 | 235 | 270 | 175 | 215 | 245 |
| P7 | 180 | 225 | 255 | 165 | 205 | 230 |
| P8 | 170 | 205 | 235 | 155 | 185 | 215 |
| P11 | 175 | 215 | 245 | 160 | 195 | 225 |
| P12 | 120 | 145 | 170 | 110 | 135 | 150 |
| M1 | — | — | — | 165 | 205 | 235 |
| M2 | — | — | — | 140 | 170 | 195 |
| M3 | — | — | — | 120 | 145 | 165 |
| M4 | — | — | — | 95 | 115 | 135 |
| M5 | — | — | — | 80 | 95 | 110 |
| K1 | 180 | 220 | 255 | 165 | 200 | 230 |
| K2 | 165 | 200 | 225 | 150 | 180 | 205 |
| K3 | 140 | 170 | 190 | 125 | 155 | 175 |
| K4 | 130 | 160 | 185 | 120 | 145 | 165 |
| K5 | 80 | 100 | 110 | 75 | 90 | 100 |
| K6 | 115 | 140 | 160 | 105 | 130 | 145 |
| K7 | 105 | 125 | 140 | 95 | 115 | 130 |
| N1 | — | — | — | 1200 | 1475 | 1675 |
| N2 | — | — | — | 485 | 600 | 680 |
| N3 | — | — | — | 325 | 395 | 455 |
| N11 | — | — | — | 370 | 455 | 520 |
| S1 | 49 | 60 | 70 | 44 | 55 | 60 |
| S2 | 39 | 48 | 55 | 36 | 44 | 50 |
| S3 | 34 | 42 | 49 | 31 | 38 | 44 |
| S11 | 65 | 80 | 95 | 60 | 75 | 85 |
| S12 | 46 | 55 | 65 | 41 | 50 | 60 |
| S13 | 27 | 33 | 39 | 25 | 30 | 35 |
| H5 | 42 | 50 | 60 | 38 | 47 | 55 |
| H8 | 46 | 55 | 65 | 41 | 50 | 60 |
| H11 | 55 | 65 | 75 | 49 | 60 | 70 |
| H12 | 80 | 100 | 115 | 75 | 90 | 105 |
| H21 | 46 | 55 | 65 | 41 | 50 | 60 |

R217.97

Cavity milling in aluminium



- For insert selection and cutting data recommendations, see page(s) 424
- For complete insert programme, see page(s) 686
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | RMPX° | C min | C max | | | | Insert |
|-----------------------|------------------|------------------|------|------|-------|------|-------|-------|-------|---|-----|-------|--------|
| | | APMXS | DC | DMM | OAL | LS | | | | | | | |
| R217.97-2525.0-X12.2A | Cylindrical | 7,5 | 25,0 | 25,0 | 150,0 | 95,0 | 10,0 | 40,0 | 49,0 | 2 | 0,5 | 40000 | XP..12 |
| R217.97-3232.0-X12.2A | Cylindrical | 7,5 | 32,0 | 32,0 | 150,0 | 85,0 | 8,0 | 54,0 | 63,0 | 2 | 0,8 | 40000 | XP..12 |
| R217.97-3232.0-X12.3A | Cylindrical | 7,5 | 32,0 | 32,0 | 150,0 | 85,0 | 8,0 | 54,0 | 63,0 | 3 | 0,8 | 40000 | XP..12 |
| | | | | | | | | | | | | | |
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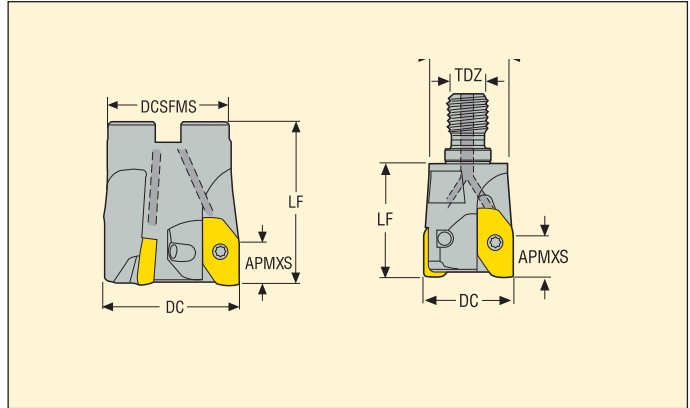
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|---------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.97-..Ø25 | DOUBLE-T | C03508-T10P | H4B-T10P | 3,0 |
| R217.97-..Ø32 | DOUBLE-T | C03509-T10P | H4B-T10P | 3,0 |
| | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.97-X12

Cavity milling in aluminium



- For insert selection and cutting data recommendations, see page(s) 424
- For complete insert programme, see page(s) 686
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|------------------------|------------------|------------------|------|--------|------|-----|------|-------|-------|-------|---|-----|-------|--------|
| | | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.97-1225.RE-X12.2A | Combimaster | 7,5 | 25,0 | 23,0 | – | M12 | 30,0 | 10,0 | 40,0 | 49,0 | 2 | 0,1 | 40000 | XP..12 |
| R217.97-1632.RE-X12.2A | Combimaster | 7,5 | 32,0 | 30,0 | – | M16 | 40,0 | 8,0 | 54,0 | 63,0 | 2 | 0,2 | 40000 | XP..12 |
| R217.97-1632.RE-X12.3A | Combimaster | 7,5 | 32,0 | 30,0 | – | M16 | 40,0 | 8,0 | 54,0 | 63,0 | 3 | 0,2 | 40000 | XP..12 |
| R217.97-1640.RE-X12.3A | Combimaster | 7,5 | 40,0 | 30,0 | – | M16 | 40,0 | 6,0 | 70,0 | 79,0 | 3 | 0,3 | 35000 | XP..12 |
| R217.97-2040.RE-X12.3A | Combimaster | 7,5 | 40,0 | 36,5 | – | M20 | 40,0 | 6,0 | 70,0 | 79,0 | 3 | 0,3 | 35000 | XP..12 |
| R220.97-0050-X12.4A | Arbor | 7,5 | 50,0 | 47,0 | 22,0 | – | 45,0 | 5,0 | 90,0 | 99,0 | 4 | 0,4 | 30000 | XP..12 |
| | | | | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

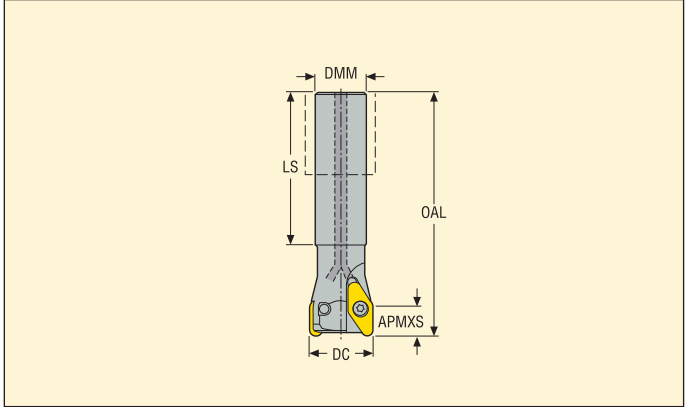
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| R217.97-..-Ø25 | | | | | 3,0 |
| R217.97-..-Ø32-40 | DOUBLE-T | C03508-T10P | H4B-T10P | – | 3,0 |
| R220.97-0050 | DOUBLE-T | C03509-T10P | H4B-T10P | 220.17-692 | 3,0 |
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Please check availability in current price and stock-list
Torque keys, see page 732

R217.97

Cavity milling in aluminium



- For insert selection and cutting data recommendations, see page(s) 425
- For complete insert programme, see page(s) 679
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | RMPX° | C min | C max | | | | Insert |
|-----------------------|------------------|------------------|------|------|-------|-------|-------|-------|-------|---|-----|-------|----------|
| | | APMXS | DC | DMM | OAL | LS | | | | | | | |
| R217.97-2532.0-V22.2A | Cylindrical | 10,0 | 32,0 | 25,0 | 120,0 | 75,0 | 15,0 | 56,0 | 62,0 | 2 | 0,4 | 40000 | VPGX2206 |
| R217.97-3240.0-V22.2A | Cylindrical | 10,0 | 40,0 | 32,0 | 150,0 | 105,0 | 10,0 | 72,0 | 78,0 | 2 | 0,9 | 35000 | VPGX2206 |
| | | | | | | | | | | | | | |
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Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.97-.. | DOUBLE-T | C05010-T20P | H6B-T20P | 5,0 |
| | | | | |
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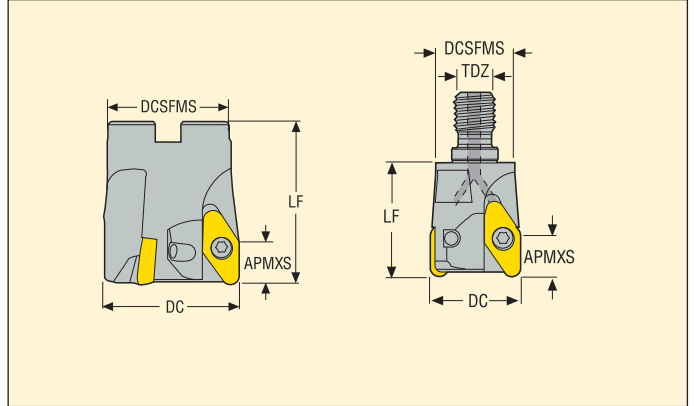
Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.97-V22

Cavity milling in aluminium



- For insert selection and cutting data recommendations, see page(s) 425
- For complete insert programme, see page(s) 679
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | RMPX° | C min | C max | | | | Insert |
|------------------------|------------------|------------------|-------|--------|------|-----|------|-------|-------|-------|---|-----|-------|----------|
| | | APMXS | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.97-1632.RE-V22.2A | Combimaster | 10,0 | 32,0 | 30,0 | - | M16 | 40,0 | 15,0 | 56,0 | 62,0 | 2 | 0,2 | 40000 | VPGX2206 |
| R217.97-1640.RE-V22.2A | Combimaster | 10,0 | 40,0 | 30,0 | - | M16 | 40,0 | 10,0 | 72,0 | 78,0 | 2 | 0,2 | 35000 | VPGX2206 |
| R217.97-2040.RE-V22.2A | Combimaster | 10,0 | 40,0 | 36,5 | - | M20 | 45,0 | 10,0 | 72,0 | 78,0 | 2 | 0,3 | 35000 | VPGX2206 |
| R220.97-0050-V22.2A | Arbor | 10,0 | 50,0 | 47,0 | 22,0 | - | 57,0 | 8,0 | 92,0 | 98,0 | 2 | 0,5 | 30000 | VPGX2206 |
| R220.97-0050-V22.3A | Arbor | 10,0 | 50,0 | 47,0 | 22,0 | - | 57,0 | 8,0 | 92,0 | 98,0 | 3 | 0,5 | 30000 | VPGX2206 |
| R220.97-0063-V22.3A | Arbor | 10,0 | 63,0 | 50,0 | 27,0 | - | 57,0 | 6,0 | 116,0 | 125,0 | 3 | 0,6 | 27000 | VPGX2206 |
| R220.97-0063-V22.4A | Arbor | 10,0 | 63,0 | 50,0 | 27,0 | - | 57,0 | 6,0 | 116,0 | 125,0 | 4 | 0,6 | 27000 | VPGX2206 |
| R220.97-0080-V22.4A | Arbor | 10,0 | 80,0 | 60,0 | 32,0 | - | 57,0 | 5,0 | 152,0 | 158,0 | 4 | 1,0 | 25000 | VPGX2206 |
| R220.97-0100-V22.5A | Arbor | 10,0 | 100,0 | 77,0 | 32,0 | - | 57,0 | 4,0 | 192,0 | 198,0 | 5 | 1,7 | 22000 | VPGX2206 |
| | | | | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.97-1632-1640 | DOUBLE-T | C05010-T20P | H6B-T20P | - | 5,0 |
| R217.97-2040 | DOUBLE-T | C05010-T20P | H6B-T20P | - | 5,0 |
| R220.97-0050 | DOUBLE-T | C05010-T20P | H6B-T20P | MC6S10X40 | 5,0 |
| R220.97-0063 | DOUBLE-T | C05013-T20P | H6B-T20P | MC6S12X35 | 5,0 |
| R220.97-0080 | DOUBLE-T | C05013-T20P | H6B-T20P | 220.17-694 | 5,0 |
| R220.97-0100 | DOUBLE-T | C05013-T20P | H6B-T20PL | 220.17-694 | 5,0 |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.97-X12 – Insert selection

| SMG | | a_p | f_z | | | |
|-----|------------------------|-------|-------|------|------|------|
| | | | 100% | 30% | 10% | 5% |
| N1 | XPKX12T304PDER-E08 H25 | 3,5 | 0,13 | 0,14 | 0,22 | 0,30 |
| N2 | XPKX12T304PDER-E08 H25 | 3,5 | 0,13 | 0,14 | 0,22 | 0,30 |
| N3 | XPKX12T304PDER-E08 H25 | 3,5 | 0,13 | 0,14 | 0,22 | 0,30 |
| N11 | XPKX12T304PDER-E08 H25 | 3,5 | 0,13 | 0,14 | 0,22 | 0,30 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R217/220.97-X12 – Cutting data v_c = (m/min)

| SMG | | | | |
|-----|------|------|------|------|
| | 100% | 30% | 10% | 5% |
| N1 | 2200 | 2925 | 3425 | 3725 |
| N2 | 560 | 740 | 860 | 940 |
| N3 | 370 | 490 | 580 | 630 |
| N11 | 425 | 560 | 660 | 720 |

R217/220.97-V22 – Insert selection

| SMG | | a_p | f_z | | | |
|-----|----------------------|-------|-------|------|------|------|
| | | | 100% | 30% | 10% | 5% |
| N1 | VPGX220605ER-E10 H25 | 5,0 | 0,18 | 0,20 | 0,30 | 0,42 |
| N2 | VPGX220605ER-E10 H25 | 5,0 | 0,18 | 0,20 | 0,30 | 0,42 |
| N3 | VPGX220605ER-E10 H25 | 5,0 | 0,18 | 0,20 | 0,30 | 0,42 |
| N11 | VPGX220605ER-E10 H25 | 5,0 | 0,18 | 0,20 | 0,30 | 0,42 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

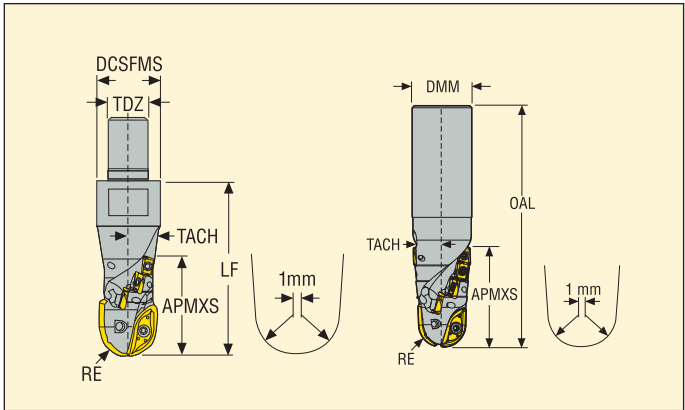
a_p/DC = %

All cutting data are start values

R217/220.97-V22 – Cutting data v_c = (m/min)

| SMG | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|
| | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% |
| N1 | 2375 | 3150 | 3725 | 4000 | 2050 | 2725 | 3250 | 3500 |
| N2 | 600 | 790 | 940 | 1000 | 520 | 690 | 820 | 880 |
| N3 | 400 | 530 | 630 | 670 | 345 | 455 | 550 | 590 |
| N11 | 455 | 600 | 720 | 770 | 395 | 520 | 620 | 670 |

R218.24



- For insert selection and cutting data recommendations, see page(s) 427-433
- For complete insert programme, see page(s) 682-683, 689
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | TACH° | kg | | () = No of inserts | |
|-----------------------------|------------------|------------------|--------|------|------|------|-------|-----|------|--------|------|-------|-------|-----------|--------------------|--|
| | | APMXS | DCSFMS | DMM | LF | LPR | OAL | TDZ | RE | 218.20 | XO.X | | | | | |
| R218.24-10R063.RE-020-06.2A | Combimaster | 23,1 | 18,5 | - | 35,0 | - | - | M10 | 6,35 | 4,0 | 6 | 0,1 | 20000 | 0.250 (2) | 06 (4) | |
| R218.24-20R063.0-025-06.2A | Cylindrical | 24,0 | - | 20,0 | - | 40,0 | 90,0 | - | 6,35 | 4,0 | 8 | 0,2 | 20000 | 0.250 (2) | 06 (6) | |
| R218.24-12R080.RE-028-06.2A | Combimaster | 28,0 | 23,0 | - | 50,0 | - | - | M12 | 8,0 | 4,0 | 8 | 0,1 | 18000 | R080 (2) | 06 (8) | |
| R218.24-25R080.0-038-06.2A | Cylindrical | 38,0 | - | 25,0 | - | 54,0 | 110,0 | - | - | 4,0 | 12 | 0,3 | 18000 | R080 (2) | 06 (12) | |
| R218.24-16R100.RE-032-10.2A | Combimaster | 32,6 | 30,0 | - | 55,0 | - | - | M16 | 10,0 | 4,0 | 6 | 0,2 | 16000 | R100 (2) | 10 (6) | |
| R218.24-25R100.0-048-10.2A | Cylindrical | 48,0 | - | 25,0 | - | 54,0 | 125,0 | - | 10,0 | 4,0 | 10 | 0,4 | 16000 | R100 (2) | 10 (10) | |
| R218.24-20R125.RE-043-10.2A | Combimaster | 43,0 | 36,5 | - | 65,0 | - | - | M20 | 12,5 | 4,0 | 8 | 0,3 | 15000 | R125 (2) | 10 (8) | |
| R218.24-32R125.0-052-10.2A | Cylindrical | 52,0 | - | 32,0 | - | 70,0 | 130,0 | - | 12,5 | 4,0 | 10 | 0,6 | 14000 | R125 (2) | 10 (10) | |
| | | | | | | | | | | | | | | | | |
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Spare Parts

| For cutter | Key periphery | Key center | Key (T-handle) | Insert screw periph | Insert screw centre | Torque value periphery screw Nm | Torque value centre screw Nm |
|-------------|---------------|------------|----------------|---------------------|---------------------|---------------------------------|------------------------------|
| | | | | | | | |
| R218.24-63 | | H4B-T06P | DOUBLE-T | C01804-T06P | C02053-T06P | 0,5 | 0,9 |
| R218.24-080 | H4B-T06P | H4B-T08P | DOUBLE-T | C01804-T06P | C02506-T08P | 0,5 | 1,2 |
| R218.24-100 | H4B-T07P | H4B-T09P | DOUBLE-T | C02506-T07P | C03007-T09P | 0,9 | 2,0 |
| R218.24-125 | H4B-T07P | H4B-T15P | DOUBLE-T | C02506-T07P | C04009-T15P | 0,9 | 3,5 |
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Please check availability in current price and stock-list
Torque keys, see page 732

R218.24-063 – Insert selection

| SMG | | | f_z | | | |
|-----|----------------------------|------------------------|-------|-------|-------|-------|
| | | | 100% | 25% | 10% | 5% |
| P1 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 F40M | 0,042 | 0,050 | 0,070 | 0,10 |
| P2 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 F40M | 0,044 | 0,050 | 0,075 | 0,10 |
| P3 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 F40M | 0,042 | 0,048 | 0,070 | 0,095 |
| P4 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 F40M | 0,040 | 0,046 | 0,065 | 0,095 |
| P5 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 F40M | 0,040 | 0,046 | 0,065 | 0,090 |
| P6 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 F40M | 0,040 | 0,046 | 0,065 | 0,090 |
| P7 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 F40M | 0,040 | 0,046 | 0,065 | 0,090 |
| P8 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 F40M | 0,042 | 0,048 | 0,070 | 0,095 |
| P11 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 MP3000 | 0,040 | 0,046 | 0,065 | 0,090 |
| P12 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 MP3000 | 0,028 | 0,032 | 0,046 | 0,065 |
| M1 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 F40M | 0,044 | 0,050 | 0,075 | 0,10 |
| M2 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 F40M | 0,040 | 0,046 | 0,065 | 0,090 |
| M3 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 F40M | 0,032 | 0,038 | 0,055 | 0,075 |
| M4 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 F40M | 0,030 | 0,034 | 0,048 | 0,065 |
| M5 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 F40M | 0,030 | 0,034 | 0,048 | 0,065 |
| K1 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 MP3000 | 0,044 | 0,050 | 0,075 | 0,10 |
| K2 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 MP3000 | 0,040 | 0,046 | 0,065 | 0,090 |
| K3 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 MP3000 | 0,040 | 0,046 | 0,065 | 0,090 |
| K4 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 MP3000 | 0,040 | 0,046 | 0,065 | 0,090 |
| K5 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 MP3000 | 0,036 | 0,042 | 0,060 | 0,080 |
| K6 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 MP3000 | 0,040 | 0,046 | 0,065 | 0,090 |
| K7 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 MP3000 | 0,036 | 0,042 | 0,060 | 0,080 |
| N1 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 F40M | 0,055 | 0,065 | 0,095 | 0,13 |
| N2 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 MP3000 | 0,055 | 0,065 | 0,095 | 0,13 |
| N3 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 MP3000 | 0,055 | 0,065 | 0,095 | 0,13 |
| N11 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 F40M | 0,055 | 0,065 | 0,095 | 0,13 |
| S1 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 F40M | 0,030 | 0,034 | 0,048 | 0,065 |
| S2 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 F40M | 0,030 | 0,034 | 0,048 | 0,065 |
| S3 | 218.20-0.250ER-ME03 F40M | XOMX060204R-M05 F40M | 0,028 | 0,032 | 0,046 | 0,060 |
| S11 | 218.20-0.250ER-ME03 MS2050 | XOMX060204R-M05 F40M | 0,032 | 0,038 | 0,055 | 0,075 |
| S12 | 218.20-0.250ER-ME03 MS2050 | XOMX060204R-M05 F40M | 0,032 | 0,038 | 0,055 | 0,075 |
| S13 | 218.20-0.250ER-ME03 MS2050 | XOMX060204R-M05 F40M | 0,030 | 0,034 | 0,048 | 0,065 |
| H11 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 MP3000 | 0,028 | 0,032 | 0,046 | 0,065 |
| H12 | 218.20-0.250ER-M03 F40M | XOMX060204R-M05 MP3000 | 0,022 | 0,024 | 0,036 | 0,050 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R218.24-063 – Cutting data $v_c =$ (m/min)

| SMG | F40M | | | | MS2050 | | | |
|-----|------|------|------|------|--------|-----|-----|-----|
| | 100% | 25% | 10% | 5% | 100% | 25% | 10% | 5% |
| P1 | 275 | 380 | 430 | 460 | 305 | 415 | 475 | 500 |
| P2 | 265 | 365 | 420 | 445 | 290 | 405 | 460 | 490 |
| P3 | 230 | 320 | 360 | 385 | 255 | 350 | 395 | 425 |
| P4 | 205 | 280 | 320 | 340 | 225 | 310 | 355 | 375 |
| P5 | 195 | 270 | 305 | 330 | 215 | 295 | 335 | 360 |
| P6 | 220 | 305 | 345 | 370 | 240 | 335 | 380 | 405 |
| P7 | 205 | 285 | 325 | 350 | 230 | 315 | 360 | 380 |
| P8 | 195 | 270 | 305 | 325 | 215 | 295 | 335 | 360 |
| P11 | 200 | 280 | 315 | 340 | 220 | 305 | 345 | 370 |
| P12 | 125 | 170 | 195 | 210 | 140 | 190 | 215 | 230 |
| M1 | 215 | 295 | 340 | 360 | 235 | 325 | 370 | 395 |
| M2 | 175 | 240 | 275 | 295 | 195 | 265 | 305 | 325 |
| M3 | 140 | 190 | 220 | 235 | 155 | 210 | 240 | 255 |
| M4 | 110 | 145 | 165 | 175 | 120 | 160 | 180 | 195 |
| M5 | 90 | 120 | 140 | 145 | 100 | 130 | 150 | 160 |
| K1 | 210 | 290 | 330 | 355 | — | — | — | — |
| K2 | 185 | 255 | 290 | 310 | — | — | — | — |
| K3 | 155 | 215 | 245 | 265 | — | — | — | — |
| K4 | 150 | 205 | 235 | 250 | — | — | — | — |
| K5 | 90 | 125 | 140 | 150 | — | — | — | — |
| K6 | 130 | 180 | 205 | 220 | — | — | — | — |
| K7 | 115 | 160 | 180 | 195 | — | — | — | — |
| N1 | 1600 | 2200 | 2525 | 2675 | — | — | — | — |
| N2 | 650 | 890 | 1025 | 1075 | — | — | — | — |
| N3 | 430 | 590 | 680 | 720 | — | — | — | — |
| N11 | 490 | 680 | 780 | 820 | — | — | — | — |
| S1 | 50 | 65 | 75 | 80 | 55 | 75 | 85 | 90 |
| S2 | 42 | 55 | 60 | 65 | 46 | 60 | 70 | 75 |
| S3 | 36 | 47 | 55 | 60 | 40 | 50 | 60 | 65 |
| S11 | 70 | 95 | 110 | 120 | 80 | 105 | 120 | 130 |
| S12 | 50 | 65 | 75 | 80 | 55 | 75 | 85 | 90 |
| S13 | 29 | 38 | 43 | 46 | 32 | 42 | 48 | 50 |
| H11 | 55 | 75 | 85 | 90 | — | — | — | — |
| H12 | 80 | 105 | 120 | 130 | — | — | — | — |

R218.24-080 – Insert selection

| SMG | | | f _z | | | |
|-----|--------------------------|------------------------|----------------|-------|-------|-------|
| | | | 100% | 25% | 10% | 5% |
| P1 | 218.20-080ER-ME04 F40M | XOMX060204R-M05 F40M | 0,10 | 0,11 | 0,17 | 0,24 |
| P2 | 218.20-080ER-ME04 F40M | XOMX060204R-M05 F40M | 0,10 | 0,12 | 0,17 | 0,24 |
| P3 | 218.20-080ER-ME04 F40M | XOMX060204R-M05 F40M | 0,095 | 0,11 | 0,16 | 0,22 |
| P4 | 218.20-080ER-ME04 F40M | XOMX060204R-M05 F40M | 0,095 | 0,11 | 0,16 | 0,22 |
| P5 | 218.20-080ER-M04 F25M | XOMX060204R-M05 F40M | 0,090 | 0,11 | 0,15 | 0,22 |
| P6 | 218.20-080ER-M04 F25M | XOMX060204R-M05 F40M | 0,090 | 0,10 | 0,15 | 0,22 |
| P7 | 218.20-080ER-M04 F25M | XOMX060204R-M05 MP3000 | 0,090 | 0,10 | 0,15 | 0,22 |
| P8 | 218.20-080ER-M04 F25M | XOMX060204R-M05 MP3000 | 0,095 | 0,11 | 0,16 | 0,22 |
| P11 | 218.20-080ER-M04 F25M | XOMX060204R-M05 MP3000 | 0,090 | 0,10 | 0,15 | 0,22 |
| P12 | 218.20-080ER-M04 F25M | XOMX060204R-M05 MP3000 | 0,060 | 0,070 | 0,10 | 0,15 |
| M1 | 218.20-080ER-ME04 F40M | XOMX060204R-M05 F40M | 0,10 | 0,12 | 0,17 | 0,24 |
| M2 | 218.20-080ER-ME04 F40M | XOMX060204R-M05 F40M | 0,090 | 0,11 | 0,15 | 0,22 |
| M3 | 218.20-080ER-ME04 F40M | XOMX060204R-M05 F40M | 0,075 | 0,085 | 0,12 | 0,17 |
| M4 | 218.20-080ER-M04 F40M | XOMX060204R-M05 F40M | 0,065 | 0,075 | 0,11 | 0,15 |
| M5 | 218.20-080ER-M04 F40M | XOMX060204R-M05 F40M | 0,065 | 0,075 | 0,11 | 0,15 |
| K1 | 218.20-080ER-M04 F25M | XOMX060204R-M05 MP3000 | 0,10 | 0,12 | 0,17 | 0,24 |
| K2 | 218.20-080ER-M04 F25M | XOMX060204R-M05 MP3000 | 0,090 | 0,11 | 0,15 | 0,22 |
| K3 | 218.20-080ER-M04 F25M | XOMX060204R-M05 MP3000 | 0,090 | 0,11 | 0,15 | 0,22 |
| K4 | 218.20-080ER-M04 F25M | XOMX060204R-M05 MP3000 | 0,090 | 0,11 | 0,15 | 0,22 |
| K5 | 218.20-080ER-M04 F25M | XOMX060204R-M05 MP3000 | 0,080 | 0,095 | 0,14 | 0,19 |
| K6 | 218.20-080ER-M04 F25M | XOMX060204R-M05 MP3000 | 0,090 | 0,11 | 0,15 | 0,22 |
| K7 | 218.20-080ER-M04 F25M | XOMX060204R-M05 MP3000 | 0,080 | 0,095 | 0,14 | 0,19 |
| N1 | 218.20-080ER-ME04 F40M | XOMX060204R-M05 F40M | 0,13 | 0,15 | 0,22 | 0,30 |
| N2 | 218.20-080ER-ME04 F40M | XOMX060204R-M05 F40M | 0,13 | 0,15 | 0,22 | 0,30 |
| N3 | 218.20-080ER-ME04 F40M | XOMX060204R-M05 F40M | 0,13 | 0,15 | 0,22 | 0,30 |
| N11 | 218.20-080ER-ME04 F40M | XOMX060204R-M05 F40M | 0,13 | 0,15 | 0,22 | 0,30 |
| S1 | 218.20-080ER-ME04 T350M | XOMX060204R-M05 F40M | 0,065 | 0,075 | 0,11 | 0,15 |
| S2 | 218.20-080ER-ME04 T350M | XOMX060204R-M05 F40M | 0,065 | 0,075 | 0,11 | 0,15 |
| S3 | 218.20-080ER-ME04 T350M | XOMX060204R-M05 F40M | 0,060 | 0,070 | 0,10 | 0,14 |
| S11 | 218.20-080ER-ME04 MS2050 | XOMX060204R-M05 MS2050 | 0,042 | 0,050 | 0,070 | 0,10 |
| S12 | 218.20-080ER-ME04 MS2050 | XOMX060204R-M05 MS2050 | 0,042 | 0,050 | 0,070 | 0,10 |
| S13 | 218.20-080ER-ME04 MS2050 | XOMX060204R-M05 MS2050 | 0,038 | 0,044 | 0,065 | 0,085 |
| H11 | 218.20-080ER-M04 F25M | XOMX060204R-M05 MP3000 | 0,060 | 0,070 | 0,10 | 0,15 |
| H12 | 218.20-080ER-M04 F25M | XOMX060204R-M05 MP3000 | 0,048 | 0,055 | 0,080 | 0,11 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R218.24-080 – Cutting data $v_c =$ (m/min)

| SMG | T350M | | | | F25M | | | | F40M | | | | MM4500 | | | | MS2050 | | | |
|-----|-------|-----|-----|-----|------|-----|-----|-----|------|------|------|------|--------|-----|-----|-----|--------|-----|-----|-----|
| | 100% | 25% | 10% | 5% | 100% | 25% | 10% | 5% | 100% | 25% | 10% | 5% | 100% | 25% | 10% | 5% | 100% | 25% | 10% | 5% |
| P1 | 240 | 345 | 385 | 410 | 225 | 320 | 360 | 380 | 205 | 290 | 325 | 345 | 165 | 235 | 265 | 280 | 265 | 365 | 420 | 445 |
| P2 | 235 | 330 | 375 | 400 | 220 | 305 | 350 | 370 | 200 | 275 | 320 | 340 | 160 | 225 | 260 | 275 | 255 | 355 | 405 | 435 |
| P3 | 205 | 290 | 330 | 350 | 190 | 265 | 305 | 325 | 175 | 245 | 280 | 295 | 140 | 195 | 225 | 240 | 220 | 305 | 355 | 375 |
| P4 | 180 | 255 | 290 | 310 | 170 | 235 | 270 | 285 | 150 | 215 | 245 | 260 | 125 | 175 | 200 | 210 | 195 | 275 | 310 | 335 |
| P5 | 175 | 240 | 280 | 295 | 160 | 225 | 260 | 275 | 145 | 205 | 235 | 250 | 120 | 165 | 190 | 200 | 190 | 260 | 300 | 320 |
| P6 | 195 | 280 | 315 | 330 | 180 | 260 | 295 | 310 | 165 | 235 | 265 | 280 | 135 | 190 | 215 | 225 | 215 | 295 | 335 | 360 |
| P7 | 185 | 260 | 295 | 315 | 170 | 245 | 275 | 290 | 155 | 220 | 250 | 265 | 125 | 180 | 205 | 215 | 200 | 280 | 320 | 340 |
| P8 | 175 | 240 | 275 | 295 | 160 | 225 | 255 | 275 | 145 | 205 | 235 | 250 | 120 | 165 | 190 | 200 | 185 | 260 | 295 | 315 |
| P11 | 180 | 255 | 290 | 305 | 165 | 235 | 270 | 280 | 150 | 215 | 245 | 255 | 125 | 175 | 200 | 210 | 195 | 270 | 310 | 330 |
| P12 | 115 | 160 | 185 | 195 | 110 | 150 | 170 | 185 | 100 | 135 | 155 | 165 | 80 | 110 | 125 | 135 | 120 | 170 | 195 | 205 |
| M1 | 180 | 255 | 290 | 310 | — | — | — | — | 160 | 225 | 255 | 270 | 140 | 190 | 220 | 235 | 205 | 290 | 330 | 350 |
| M2 | 150 | 210 | 240 | 255 | — | — | — | — | 135 | 185 | 215 | 225 | 115 | 160 | 185 | 195 | 170 | 235 | 270 | 285 |
| M3 | 120 | 165 | 195 | 205 | — | — | — | — | 105 | 145 | 170 | 180 | 90 | 125 | 145 | 155 | 135 | 185 | 210 | 225 |
| M4 | 95 | 130 | 145 | 155 | — | — | — | — | 85 | 115 | 130 | 140 | 70 | 95 | 110 | 120 | 105 | 140 | 165 | 175 |
| M5 | 80 | 105 | 125 | 130 | — | — | — | — | 70 | 95 | 110 | 115 | 60 | 80 | 95 | 100 | 85 | 115 | 135 | 145 |
| K1 | — | — | — | — | 175 | 240 | 275 | 295 | 155 | 220 | 250 | 270 | — | — | — | — | — | — | — | — |
| K2 | — | — | — | — | 155 | 215 | 245 | 260 | 140 | 195 | 225 | 235 | — | — | — | — | — | — | — | — |
| K3 | — | — | — | — | 130 | 180 | 210 | 220 | 120 | 165 | 190 | 200 | — | — | — | — | — | — | — | — |
| K4 | — | — | — | — | 125 | 170 | 200 | 210 | 115 | 155 | 180 | 190 | — | — | — | — | — | — | — | — |
| K5 | — | — | — | — | 75 | 105 | 120 | 130 | 70 | 95 | 110 | 120 | — | — | — | — | — | — | — | — |
| K6 | — | — | — | — | 110 | 150 | 175 | 185 | 100 | 140 | 160 | 170 | — | — | — | — | — | — | — | — |
| K7 | — | — | — | — | 95 | 135 | 155 | 165 | 90 | 125 | 140 | 150 | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | 1175 | 1650 | 1875 | 2000 | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | 470 | 660 | 760 | 810 | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | 315 | 440 | 500 | 540 | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | 360 | 500 | 580 | 620 | — | — | — | — | — | — | — | — |
| S1 | 44 | 60 | 70 | 75 | 43 | 60 | 65 | 70 | 39 | 55 | 60 | 65 | 22 | 30 | 34 | 37 | 48 | 65 | 75 | 80 |
| S2 | 35 | 48 | 55 | 60 | 34 | 47 | 55 | 55 | 31 | 42 | 49 | 50 | 18 | 24 | 28 | 30 | 39 | 55 | 60 | 65 |
| S3 | 31 | 42 | 49 | 50 | 30 | 41 | 47 | 50 | 27 | 37 | 43 | 46 | 15 | 21 | 24 | 26 | 34 | 46 | 55 | 55 |
| S11 | 60 | 85 | 100 | 105 | 60 | 80 | 95 | 100 | 55 | 75 | 85 | 90 | 30 | 42 | 49 | 50 | 70 | 95 | 105 | 115 |
| S12 | 42 | 60 | 70 | 70 | 41 | 55 | 65 | 70 | 37 | 50 | 60 | 65 | 28 | 39 | 45 | 48 | 47 | 65 | 75 | 80 |
| S13 | 25 | 34 | 39 | 41 | 24 | 33 | 38 | 40 | 22 | 30 | 34 | 36 | 16 | 22 | 26 | 27 | 27 | 37 | 43 | 45 |
| H11 | 49 | 70 | 80 | 85 | 46 | 65 | 75 | 75 | 42 | 55 | 65 | 70 | — | — | — | — | — | — | — | — |
| H12 | 75 | 100 | 115 | 120 | 65 | 90 | 105 | 115 | 60 | 85 | 95 | 105 | — | — | — | — | — | — | — | — |

R218.24-100 – Insert selection

| SMG | | | f_z | | | |
|-----|--------------------------|--------------------------|-------|-------|-------|------|
| | | | 100% | 25% | 10% | 5% |
| P1 | 218.20-100ER-ME05 F40M | XOMX10T308TR-ME07 F40M | 0,10 | 0,11 | 0,17 | 0,24 |
| P2 | 218.20-100ER-ME05 F40M | XOMX10T308TR-ME07 F40M | 0,10 | 0,12 | 0,17 | 0,24 |
| P3 | 218.20-100ER-ME05 F40M | XOMX10T308TR-ME07 MP2500 | 0,095 | 0,11 | 0,16 | 0,22 |
| P4 | 218.20-100ER-ME05 F40M | XOMX10T308TR-M09 MP2500 | 0,095 | 0,11 | 0,16 | 0,22 |
| P5 | 218.20-100ER-M05 F40M | XOMX10T308TR-M09 MP2500 | 0,090 | 0,11 | 0,15 | 0,22 |
| P6 | 218.20-100ER-M05 F40M | XOMX10T308TR-M09 MP2500 | 0,090 | 0,10 | 0,15 | 0,22 |
| P7 | 218.20-100ER-M05 F40M | XOMX10T308TR-M09 MP2500 | 0,090 | 0,10 | 0,15 | 0,22 |
| P8 | 218.20-100ER-M05 F40M | XOMX10T308TR-M09 MP2500 | 0,095 | 0,11 | 0,16 | 0,22 |
| P11 | 218.20-100ER-M05 F40M | XOMX10T308TR-M09 MP2500 | 0,090 | 0,10 | 0,15 | 0,22 |
| P12 | 218.20-100ER-M05 F40M | XOMX10T308TR-M09 MP2500 | 0,065 | 0,070 | 0,10 | 0,15 |
| M1 | 218.20-100ER-ME05 F40M | XOEX10T308R-M06 F40M | 0,10 | 0,12 | 0,17 | 0,24 |
| M2 | 218.20-100ER-ME05 F40M | XOEX10T308R-M06 F40M | 0,090 | 0,11 | 0,15 | 0,22 |
| M3 | 218.20-100ER-ME05 F40M | XOEX10T308R-M06 F40M | 0,075 | 0,085 | 0,12 | 0,17 |
| M4 | 218.20-100ER-M05 F40M | XOEX10T308R-M06 T350M | 0,065 | 0,075 | 0,11 | 0,15 |
| M5 | 218.20-100ER-M05 F40M | XOEX10T308R-M06 T350M | 0,065 | 0,075 | 0,11 | 0,15 |
| K1 | 218.20-100ER-M05 F25M | XOMX10T308TR-M09 MK2050 | 0,10 | 0,12 | 0,17 | 0,24 |
| K2 | 218.20-100ER-M05 F25M | XOMX10T308TR-M09 MK2050 | 0,090 | 0,11 | 0,15 | 0,22 |
| K3 | 218.20-100ER-M05 F25M | XOMX10T308TR-M09 MK2050 | 0,090 | 0,11 | 0,15 | 0,22 |
| K4 | 218.20-100ER-M05 F25M | XOMX10T308TR-M09 MK2050 | 0,090 | 0,11 | 0,15 | 0,22 |
| K5 | 218.20-100ER-M05 F25M | XOMX10T308TR-M09 MK2050 | 0,080 | 0,095 | 0,14 | 0,19 |
| K6 | 218.20-100ER-M05 F25M | XOMX10T308TR-M09 MK2050 | 0,090 | 0,11 | 0,15 | 0,22 |
| K7 | 218.20-100ER-M05 F25M | XOMX10T308TR-M09 MK2050 | 0,080 | 0,095 | 0,14 | 0,19 |
| N1 | 218.20-100ER-ME05 F40M | XOEX10T308FR-E05 H15 | 0,13 | 0,15 | 0,22 | 0,30 |
| N2 | 218.20-100ER-ME05 F40M | XOEX10T308FR-E05 H15 | 0,13 | 0,15 | 0,22 | 0,30 |
| N3 | 218.20-100ER-ME05 F40M | XOEX10T308FR-E05 H15 | 0,13 | 0,15 | 0,22 | 0,30 |
| N11 | 218.20-100ER-ME05 F40M | XOEX10T308FR-E05 H15 | 0,13 | 0,15 | 0,22 | 0,30 |
| S1 | 218.20-100ER-ME05 F40M | XOEX10T308R-M06 F40M | 0,065 | 0,075 | 0,11 | 0,15 |
| S2 | 218.20-100ER-ME05 F40M | XOEX10T308R-M06 F40M | 0,065 | 0,075 | 0,11 | 0,15 |
| S3 | 218.20-100ER-ME05 F40M | XOEX10T308R-M06 F40M | 0,060 | 0,070 | 0,10 | 0,14 |
| S11 | 218.20-100ER-ME05 MS2050 | XOEX10T308R-M06 MS2050 | 0,055 | 0,060 | 0,090 | 0,12 |
| S12 | 218.20-100ER-ME05 MS2050 | XOEX10T308R-M06 MS2050 | 0,055 | 0,060 | 0,090 | 0,12 |
| S13 | 218.20-100ER-ME05 MS2050 | XOEX10T308R-M06 MS2050 | 0,048 | 0,055 | 0,080 | 0,11 |
| H11 | 218.20-100ER-M05 F25M | XOMX10T308TR-M09 MP1500 | 0,065 | 0,070 | 0,10 | 0,15 |
| H12 | 218.20-100ER-M05 F25M | XOMX10T308TR-M09 MP1500 | 0,048 | 0,055 | 0,080 | 0,11 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R218.24-100 – Cutting data $v_c =$ (m/min)

| SMG | F25M | | | | F40M | | | | MM4500 | | | | MS2050 | | | |
|-----|------|-----|-----|-----|------|------|------|------|--------|-----|-----|-----|--------|-----|-----|-----|
| | 100% | 25% | 10% | 5% | 100% | 25% | 10% | 5% | 100% | 25% | 10% | 5% | 100% | 25% | 10% | 5% |
| P1 | 230 | 330 | 370 | 395 | 210 | 300 | 335 | 360 | 170 | 240 | 275 | 290 | 255 | 355 | 405 | 435 |
| P2 | 225 | 315 | 360 | 385 | 205 | 285 | 330 | 350 | 165 | 230 | 265 | 280 | 245 | 340 | 390 | 415 |
| P3 | 195 | 275 | 315 | 335 | 180 | 250 | 285 | 305 | 145 | 205 | 230 | 250 | 210 | 295 | 345 | 360 |
| P4 | 175 | 240 | 275 | 295 | 155 | 220 | 250 | 270 | 125 | 180 | 205 | 220 | 190 | 265 | 300 | 325 |
| P5 | 165 | 230 | 270 | 285 | 150 | 210 | 245 | 255 | 125 | 170 | 200 | 210 | 180 | 255 | 290 | 310 |
| P6 | 190 | 265 | 300 | 315 | 170 | 240 | 275 | 290 | 140 | 195 | 220 | 235 | 205 | 285 | 325 | 345 |
| P7 | 175 | 250 | 285 | 300 | 160 | 230 | 260 | 270 | 130 | 185 | 210 | 220 | 190 | 270 | 305 | 325 |
| P8 | 165 | 230 | 265 | 285 | 150 | 210 | 240 | 255 | 120 | 170 | 195 | 210 | 180 | 250 | 290 | 305 |
| P11 | 170 | 245 | 275 | 290 | 155 | 220 | 250 | 265 | 125 | 180 | 205 | 215 | 185 | 260 | 295 | 320 |
| P12 | 110 | 155 | 175 | 190 | 100 | 140 | 160 | 170 | 80 | 115 | 130 | 140 | 120 | 165 | 190 | 200 |
| M1 | — | — | — | — | 165 | 230 | 265 | 280 | 140 | 200 | 230 | 240 | 200 | 275 | 315 | 335 |
| M2 | — | — | — | — | 135 | 190 | 220 | 230 | 120 | 165 | 190 | 200 | 165 | 230 | 260 | 280 |
| M3 | — | — | — | — | 110 | 150 | 175 | 185 | 95 | 130 | 150 | 160 | 130 | 180 | 205 | 220 |
| M4 | — | — | — | — | 85 | 115 | 135 | 145 | 75 | 100 | 115 | 125 | 100 | 135 | 160 | 170 |
| M5 | — | — | — | — | 70 | 95 | 110 | 120 | 60 | 85 | 95 | 105 | 85 | 115 | 130 | 140 |
| K1 | 180 | 250 | 285 | 305 | 160 | 225 | 260 | 275 | — | — | — | — | — | — | — | — |
| K2 | 160 | 220 | 255 | 270 | 145 | 200 | 230 | 245 | — | — | — | — | — | — | — | — |
| K3 | 135 | 185 | 215 | 225 | 120 | 170 | 195 | 205 | — | — | — | — | — | — | — | — |
| K4 | 130 | 175 | 205 | 215 | 115 | 160 | 185 | 195 | — | — | — | — | — | — | — | — |
| K5 | 80 | 110 | 125 | 135 | 70 | 100 | 115 | 120 | — | — | — | — | — | — | — | — |
| K6 | 115 | 155 | 180 | 190 | 105 | 140 | 165 | 175 | — | — | — | — | — | — | — | — |
| K7 | 100 | 140 | 160 | 170 | 90 | 125 | 145 | 155 | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | 1200 | 1700 | 1925 | 2075 | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | 485 | 680 | 780 | 840 | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | 325 | 455 | 520 | 560 | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | 370 | 520 | 590 | 640 | — | — | — | — | — | — | — | — |
| S1 | 44 | 60 | 70 | 75 | 40 | 55 | 60 | 65 | 23 | 31 | 35 | 38 | 47 | 65 | 75 | 80 |
| S2 | 35 | 48 | 55 | 60 | 32 | 44 | 50 | 55 | 18 | 25 | 28 | 30 | 38 | 50 | 60 | 65 |
| S3 | 31 | 42 | 49 | 50 | 28 | 38 | 44 | 47 | 16 | 22 | 25 | 27 | 33 | 45 | 50 | 55 |
| S11 | 60 | 85 | 100 | 105 | 55 | 75 | 90 | 95 | 31 | 43 | 50 | 55 | 65 | 90 | 105 | 110 |
| S12 | 42 | 60 | 70 | 70 | 38 | 55 | 60 | 65 | 29 | 40 | 46 | 49 | 45 | 65 | 75 | 75 |
| S13 | 25 | 34 | 39 | 41 | 23 | 30 | 35 | 38 | 17 | 23 | 26 | 28 | 26 | 36 | 42 | 44 |
| H11 | 46 | 65 | 75 | 80 | 42 | 60 | 70 | 70 | — | — | — | — | — | — | — | — |
| H12 | 70 | 95 | 110 | 115 | 65 | 85 | 100 | 105 | — | — | — | — | — | — | — | — |

R218.24-125 – Insert selection

| SMG | | | f_z | | | |
|-----|--------------------------|--------------------------|-------|-------|-------|------|
| | | | 100% | 25% | 10% | 5% |
| P1 | 218.20-125ER-ME07 F40M | XOMX10T308TR-ME07 F40M | 0,10 | 0,11 | 0,17 | 0,24 |
| P2 | 218.20-125ER-ME07 F40M | XOMX10T308TR-ME07 F40M | 0,10 | 0,12 | 0,17 | 0,24 |
| P3 | 218.20-125ER-ME07 F40M | XOMX10T308TR-ME07 MP2500 | 0,095 | 0,11 | 0,16 | 0,22 |
| P4 | 218.20-125ER-ME07 F40M | XOMX10T308TR-M09 MP2500 | 0,095 | 0,11 | 0,16 | 0,22 |
| P5 | 218.20-125ER-M07 F40M | XOMX10T308TR-M09 MP2500 | 0,090 | 0,11 | 0,15 | 0,22 |
| P6 | 218.20-125ER-M07 F40M | XOMX10T308TR-M09 MP2500 | 0,090 | 0,10 | 0,15 | 0,22 |
| P7 | 218.20-125ER-M07 F40M | XOMX10T308TR-M09 MP2500 | 0,090 | 0,10 | 0,15 | 0,22 |
| P8 | 218.20-125ER-M07 F40M | XOMX10T308TR-M09 MP2500 | 0,095 | 0,11 | 0,16 | 0,22 |
| P11 | 218.20-125ER-M07 F40M | XOMX10T308TR-M09 MP2500 | 0,090 | 0,10 | 0,15 | 0,22 |
| P12 | 218.20-125ER-M07 F40M | XOMX10T308TR-M09 MP2500 | 0,065 | 0,075 | 0,11 | 0,15 |
| M1 | 218.20-125ER-ME07 F40M | XOEX10T308R-M06 F40M | 0,10 | 0,12 | 0,17 | 0,24 |
| M2 | 218.20-125ER-ME07 F40M | XOEX10T308R-M06 F40M | 0,090 | 0,11 | 0,15 | 0,22 |
| M3 | 218.20-125ER-ME07 F40M | XOEX10T308R-M06 F40M | 0,075 | 0,085 | 0,12 | 0,17 |
| M4 | 218.20-125ER-M07 F40M | XOEX10T308R-M06 T350M | 0,065 | 0,080 | 0,11 | 0,16 |
| M5 | 218.20-125ER-M07 F40M | XOEX10T308R-M06 T350M | 0,065 | 0,080 | 0,11 | 0,16 |
| K1 | 218.20-125ER-M07 F25M | XOMX10T308TR-M09 MK2050 | 0,10 | 0,12 | 0,17 | 0,24 |
| K2 | 218.20-125ER-M07 F25M | XOMX10T308TR-M09 MK2050 | 0,090 | 0,11 | 0,15 | 0,22 |
| K3 | 218.20-125ER-M07 F25M | XOMX10T308TR-M09 MK2050 | 0,090 | 0,11 | 0,15 | 0,22 |
| K4 | 218.20-125ER-M07 F25M | XOMX10T308TR-M09 MK2050 | 0,090 | 0,11 | 0,15 | 0,22 |
| K5 | 218.20-125ER-M07 F25M | XOMX10T308TR-M09 MK2050 | 0,080 | 0,095 | 0,14 | 0,19 |
| K6 | 218.20-125ER-M07 F25M | XOMX10T308TR-M09 MK2050 | 0,090 | 0,11 | 0,15 | 0,22 |
| K7 | 218.20-125ER-M07 F25M | XOMX10T308TR-M09 MK2050 | 0,080 | 0,095 | 0,14 | 0,19 |
| N1 | 218.20-125ER-ME07 F40M | XOEX10T308FR-E05 H15 | 0,13 | 0,15 | 0,22 | 0,30 |
| N2 | 218.20-125ER-ME07 F40M | XOEX10T308FR-E05 H15 | 0,13 | 0,15 | 0,22 | 0,30 |
| N3 | 218.20-125ER-ME07 F40M | XOEX10T308FR-E05 H15 | 0,13 | 0,15 | 0,22 | 0,30 |
| N11 | 218.20-125ER-ME07 F40M | XOEX10T308FR-E05 H15 | 0,13 | 0,15 | 0,22 | 0,30 |
| S1 | 218.20-125ER-ME07 F40M | XOEX10T308R-M06 F40M | 0,065 | 0,080 | 0,11 | 0,16 |
| S2 | 218.20-125ER-ME07 F40M | XOEX10T308R-M06 F40M | 0,065 | 0,080 | 0,11 | 0,16 |
| S3 | 218.20-125ER-ME07 F40M | XOEX10T308R-M06 F40M | 0,065 | 0,070 | 0,10 | 0,15 |
| S11 | 218.20-125ER-ME07 MS2050 | XOEX10T308R-M06 MS2050 | 0,075 | 0,085 | 0,13 | 0,18 |
| S12 | 218.20-125ER-ME07 MS2050 | XOEX10T308R-M06 MS2050 | 0,075 | 0,085 | 0,13 | 0,18 |
| S13 | 218.20-125ER-ME07 MS2050 | XOEX10T308R-M06 MS2050 | 0,065 | 0,080 | 0,11 | 0,16 |
| H11 | 218.20-125ER-M07 F25M | XOMX10T308TR-M09 MP1500 | 0,065 | 0,075 | 0,11 | 0,15 |
| H12 | 218.20-125ER-M07 F25M | XOMX10T308TR-M09 MP1500 | 0,050 | 0,055 | 0,080 | 0,11 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R218.24-125 – Cutting data $v_c =$ (m/min)

| SMG | F25M | | | | F40M | | | | MM4500 | | | | MS2050 | | | |
|-----|------|-----|-----|-----|------|------|------|------|--------|-----|-----|-----|--------|-----|-----|-----|
| | 100% | 25% | 10% | 5% | 100% | 25% | 10% | 5% | 100% | 25% | 10% | 5% | 100% | 25% | 10% | 5% |
| P1 | 230 | 325 | 365 | 395 | 225 | 320 | 360 | 390 | 180 | 255 | 290 | 315 | 250 | 350 | 395 | 425 |
| P2 | 225 | 310 | 355 | 380 | 220 | 305 | 350 | 370 | 180 | 245 | 285 | 300 | 240 | 335 | 385 | 410 |
| P3 | 195 | 270 | 310 | 335 | 190 | 265 | 305 | 325 | 155 | 215 | 245 | 265 | 210 | 295 | 335 | 360 |
| P4 | 170 | 240 | 275 | 295 | 170 | 235 | 270 | 285 | 135 | 190 | 215 | 230 | 185 | 260 | 295 | 315 |
| P5 | 165 | 230 | 265 | 280 | 165 | 225 | 260 | 275 | 130 | 180 | 210 | 220 | 180 | 245 | 285 | 300 |
| P6 | 185 | 260 | 300 | 315 | 185 | 255 | 290 | 305 | 150 | 210 | 235 | 250 | 200 | 280 | 320 | 340 |
| P7 | 175 | 250 | 280 | 295 | 170 | 240 | 275 | 290 | 140 | 195 | 225 | 235 | 190 | 265 | 300 | 320 |
| P8 | 165 | 230 | 260 | 280 | 160 | 225 | 255 | 275 | 130 | 180 | 205 | 220 | 175 | 245 | 280 | 300 |
| P11 | 170 | 240 | 275 | 290 | 165 | 235 | 265 | 280 | 135 | 190 | 215 | 230 | 185 | 260 | 295 | 310 |
| P12 | 110 | 150 | 175 | 185 | 105 | 150 | 170 | 180 | 85 | 120 | 140 | 150 | 120 | 165 | 190 | 200 |
| M1 | — | — | — | — | 175 | 245 | 280 | 300 | 150 | 210 | 240 | 260 | 195 | 270 | 310 | 330 |
| M2 | — | — | — | — | 145 | 200 | 235 | 245 | 125 | 175 | 200 | 210 | 160 | 220 | 255 | 270 |
| M3 | — | — | — | — | 115 | 160 | 185 | 200 | 100 | 140 | 160 | 170 | 130 | 180 | 205 | 220 |
| M4 | — | — | — | — | 95 | 125 | 140 | 150 | 80 | 105 | 125 | 130 | 105 | 135 | 155 | 170 |
| M5 | — | — | — | — | 80 | 105 | 120 | 125 | 70 | 90 | 100 | 110 | 85 | 115 | 130 | 140 |
| K1 | 180 | 245 | 280 | 300 | 175 | 240 | 275 | 295 | — | — | — | — | — | — | — | — |
| K2 | 160 | 215 | 250 | 265 | 155 | 210 | 245 | 260 | — | — | — | — | — | — | — | — |
| K3 | 135 | 185 | 215 | 225 | 130 | 180 | 210 | 220 | — | — | — | — | — | — | — | — |
| K4 | 125 | 175 | 205 | 215 | 125 | 170 | 200 | 210 | — | — | — | — | — | — | — | — |
| K5 | 80 | 110 | 125 | 130 | 75 | 105 | 120 | 130 | — | — | — | — | — | — | — | — |
| K6 | 110 | 155 | 180 | 190 | 110 | 150 | 175 | 185 | — | — | — | — | — | — | — | — |
| K7 | 100 | 140 | 155 | 170 | 100 | 135 | 155 | 165 | — | — | — | — | — | — | — | — |
| N1 | — | — | — | — | 1275 | 1800 | 2050 | 2200 | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | 520 | 730 | 830 | 890 | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | 345 | 485 | 550 | 590 | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | 395 | 550 | 630 | 680 | — | — | — | — | — | — | — | — |
| S1 | 45 | 60 | 70 | 75 | 44 | 60 | 65 | 70 | 25 | 33 | 38 | 40 | 48 | 65 | 75 | 80 |
| S2 | 36 | 48 | 55 | 60 | 35 | 47 | 55 | 55 | 20 | 26 | 30 | 32 | 39 | 50 | 60 | 65 |
| S3 | 31 | 42 | 48 | 50 | 30 | 41 | 47 | 50 | 17 | 23 | 27 | 28 | 34 | 45 | 50 | 55 |
| S11 | 60 | 85 | 95 | 100 | 60 | 80 | 95 | 100 | 34 | 46 | 55 | 55 | 65 | 90 | 105 | 110 |
| S12 | 42 | 60 | 65 | 70 | 42 | 55 | 65 | 70 | 31 | 43 | 49 | 50 | 46 | 60 | 70 | 75 |
| S13 | 25 | 33 | 38 | 41 | 25 | 33 | 37 | 40 | 19 | 25 | 28 | 30 | 27 | 36 | 41 | 44 |
| H11 | 46 | 65 | 75 | 80 | 45 | 65 | 70 | 75 | — | — | — | — | — | — | — | — |
| H12 | 70 | 95 | 110 | 115 | 70 | 90 | 105 | 115 | — | — | — | — | — | — | — | — |



High feed milling cutters

| Insert | a _p max | Material suitability | | | | | | | | | | |
|-----------------|--------------------|----------------------|---|---|---|---|---|---|---|---|---|---|
| | | P | M | K | N | S | S | H | | | | |
| LP05 | 0,65 | ■ | ■ | ■ | □ | ■ | ■ | ■ | ■ | □ | ■ | ■ |
| LP06 | 0,8 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | □ | ■ | ■ |
| LO06 | 0,9 | ■ | ▣ | ■ | - | ■ | ▣ | ■ | ■ | ▣ | ▣ | ▣ |
| 218.19-100 | 0,7 | ■ | ▣ | ■ | ■ | ▣ | ▣ | ■ | ■ | ▣ | ■ | ■ |
| 218.19-125 | 1,0 | ■ | ▣ | ■ | ■ | ▣ | ▣ | ■ | ▣ | ■ | ■ | ■ |
| 218.19-160 | 1,8 | ■ | ▣ | ■ | ■ | ▣ | ▣ | □ | - | ■ | ■ | ■ |
| 218.19-160C | 2,5 | ■ | ▣ | ■ | ■ | ▣ | ▣ | □ | - | ■ | - | □ |
| 218.19-230 | 0,65 | ■ | ■ | ■ | - | ■ | □ | ▣ | - | ■ | □ | ■ |
| SCET | 2,0 | ■ | ■ | ■ | - | ■ | ■ | - | - | ■ | □ | ■ |
| ON09 | 2,0 | ■ | - | ■ | - | - | - | - | - | ■ | - | - |

| | | | | | |
|--------------------|---|---|---|--------------------------------|--|
| 1st choice | ■ | High speed machine with low Power/ Torque | | Unstable condition suitability | |
| Alternative choice | ▣ | Strong stable machine with rigid conection | | Ramping ability | |
| Possible choice | □ | Not recommended | - | Plunging ability | |

High feed milling cutters

| No. of cutting edges | Application | Cutter diameter available with effective number of teeth | | | | | | | | | | | | | | | | | | See page | | | | | | | |
|----------------------|-------------|--|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----------|-----|-----|-----|-----|-----|-----|---------|
| | | 12 | 14 | 16 | 18 | 20 | 25 | 27 | 32 | 35 | 40 | 42 | 50 | 52 | 63 | 66 | 80 | 84 | 88 | | 100 | 108 | 125 | 133 | 160 | 168 | 208 |
| 2 | | | | 2 | | 3 | | | | | | | | | | | | | | | | | | | | | 439-440 |
| | | 2 | 2 | 3 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | 443-444 |
| | | | | | | 2 | 3 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | |
| | | | | 2 | 2 | 3 | 4 | | 5 | 6 | 6 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | 5 | | | | | | | | | | | | | | | | | 447-448 |
| | | | | | | 2 | 3 | 3 | 4 | 5 | 6 | | | | | | | | | | | | | | | | |
| | | | | | | | 4 | | 5 | 6 | 7 | 7 | 8 | 8 | 9 | | | | | | | | | | | | |
| 3 | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | 451-465 |
| | | | | | | 2 | 3 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | 451-465 |
| | | | | | | | 2 | | 3 | 3 | 4 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | 3 | | 4 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | 3 | | 4 | | | | | | | | | | | | | 451-465 |
| | | | | | | | | | | | | 4 | 4 | 5 | 5 | 6 | 7 | | 7 | | | | | | | | |
| | | | | | | | | | 2 | | 3 | | 5 | 5 | 6 | 6 | 7 | 8 | | 9 | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | 5 | | 6 | | 8 | | 10 | 12 | 466 |
| 6 | | | | | | | | | | | | 4 | | 5 | | 6 | | | | 7 | | 9 | | 10 | | | N/A |
| | | | | | | | | | | 3 | 3 | 5 | 5 | 6 | 6 | 7 | 8 | | 9 | | | | | | | | |
| 4 | | | | | | | | | | | | | | 4 | 4 | 5 | 5 | | 5 | | | | | | | | 469-471 |
| | | | | | | | | | | | | | 4 | 4 | 5 | 6 | 6 | | 7 | | 6 | | 7 | | | | |
| | | | | | | | | | | | | | 5 | 5 | 6 | 6 | 7 | | 8 | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | 6 | | 7 | | 8 | | 10 | | 472 |

x indicates number of teeth (first choice)

x indicates number of teeth

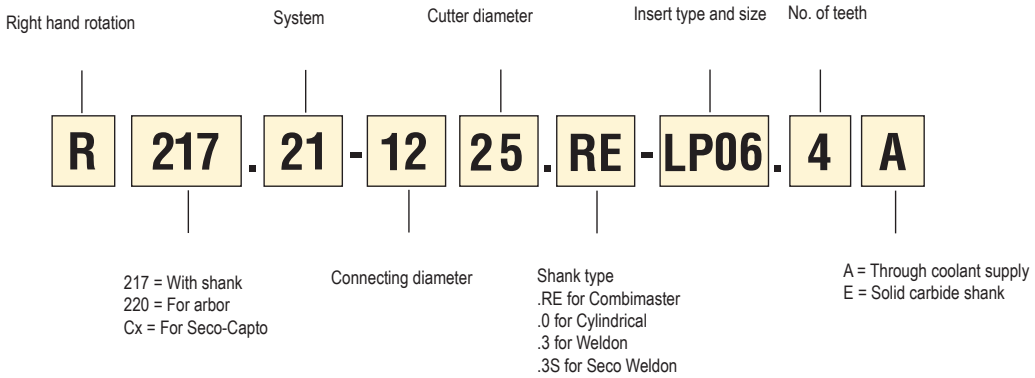
Troubleshooter for unstable fixturing and/or machine

Basic choice

Milling cutters

In milling Seco uses product specific designation systems, there is no ISO system available for cutters. See example below.

Code key for High feed milling cutter 217/220.21



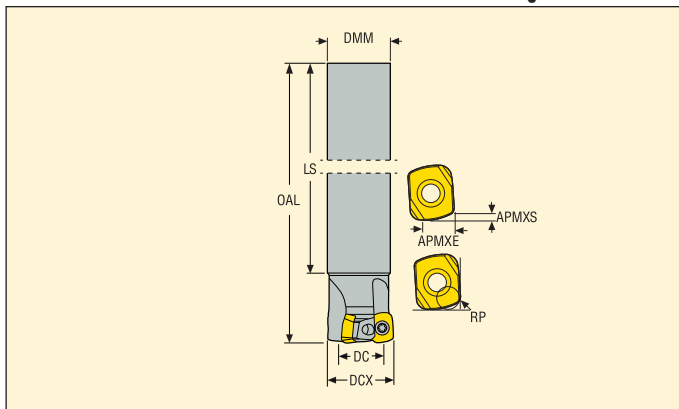
Dimensions of mounting

| | Dimensions in mm | | | | | | Spindle-nose |
|---------|------------------|------|-----|-------|-------|--------|--------------|
| | DCSFMS | DCB | KWW | C | DBC1 | DBC2 | |
| 30-35 | 16 | 8,4 | 5,6 | - | - | - | |
| 42-47 | 22 | 10,4 | 6,3 | - | - | - | |
| 48-62 | 27 | 12,4 | 7 | - | - | - | |
| 60-90 | 32 | 14,4 | 8 | - | - | - | |
| 90-130 | 40 | 16,4 | 9 | 66,7 | - | (8xxx) | |
| 130-270 | 60 | 25,7 | 14 | 101,6 | 177,8 | (8xxx) | |
| | | | | | | | |
| | | | | | | | |

For a more exact DCSFMS and DCB measurement, see each product table.

R217.21

High feed cutters - LP



- For insert selection and cutting data recommendations, see page(s) 441-442
- For complete insert programme, see page(s) 649
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | RMPX° | C min | C max | | | | Insert |
|------------------------|------------------|------------------|-------|------|------|------|-------|-------|------|-----|-----|-------|-------|-------|-----|-------|--------|--------|
| | | APMXE | APMXS | DCX | DC | DMM | OAL | LS | UTCN | RP | | | | | | | | |
| R217.21-1012.0-LP05.2A | Cylindrical | 3,5 | 0,65 | 12,0 | 5,4 | 10,0 | 100,0 | 84,0 | 0,32 | 1,5 | 3,9 | 15,6 | 23,12 | 2 | 0,1 | 45000 | LP..05 | |
| R217.21-1214.0-LP05.2A | Cylindrical | 3,5 | 0,65 | 14,0 | 7,4 | 12,0 | 120,0 | 104,0 | 0,32 | 1,5 | 3,5 | 18,2 | 27,12 | 2 | 0,1 | 42000 | LP..05 | |
| R217.21-1416.0-LP05.2A | Cylindrical | 3,5 | 0,65 | 16,0 | 9,4 | 14,0 | 150,0 | 132,0 | 0,32 | 1,5 | 3,0 | 20,8 | 31,12 | 2 | 0,2 | 39000 | LP..05 | |
| R217.21-1618.0-LP05.3A | Cylindrical | 3,5 | 0,65 | 18,0 | 11,4 | 16,0 | 160,0 | 142,0 | 0,32 | 1,5 | 2,2 | 23,4 | 35,12 | 3 | 0,3 | 37000 | LP..05 | |
| R217.21-1820.0-LP05.3A | Cylindrical | 3,5 | 0,65 | 20,0 | 13,4 | 18,0 | 160,0 | 142,0 | 0,32 | 1,5 | 1,9 | 26,0 | 39,12 | 3 | 0,3 | 35000 | LP..05 | |
| | | | | | | | | | | | | | | | | | | |
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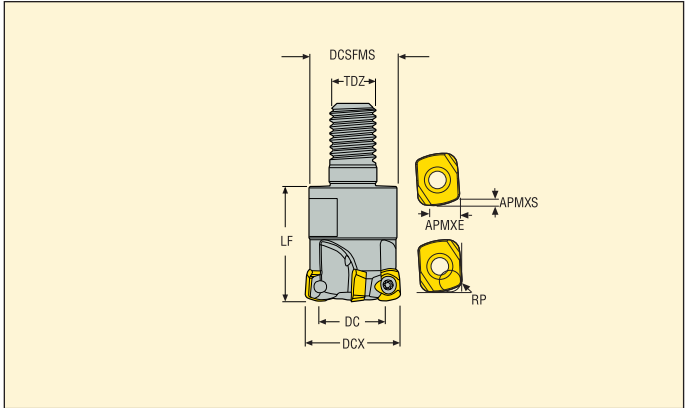
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| R217.21-.. | DOUBLE-T | C02053-T06P | H4B-T06P | 0,5 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.21

High feed cutters - LP



- For insert selection and cutting data recommendations, see page(s) 441-442
- For complete insert programme, see page(s) 649
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | RMPX° | C min | C max | | | | Insert |
|-------------------------|------------------|------------------|-------|------|------|--------|-----|------|------|-----|-----|-------|-------|-------|-----|-------|--------|--------|
| | | APMXE | APMXS | DCX | DC | DCSFMS | TDZ | LF | UTCN | RP | | | | | | | | |
| R217.21-0612.RE-LP05.2A | Combimaster | 3,5 | 0,65 | 12,0 | 5,4 | 11,0 | M6 | 18,0 | 0,32 | 1,5 | 3,9 | 15,6 | 23,12 | 2 | 0,1 | 45000 | LP..05 | |
| R217.21-0812.RE-LP05.2A | Combimaster | 3,5 | 0,65 | 12,0 | 5,4 | 13,5 | M8 | 20,0 | 0,32 | 1,5 | 3,9 | 15,6 | 23,12 | 2 | 0,1 | 45000 | LP..05 | |
| R217.21-0614.RE-LP05.2A | Combimaster | 3,5 | 0,65 | 14,0 | 7,4 | 11,0 | M6 | 18,0 | 0,32 | 1,5 | 3,5 | 18,2 | 27,12 | 2 | 0,1 | 42000 | LP..05 | |
| R217.21-0814.RE-LP05.2A | Combimaster | 3,5 | 0,65 | 14,0 | 7,4 | 13,5 | M8 | 20,0 | 0,32 | 1,5 | 3,5 | 18,2 | 27,12 | 2 | 0,1 | 42000 | LP..05 | |
| R217.21-0816.RE-LP05.3A | Combimaster | 3,5 | 0,65 | 16,0 | 9,4 | 13,5 | M8 | 20,0 | 0,32 | 1,5 | 3,0 | 20,8 | 31,12 | 3 | 0,1 | 39000 | LP..05 | |
| R217.21-1020.RE-LP05.4A | Combimaster | 3,5 | 0,65 | 20,0 | 13,4 | 18,5 | M10 | 23,0 | 0,32 | 1,5 | 1,9 | 26,0 | 39,12 | 4 | 0,1 | 35000 | LP..05 | |
| | | | | | | | | | | | | | | | | | | |
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For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.21-.. Ø12 | DOUBLE-T | C02005-T06P | H4B-T06P | 0,5 |
| R217.21-.. Ø14-20 | DOUBLE-T | C02053-T06P | H4B-T06P | 0,5 |
| | | | | |
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Please check availability in current price and stock-list

Torque keys, see page 732

R217/220.21-LP05 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|------|------|
| | | | 100% | 70% | 30% |
| P1 | LPHT05T210TR-ME04 T350M | 0,60 | 0,44 | 0,44 | 0,48 |
| P2 | LPHT05T210TR-ME04 T350M | 0,60 | 0,44 | 0,44 | 0,48 |
| P3 | LPHT05T210TR-ME04 T350M | 0,60 | 0,42 | 0,42 | 0,46 |
| P4 | LPKT05T210TR-M05 MP2500 | 0,60 | 0,50 | 0,50 | 0,55 |
| P5 | LPKT05T210TR-M05 MP2500 | 0,60 | 0,50 | 0,50 | 0,55 |
| P6 | LPKT05T210TR-M05 MP2500 | 0,60 | 0,50 | 0,50 | 0,55 |
| P7 | LPKT05T210TR-M05 MP2500 | 0,60 | 0,50 | 0,50 | 0,55 |
| P8 | LPKW05T210TR-MD05 MP2500 | 0,60 | 0,55 | 0,55 | 0,60 |
| P11 | LPKT05T210TR-M05 MS2500 | 0,60 | 0,50 | 0,50 | 0,55 |
| P12 | LPKT05T210TR-M05 MS2500 | 0,46 | 0,40 | 0,40 | 0,44 |
| M1 | LPKT05T210TR-M05 F40M | 0,60 | 0,55 | 0,55 | 0,60 |
| M2 | LPKT05T210TR-M05 F40M | 0,60 | 0,50 | 0,50 | 0,55 |
| M3 | LPKT05T210TR-M05 F40M | 0,46 | 0,46 | 0,46 | 0,50 |
| M4 | LPKT05T210TR-M05 F40M | 0,36 | 0,44 | 0,44 | 0,50 |
| M5 | LPKT05T210TR-M05 F40M | 0,36 | 0,44 | 0,44 | 0,50 |
| K1 | LPKW05T210TR-MD05 MP2500 | 0,60 | 0,55 | 0,55 | 0,60 |
| K2 | LPKW05T210TR-MD05 MP2500 | 0,60 | 0,50 | 0,50 | 0,55 |
| K3 | LPKW05T210TR-MD05 MP2500 | 0,60 | 0,50 | 0,50 | 0,55 |
| K4 | LPKW05T210TR-MD05 MP2500 | 0,60 | 0,50 | 0,50 | 0,55 |
| K5 | LPKW05T210TR-MD05 MP2500 | 0,60 | 0,46 | 0,46 | 0,50 |
| K6 | LPKW05T210TR-MD05 MP2500 | 0,60 | 0,50 | 0,50 | 0,55 |
| K7 | LPKW05T210TR-MD05 MP2500 | 0,60 | 0,46 | 0,46 | 0,50 |
| N1 | LPHT05T210TR-ME04 F40M | 0,60 | 0,55 | 0,55 | 0,60 |
| N2 | LPHT05T210TR-ME04 F40M | 0,60 | 0,55 | 0,55 | 0,60 |
| N3 | LPHT05T210TR-ME04 F40M | 0,60 | 0,55 | 0,55 | 0,60 |
| N11 | LPHT05T210TR-ME04 F40M | 0,60 | 0,55 | 0,55 | 0,60 |
| S1 | LPHT05T210TR-ME04 F40M | 0,36 | 0,36 | 0,36 | 0,38 |
| S2 | LPHT05T210TR-ME04 F40M | 0,36 | 0,36 | 0,36 | 0,38 |
| S3 | LPKT05T210TR-M05 F40M | 0,36 | 0,42 | 0,42 | 0,46 |
| S11 | LPHT05T210TR-ME04 MS2050 | 0,40 | 0,40 | 0,40 | 0,44 |
| S12 | LPHT05T210TR-ME04 MS2050 | 0,40 | 0,40 | 0,40 | 0,44 |
| S13 | LPHT05T210TR-ME04 MS2050 | 0,36 | 0,36 | 0,36 | 0,38 |
| H5 | LPHW05T210TR-MD05 MH1000 | 0,36 | 0,38 | 0,38 | 0,42 |
| H8 | LPHW05T210TR-MD05 MH1000 | 0,32 | 0,28 | 0,28 | 0,32 |
| H11 | LPKT05T210TR-M05 F40M | 0,36 | 0,38 | 0,38 | 0,42 |
| H12 | LPKT05T210TR-M05 F40M | 0,32 | 0,28 | 0,28 | 0,32 |
| H21 | LPHW05T210TR-MD05 MH1000 | 0,32 | 0,28 | 0,28 | 0,32 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R217/220.21-LP05 – Cutting data $v_c =$ (m/min)

| SMG | MP2050 | | | MP2500 | | | MP3000 | | | T350M | | | F40M | | | MM4500 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|------|-------|-----|-----|------|------|------|--------|-----|-----|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 325 | 385 | 470 | 330 | 395 | 480 | 315 | 375 | 450 | 315 | 375 | 455 | 250 | 300 | 360 | 225 | 265 | 320 |
| P2 | 320 | 375 | 455 | 325 | 385 | 465 | 305 | 365 | 440 | 310 | 365 | 440 | 245 | 290 | 350 | 220 | 260 | 310 |
| P3 | 275 | 325 | 395 | 280 | 330 | 400 | 265 | 315 | 380 | 270 | 320 | 385 | 210 | 250 | 305 | 190 | 225 | 270 |
| P4 | 245 | 295 | 355 | 250 | 300 | 360 | 240 | 280 | 340 | 235 | 280 | 340 | 190 | 225 | 270 | 165 | 200 | 240 |
| P5 | 235 | 280 | 335 | 240 | 285 | 345 | 225 | 270 | 325 | 230 | 270 | 325 | 180 | 215 | 260 | 160 | 190 | 230 |
| P6 | 265 | 315 | 380 | 270 | 320 | 385 | 255 | 305 | 365 | 255 | 305 | 365 | 205 | 240 | 290 | 180 | 215 | 260 |
| P7 | 250 | 295 | 355 | 255 | 300 | 365 | 240 | 285 | 345 | 240 | 290 | 345 | 195 | 230 | 275 | 170 | 205 | 245 |
| P8 | 230 | 275 | 330 | 235 | 280 | 335 | 220 | 265 | 320 | 225 | 270 | 325 | 175 | 210 | 255 | 160 | 190 | 225 |
| P11 | 240 | 290 | 345 | 245 | 295 | 355 | 235 | 280 | 335 | 235 | 280 | 335 | 185 | 220 | 270 | 165 | 195 | 235 |
| P12 | 155 | 185 | 220 | 160 | 185 | 225 | 150 | 175 | 210 | 150 | 175 | 210 | 120 | 140 | 170 | 105 | 125 | 150 |
| M1 | 230 | 270 | 325 | 235 | 275 | 335 | 230 | 270 | 330 | 240 | 285 | 340 | 200 | 235 | 285 | 185 | 220 | 265 |
| M2 | 190 | 225 | 270 | 195 | 230 | 275 | 190 | 225 | 270 | 195 | 235 | 280 | 165 | 195 | 235 | 155 | 185 | 220 |
| M3 | 150 | 180 | 210 | 155 | 180 | 215 | 155 | 180 | 215 | 160 | 185 | 220 | 130 | 155 | 185 | 125 | 145 | 175 |
| M4 | 120 | 145 | 165 | 120 | 145 | 170 | 120 | 145 | 170 | 120 | 150 | 175 | 105 | 125 | 145 | 95 | 115 | 135 |
| M5 | 100 | 120 | 140 | 100 | 125 | 145 | 100 | 120 | 140 | 100 | 125 | 145 | 85 | 105 | 120 | 80 | 95 | 115 |
| K1 | 250 | 300 | 360 | 255 | 305 | 370 | 245 | 290 | 350 | — | — | — | 195 | 230 | 280 | — | — | — |
| K2 | 225 | 265 | 320 | 230 | 270 | 325 | 215 | 255 | 310 | — | — | — | 175 | 205 | 245 | — | — | — |
| K3 | 190 | 225 | 270 | 195 | 230 | 275 | 180 | 215 | 260 | — | — | — | 145 | 175 | 210 | — | — | — |
| K4 | 180 | 215 | 260 | 185 | 220 | 265 | 175 | 205 | 250 | — | — | — | 140 | 165 | 200 | — | — | — |
| K5 | 110 | 130 | 155 | 110 | 135 | 160 | 105 | 125 | 150 | — | — | — | 85 | 100 | 120 | — | — | — |
| K6 | 160 | 190 | 230 | 160 | 190 | 230 | 155 | 180 | 220 | — | — | — | 125 | 145 | 175 | — | — | — |
| K7 | 140 | 165 | 200 | 145 | 170 | 205 | 135 | 160 | 195 | — | — | — | 110 | 130 | 155 | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1450 | 1700 | 2050 | — | — | — |
| N2 | — | — | — | — | — | — | 730 | 860 | 1025 | — | — | — | 580 | 690 | 830 | — | — | — |
| N3 | — | — | — | — | — | — | 485 | 580 | 690 | — | — | — | 390 | 460 | 550 | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 445 | 530 | 630 | — | — | — |
| S1 | 60 | 70 | 80 | — | — | — | 55 | 70 | 80 | 55 | 70 | 80 | 48 | 60 | 70 | 29 | 35 | 42 |
| S2 | 46 | 55 | 65 | — | — | — | 45 | 55 | 65 | 46 | 55 | 65 | 39 | 47 | 55 | 24 | 29 | 34 |
| S3 | 40 | 49 | 60 | — | — | — | 39 | 47 | 55 | 40 | 49 | 55 | 34 | 41 | 48 | 21 | 25 | 29 |
| S11 | 80 | 95 | 115 | — | — | — | 75 | 90 | 110 | 80 | 95 | 115 | 65 | 80 | 95 | 41 | 49 | 60 |
| S12 | 55 | 65 | 80 | — | — | — | 55 | 65 | 75 | 55 | 65 | 80 | 46 | 55 | 65 | 38 | 45 | 55 |
| S13 | 32 | 39 | 46 | — | — | — | 31 | 38 | 44 | 32 | 39 | 46 | 27 | 33 | 38 | 22 | 27 | 31 |
| H5 | 49 | 55 | 70 | 50 | 60 | 70 | 49 | 55 | 70 | 50 | 60 | 70 | 42 | 49 | 60 | — | — | — |
| H8 | 50 | 60 | 70 | 55 | 65 | 75 | 50 | 60 | 70 | 55 | 65 | 75 | 45 | 50 | 60 | — | — | — |
| H11 | 60 | 70 | 85 | 65 | 75 | 90 | 60 | 70 | 85 | 65 | 75 | 90 | 55 | 60 | 75 | — | — | — |
| H12 | 105 | 120 | 145 | 105 | 125 | 145 | 100 | 120 | 140 | 100 | 115 | 135 | 80 | 95 | 110 | — | — | — |
| H21 | 50 | 60 | 70 | 55 | 65 | 75 | 50 | 60 | 70 | 55 | 65 | 75 | 45 | 50 | 60 | — | — | — |

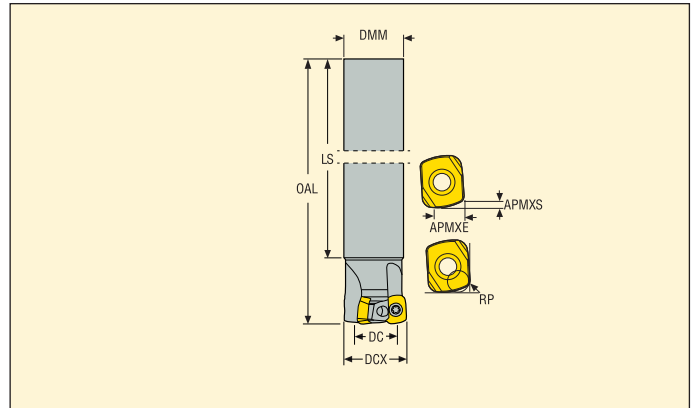
| SMG | MS2050 | | | MS2500 | | | MH1000 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | — | — | — | 365 | 430 | 520 | — | — | — |
| P2 | — | — | — | 355 | 420 | 510 | — | — | — |
| P3 | — | — | — | 305 | 360 | 435 | — | — | — |
| P4 | — | — | — | 275 | 325 | 390 | — | — | — |
| P5 | — | — | — | 260 | 310 | 375 | — | — | — |
| P6 | — | — | — | 295 | 350 | 420 | — | — | — |
| P7 | — | — | — | 275 | 330 | 395 | — | — | — |
| P8 | — | — | — | 255 | 305 | 365 | — | — | — |
| P11 | — | — | — | 270 | 320 | 385 | — | — | — |
| P12 | 130 | 155 | 185 | 175 | 205 | 245 | 160 | 190 | 225 |
| M1 | 215 | 260 | 310 | 255 | 300 | 365 | — | — | — |
| M2 | 180 | 215 | 260 | 210 | 250 | 300 | — | — | — |
| M3 | 145 | 170 | 200 | 170 | 200 | 235 | — | — | — |
| M4 | 115 | 135 | 160 | 130 | 160 | 185 | — | — | — |
| M5 | 95 | 115 | 135 | 110 | 135 | 155 | — | — | — |
| K1 | — | — | — | — | — | — | 260 | 310 | 375 |
| K2 | — | — | — | — | — | — | 230 | 275 | 330 |
| K3 | — | — | — | — | — | — | 195 | 230 | 280 |
| K4 | — | — | — | — | — | — | 185 | 220 | 265 |
| K5 | — | — | — | — | — | — | 115 | 135 | 165 |
| K6 | — | — | — | — | — | — | 165 | 195 | 235 |
| K7 | — | — | — | — | — | — | 145 | 170 | 210 |
| N1 | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — |
| S1 | 55 | 65 | 75 | 65 | 80 | 90 | — | — | — |
| S2 | 42 | 50 | 60 | 50 | 65 | 75 | — | — | — |
| S3 | 37 | 45 | 55 | 45 | 55 | 65 | — | — | — |
| S11 | 75 | 90 | 105 | 90 | 105 | 125 | — | — | — |
| S12 | 50 | 60 | 70 | 60 | 75 | 90 | — | — | — |
| S13 | 30 | 36 | 42 | 36 | 44 | 50 | — | — | — |
| H5 | — | — | — | — | — | — | 55 | 65 | 75 |
| H8 | — | — | — | — | — | — | 60 | 70 | 80 |
| H11 | — | — | — | — | — | — | 70 | 85 | 100 |
| H12 | — | — | — | — | — | — | 105 | 125 | 150 |
| H21 | — | — | — | — | — | — | 60 | 70 | 80 |

R217.21

High feed cutters - LP



- For insert selection and cutting data recommendations, see page(s) 445-446
- For complete insert programme, see page(s) 649
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | RMPX* | C min | C max | | | | Insert |
|------------------------|------------------|------------------|-------|------|------|------|-------|-------|-----|-------|-------|-------|---|-----|-------|--------|
| | | APMXE | APMXS | DCX | DC | DMM | OAL | LS | RP | | | | | | | |
| R217.21-1416.0-LP06.2A | Cylindrical | 4,5 | 0,8 | 16,0 | 7,5 | 14,0 | 150,0 | 132,0 | 1,8 | 5,0 | 20,8 | 30,87 | 2 | 0,2 | 39000 | LP..06 |
| R217.21-1618.0-LP06.2A | Cylindrical | 4,5 | 0,8 | 18,0 | 9,5 | 16,0 | 160,0 | 142,0 | 1,8 | 3,5 | 23,4 | 34,87 | 2 | 0,4 | 37000 | LP..06 |
| R217.21-1820.0-LP06.2A | Cylindrical | 4,5 | 0,8 | 20,0 | 11,6 | 18,0 | 160,0 | 142,0 | 1,8 | 3,0 | 26,0 | 39,87 | 2 | 0,4 | 35000 | LP..06 |
| R217.21-2525.0-LP06.3A | Cylindrical | 4,5 | 0,8 | 25,0 | 16,5 | 25,0 | 180,0 | 140,0 | 1,8 | 2,0 | 32,5 | 48,87 | 3 | 0,4 | 30000 | LP..06 |
| R217.21-2527.0-LP06.3A | Cylindrical | 4,5 | 0,8 | 27,0 | 18,5 | 25,0 | 250,0 | 228,0 | 1,8 | 1,5 | 35,1 | 52,87 | 3 | 0,4 | 30000 | LP..06 |
| R217.21-3232.0-LP06.4A | Cylindrical | 4,5 | 0,8 | 32,0 | 23,5 | 32,0 | 200,0 | 160,0 | 1,8 | 1,5 | 41,6 | 62,87 | 4 | 0,4 | 27000 | LP..06 |
| R217.21-3235.0-LP06.4A | Cylindrical | 4,5 | 0,8 | 35,0 | 26,5 | 32,0 | 250,0 | 228,0 | 1,8 | 1,2 | 45,5 | 68,87 | 4 | 0,4 | 26000 | LP..06 |

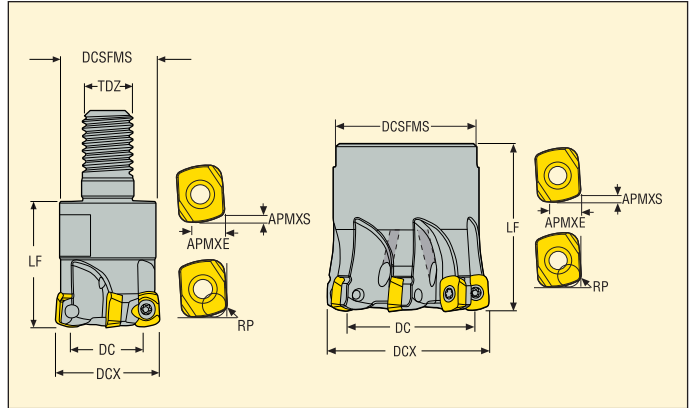
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------------|
| | | | | |
| Ø16-20 | DOUBLE-T | C02555-T08P | H4B-T08P | 1,2 |
| Ø25-35 | DOUBLE-T | C02506-T08P | H4B-T08P | 1,2 |
| | | | | |
| | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.21-LP06

High feed cutters - LP



- For insert selection and cutting data recommendations, see page(s) 445-446
- For complete insert programme, see page(s) 649
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | RMPX° | C min | C max | | KG | | Insert |
|-------------------------|------------------|------------------|-------|------|------|------|--------|-----|------|-----|-------|-------|-------|---|-----|-------|--------|
| | | APMXE | APMXS | DCX | DC | DCB | DCSFMS | TDZ | LF | RP | | | | | | | |
| R217.21-0816.RE-LP06.2A | Combimaster | 4,5 | 0,8 | 16,0 | 7,5 | - | 13,5 | M8 | 20,0 | 1,8 | 5,0 | 20,8 | 30,87 | 2 | 0,3 | 39000 | LP.06 |
| R217.21-1020.RE-LP06.2A | Combimaster | 4,5 | 0,8 | 20,0 | 11,5 | - | 18,5 | M10 | 28,0 | 1,8 | 3,0 | 26,0 | 38,87 | 2 | 0,3 | 35000 | LP.06 |
| R217.21-1020.RE-LP06.3A | Combimaster | 4,5 | 0,8 | 20,0 | 11,5 | - | 18,5 | M10 | 28,0 | 1,8 | 3,0 | 26,0 | 38,87 | 3 | 0,4 | 35000 | LP.06 |
| R217.21-1225.RE-LP06.3A | Combimaster | 4,5 | 0,8 | 25,0 | 16,5 | - | 23,0 | M12 | 30,0 | 1,8 | 2,0 | 32,5 | 48,87 | 3 | 0,3 | 30000 | LP.06 |
| R217.21-1225.RE-LP06.4A | Combimaster | 4,5 | 0,8 | 25,0 | 16,5 | - | 23,0 | M12 | 30,0 | 1,8 | 2,0 | 32,5 | 48,87 | 4 | 0,4 | 30000 | LP.06 |
| R217.21-1632.RE-LP06.5A | Combimaster | 4,5 | 0,8 | 32,0 | 23,5 | - | 30,0 | M16 | 35,0 | 1,8 | 1,5 | 41,6 | 62,87 | 5 | 0,2 | 27000 | LP.06 |
| R217.21-1635.RE-LP06.5A | Combimaster | 4,5 | 0,8 | 35,0 | 26,5 | - | 30,0 | M16 | 35,0 | 1,8 | 1,5 | 45,5 | 68,87 | 5 | 0,3 | 26000 | LP.06 |
| R220.21-0035-LP06.6A | Arbor | 4,5 | 0,8 | 35,0 | 26,5 | 16,0 | 32,0 | - | 35,0 | 1,8 | 1,29 | 45,5 | 68,87 | 6 | 0,4 | 26000 | LP.06 |
| R217.21-2040.RE-LP06.7A | Combimaster | 4,5 | 0,8 | 40,0 | 31,5 | - | 36,5 | M20 | 40,0 | 1,8 | 0,9 | 52,0 | 78,87 | 7 | 0,4 | 24000 | LP.06 |
| R220.21-0040-LP06.6A | Arbor | 4,5 | 0,8 | 40,0 | 31,5 | 16,0 | 32,0 | - | 40,0 | 1,8 | 0,9 | 52,0 | 78,87 | 6 | 0,2 | 24000 | LP.06 |
| | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | |

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| Ø16-20 | DOUBLE-T | C02555-T08P | H4B-T08P | - | 1,2 |
| Ø25-40 | DOUBLE-T | C02506-T08P | H4B-T08P | - | 1,2 |
| R220.21-.. | DOUBLE-T | C02506-T08P | H4B-T08P | 220.17-689 | 1,2 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Please check availability in current price and stock-list
Torque keys, see page 732

R217/220.21-LP06 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|------|------|
| | | | 100% | 70% | 30% |
| P1 | LPHT060310TR-M06 T350M | 0,70 | 0,70 | 0,70 | 0,75 |
| P2 | LPHT060310TR-M06 T350M | 0,70 | 0,70 | 0,70 | 0,75 |
| P3 | LPHT060310TR-M06 T350M | 0,70 | 0,65 | 0,65 | 0,75 |
| P4 | LPHT060310TR-M06 MP2500 | 0,70 | 0,65 | 0,65 | 0,70 |
| P5 | LPHT060310TR-M06 MP2500 | 0,70 | 0,65 | 0,65 | 0,70 |
| P6 | LPHT060310TR-M06 MP2500 | 0,70 | 0,65 | 0,65 | 0,70 |
| P7 | LPHW060310TR-MD07 MP2500 | 0,70 | 0,75 | 0,75 | 0,80 |
| P8 | LPHW060310TR-MD07 MP2500 | 0,70 | 0,75 | 0,75 | 0,85 |
| P11 | LPHW060310TR-MD07 MS2500 | 0,70 | 0,75 | 0,75 | 0,80 |
| P12 | LPHW060310TR-MD07 MS2500 | 0,60 | 0,55 | 0,55 | 0,60 |
| M1 | LPHT060310TR-ME05 F40M | 0,70 | 0,60 | 0,60 | 0,65 |
| M2 | LPHT060310TR-ME05 F40M | 0,70 | 0,55 | 0,55 | 0,60 |
| M3 | LPHT060310TR-ME05 F40M | 0,60 | 0,46 | 0,46 | 0,50 |
| M4 | LPHT060310TR-M06 F40M | 0,44 | 0,55 | 0,55 | 0,60 |
| M5 | LPHT060310TR-M06 F40M | 0,44 | 0,55 | 0,55 | 0,60 |
| K1 | LPHW060310TR-D06 MP3000 | 0,70 | 0,70 | 0,70 | 0,75 |
| K2 | LPHW060310TR-D06 MP3000 | 0,70 | 0,65 | 0,65 | 0,70 |
| K3 | LPHW060310TR-D06 MP3000 | 0,70 | 0,65 | 0,65 | 0,70 |
| K4 | LPHW060310TR-D06 MP3000 | 0,70 | 0,65 | 0,65 | 0,70 |
| K5 | LPHW060310TR-D06 MP3000 | 0,70 | 0,55 | 0,55 | 0,65 |
| K6 | LPHW060310TR-D06 MP3000 | 0,70 | 0,65 | 0,65 | 0,70 |
| K7 | LPHW060310TR-D06 MP3000 | 0,70 | 0,55 | 0,55 | 0,65 |
| N1 | LPHT060310ER-E05 H25 | 0,70 | 0,75 | 0,75 | 0,80 |
| N2 | LPHT060310ER-E05 H25 | 0,70 | 0,75 | 0,75 | 0,80 |
| N3 | LPHT060310ER-E05 H25 | 0,70 | 0,75 | 0,75 | 0,80 |
| N11 | LPHT060310ER-E05 H25 | 0,70 | 0,75 | 0,75 | 0,80 |
| S1 | LPHT060310TR-M06 MS2500 | 0,44 | 0,55 | 0,55 | 0,60 |
| S2 | LPHT060310TR-M06 MS2500 | 0,44 | 0,55 | 0,55 | 0,60 |
| S3 | LPHT060310TR-M06 MS2500 | 0,44 | 0,50 | 0,50 | 0,55 |
| S11 | LPHT060310TR-M06 MS2050 | 0,50 | 0,60 | 0,60 | 0,65 |
| S12 | LPHT060310TR-M06 MS2050 | 0,50 | 0,60 | 0,60 | 0,65 |
| S13 | LPHT060310TR-M06 MS2050 | 0,44 | 0,55 | 0,55 | 0,60 |
| H5 | LPHW060310TR-D06 MH1000 | 0,44 | 0,44 | 0,44 | 0,50 |
| H8 | LPHW060310TR-D06 MH1000 | 0,38 | 0,34 | 0,34 | 0,38 |
| H11 | LPHW060310TR-D06 MP3000 | 0,44 | 0,44 | 0,44 | 0,50 |
| H12 | LPHT060310TR-M06 T350M | 0,38 | 0,34 | 0,34 | 0,38 |
| H21 | LPHW060310TR-D06 MH1000 | 0,38 | 0,34 | 0,34 | 0,38 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

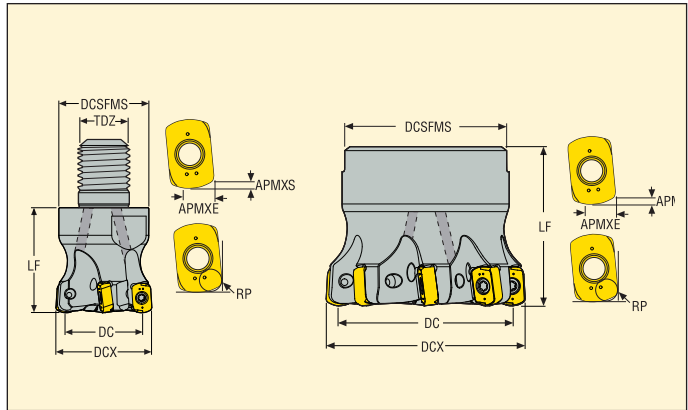
R217/220.21-LP06 – Cutting data $v_c =$ (m/min)

| SMG | MP2050 | | | MP2500 | | | MP3000 | | | T350M | | | F40M | | | MM4500 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|------|------|--------|-----|-----|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 295 | 335 | 410 | 300 | 340 | 415 | 285 | 325 | 395 | 260 | 295 | 365 | 225 | 260 | 315 | 200 | 230 | 275 |
| P2 | 285 | 325 | 400 | 290 | 330 | 405 | 275 | 315 | 385 | 255 | 290 | 355 | 220 | 250 | 310 | 195 | 220 | 270 |
| P3 | 250 | 285 | 350 | 255 | 290 | 355 | 240 | 275 | 335 | 220 | 255 | 310 | 195 | 220 | 270 | 170 | 195 | 235 |
| P4 | 220 | 250 | 305 | 225 | 255 | 315 | 215 | 245 | 295 | 195 | 225 | 275 | 170 | 195 | 235 | 150 | 170 | 205 |
| P5 | 210 | 240 | 295 | 215 | 245 | 300 | 205 | 230 | 285 | 185 | 215 | 260 | 165 | 185 | 225 | 140 | 165 | 200 |
| P6 | 235 | 270 | 330 | 240 | 275 | 335 | 230 | 260 | 320 | 210 | 240 | 290 | 180 | 210 | 255 | 165 | 190 | 225 |
| P7 | 225 | 255 | 310 | 225 | 260 | 315 | 215 | 245 | 300 | 200 | 225 | 275 | 170 | 195 | 240 | 155 | 175 | 215 |
| P8 | 210 | 240 | 295 | 215 | 245 | 300 | 205 | 230 | 285 | 185 | 215 | 260 | 165 | 185 | 225 | 140 | 165 | 200 |
| P11 | 215 | 250 | 300 | 220 | 250 | 310 | 210 | 240 | 290 | 190 | 220 | 270 | 165 | 190 | 235 | 150 | 170 | 210 |
| P12 | 145 | 165 | 195 | 145 | 165 | 200 | 140 | 160 | 190 | 125 | 145 | 175 | 110 | 125 | 150 | 95 | 110 | 130 |
| M1 | 205 | 235 | 285 | 210 | 240 | 295 | 205 | 235 | 290 | 195 | 225 | 275 | 175 | 205 | 250 | 165 | 190 | 230 |
| M2 | 170 | 195 | 235 | 175 | 195 | 240 | 170 | 195 | 235 | 160 | 185 | 225 | 145 | 165 | 205 | 135 | 155 | 190 |
| M3 | 135 | 160 | 190 | 140 | 160 | 195 | 140 | 160 | 190 | 130 | 150 | 180 | 120 | 135 | 165 | 110 | 130 | 150 |
| M4 | 105 | 130 | 150 | 110 | 130 | 155 | 110 | 130 | 150 | 100 | 120 | 145 | 95 | 110 | 130 | 85 | 105 | 120 |
| M5 | 90 | 105 | 125 | 90 | 110 | 130 | 90 | 105 | 125 | 85 | 100 | 120 | 75 | 90 | 110 | 75 | 85 | 100 |
| K1 | 225 | 260 | 315 | 230 | 265 | 320 | 220 | 250 | 305 | — | — | — | 175 | 200 | 245 | — | — | — |
| K2 | 200 | 230 | 280 | 205 | 235 | 285 | 195 | 220 | 270 | — | — | — | 155 | 175 | 215 | — | — | — |
| K3 | 170 | 195 | 235 | 170 | 195 | 240 | 165 | 185 | 225 | — | — | — | 130 | 150 | 180 | — | — | — |
| K4 | 160 | 185 | 225 | 165 | 190 | 230 | 155 | 180 | 215 | — | — | — | 125 | 140 | 175 | — | — | — |
| K5 | 100 | 115 | 135 | 100 | 115 | 140 | 95 | 110 | 130 | — | — | — | 80 | 90 | 105 | — | — | — |
| K6 | 140 | 165 | 200 | 145 | 165 | 200 | 135 | 155 | 190 | — | — | — | 110 | 125 | 155 | — | — | — |
| K7 | 130 | 145 | 175 | 130 | 150 | 180 | 125 | 140 | 170 | — | — | — | 100 | 115 | 135 | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1275 | 1475 | 1775 | — | — | — |
| N2 | — | — | — | — | — | — | 650 | 740 | 900 | — | — | — | 520 | 590 | 720 | — | — | — |
| N3 | — | — | — | — | — | — | 430 | 495 | 600 | — | — | — | 345 | 395 | 480 | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 395 | 450 | 550 | — | — | — |
| S1 | 50 | 60 | 75 | — | — | — | 50 | 60 | 70 | 48 | 55 | 65 | 43 | 50 | 60 | 27 | 32 | 37 |
| S2 | 42 | 50 | 60 | — | — | — | 40 | 48 | 55 | 38 | 46 | 55 | 35 | 42 | 49 | 22 | 26 | 30 |
| S3 | 37 | 44 | 50 | — | — | — | 36 | 42 | 50 | 34 | 40 | 47 | 31 | 37 | 43 | 19 | 22 | 26 |
| S11 | 75 | 85 | 100 | — | — | — | 70 | 85 | 100 | 65 | 80 | 95 | 60 | 70 | 85 | 37 | 43 | 50 |
| S12 | 50 | 60 | 70 | — | — | — | 48 | 55 | 70 | 46 | 55 | 65 | 42 | 49 | 60 | 34 | 40 | 47 |
| S13 | 29 | 35 | 41 | — | — | — | 28 | 34 | 40 | 27 | 32 | 38 | 24 | 29 | 34 | 20 | 24 | 28 |
| H5 | 45 | 50 | 60 | 46 | 50 | 60 | 45 | 50 | 60 | 44 | 50 | 60 | 38 | 44 | 50 | — | — | — |
| H8 | 48 | 55 | 65 | 49 | 55 | 65 | 48 | 55 | 65 | 47 | 55 | 65 | 41 | 47 | 55 | — | — | — |
| H11 | 55 | 65 | 75 | 60 | 65 | 80 | 55 | 65 | 75 | 55 | 65 | 75 | 49 | 55 | 65 | — | — | — |
| H12 | 95 | 110 | 130 | 95 | 110 | 130 | 90 | 105 | 125 | 85 | 95 | 115 | 75 | 85 | 100 | — | — | — |
| H21 | 48 | 55 | 65 | 49 | 55 | 65 | 48 | 55 | 65 | 47 | 55 | 65 | 41 | 47 | 55 | — | — | — |

| SMG | MS2050 | | | MS2500 | | | MH1000 | | | H25 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|------|------|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | — | — | — | 325 | 370 | 455 | — | — | — | — | — | — |
| P2 | — | — | — | 315 | 360 | 445 | — | — | — | — | — | — |
| P3 | — | — | — | 280 | 320 | 390 | — | — | — | — | — | — |
| P4 | — | — | — | 245 | 280 | 340 | — | — | — | — | — | — |
| P5 | — | — | — | 235 | 270 | 325 | — | — | — | — | — | — |
| P6 | — | — | — | 265 | 300 | 365 | — | — | — | — | — | — |
| P7 | — | — | — | 250 | 285 | 345 | — | — | — | — | — | — |
| P8 | — | — | — | 235 | 270 | 325 | — | — | — | — | — | — |
| P11 | — | — | — | 240 | 275 | 335 | — | — | — | — | — | — |
| P12 | 120 | 140 | 165 | 160 | 185 | 220 | 150 | 170 | 205 | — | — | — |
| M1 | 195 | 225 | 275 | 225 | 260 | 315 | — | — | — | — | — | — |
| M2 | 160 | 185 | 225 | 185 | 215 | 260 | — | — | — | — | — | — |
| M3 | 130 | 150 | 180 | 150 | 175 | 210 | — | — | — | — | — | — |
| M4 | 100 | 120 | 145 | 120 | 140 | 165 | — | — | — | — | — | — |
| M5 | 85 | 100 | 120 | 100 | 120 | 140 | — | — | — | — | — | — |
| K1 | — | — | — | — | — | — | 235 | 265 | 325 | — | — | — |
| K2 | — | — | — | — | — | — | 205 | 235 | 290 | — | — | — |
| K3 | — | — | — | — | — | — | 175 | 200 | 245 | — | — | — |
| K4 | — | — | — | — | — | — | 165 | 190 | 235 | — | — | — |
| K5 | — | — | — | — | — | — | 105 | 120 | 140 | — | — | — |
| K6 | — | — | — | — | — | — | 145 | 170 | 205 | — | — | — |
| K7 | — | — | — | — | — | — | 135 | 150 | 180 | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | 1325 | 1525 | 1875 |
| N2 | — | — | — | — | — | — | — | — | — | 540 | 610 | 750 |
| N3 | — | — | — | — | — | — | — | — | — | 360 | 410 | 500 |
| N11 | — | — | — | — | — | — | — | — | — | 410 | 470 | 570 |
| S1 | 48 | 55 | 65 | 60 | 70 | 80 | — | — | — | — | — | — |
| S2 | 38 | 46 | 55 | 47 | 55 | 65 | — | — | — | — | — | — |
| S3 | 34 | 40 | 47 | 41 | 49 | 60 | — | — | — | — | — | — |
| S11 | 65 | 80 | 95 | 80 | 95 | 115 | — | — | — | — | — | — |
| S12 | 46 | 55 | 65 | 55 | 65 | 80 | — | — | — | — | — | — |
| S13 | 27 | 32 | 38 | 33 | 39 | 46 | — | — | — | — | — | — |
| H5 | — | — | — | — | — | — | 50 | 60 | 70 | — | — | — |
| H8 | — | — | — | — | — | — | 55 | 65 | 75 | — | — | — |
| H11 | — | — | — | — | — | — | 65 | 75 | 90 | — | — | — |
| H12 | — | — | — | — | — | — | 100 | 115 | 135 | — | — | — |
| H21 | — | — | — | — | — | — | 55 | 65 | 75 | — | — | — |

R217/220.21-LO06

High feed cutters - LO06



- For insert selection and cutting data recommendations, see page(s) 449-450
- For complete insert programme, see page(s) 648
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | RMPX° | C min | C max | | | | Insert |
|-------------------------|------------------|------------------|-------|------|------|------|--------|-----|------|-----|-------|-------|-------|---|-----|-------|--------|
| | | APMXE | APMXS | DCX | DC | DCB | DCSFMS | TDZ | LF | RP | | | | | | | |
| R217.21-1020.RE-LO06.2A | Combimaster | 2,5 | 0,9 | 20,0 | 13,3 | - | 18,5 | M10 | 28,0 | 1,8 | 1,0 | 26,0 | 39,37 | 2 | 0,1 | 35000 | LO..06 |
| R217.21-1225.RE-LO06.3A | Combimaster | 2,5 | 0,9 | 25,0 | 18,3 | - | 23,0 | M12 | 30,0 | 1,8 | 0,8 | 32,5 | 49,37 | 3 | 0,1 | 30000 | LO..06 |
| R217.21-1225.RE-LO06.4A | Combimaster | 2,5 | 0,9 | 25,0 | 18,3 | - | 23,0 | M12 | 30,0 | 1,8 | 0,8 | 43,3 | 49,0 | 4 | 0,1 | 30000 | LO..06 |
| R217.21-1632.RE-LO06.4A | Combimaster | 2,5 | 0,9 | 32,0 | 25,3 | - | 30,0 | M16 | 35,0 | 1,8 | 0,5 | 41,6 | 63,37 | 4 | 0,2 | 27000 | LO..06 |
| R217.21-1632.RE-LO06.5A | Combimaster | 2,5 | 0,9 | 32,0 | 25,3 | - | 30,0 | M16 | 35,0 | 1,8 | 0,5 | 57,3 | 63,0 | 5 | 0,2 | 27000 | LO..06 |
| R217.21-1635.RE-LO06.5A | Combimaster | 2,5 | 0,9 | 35,0 | 28,3 | - | 30,0 | M16 | 35,0 | 1,8 | 0,5 | 63,3 | 69,0 | 5 | 0,2 | 26000 | LO..06 |
| R220.21-0035-LO06.6A | Arbor | 2,5 | 0,9 | 35,0 | 28,3 | 16,0 | 32,0 | - | 35,0 | 1,8 | 0,5 | 68,3 | 69,0 | 6 | 0,2 | 24500 | LO..06 |
| R217.21-1640.RE-LO06.5A | Combimaster | 2,5 | 0,9 | 40,0 | 33,3 | - | 30,0 | M16 | 35,0 | 1,8 | 0,4 | 73,3 | 79,0 | 5 | 0,2 | 18000 | LO..06 |
| R217.21-2040.RE-LO06.6A | Combimaster | 2,5 | 0,9 | 40,0 | 33,0 | - | 36,5 | M20 | 40,0 | 1,8 | 0,4 | 52,0 | - | 6 | 0,4 | 18000 | LO..06 |
| R220.21-0040-LO06.7A | Arbor | 2,5 | 0,9 | 40,0 | 33,3 | 16,0 | 35,0 | - | 40,0 | 1,8 | 0,4 | 73,3 | 79,0 | 7 | 0,2 | 18000 | LO..06 |
| R220.21-0042-LO06.7A | Arbor | 2,5 | 0,9 | 42,0 | 35,3 | 16,0 | 35,0 | - | 40,0 | 1,8 | 0,4 | 77,3 | 82,0 | 7 | 0,2 | 18000 | LO..06 |
| R220.21-0050-LO06.8A | Arbor | 2,5 | 0,9 | 50,0 | 43,3 | 22,0 | 42,0 | - | 40,0 | 1,8 | 0,3 | 93,3 | 99,0 | 8 | 0,3 | 16000 | LO..06 |
| R220.21-0052-LO06.8A | Arbor | 2,5 | 0,9 | 52,0 | 45,3 | 22,0 | 42,0 | - | 40,0 | 1,8 | 0,3 | 97,3 | 103,0 | 8 | 0,4 | 16000 | LO..06 |
| R220.21-0063-LO06.9A | Arbor | 2,5 | 0,9 | 63,0 | 56,3 | 22,0 | 47,0 | - | 40,0 | 1,8 | 0,25 | 119,0 | 125,0 | 9 | 0,5 | 15000 | LO..06 |

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-----------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.21-.. | DOUBLE-T | C02508-T08P | H4B-T08P | - | 1,2 |
| R220.21- Ø35 | DOUBLE-T | C02508-T08P | H4B-T08P | MC6S8X25 | 1,2 |
| R220.21- Ø40-42 | DOUBLE-T | C02508-T08P | H4B-T08P | 220.17-689 | 1,2 |
| R220.21- Ø50-63 | DOUBLE-T | C02508-T08P | H4B-T08P | 220.17-692 | 1,2 |

Please check availability in current price and stock-list

Torque keys, see page 732

R217/220.21-L006 – Insert selection

| SMG | | a_p | f_z | | |
|-----|--------------------------|-------|-------|------|------|
| | | | 100% | 70% | 30% |
| P1 | LOHT060310TR-ME06 T350M | 0,80 | 0,55 | 0,55 | 0,55 |
| P2 | LOHT060310TR-ME06 T350M | 0,80 | 0,55 | 0,55 | 0,60 |
| P3 | LOHT060310TR-ME06 T350M | 0,80 | 0,50 | 0,50 | 0,55 |
| P4 | LOHT060310TR-M07 MP2500 | 0,80 | 0,60 | 0,60 | 0,65 |
| P5 | LOHT060310TR-M07 MP2500 | 0,80 | 0,55 | 0,55 | 0,60 |
| P6 | LOHT060310TR-M07 MP2500 | 0,80 | 0,55 | 0,55 | 0,60 |
| P7 | LOHT060310TR-M07 MP2500 | 0,80 | 0,55 | 0,55 | 0,60 |
| P8 | LOHT060310TR-MD07 MP2500 | 0,80 | 0,60 | 0,60 | 0,65 |
| P11 | LOHT060310TR-M07 MS2500 | 0,80 | 0,55 | 0,55 | 0,60 |
| P12 | LOHT060310TR-M07 MS2500 | 0,65 | 0,42 | 0,42 | 0,46 |
| M1 | LOHT060310TR-ME06 T350M | 0,80 | 0,55 | 0,55 | 0,60 |
| M2 | LOHT060310TR-ME06 T350M | 0,80 | 0,48 | 0,48 | 0,55 |
| M3 | LOHT060310TR-ME06 T350M | 0,65 | 0,44 | 0,44 | 0,48 |
| M4 | LOHT060310TR-ME06 T350M | 0,48 | 0,44 | 0,44 | 0,48 |
| M5 | LOHT060310TR-ME06 T350M | 0,48 | 0,44 | 0,44 | 0,48 |
| K1 | LOHT060310TR-MD07 MK2050 | 0,80 | 0,60 | 0,60 | 0,70 |
| K2 | LOHT060310TR-MD07 MK2050 | 0,80 | 0,55 | 0,55 | 0,60 |
| K3 | LOHT060310TR-MD07 MK2050 | 0,80 | 0,55 | 0,55 | 0,60 |
| K4 | LOHW060310TR-D07 MP1500 | 0,80 | 0,55 | 0,55 | 0,60 |
| K5 | LOHW060310TR-D07 MP1500 | 0,80 | 0,50 | 0,50 | 0,55 |
| K6 | LOHT060310TR-MD07 MK2050 | 0,80 | 0,55 | 0,55 | 0,60 |
| K7 | LOHT060310TR-MD07 MK2050 | 0,80 | 0,50 | 0,50 | 0,55 |
| S1 | LOHT060310TR-ME06 MS2500 | 0,48 | 0,44 | 0,44 | 0,48 |
| S2 | LOHT060310TR-ME06 MS2500 | 0,48 | 0,44 | 0,44 | 0,48 |
| S3 | LOHT060310TR-M07 F40M | 0,48 | 0,48 | 0,48 | 0,50 |
| S11 | LOHT060310TR-ME06 MS2050 | 0,55 | 0,46 | 0,46 | 0,50 |
| S12 | LOHT060310TR-ME06 MS2050 | 0,55 | 0,46 | 0,46 | 0,50 |
| S13 | LOHT060310TR-ME06 MS2050 | 0,48 | 0,44 | 0,44 | 0,48 |
| H5 | LOHW060310TR-D07 MH1000 | 0,50 | 0,42 | 0,42 | 0,46 |
| H8 | LOHW060310TR-D07 MH1000 | 0,44 | 0,34 | 0,34 | 0,38 |
| H11 | LOHT060310TR-M07 T350M | 0,50 | 0,42 | 0,42 | 0,46 |
| H12 | LOHT060310TR-M07 T350M | 0,44 | 0,34 | 0,34 | 0,38 |
| H21 | LOHW060310TR-D07 MH1000 | 0,44 | 0,34 | 0,34 | 0,38 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

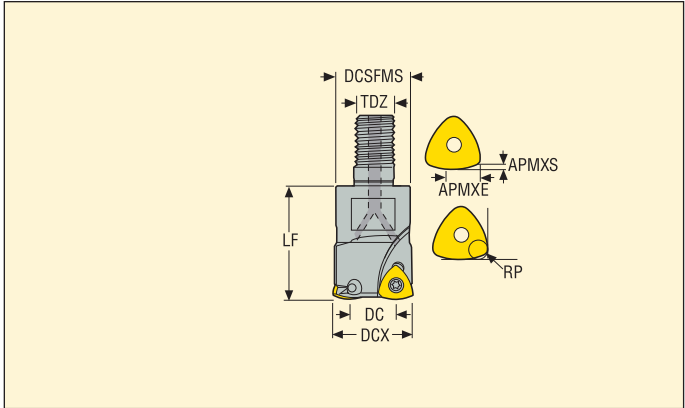
R217/220.21-L006 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2050 | | | MP2500 | | | MP3000 | | | T350M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 285 | 320 | 390 | 270 | 305 | 375 | 275 | 310 | 380 | 260 | 295 | 360 | 240 | 270 | 330 | 210 | 235 | 290 |
| P2 | 275 | 310 | 375 | 265 | 300 | 355 | 270 | 305 | 365 | 255 | 290 | 345 | 235 | 265 | 315 | 205 | 230 | 275 |
| P3 | 240 | 270 | 325 | 230 | 255 | 315 | 230 | 260 | 320 | 220 | 245 | 300 | 200 | 230 | 280 | 175 | 200 | 240 |
| P4 | 210 | 235 | 290 | 200 | 225 | 275 | 205 | 230 | 280 | 195 | 220 | 265 | 180 | 200 | 245 | 155 | 175 | 215 |
| P5 | 205 | 230 | 280 | 195 | 220 | 270 | 200 | 225 | 275 | 190 | 215 | 260 | 175 | 195 | 240 | 150 | 170 | 210 |
| P6 | 230 | 260 | 315 | 220 | 250 | 300 | 225 | 255 | 310 | 210 | 240 | 290 | 195 | 220 | 270 | 170 | 190 | 235 |
| P7 | 215 | 245 | 300 | 210 | 235 | 285 | 210 | 240 | 290 | 200 | 225 | 275 | 185 | 210 | 255 | 160 | 180 | 220 |
| P8 | 200 | 225 | 275 | 190 | 215 | 265 | 195 | 220 | 270 | 185 | 210 | 255 | 170 | 190 | 235 | 150 | 165 | 205 |
| P11 | 210 | 240 | 290 | 200 | 230 | 275 | 205 | 230 | 280 | 195 | 220 | 265 | 180 | 200 | 245 | 155 | 175 | 215 |
| P12 | 140 | 155 | 185 | 130 | 150 | 180 | 135 | 150 | 185 | 125 | 145 | 175 | 115 | 130 | 160 | 100 | 115 | 140 |
| M1 | — | — | — | 190 | 215 | 255 | 195 | 220 | 260 | 190 | 215 | 255 | 180 | 205 | 245 | 165 | 185 | 220 |
| M2 | — | — | — | 155 | 175 | 215 | 160 | 180 | 220 | 160 | 180 | 215 | 150 | 170 | 205 | 135 | 155 | 185 |
| M3 | — | — | — | 125 | 145 | 175 | 130 | 145 | 180 | 130 | 145 | 175 | 120 | 135 | 165 | 110 | 125 | 150 |
| M4 | — | — | — | 100 | 115 | 135 | 100 | 115 | 135 | 100 | 115 | 135 | 95 | 110 | 125 | 85 | 100 | 115 |
| M5 | — | — | — | 85 | 95 | 110 | 85 | 95 | 115 | 85 | 95 | 110 | 80 | 90 | 105 | 70 | 80 | 95 |
| K1 | 220 | 245 | 295 | 210 | 235 | 285 | 215 | 240 | 290 | 200 | 230 | 275 | — | — | — | 160 | 180 | 220 |
| K2 | 195 | 220 | 265 | 185 | 210 | 255 | 190 | 215 | 260 | 180 | 200 | 245 | — | — | — | 145 | 160 | 195 |
| K3 | 165 | 185 | 225 | 160 | 180 | 215 | 160 | 180 | 220 | 150 | 170 | 210 | — | — | — | 120 | 135 | 165 |
| K4 | 155 | 175 | 215 | 150 | 170 | 205 | 155 | 175 | 210 | 145 | 165 | 200 | — | — | — | 115 | 130 | 160 |
| K5 | 95 | 110 | 130 | 90 | 105 | 125 | 95 | 105 | 130 | 90 | 100 | 120 | — | — | — | 70 | 80 | 95 |
| K6 | 140 | 155 | 190 | 135 | 150 | 180 | 135 | 150 | 185 | 130 | 145 | 175 | — | — | — | 100 | 115 | 140 |
| K7 | 125 | 140 | 170 | 120 | 135 | 160 | 120 | 135 | 165 | 115 | 130 | 155 | — | — | — | 90 | 100 | 125 |
| S1 | — | — | — | 48 | 55 | 65 | — | — | — | 47 | 55 | 60 | 44 | 50 | 60 | 40 | 46 | 55 |
| S2 | — | — | — | 39 | 45 | 50 | — | — | — | 38 | 43 | 50 | 36 | 41 | 48 | 32 | 37 | 43 |
| S3 | — | — | — | 34 | 38 | 46 | — | — | — | 33 | 37 | 44 | 31 | 35 | 42 | 28 | 32 | 38 |
| S11 | — | — | — | 65 | 75 | 90 | — | — | — | 65 | 70 | 85 | 60 | 70 | 85 | 55 | 60 | 75 |
| S12 | — | — | — | 46 | 50 | 65 | — | — | — | 45 | 50 | 60 | 42 | 48 | 55 | 38 | 43 | 50 |
| S13 | — | — | — | 27 | 31 | 36 | — | — | — | 26 | 30 | 35 | 25 | 28 | 33 | 23 | 26 | 30 |
| H5 | 47 | 55 | 65 | 41 | 46 | 55 | 42 | 47 | 55 | 41 | 46 | 55 | 40 | 45 | 55 | 35 | 39 | 47 |
| H8 | 50 | 55 | 70 | 44 | 49 | 60 | 45 | 50 | 60 | 44 | 49 | 60 | 43 | 48 | 60 | 37 | 42 | 50 |
| H11 | 60 | 70 | 80 | 50 | 60 | 70 | 55 | 60 | 70 | 50 | 60 | 70 | 50 | 60 | 70 | 45 | 50 | 60 |
| H12 | 90 | 100 | 120 | 85 | 100 | 115 | 90 | 100 | 120 | 85 | 95 | 115 | 75 | 85 | 105 | 65 | 75 | 90 |
| H21 | 50 | 55 | 70 | 44 | 49 | 60 | 45 | 50 | 60 | 44 | 49 | 60 | 43 | 48 | 60 | 37 | 42 | 50 |

| SMG | MM4500 | | | MK2050 | | | MS2500 | | | MS2500 | | | MH1000 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 185 | 205 | 255 | 250 | 280 | 340 | — | — | — | 300 | 340 | 415 | — | — | — |
| P2 | 180 | 200 | 245 | 240 | 270 | 325 | — | — | — | 295 | 330 | 395 | — | — | — |
| P3 | 155 | 175 | 215 | 205 | 235 | 285 | — | — | — | 255 | 285 | 350 | — | — | — |
| P4 | 140 | 155 | 190 | 185 | 205 | 250 | — | — | — | 225 | 250 | 305 | — | — | — |
| P5 | 135 | 150 | 180 | 180 | 200 | 245 | — | — | — | 220 | 245 | 300 | — | — | — |
| P6 | 150 | 170 | 205 | 200 | 225 | 275 | — | — | — | 245 | 275 | 335 | — | — | — |
| P7 | 140 | 160 | 190 | 190 | 215 | 260 | — | — | — | 230 | 260 | 315 | — | — | — |
| P8 | 130 | 150 | 180 | 175 | 195 | 240 | — | — | — | 215 | 240 | 295 | — | — | — |
| P11 | 140 | 155 | 185 | 185 | 205 | 250 | — | — | — | 225 | 255 | 310 | — | — | — |
| P12 | 90 | 100 | 120 | 120 | 135 | 165 | 145 | 165 | 200 | 145 | 165 | 200 | 125 | 145 | 170 |
| M1 | 155 | 170 | 210 | — | — | — | 210 | 235 | 285 | 210 | 235 | 285 | — | — | — |
| M2 | 130 | 145 | 175 | — | — | — | 175 | 195 | 240 | 175 | 195 | 240 | — | — | — |
| M3 | 105 | 115 | 140 | — | — | — | 140 | 160 | 195 | 140 | 160 | 195 | — | — | — |
| M4 | 80 | 90 | 110 | — | — | — | 110 | 125 | 145 | 110 | 125 | 145 | — | — | — |
| M5 | 65 | 75 | 90 | — | — | — | 90 | 105 | 125 | 90 | 105 | 125 | — | — | — |
| K1 | — | — | — | 260 | 295 | 350 | — | — | — | — | — | — | 200 | 225 | 270 |
| K2 | — | — | — | 230 | 260 | 315 | — | — | — | — | — | — | 180 | 200 | 245 |
| K3 | — | — | — | 195 | 220 | 270 | — | — | — | — | — | — | 150 | 170 | 210 |
| K4 | — | — | — | 185 | 210 | 255 | — | — | — | — | — | — | 145 | 165 | 200 |
| K5 | — | — | — | 115 | 130 | 155 | — | — | — | — | — | — | 90 | 100 | 120 |
| K6 | — | — | — | 165 | 185 | 225 | — | — | — | — | — | — | 125 | 145 | 175 |
| K7 | — | — | — | 145 | 165 | 200 | — | — | — | — | — | — | 115 | 125 | 155 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | 25 | 28 | 33 | — | — | — | 55 | 60 | 70 | 55 | 60 | 70 | — | — | — |
| S2 | 20 | 22 | 27 | — | — | — | 43 | 50 | 60 | 43 | 50 | 60 | — | — | — |
| S3 | 17 | 20 | 24 | — | — | — | 38 | 43 | 50 | 38 | 43 | 50 | — | — | — |
| S11 | 35 | 39 | 47 | — | — | — | 75 | 85 | 100 | 75 | 85 | 100 | — | — | — |
| S12 | 32 | 36 | 43 | — | — | — | 50 | 60 | 70 | 50 | 60 | 70 | — | — | — |
| S13 | 18 | 21 | 25 | — | — | — | 30 | 35 | 41 | 30 | 35 | 41 | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — | 44 | 49 | 60 |
| H8 | — | — | — | — | — | — | — | — | — | — | — | — | 47 | 50 | 65 |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — | 55 | 60 | 75 |
| H12 | — | — | — | — | — | — | — | — | — | — | — | — | 85 | 95 | 115 |
| H21 | — | — | — | — | — | — | — | — | — | — | — | — | 47 | 50 | 65 |

R217.21

High feed cutters



- For insert selection and cutting data recommendations, see page(s) 456-463
- For complete insert programme, see page(s) 688
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | RMPX* | C min | C max | | | | Insert |
|--------------------------|------------------|------------------|-------|------|-------|--------|-----|------|------|------|-------|-------|-------|-----|-------|------------|--------|
| | | APMXE | APMXS | DCX | DC | DCSFMS | TDZ | LF | RP | | | | | | | | |
| R217.21-0816.RE-R080.2 | Combimaster | 5,0 | 0,6 | 16,0 | 9,25 | 13,5 | M8 | 23,0 | 1,0 | 6,1 | 20,8 | 30,75 | 2 | 0,1 | 53400 | 218.19-080 | |
| R217.21-1020.RE-R100.2A | Combimaster | 7,0 | 0,7 | 20,0 | 11,45 | 18,5 | M10 | 28,0 | 1,47 | 5,71 | 26,0 | 38,25 | 2 | 0,1 | 32600 | 218.19-100 | |
| R217.21-1020.RE-R100.2HA | Combimaster | 7,0 | 1,0 | 20,0 | 10,44 | 18,5 | M10 | 28,0 | 1,7 | 4,32 | 26,0 | 38,25 | 2 | 0,1 | 32600 | 218.19-100 | |
| R217.21-1225.RE-R100.3A | Combimaster | 7,0 | 0,7 | 25,0 | 16,46 | 23,0 | M12 | 35,0 | 1,47 | 3,48 | 32,5 | 48,25 | 3 | 0,1 | 29100 | 218.19-100 | |
| R217.21-1225.RE-R125.2HA | Combimaster | 9,0 | 1,5 | 25,0 | 12,36 | 23,0 | M12 | 35,0 | 2,18 | 4,25 | 32,5 | 47,75 | 2 | 0,1 | 29100 | 218.19-125 | |
| R217.21-1632.RE-R125.2A | Combimaster | 9,0 | 1,0 | 32,0 | 21,16 | 30,0 | M16 | 40,0 | 1,74 | 3,67 | 41,6 | 61,75 | 2 | 0,2 | 19700 | 218.19-125 | |
| R217.21-1632.RE-R125.3A | Combimaster | 9,0 | 1,0 | 32,0 | 21,21 | 30,0 | M16 | 40,0 | 1,74 | 3,7 | 41,6 | 61,75 | 3 | 0,3 | 19700 | 218.19-125 | |
| R217.21-1632.RE-R160.2HA | Combimaster | 11,0 | 1,8 | 32,0 | 16,09 | 30,0 | M16 | 40,0 | 2,87 | 3,76 | 41,6 | 61,25 | 2 | 0,2 | 16200 | 218.19-160 | |
| R217.21-1635.RE-R125.3A | Combimaster | 9,0 | 1,0 | 35,0 | 24,16 | 30,0 | M16 | 40,0 | 1,74 | 3,1 | 45,5 | 67,75 | 3 | 0,2 | 18800 | 218.19-125 | |
| R217.21-1640.RE-R125.4A | Combimaster | 9,0 | 1,0 | 40,0 | 29,25 | 30,0 | M16 | 40,0 | 1,74 | 2,47 | 52,0 | 77,75 | 4 | 0,3 | 17600 | 218.19-125 | |
| R217.21-1640.RE-R160.3HA | Combimaster | 11,0 | 1,8 | 40,0 | 23,99 | 30,0 | M16 | 40,0 | 2,87 | 2,18 | 52,0 | 77,25 | 3 | 0,2 | 14500 | 218.19-160 | |
| R217.21-2040.RE-R125.4A | Combimaster | 9,0 | 1,0 | 40,0 | 29,25 | 36,5 | M20 | 40,0 | 1,74 | 2,47 | 52,0 | 77,75 | 4 | 0,3 | 17600 | 218.19-125 | |
| R217.21-2040.RE-R160.3HA | Combimaster | 11,0 | 1,8 | 40,0 | 23,99 | 36,5 | M20 | 40,0 | 2,87 | 2,18 | 52,0 | 77,25 | 3 | 0,3 | 14500 | 218.19-160 | |
| | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | |

For Combimaster Shanks, see Machining Navigator Tooling System

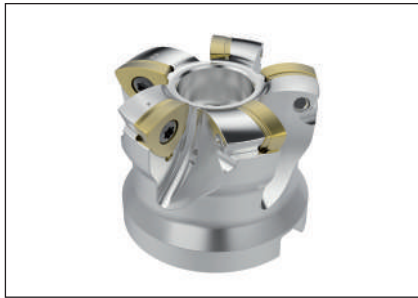
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|--------------|----------------|--------------|------------|-------------------|
| | | | | |
| R217.21-R080 | DOUBLE-T | C02205-T07P | H4B-T07P | 0,9 |
| R217.21-R100 | DOUBLE-T | C02506-T08P | H4B-T08P | 1,0 |
| R217.21-R125 | DOUBLE-T | C03007-T09P | H4B-T09P | 2,0 |
| R217.21-R160 | DOUBLE-T | C03510-T15P | H4B-T15P | 3,0 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

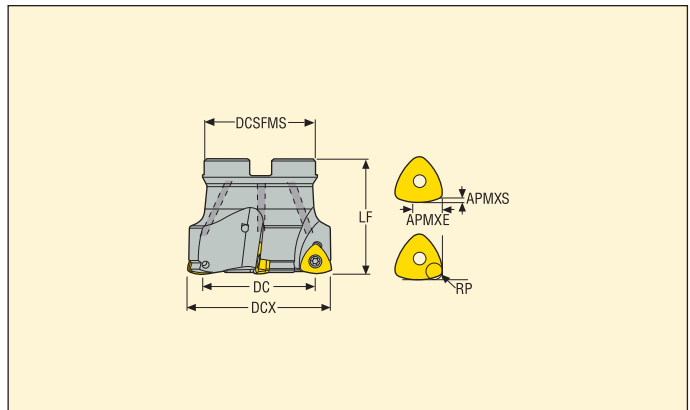
Please check availability in current price and stock-list

Torque keys, see page 732

R220.21-R160



- For insert selection and cutting data recommendations, see page(s) 456-463
- For complete insert programme, see page(s) 688
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | RMPX° | C min | C max | | | | Insert |
|----------------------|------------------|------------------|-------|-------|-------|------|--------|------|------|-------|-------|--------|---|-----|-------|------------|
| | | APMXE | APMXS | DCX | DC | DCB | DCSFMS | LF | RP | | | | | | | |
| R220.21-0040-R125.4A | Arbor | 9,0 | 1,0 | 40,0 | 29,2 | 16,0 | 35,0 | 40,0 | 1,75 | 2,47 | 52,0 | 77,75 | 4 | 0,2 | 17600 | 218.19-125 |
| R220.21-0042-R125.4A | Arbor | 9,0 | 1,0 | 42,0 | 31,2 | 16,0 | 35,0 | 40,0 | 1,75 | 2,28 | 54,6 | 81,75 | 4 | 0,2 | 17200 | 218.19-125 |
| R220.21-0050-R160.3A | Arbor | 11,0 | 1,8 | 50,0 | 34,17 | 22,0 | 47,0 | 40,0 | 2,85 | 1,47 | 65,0 | 97,25 | 3 | 0,3 | 12900 | 218.19-160 |
| R220.21-0050-R160.4A | Arbor | 11,0 | 1,8 | 50,0 | 34,17 | 22,0 | 47,0 | 40,0 | 2,85 | 1,47 | 65,0 | 97,25 | 4 | 0,3 | 12900 | 218.19-160 |
| R220.21-0050-R160.5A | Arbor | 11,0 | 1,8 | 50,0 | 33,7 | 22,0 | 47,0 | 40,0 | 3,01 | 0,9 | 65,0 | 97,25 | 5 | 0,4 | 12900 | 218.19-160 |
| R220.21-0052-R160.4A | Arbor | 11,0 | 1,8 | 52,0 | 36,19 | 22,0 | 47,0 | 40,0 | 2,85 | 1,38 | 67,6 | 101,25 | 4 | 0,4 | 12700 | 218.19-160 |
| R220.21-0052-R160.5A | Arbor | 11,0 | 1,8 | 52,0 | 35,7 | 22,0 | 47,0 | 40,0 | 3,03 | 0,8 | 67,6 | 101,25 | 5 | 0,4 | 12700 | 218.19-160 |
| R220.21-0063-R160.4A | Arbor | 11,0 | 1,8 | 63,0 | 47,2 | 27,0 | 50,0 | 50,0 | 2,85 | 1,0 | 81,9 | 123,25 | 4 | 0,5 | 11500 | 218.19-160 |
| R220.21-0063-R160.5A | Arbor | 11,0 | 1,8 | 63,0 | 47,2 | 27,0 | 50,0 | 50,0 | 2,85 | 1,0 | 81,9 | 123,25 | 5 | 0,6 | 11500 | 218.19-160 |
| R220.21-0063-R160.6A | Arbor | 11,0 | 1,8 | 63,0 | 47,9 | 27,0 | 50,0 | 50,0 | 3,0 | 0,6 | 81,9 | 123,25 | 6 | 0,6 | 11500 | 218.19-160 |
| R220.21-0066-R160.5A | Arbor | 11,0 | 1,8 | 66,0 | 50,21 | 27,0 | 50,0 | 50,0 | 2,85 | 0,95 | 85,8 | 129,25 | 5 | 0,6 | 11200 | 218.19-160 |
| R220.21-0066-R160.6A | Arbor | 11,0 | 1,8 | 66,0 | 50,9 | 27,0 | 62,0 | 50,0 | 3,0 | 0,5 | 85,8 | 129,25 | 6 | 0,8 | 11200 | 218.19-160 |
| R220.21-0080-R160.6A | Arbor | 11,0 | 1,8 | 80,0 | 64,15 | 27,0 | 62,0 | 50,0 | 2,85 | 0,73 | 104,0 | 157,25 | 6 | 1,0 | 10200 | 218.19-160 |
| R220.21-0080-R160.7A | Arbor | 11,0 | 1,8 | 80,0 | 63,6 | 27,0 | 62,0 | 50,0 | 3,0 | 0,4 | 104,0 | 157,25 | 7 | 1,3 | 10200 | 218.19-160 |
| R220.21-0084-R160.7A | Arbor | 11,0 | 1,8 | 84,0 | 67,6 | 32,0 | 77,0 | 50,0 | 3,0 | 0,4 | 109,2 | 165,25 | 7 | 1,3 | 10000 | 218.19-160 |
| R220.21-0084-R160.8A | Arbor | 11,0 | 1,8 | 84,0 | 67,6 | 32,0 | 77,0 | 50,0 | 3,0 | 0,4 | 109,2 | 165,25 | 8 | 1,5 | 10000 | 218.19-160 |
| R220.21-0100-R160.7A | Arbor | 11,0 | 1,8 | 100,0 | 84,13 | 32,0 | 77,0 | 50,0 | 2,85 | 0,54 | 130,0 | 197,25 | 7 | 1,6 | 9700 | 218.19-160 |
| R220.21-0100-R160.9A | Arbor | 11,0 | 1,8 | 100,0 | 83,6 | 32,0 | 77,0 | 50,0 | 3,0 | 0,3 | 130,0 | 197,25 | 9 | 1,6 | 9700 | 218.19-160 |

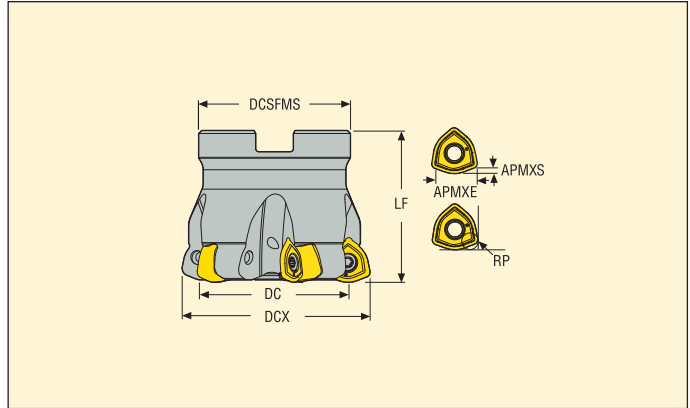
Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.21-0040-0042 | DOUBLE-T | C03007-T09P | H4B-T09P | 220.17-689 | 2,0 |
| R220.21-0050-0052 | DOUBLE-T | C03510-T15P | H4B-T15P | 220.17-692 | 3,5 |
| R220.21-0063-0080 | DOUBLE-T | C03510-T15P | H4B-T15P | MC6S12X35 | 3,5 |
| R220.21-0063-0080 | DOUBLE-T | C03510-T15P | H4B-T15PL | MC6S12X35 | 3,5 |
| R220.21-0084-0100 | DOUBLE-T | C03510-T15P | H4B-T15P | 950E1645 | 3,5 |
| R220.21-0100 | DOUBLE-T | C03510-T15P | H4B-T15PL | 220.17-694 | 3,5 |

Please check availability in current price and stock-list
Torque keys, see page 732

R220.21-R230

High feed cutters



- For insert selection and cutting data recommendations, see page(s) 467-468
- For complete insert programme, see page(s) 688
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | RMPX° | C min | C max | | | | Insert |
|-----------------------|------------------|------------------|-------|-------|-------|------|--------|------|------|-----|-------|-------|-------|-----|-------|------------|--------|
| | | APMXE | APMXS | DCX | DC | DCB | DCSFMS | LF | RP | | | | | | | | |
| R220.21-0050-R230.4A | Arbor | 10,0 | 1,8 | 50,0 | 35,6 | 22,0 | 42,0 | 40,0 | 3,32 | 0,9 | 85,6 | 98,0 | 4 | 0,3 | 12100 | 218.21-... | |
| R220.21-0050-R230.5A | Arbor | 10,0 | 1,8 | 50,0 | 35,6 | 22,0 | 42,0 | 40,0 | 3,32 | 0,9 | 85,6 | 98,0 | 5 | 0,3 | 12100 | 218.21-... | |
| R220.21-0052-R230.5A | Arbor | 10,0 | 1,8 | 52,0 | 37,6 | 22,0 | 42,0 | 40,0 | 3,32 | 0,9 | 89,6 | 102,0 | 5 | 0,3 | 11900 | 218.21-... | |
| R220.21-0063-R230.5A | Arbor | 10,0 | 1,8 | 63,0 | 48,3 | 27,0 | 50,0 | 50,0 | 3,32 | 0,6 | 111,3 | 124,0 | 5 | 0,6 | 10800 | 218.21-... | |
| R220.21-0063-R230.6A | Arbor | 10,0 | 1,8 | 63,0 | 48,3 | 27,0 | 50,0 | 50,0 | 3,32 | 0,6 | 111,3 | 124,0 | 6 | 0,6 | 10800 | 218.21-... | |
| R220.21-0066-R230.6A | Arbor | 10,0 | 1,8 | 66,0 | 51,3 | 27,0 | 62,0 | 50,0 | 3,32 | 0,6 | 117,3 | 130,0 | 6 | 0,8 | 10600 | 218.21-... | |
| R220.21-0080-R230.6A | Arbor | 10,0 | 1,8 | 80,0 | 65,6 | 27,0 | 62,0 | 50,0 | 3,32 | 0,4 | 145,6 | 158,0 | 6 | 1,0 | 9600 | 218.21-... | |
| R220.21-0080-R230.7A | Arbor | 10,0 | 1,8 | 80,0 | 65,6 | 27,0 | 62,0 | 50,0 | 3,32 | 0,4 | 145,6 | 158,0 | 7 | 1,0 | 9600 | 218.21-... | |
| R220.21-0084-R230.8A | Arbor | 10,0 | 1,8 | 84,0 | 69,6 | 32,0 | 77,0 | 50,0 | 3,32 | 0,4 | 153,6 | 166,0 | 8 | 1,3 | 9400 | 218.21-... | |
| R220.21-0100-R230.7A | Arbor | 10,0 | 1,8 | 100,0 | 85,6 | 32,0 | 77,0 | 50,0 | 3,3 | 0,3 | 185,6 | 198,0 | 7 | 1,5 | 8600 | 218.21-... | |
| R220.21-0100-R230.9A | Arbor | 10,0 | 1,8 | 100,0 | 85,6 | 32,0 | 77,0 | 50,0 | 3,32 | 0,3 | 185,6 | 198,0 | 9 | 1,6 | 8600 | 218.21-... | |
| R220.21-0125-R230.9A | Arbor | 10,0 | 1,8 | 125,0 | 110,2 | 40,0 | 90,0 | 63,0 | 3,32 | 0,2 | 235,2 | 248,0 | 9 | 2,8 | 7700 | 218.21-... | |
| R220.21-8160-R230.10A | Arbor | 10,0 | 1,8 | 160,0 | 145,2 | 40,0 | 90,0 | 63,0 | 3,32 | 0,1 | 305,2 | 318,0 | 10 | 4,1 | 6800 | 218.21-... | |

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.21-0050 | DOUBLE-T | C04011-T15P | H4B-T15P | 220.17-692 | 3,5 |
| R220.21-0063-0066 | DOUBLE-T | C04011-T15P | H4B-T15P | MC6S12X35 | 3,5 |
| R220.21-0080 | DOUBLE-T | C04011-T15P | H4B-T15PL | MC6S12X35 | 3,5 |
| R220.21-0084-0100 | DOUBLE-T | C04011-T15P | H4B-T15PL | MLC6S16X35 | 3,5 |
| R220.21-0125 | DOUBLE-T | C04011-T15P | H4B-T15PL | MLC6S20X40 | 3,5 |
| R220.21-8160 | DOUBLE-T | C04011-T15P | H4B-T15PL | - | 3,5 |

Please check availability in current price and stock-list
Torque keys, see page 732

R217.21-080 – Insert selection

| SMG | | a_p | f_z | | |
|-----|-------------------------|-------|-------|------|------|
| | | | 100% | 70% | 30% |
| P1 | 218.19-080T-M04 T350M | 0,55 | 0,50 | 0,50 | 0,55 |
| P2 | 218.19-080T-M04 T350M | 0,55 | 0,50 | 0,50 | 0,60 |
| P3 | 218.19-080T-M04 T350M | 0,55 | 0,50 | 0,50 | 0,55 |
| P4 | 218.19-080T-MD04 MS2500 | 0,55 | 0,48 | 0,48 | 0,55 |
| P5 | 218.19-080T-MD04 MS2500 | 0,55 | 0,48 | 0,48 | 0,50 |
| P6 | 218.19-080T-MD04 MS2500 | 0,55 | 0,48 | 0,48 | 0,50 |
| P7 | 218.19-080T-MD04 MS2500 | 0,55 | 0,48 | 0,48 | 0,50 |
| P8 | 218.19-080T-MD04 MP2500 | 0,55 | 0,50 | 0,50 | 0,55 |
| P11 | 218.19-080T-MD04 MS2500 | 0,55 | 0,48 | 0,48 | 0,50 |
| P12 | 218.19-080T-MD04 MS2500 | 0,44 | 0,34 | 0,34 | 0,38 |
| M1 | 218.19-080T-M04 F40M | 0,55 | 0,50 | 0,50 | 0,60 |
| M2 | 218.19-080T-M04 F40M | 0,55 | 0,48 | 0,48 | 0,50 |
| M3 | 218.19-080T-M04 F40M | 0,44 | 0,40 | 0,40 | 0,44 |
| M4 | 218.19-080T-M04 F40M | 0,32 | 0,36 | 0,36 | 0,38 |
| M5 | 218.19-080T-M04 F40M | 0,32 | 0,36 | 0,36 | 0,38 |
| K1 | 218.19-080T-MD04 F25M | 0,55 | 0,50 | 0,50 | 0,60 |
| K2 | 218.19-080T-MD04 F25M | 0,55 | 0,48 | 0,48 | 0,50 |
| K3 | 218.19-080T-MD04 F25M | 0,55 | 0,48 | 0,48 | 0,50 |
| K4 | 218.19-080T-MD04 F25M | 0,55 | 0,48 | 0,48 | 0,50 |
| K5 | 218.19-080T-MD04 F25M | 0,55 | 0,42 | 0,42 | 0,48 |
| K6 | 218.19-080T-MD04 F25M | 0,55 | 0,48 | 0,48 | 0,50 |
| K7 | 218.19-080T-MD04 F25M | 0,55 | 0,42 | 0,42 | 0,48 |
| S1 | 218.19-080T-M04 F40M | 0,32 | 0,36 | 0,36 | 0,38 |
| S2 | 218.19-080T-M04 F40M | 0,32 | 0,36 | 0,36 | 0,38 |
| S3 | 218.19-080T-M04 F40M | 0,32 | 0,32 | 0,32 | 0,36 |
| S11 | 218.19-080T-M04 F40M | 0,38 | 0,40 | 0,40 | 0,44 |
| S12 | 218.19-080T-M04 F40M | 0,38 | 0,40 | 0,40 | 0,44 |
| S13 | 218.19-080T-M04 F40M | 0,32 | 0,36 | 0,36 | 0,38 |
| H5 | 218.19-080T-MD04 F15M | 0,34 | 0,30 | 0,30 | 0,32 |
| H8 | 218.19-080T-MD04 F15M | 0,28 | 0,22 | 0,22 | 0,26 |
| H11 | 218.19-080T-MD04 F15M | 0,34 | 0,30 | 0,30 | 0,32 |
| H12 | 218.19-080T-MD04 F15M | 0,28 | 0,22 | 0,22 | 0,26 |
| H21 | 218.19-080T-MD04 F15M | 0,28 | 0,22 | 0,22 | 0,26 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

High feed milling cutters



R217.21-080 – Cutting data $v_c =$ (m/min)

| SMG | MP2500 | | | T350M | | | F15M | | | F25M | | | F30M | | | F40M | | |
|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|------|-----|-----|------|------|------|------|------|------|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 360 | 435 | 530 | 315 | 380 | 455 | — | — | — | 285 | 345 | 415 | 285 | 350 | 420 | 275 | 330 | 400 |
| P2 | 350 | 425 | 500 | 305 | 370 | 435 | — | — | — | 280 | 335 | 395 | 280 | 340 | 400 | 265 | 320 | 380 |
| P3 | 300 | 365 | 440 | 265 | 320 | 385 | — | — | — | 240 | 290 | 350 | 240 | 290 | 350 | 230 | 275 | 335 |
| P4 | 270 | 325 | 385 | 235 | 285 | 335 | — | — | — | 215 | 260 | 305 | 215 | 260 | 310 | 205 | 245 | 295 |
| P5 | 255 | 310 | 380 | 225 | 270 | 330 | — | — | — | 205 | 245 | 300 | 205 | 245 | 300 | 195 | 235 | 285 |
| P6 | 290 | 350 | 425 | 250 | 305 | 370 | — | — | — | 230 | 275 | 335 | 230 | 280 | 335 | 220 | 265 | 320 |
| P7 | 270 | 330 | 400 | 235 | 285 | 350 | — | — | — | 215 | 260 | 315 | 215 | 260 | 320 | 205 | 250 | 305 |
| P8 | 255 | 310 | 370 | 220 | 270 | 320 | — | — | — | 200 | 245 | 295 | 200 | 245 | 295 | 190 | 235 | 280 |
| P11 | 265 | 320 | 390 | 230 | 280 | 340 | — | — | — | 210 | 255 | 310 | 210 | 255 | 310 | 200 | 240 | 295 |
| P12 | 170 | 210 | 245 | 150 | 180 | 215 | 150 | 180 | 215 | 135 | 165 | 195 | 135 | 165 | 195 | 130 | 160 | 185 |
| M1 | 255 | 305 | 360 | 235 | 285 | 335 | — | — | — | — | — | — | 225 | 275 | 320 | 215 | 260 | 305 |
| M2 | 205 | 250 | 305 | 190 | 235 | 285 | — | — | — | — | — | — | 185 | 220 | 270 | 175 | 210 | 255 |
| M3 | 170 | 205 | 240 | 155 | 190 | 225 | — | — | — | — | — | — | 150 | 180 | 215 | 140 | 175 | 205 |
| M4 | 130 | 160 | 190 | 125 | 150 | 175 | — | — | — | — | — | — | 120 | 145 | 170 | 110 | 135 | 160 |
| M5 | 110 | 135 | 160 | 105 | 125 | 150 | — | — | — | — | — | — | 100 | 120 | 140 | 95 | 115 | 135 |
| K1 | 280 | 335 | 395 | — | — | — | 240 | 290 | 345 | 220 | 265 | 315 | 220 | 270 | 315 | 210 | 255 | 300 |
| K2 | 245 | 295 | 360 | — | — | — | 210 | 255 | 310 | 195 | 235 | 285 | 195 | 235 | 285 | 185 | 225 | 270 |
| K3 | 205 | 250 | 305 | — | — | — | 180 | 215 | 260 | 165 | 200 | 240 | 165 | 200 | 240 | 155 | 190 | 230 |
| K4 | 195 | 240 | 290 | — | — | — | 170 | 205 | 250 | 155 | 190 | 230 | 155 | 190 | 230 | 150 | 180 | 220 |
| K5 | 120 | 145 | 175 | — | — | — | 105 | 125 | 150 | 95 | 115 | 140 | 95 | 115 | 140 | 90 | 110 | 130 |
| K6 | 175 | 210 | 255 | — | — | — | 150 | 180 | 220 | 135 | 165 | 200 | 140 | 165 | 205 | 130 | 160 | 195 |
| K7 | 155 | 185 | 225 | — | — | — | 135 | 160 | 190 | 120 | 150 | 175 | 125 | 150 | 175 | 115 | 140 | 170 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1625 | 1975 | 2375 | 1550 | 1900 | 2250 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 660 | 800 | 960 | 630 | 760 | 910 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 440 | 530 | 640 | 420 | 510 | 610 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 500 | 610 | 730 | 480 | 580 | 690 |
| S1 | — | — | — | 60 | 70 | 85 | — | — | — | — | — | — | 55 | 65 | 80 | 50 | 65 | 75 |
| S2 | — | — | — | 46 | 55 | 65 | — | — | — | — | — | — | 44 | 55 | 65 | 42 | 50 | 60 |
| S3 | — | — | — | 41 | 50 | 60 | — | — | — | — | — | — | 39 | 48 | 55 | 37 | 45 | 55 |
| S11 | — | — | — | 80 | 100 | 115 | — | — | — | — | — | — | 75 | 95 | 110 | 75 | 90 | 105 |
| S12 | — | — | — | 55 | 70 | 80 | — | — | — | — | — | — | 44 | 55 | 65 | 50 | 60 | 75 |
| S13 | — | — | — | 32 | 40 | 46 | — | — | — | — | — | — | 26 | 31 | 37 | 29 | 36 | 42 |
| H5 | 55 | 65 | 75 | 50 | 60 | 75 | 50 | 60 | 75 | — | — | — | 48 | 55 | 65 | 45 | 55 | 65 |
| H8 | 60 | 70 | 80 | 55 | 65 | 75 | 55 | 65 | 75 | — | — | — | 50 | 60 | 70 | 48 | 60 | 65 |
| H11 | 70 | 85 | 100 | 65 | 80 | 95 | 65 | 80 | 95 | — | — | — | 60 | 70 | 85 | 60 | 70 | 80 |
| H12 | 115 | 135 | 160 | 100 | 120 | 140 | 100 | 120 | 135 | — | — | — | 90 | 110 | 125 | 85 | 105 | 120 |
| H21 | 60 | 70 | 80 | 55 | 65 | 75 | 55 | 65 | 75 | — | — | — | 50 | 60 | 70 | 48 | 60 | 65 |

| SMG | MS2500 | | |
|-----|--------|-----|-----|
| | 100% | 70% | 30% |
| P1 | 375 | 455 | 540 |
| P2 | 365 | 440 | 520 |
| P3 | 315 | 380 | 455 |
| P4 | 280 | 340 | 400 |
| P5 | 265 | 320 | 390 |
| P6 | 300 | 360 | 440 |
| P7 | 280 | 340 | 415 |
| P8 | 265 | 320 | 385 |
| P11 | 275 | 330 | 405 |
| P12 | 180 | 215 | 255 |
| M1 | 260 | 315 | 375 |
| M2 | 215 | 260 | 315 |
| M3 | 175 | 210 | 250 |
| M4 | 135 | 165 | 195 |
| M5 | 115 | 140 | 165 |
| K1 | — | — | — |
| K2 | — | — | — |
| K3 | — | — | — |
| K4 | — | — | — |
| K5 | — | — | — |
| K6 | — | — | — |
| K7 | — | — | — |
| N1 | — | — | — |
| N2 | — | — | — |
| N3 | — | — | — |
| N11 | — | — | — |
| S1 | 65 | 80 | 95 |
| S2 | 55 | 65 | 75 |
| S3 | 47 | 60 | 65 |
| S11 | 95 | 115 | 135 |
| S12 | 65 | 80 | 90 |
| S13 | 38 | 46 | 55 |
| H5 | — | — | — |
| H8 | — | — | — |
| H11 | — | — | — |
| H12 | — | — | — |
| H21 | — | — | — |

R217.21-100 – Insert selection

| SMG | | a_p | f_z | | |
|-----|-------------------------|-------|-------|------|------|
| | | | 100% | 70% | 30% |
| P1 | 218.19-100T-M06 T350M | 0,65 | 0,80 | 0,80 | 0,90 |
| P2 | 218.19-100T-M06 T350M | 0,65 | 0,80 | 0,80 | 0,90 |
| P3 | 218.19-100T-M06 T350M | 0,65 | 0,75 | 0,75 | 0,85 |
| P4 | 218.19-100T-MD08 MS2500 | 0,65 | 1,0 | 1,0 | 1,1 |
| P5 | 218.19-100T-MD08 MS2500 | 0,65 | 1,0 | 1,0 | 1,1 |
| P6 | 218.19-100T-MD08 MS2500 | 0,65 | 0,95 | 0,95 | 1,1 |
| P7 | 218.19-100T-MD08 MS2500 | 0,65 | 0,95 | 0,95 | 1,1 |
| P8 | 218.19-100T-MD08 MP2500 | 0,65 | 1,0 | 1,0 | 1,1 |
| P11 | 218.19-100T-MD08 MS2500 | 0,65 | 0,95 | 0,95 | 1,1 |
| P12 | 218.19-100T-MD08 MS2500 | 0,50 | 0,70 | 0,70 | 0,75 |
| M1 | 218.19-100T-M06 F40M | 0,65 | 0,80 | 0,80 | 0,90 |
| M2 | 218.19-100T-M06 F40M | 0,65 | 0,75 | 0,75 | 0,80 |
| M3 | 218.19-100T-M06 F40M | 0,50 | 0,60 | 0,60 | 0,65 |
| M4 | 218.19-100T-M06 F40M | 0,38 | 0,55 | 0,55 | 0,60 |
| M5 | 218.19-100T-M06 F40M | 0,38 | 0,55 | 0,55 | 0,60 |
| K1 | 218.19-100T-MD08 MK2050 | 0,65 | 1,1 | 1,1 | 1,2 |
| K2 | 218.19-100T-MD08 MK2050 | 0,65 | 1,0 | 1,0 | 1,1 |
| K3 | 218.19-100T-MD08 MK2050 | 0,65 | 1,0 | 1,0 | 1,1 |
| K4 | 218.19-100T-MD08 MK2050 | 0,65 | 1,0 | 1,0 | 1,1 |
| K5 | 218.19-100T-MD08 MK2050 | 0,65 | 0,90 | 0,90 | 1,0 |
| K6 | 218.19-100T-MD08 MK2050 | 0,65 | 1,0 | 1,0 | 1,1 |
| K7 | 218.19-100T-MD08 MK2050 | 0,65 | 0,90 | 0,90 | 1,0 |
| N1 | 218.19-100-E06 H25 | 0,65 | 1,0 | 1,0 | 1,2 |
| N2 | 218.19-100-E06 H25 | 0,65 | 1,0 | 1,0 | 1,2 |
| N3 | 218.19-100-E06 H25 | 0,65 | 1,0 | 1,0 | 1,2 |
| N11 | 218.19-100-E06 H25 | 0,65 | 1,0 | 1,0 | 1,2 |
| S1 | 218.19-100T-M06 MS2500 | 0,38 | 0,55 | 0,55 | 0,60 |
| S2 | 218.19-100T-M06 MS2500 | 0,38 | 0,55 | 0,55 | 0,60 |
| S3 | 218.19-100T-M06 MS2500 | 0,38 | 0,50 | 0,50 | 0,55 |
| S11 | 218.19-100T-M06 MS2050 | 0,44 | 0,60 | 0,60 | 0,65 |
| S12 | 218.19-100T-M06 MS2050 | 0,44 | 0,60 | 0,60 | 0,65 |
| S13 | 218.19-100T-M06 MS2050 | 0,38 | 0,55 | 0,55 | 0,60 |
| H5 | 218.19-100T-MD08 MH1000 | 0,38 | 0,60 | 0,60 | 0,65 |
| H8 | 218.19-100T-MD08 MH1000 | 0,34 | 0,46 | 0,46 | 0,50 |
| H11 | 218.19-100T-MD08 MH1000 | 0,38 | 0,60 | 0,60 | 0,65 |
| H12 | 218.19-100T-M06 MP3000 | 0,34 | 0,34 | 0,34 | 0,38 |
| H21 | 218.19-100T-MD08 MH1000 | 0,34 | 0,46 | 0,46 | 0,50 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R217.21-100 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | MP3000 | | | T350M | | | F15M | | | F25M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|------|-----|-----|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 305 | 360 | 440 | 270 | 320 | 390 | 295 | 350 | 420 | 270 | 320 | 385 | — | — | — | 260 | 305 | 370 |
| P2 | 300 | 350 | 430 | 265 | 310 | 380 | 285 | 340 | 410 | 265 | 310 | 375 | — | — | — | 255 | 300 | 360 |
| P3 | 265 | 310 | 375 | 235 | 275 | 335 | 250 | 295 | 355 | 230 | 275 | 330 | — | — | — | 220 | 260 | 315 |
| P4 | 230 | 275 | 330 | 205 | 240 | 295 | 220 | 260 | 315 | 205 | 240 | 290 | — | — | — | 195 | 230 | 275 |
| P5 | 220 | 260 | 315 | 195 | 230 | 280 | 210 | 250 | 305 | 195 | 230 | 280 | — | — | — | 185 | 220 | 270 |
| P6 | 250 | 295 | 355 | 225 | 265 | 315 | 235 | 280 | 340 | 220 | 260 | 315 | — | — | — | 210 | 245 | 300 |
| P7 | 240 | 280 | 335 | 210 | 250 | 300 | 225 | 265 | 320 | 205 | 245 | 295 | — | — | — | 195 | 230 | 285 |
| P8 | 220 | 260 | 315 | 195 | 230 | 280 | 210 | 250 | 300 | 195 | 230 | 275 | — | — | — | 185 | 220 | 265 |
| P11 | 230 | 270 | 325 | 205 | 240 | 290 | 220 | 255 | 315 | 200 | 235 | 290 | — | — | — | 190 | 225 | 275 |
| P12 | 155 | 185 | 220 | 135 | 165 | 195 | 145 | 175 | 210 | 135 | 160 | 190 | 125 | 150 | 175 | 130 | 155 | 185 |
| M1 | — | — | — | 190 | 225 | 275 | 215 | 255 | 305 | 205 | 240 | 290 | — | — | — | — | — | — |
| M2 | — | — | — | 160 | 185 | 225 | 175 | 210 | 255 | 165 | 195 | 240 | — | — | — | — | — | — |
| M3 | — | — | — | 135 | 160 | 190 | 145 | 175 | 210 | 140 | 165 | 200 | — | — | — | — | — | — |
| M4 | — | — | — | 105 | 130 | 150 | 115 | 140 | 165 | 110 | 135 | 155 | — | — | — | — | — | — |
| M5 | — | — | — | 90 | 110 | 125 | 95 | 115 | 140 | 90 | 110 | 130 | — | — | — | — | — | — |
| K1 | 235 | 280 | 340 | 210 | 245 | 300 | 230 | 270 | 325 | — | — | — | 190 | 225 | 275 | 200 | 235 | 285 |
| K2 | 210 | 250 | 300 | 185 | 220 | 265 | 200 | 235 | 290 | — | — | — | 170 | 200 | 245 | 175 | 210 | 255 |
| K3 | 180 | 210 | 255 | 155 | 185 | 225 | 170 | 200 | 245 | — | — | — | 145 | 170 | 205 | 150 | 175 | 215 |
| K4 | 170 | 200 | 245 | 150 | 175 | 215 | 160 | 190 | 235 | — | — | — | 135 | 160 | 195 | 145 | 170 | 205 |
| K5 | 105 | 125 | 150 | 90 | 110 | 130 | 100 | 120 | 140 | — | — | — | 85 | 100 | 120 | 90 | 105 | 125 |
| K6 | 150 | 175 | 215 | 130 | 155 | 190 | 145 | 170 | 205 | — | — | — | 120 | 140 | 175 | 125 | 150 | 180 |
| K7 | 135 | 155 | 190 | 120 | 140 | 170 | 130 | 150 | 180 | — | — | — | 105 | 125 | 155 | 115 | 135 | 160 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | 680 | 810 | 980 | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | 455 | 540 | 650 | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | — | — | — | 55 | 65 | 75 | 50 | 60 | 75 | — | — | — | — | — | — |
| S2 | — | — | — | — | — | — | 44 | 55 | 60 | 42 | 50 | 60 | — | — | — | — | — | — |
| S3 | — | — | — | — | — | — | 39 | 46 | 55 | 37 | 44 | 50 | — | — | — | — | — | — |
| S11 | — | — | — | — | — | — | 75 | 90 | 110 | 70 | 85 | 100 | — | — | — | — | — | — |
| S12 | — | — | — | — | — | — | 50 | 65 | 75 | 50 | 60 | 70 | — | — | — | — | — | — |
| S13 | — | — | — | — | — | — | 31 | 37 | 43 | 29 | 35 | 41 | — | — | — | — | — | — |
| H5 | 55 | 65 | 75 | — | — | — | 48 | 55 | 65 | 48 | 55 | 65 | 44 | 50 | 60 | 45 | 55 | 65 |
| H8 | 60 | 70 | 80 | — | — | — | 50 | 60 | 70 | 50 | 60 | 70 | 47 | 55 | 65 | 48 | 55 | 65 |
| H11 | 70 | 80 | 95 | — | — | — | 60 | 70 | 85 | 60 | 70 | 85 | 55 | 65 | 80 | 60 | 65 | 80 |
| H12 | 105 | 125 | 145 | — | — | — | 100 | 115 | 135 | 90 | 105 | 125 | 85 | 100 | 120 | 85 | 100 | 120 |
| H21 | 60 | 70 | 80 | — | — | — | 50 | 60 | 70 | 50 | 60 | 70 | 47 | 55 | 65 | 48 | 55 | 65 |

| SMG | F40M | | | MK2050 | | | MS2050 | | | MS2500 | | | MH1000 | | | H25 | | |
|-----|------|------|------|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|------|------|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 235 | 280 | 335 | 265 | 315 | 385 | — | — | — | 340 | 400 | 485 | — | — | — | — | — | — |
| P2 | 230 | 270 | 325 | 260 | 305 | 375 | — | — | — | 330 | 390 | 470 | — | — | — | — | — | — |
| P3 | 200 | 235 | 285 | 230 | 270 | 330 | — | — | — | 290 | 340 | 410 | — | — | — | — | — | — |
| P4 | 175 | 210 | 250 | 200 | 240 | 290 | — | — | — | 255 | 300 | 360 | — | — | — | — | — | — |
| P5 | 170 | 200 | 245 | 195 | 230 | 275 | — | — | — | 245 | 285 | 350 | — | — | — | — | — | — |
| P6 | 190 | 225 | 275 | 220 | 260 | 310 | — | — | — | 275 | 320 | 395 | — | — | — | — | — | — |
| P7 | 180 | 210 | 260 | 210 | 245 | 295 | — | — | — | 260 | 305 | 370 | — | — | — | — | — | — |
| P8 | 170 | 200 | 240 | 195 | 230 | 275 | — | — | — | 245 | 285 | 345 | — | — | — | — | — | — |
| P11 | 175 | 205 | 250 | 200 | 240 | 285 | — | — | — | 250 | 295 | 360 | — | — | — | — | — | — |
| P12 | 120 | 140 | 165 | 135 | 160 | 190 | 130 | 155 | 185 | 170 | 200 | 240 | 150 | 180 | 215 | — | — | — |
| M1 | 185 | 220 | 265 | — | — | — | 205 | 240 | 290 | 235 | 280 | 335 | — | — | — | — | — | — |
| M2 | 150 | 180 | 220 | — | — | — | 165 | 195 | 240 | 195 | 230 | 280 | — | — | — | — | — | — |
| M3 | 125 | 150 | 180 | — | — | — | 140 | 165 | 200 | 165 | 195 | 230 | — | — | — | — | — | — |
| M4 | 100 | 120 | 140 | — | — | — | 110 | 135 | 155 | 130 | 155 | 180 | — | — | — | — | — | — |
| M5 | 85 | 100 | 120 | — | — | — | 90 | 110 | 130 | 105 | 130 | 150 | — | — | — | — | — | — |
| K1 | 180 | 215 | 260 | 280 | 330 | 405 | — | — | — | — | — | — | 230 | 270 | 330 | — | — | — |
| K2 | 160 | 190 | 230 | 250 | 295 | 360 | — | — | — | — | — | — | 205 | 240 | 295 | — | — | — |
| K3 | 135 | 160 | 195 | 210 | 250 | 305 | — | — | — | — | — | — | 175 | 205 | 250 | — | — | — |
| K4 | 130 | 155 | 185 | 200 | 240 | 290 | — | — | — | — | — | — | 165 | 195 | 235 | — | — | — |
| K5 | 80 | 95 | 115 | 125 | 145 | 175 | — | — | — | — | — | — | 100 | 120 | 145 | — | — | — |
| K6 | 115 | 135 | 165 | 180 | 210 | 255 | — | — | — | — | — | — | 145 | 170 | 210 | — | — | — |
| K7 | 105 | 120 | 145 | 160 | 185 | 225 | — | — | — | — | — | — | 130 | 155 | 185 | — | — | — |
| N1 | 1350 | 1600 | 1950 | — | — | — | — | — | — | — | — | — | — | — | — | 1400 | 1650 | 2000 |
| N2 | 550 | 640 | 780 | — | — | — | — | — | — | — | — | — | — | — | — | 570 | 670 | 810 |
| N3 | 365 | 430 | 520 | — | — | — | — | — | — | — | — | — | — | — | — | 380 | 445 | 540 |
| N11 | 415 | 490 | 600 | — | — | — | — | — | — | — | — | — | — | — | — | 430 | 510 | 620 |
| S1 | 47 | 55 | 65 | — | — | — | 50 | 60 | 75 | 65 | 75 | 90 | — | — | — | — | — | — |
| S2 | 38 | 46 | 55 | — | — | — | 42 | 50 | 60 | 50 | 60 | 70 | — | — | — | — | — | — |
| S3 | 33 | 40 | 47 | — | — | — | 37 | 44 | 50 | 45 | 55 | 65 | — | — | — | — | — | — |
| S11 | 65 | 80 | 95 | — | — | — | 70 | 85 | 100 | 85 | 105 | 125 | — | — | — | — | — | — |
| S12 | 45 | 55 | 65 | — | — | — | 50 | 60 | 70 | 60 | 75 | 85 | — | — | — | — | — | — |
| S13 | 26 | 32 | 37 | — | — | — | 29 | 35 | 41 | 35 | 43 | 50 | — | — | — | — | — | — |
| H5 | 41 | 48 | 55 | — | — | — | — | — | — | — | — | — | 55 | 60 | 75 | — | — | — |
| H8 | 44 | 50 | 60 | — | — | — | — | — | — | — | — | — | 55 | 65 | 80 | — | — | — |
| H11 | 55 | 60 | 75 | — | — | — | — | — | — | — | — | — | 70 | 80 | 95 | — | — | — |
| H12 | 80 | 90 | 110 | — | — | — | — | — | — | — | — | — | 100 | 120 | 145 | — | — | — |
| H21 | 44 | 50 | 60 | — | — | — | — | — | — | — | — | — | 55 | 65 | 80 | — | — | — |

R217/220.21-125 – Insert selection

| SMG | | a_p | f_z | | |
|-----|----------------------------|-------|-------|------|------|
| | | | 100% | 70% | 30% |
| P1 | 218.19-125T-T3-M07 T350M | 0,90 | 0,90 | 0,90 | 0,95 |
| P2 | 218.19-125T-T3-M07 T350M | 0,90 | 0,90 | 0,90 | 1,0 |
| P3 | 218.19-125T-T3-M07 T350M | 0,90 | 0,85 | 0,85 | 0,95 |
| P4 | 218.19-125T-T3-MD10 MS2500 | 0,90 | 1,2 | 1,2 | 1,3 |
| P5 | 218.19-125T-T3-MD10 MS2500 | 0,90 | 1,2 | 1,2 | 1,3 |
| P6 | 218.19-125T-T3-MD10 MS2500 | 0,90 | 1,2 | 1,2 | 1,3 |
| P7 | 218.19-125T-T3-MD10 MS2500 | 0,90 | 1,2 | 1,2 | 1,3 |
| P8 | 218.19-125T-T3-MD10 MP2500 | 0,90 | 1,2 | 1,2 | 1,3 |
| P11 | 218.19-125T-T3-MD10 MS2500 | 0,90 | 1,2 | 1,2 | 1,3 |
| P12 | 218.19-125T-T3-MD10 MS2500 | 0,70 | 0,85 | 0,85 | 0,95 |
| M1 | 218.19-125T-T3-M07 F40M | 0,90 | 0,90 | 0,90 | 1,0 |
| M2 | 218.19-125T-T3-M07 F40M | 0,90 | 0,80 | 0,80 | 0,90 |
| M3 | 218.19-125T-T3-M07 F40M | 0,70 | 0,70 | 0,70 | 0,80 |
| M4 | 218.19-125T-T3-M07 F40M | 0,55 | 0,60 | 0,60 | 0,70 |
| M5 | 218.19-125T-T3-M07 F40M | 0,55 | 0,60 | 0,60 | 0,70 |
| K1 | 218.19-125T-T3-MD10 MK2050 | 0,90 | 1,3 | 1,3 | 1,4 |
| K2 | 218.19-125T-T3-MD10 MK2050 | 0,90 | 1,2 | 1,2 | 1,3 |
| K3 | 218.19-125T-T3-MD10 MK2050 | 0,90 | 1,2 | 1,2 | 1,3 |
| K4 | 218.19-125T-T3-MD10 MK2050 | 0,90 | 1,2 | 1,2 | 1,3 |
| K5 | 218.19-125T-T3-MD10 MK2050 | 0,90 | 1,0 | 1,0 | 1,2 |
| K6 | 218.19-125T-T3-MD10 MK2050 | 0,90 | 1,2 | 1,2 | 1,3 |
| K7 | 218.19-125T-T3-MD10 MK2050 | 0,90 | 1,0 | 1,0 | 1,2 |
| N1 | 218.19-125-T3-E06 H25 | 0,90 | 1,0 | 1,0 | 1,1 |
| N2 | 218.19-125-T3-E06 H25 | 0,90 | 1,0 | 1,0 | 1,1 |
| N3 | 218.19-125-T3-E06 H25 | 0,90 | 1,0 | 1,0 | 1,1 |
| N11 | 218.19-125-T3-E06 H25 | 0,90 | 1,0 | 1,0 | 1,1 |
| S1 | 218.19-125T-T3-M07 MS2500 | 0,55 | 0,60 | 0,60 | 0,70 |
| S2 | 218.19-125T-T3-M07 MS2500 | 0,55 | 0,60 | 0,60 | 0,70 |
| S3 | 218.19-125T-T3-M07 MS2500 | 0,55 | 0,60 | 0,60 | 0,65 |
| S11 | 218.19-125T-T3-M07 MS2050 | 0,65 | 0,70 | 0,70 | 0,80 |
| S12 | 218.19-125T-T3-M07 MS2050 | 0,65 | 0,70 | 0,70 | 0,80 |
| S13 | 218.19-125T-T3-M07 MS2050 | 0,55 | 0,60 | 0,60 | 0,70 |
| H5 | 218.19-125T-T3-MD10 MH1000 | 0,55 | 0,75 | 0,75 | 0,80 |
| H8 | 218.19-125T-T3-MD10 MH1000 | 0,48 | 0,55 | 0,55 | 0,65 |
| H11 | 218.19-125T-T3-MD08 MP3000 | 0,55 | 0,60 | 0,60 | 0,65 |
| H12 | 218.19-125T-T3-M07 T350M | 0,48 | 0,40 | 0,40 | 0,44 |
| H21 | 218.19-125T-T3-MD10 MH1000 | 0,48 | 0,55 | 0,55 | 0,65 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

High feed milling cutters



R217/220.21-125 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | MP3000 | | | T350M | | | F40M | | | MK2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|------|------|--------|-----|-----|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 275 | 320 | 395 | 295 | 340 | 420 | 280 | 325 | 400 | 255 | 295 | 365 | 225 | 260 | 320 | 240 | 280 | 345 |
| P2 | 270 | 310 | 385 | 285 | 330 | 405 | 270 | 315 | 380 | 250 | 290 | 350 | 215 | 250 | 305 | 235 | 270 | 335 |
| P3 | 240 | 275 | 340 | 250 | 290 | 350 | 240 | 275 | 335 | 220 | 255 | 305 | 190 | 220 | 265 | 210 | 240 | 295 |
| P4 | 210 | 240 | 300 | 220 | 255 | 315 | 210 | 240 | 300 | 190 | 225 | 275 | 165 | 195 | 240 | 185 | 210 | 260 |
| P5 | 200 | 230 | 285 | 215 | 250 | 300 | 205 | 235 | 285 | 185 | 215 | 260 | 165 | 190 | 225 | 175 | 200 | 250 |
| P6 | 225 | 260 | 320 | 240 | 280 | 335 | 230 | 265 | 320 | 210 | 245 | 295 | 185 | 210 | 255 | 195 | 225 | 280 |
| P7 | 210 | 245 | 300 | 225 | 265 | 320 | 215 | 250 | 300 | 200 | 230 | 275 | 170 | 200 | 240 | 185 | 215 | 265 |
| P8 | 200 | 230 | 285 | 210 | 245 | 295 | 200 | 230 | 280 | 185 | 215 | 260 | 160 | 185 | 225 | 175 | 200 | 250 |
| P11 | 205 | 240 | 295 | 220 | 255 | 310 | 210 | 240 | 295 | 190 | 225 | 270 | 165 | 195 | 235 | 180 | 210 | 255 |
| P12 | 140 | 165 | 195 | 145 | 170 | 205 | 140 | 160 | 195 | 125 | 150 | 180 | 110 | 130 | 155 | 120 | 145 | 170 |
| M1 | — | — | — | 205 | 240 | 290 | 205 | 235 | 285 | 195 | 225 | 270 | 175 | 205 | 245 | — | — | — |
| M2 | — | — | — | 175 | 200 | 240 | 170 | 195 | 235 | 160 | 185 | 225 | 145 | 170 | 205 | — | — | — |
| M3 | — | — | — | 140 | 165 | 195 | 140 | 165 | 195 | 130 | 155 | 185 | 120 | 140 | 165 | — | — | — |
| M4 | — | — | — | 115 | 135 | 160 | 110 | 135 | 155 | 105 | 125 | 150 | 95 | 115 | 135 | — | — | — |
| M5 | — | — | — | 95 | 115 | 130 | 95 | 110 | 130 | 90 | 105 | 125 | 80 | 95 | 110 | — | — | — |
| K1 | 215 | 245 | 305 | 225 | 265 | 320 | 215 | 250 | 300 | — | — | — | 170 | 200 | 240 | 255 | 295 | 360 |
| K2 | 190 | 220 | 270 | 205 | 235 | 285 | 195 | 225 | 270 | — | — | — | 155 | 180 | 215 | 225 | 260 | 320 |
| K3 | 160 | 185 | 230 | 170 | 200 | 240 | 165 | 190 | 230 | — | — | — | 130 | 150 | 185 | 190 | 220 | 270 |
| K4 | 155 | 175 | 220 | 165 | 190 | 230 | 155 | 180 | 220 | — | — | — | 125 | 145 | 175 | 180 | 210 | 260 |
| K5 | 95 | 110 | 135 | 100 | 115 | 140 | 95 | 110 | 135 | — | — | — | 75 | 85 | 105 | 115 | 135 | 160 |
| K6 | 135 | 155 | 190 | 145 | 170 | 205 | 135 | 160 | 190 | — | — | — | 110 | 125 | 155 | 160 | 185 | 230 |
| K7 | 125 | 145 | 170 | 130 | 150 | 180 | 120 | 140 | 170 | — | — | — | 95 | 110 | 135 | 145 | 170 | 200 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1275 | 1475 | 1775 | — | — | — |
| N2 | — | — | — | — | — | — | 650 | 750 | 900 | — | — | — | 520 | 600 | 720 | — | — | — |
| N3 | — | — | — | — | — | — | 430 | 500 | 600 | — | — | — | 345 | 400 | 480 | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 395 | 455 | 550 | — | — | — |
| S1 | — | — | — | — | — | — | 50 | 65 | 75 | 49 | 60 | 70 | 45 | 55 | 65 | — | — | — |
| S2 | — | — | — | — | — | — | 42 | 50 | 60 | 40 | 48 | 55 | 36 | 43 | 50 | — | — | — |
| S3 | — | — | — | — | — | — | 36 | 43 | 50 | 34 | 41 | 49 | 31 | 37 | 44 | — | — | — |
| S11 | — | — | — | — | — | — | 70 | 85 | 100 | 65 | 80 | 95 | 60 | 75 | 85 | — | — | — |
| S12 | — | — | — | — | — | — | 49 | 60 | 70 | 47 | 55 | 65 | 42 | 50 | 60 | — | — | — |
| S13 | — | — | — | — | — | — | 29 | 35 | 41 | 28 | 33 | 39 | 25 | 30 | 35 | — | — | — |
| H5 | 50 | 55 | 70 | 47 | 55 | 65 | 46 | 55 | 65 | 45 | 50 | 60 | 39 | 45 | 55 | — | — | — |
| H8 | 55 | 65 | 75 | 50 | 60 | 70 | 49 | 55 | 65 | 48 | 55 | 65 | 42 | 48 | 55 | — | — | — |
| H11 | 65 | 70 | 90 | 60 | 70 | 85 | 60 | 65 | 80 | 60 | 65 | 80 | 50 | 60 | 70 | — | — | — |
| H12 | 100 | 110 | 130 | 100 | 115 | 135 | 95 | 110 | 130 | 85 | 100 | 120 | 75 | 85 | 105 | — | — | — |
| H21 | 55 | 65 | 75 | 50 | 60 | 70 | 49 | 55 | 65 | 48 | 55 | 65 | 42 | 48 | 55 | — | — | — |

| SMG | MM4500 | | | MS2050 | | | MS2500 | | | MH1000 | | | H25 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|------|------|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 180 | 210 | 260 | — | — | — | 320 | 370 | 460 | — | — | — | — | — | — |
| P2 | 175 | 205 | 245 | — | — | — | 315 | 360 | 440 | — | — | — | — | — | — |
| P3 | 155 | 180 | 215 | — | — | — | 275 | 315 | 385 | — | — | — | — | — | — |
| P4 | 135 | 155 | 195 | — | — | — | 240 | 280 | 345 | — | — | — | — | — | — |
| P5 | 130 | 150 | 185 | — | — | — | 235 | 270 | 325 | — | — | — | — | — | — |
| P6 | 150 | 170 | 205 | — | — | — | 265 | 305 | 370 | — | — | — | — | — | — |
| P7 | 140 | 160 | 195 | — | — | — | 250 | 285 | 345 | — | — | — | — | — | — |
| P8 | 130 | 150 | 180 | — | — | — | 230 | 265 | 325 | — | — | — | — | — | — |
| P11 | 135 | 155 | 190 | — | — | — | 240 | 280 | 335 | — | — | — | — | — | — |
| P12 | 90 | 105 | 125 | 120 | 140 | 170 | 160 | 185 | 225 | 135 | 160 | 190 | — | — | — |
| M1 | 150 | 175 | 210 | 195 | 225 | 270 | 225 | 260 | 315 | — | — | — | — | — | — |
| M2 | 125 | 145 | 175 | 160 | 185 | 225 | 185 | 215 | 260 | — | — | — | — | — | — |
| M3 | 105 | 120 | 145 | 130 | 155 | 185 | 155 | 180 | 215 | — | — | — | — | — | — |
| M4 | 85 | 100 | 115 | 105 | 125 | 150 | 125 | 150 | 170 | — | — | — | — | — | — |
| M5 | 70 | 85 | 95 | 90 | 105 | 125 | 105 | 125 | 145 | — | — | — | — | — | — |
| K1 | — | — | — | — | — | — | — | — | — | 210 | 240 | 295 | — | — | — |
| K2 | — | — | — | — | — | — | — | — | — | 185 | 215 | 265 | — | — | — |
| K3 | — | — | — | — | — | — | — | — | — | 155 | 180 | 220 | — | — | — |
| K4 | — | — | — | — | — | — | — | — | — | 150 | 175 | 210 | — | — | — |
| K5 | — | — | — | — | — | — | — | — | — | 95 | 110 | 130 | — | — | — |
| K6 | — | — | — | — | — | — | — | — | — | 130 | 150 | 185 | — | — | — |
| K7 | — | — | — | — | — | — | — | — | — | 120 | 140 | 165 | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1350 | 1550 | 1900 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 540 | 630 | 760 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 360 | 415 | 510 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 410 | 475 | 580 |
| S1 | 25 | 31 | 35 | 49 | 60 | 70 | 60 | 70 | 85 | — | — | — | — | — | — |
| S2 | 20 | 25 | 29 | 40 | 48 | 55 | 48 | 60 | 70 | — | — | — | — | — | — |
| S3 | 18 | 21 | 25 | 34 | 41 | 49 | 42 | 50 | 60 | — | — | — | — | — | — |
| S11 | 35 | 41 | 48 | 65 | 80 | 95 | 80 | 100 | 115 | — | — | — | — | — | — |
| S12 | 32 | 38 | 45 | 47 | 55 | 65 | 55 | 70 | 80 | — | — | — | — | — | — |
| S13 | 19 | 23 | 27 | 28 | 33 | 39 | 34 | 41 | 47 | — | — | — | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — | 48 | 55 | 65 | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | 55 | 60 | 70 | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | 60 | 70 | 85 | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | 95 | 110 | 130 | — | — | — |
| H21 | — | — | — | — | — | — | — | — | — | 55 | 60 | 70 | — | — | — |

R217/220.21-160 – Insert selection

| SMG | | a_p | f_z | | |
|-----|----------------------------|-------|-------|------|------|
| | | | 100% | 70% | 30% |
| P1 | 218.19-160T-04-M08 T350M | 1,6 | 0,85 | 0,85 | 0,95 |
| P2 | 218.19-160T-04-M08 T350M | 1,6 | 0,85 | 0,85 | 0,95 |
| P3 | 218.19-160T-04-M08 T350M | 1,6 | 0,80 | 0,80 | 0,90 |
| P4 | 218.19-160T-04-M08 MP2500 | 1,6 | 0,80 | 0,80 | 0,90 |
| P5 | 218.19-160T-04-MD11 MP2500 | 1,6 | 1,1 | 1,1 | 1,2 |
| P6 | 218.19-160T-04-MD11 MP2500 | 1,6 | 1,1 | 1,1 | 1,2 |
| P7 | 218.19-160T-04-MD11 MP2500 | 1,6 | 1,1 | 1,1 | 1,2 |
| P8 | 218.19-160T-04-MD11 MP2500 | 1,6 | 1,1 | 1,1 | 1,2 |
| P11 | 218.19-160T-04-MD11 MS2500 | 1,6 | 1,1 | 1,1 | 1,2 |
| P12 | 218.19-160T-04-MD11 MS2500 | 1,3 | 0,80 | 0,80 | 0,90 |
| M1 | 218.19-160T-04-M08 F40M | 1,6 | 0,85 | 0,85 | 0,95 |
| M2 | 218.19-160T-04-M08 F40M | 1,6 | 0,80 | 0,80 | 0,85 |
| M3 | 218.19-160T-04-M08 F40M | 1,3 | 0,70 | 0,70 | 0,75 |
| M4 | 218.19-160T-04-M08 F40M | 0,90 | 0,70 | 0,70 | 0,80 |
| M5 | 218.19-160T-04-M08 F40M | 0,90 | 0,70 | 0,70 | 0,80 |
| K1 | 218.19-160T-04-MD11 MK2050 | 1,6 | 1,2 | 1,2 | 1,3 |
| K2 | 218.19-160T-04-MD11 MK2050 | 1,6 | 1,1 | 1,1 | 1,2 |
| K3 | 218.19-160T-04-MD11 MK2050 | 1,6 | 1,1 | 1,1 | 1,2 |
| K4 | 218.19-160T-04-MD11 MK2050 | 1,6 | 1,1 | 1,1 | 1,2 |
| K5 | 218.19-160T-04-MD11 MK2050 | 1,6 | 1,0 | 1,0 | 1,1 |
| K6 | 218.19-160T-04-MD11 MK2050 | 1,6 | 1,1 | 1,1 | 1,2 |
| K7 | 218.19-160T-04-MD11 MK2050 | 1,6 | 1,0 | 1,0 | 1,1 |
| N1 | 218.19-160-04-E07 H25 | 1,6 | 0,95 | 0,95 | 1,1 |
| N2 | 218.19-160-04-E07 H25 | 1,6 | 0,95 | 0,95 | 1,1 |
| N3 | 218.19-160-04-E07 H25 | 1,6 | 0,95 | 0,95 | 1,1 |
| N11 | 218.19-160-04-E07 H25 | 1,6 | 0,95 | 0,95 | 1,1 |
| S1 | 218.19-160T-04-M08 MS2500 | 0,90 | 0,70 | 0,70 | 0,80 |
| S2 | 218.19-160T-04-M08 MS2500 | 0,90 | 0,70 | 0,70 | 0,80 |
| S3 | 218.19-160T-04-M08 MS2500 | 0,90 | 0,65 | 0,65 | 0,70 |
| S11 | 218.19-160T-04-M08 MS2050 | 1,1 | 0,75 | 0,75 | 0,85 |
| S12 | 218.19-160T-04-M08 MS2050 | 1,1 | 0,75 | 0,75 | 0,85 |
| S13 | 218.19-160T-04-M08 MS2050 | 0,90 | 0,70 | 0,70 | 0,80 |
| H5 | 218.19-160T-04-MD11 MH1000 | 1,0 | 0,80 | 0,80 | 0,90 |
| H8 | 218.19-160T-04-MD11 MH1000 | 0,90 | 0,65 | 0,65 | 0,70 |
| H11 | 218.19-160T-04-MD09 MP3000 | 1,0 | 0,65 | 0,65 | 0,70 |
| H12 | 218.19-160T-04-M08 T350M | 0,90 | 0,46 | 0,46 | 0,50 |
| H21 | 218.19-160T-04-MD11 MH1000 | 0,90 | 0,65 | 0,65 | 0,70 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R217/220.21-160 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2050 | | | MP2500 | | | MP3000 | | | T350M | | | F15M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 270 | 320 | 395 | 285 | 330 | 405 | 290 | 340 | 410 | 275 | 320 | 390 | 250 | 295 | 360 | — | — | — |
| P2 | 265 | 310 | 385 | 275 | 325 | 395 | 280 | 330 | 400 | 265 | 310 | 380 | 245 | 285 | 350 | — | — | — |
| P3 | 235 | 275 | 340 | 240 | 285 | 345 | 245 | 290 | 350 | 235 | 275 | 330 | 215 | 250 | 305 | — | — | — |
| P4 | 205 | 240 | 295 | 210 | 250 | 305 | 215 | 255 | 310 | 205 | 240 | 290 | 190 | 220 | 270 | — | — | — |
| P5 | 195 | 230 | 285 | 205 | 240 | 295 | 205 | 240 | 300 | 195 | 230 | 285 | 180 | 210 | 260 | — | — | — |
| P6 | 220 | 260 | 320 | 230 | 265 | 330 | 230 | 270 | 335 | 220 | 260 | 320 | 200 | 235 | 295 | — | — | — |
| P7 | 210 | 245 | 300 | 215 | 250 | 310 | 220 | 255 | 315 | 205 | 245 | 300 | 190 | 225 | 275 | — | — | — |
| P8 | 195 | 230 | 285 | 205 | 240 | 290 | 205 | 240 | 295 | 195 | 230 | 280 | 180 | 210 | 255 | — | — | — |
| P11 | 200 | 235 | 290 | 210 | 245 | 300 | 215 | 250 | 310 | 200 | 235 | 290 | 185 | 215 | 270 | — | — | — |
| P12 | 135 | 155 | 190 | 140 | 160 | 195 | 140 | 160 | 200 | 135 | 155 | 190 | 120 | 140 | 175 | 110 | 125 | 155 |
| M1 | — | — | — | 195 | 230 | 280 | 200 | 235 | 290 | 200 | 235 | 285 | 190 | 220 | 270 | — | — | — |
| M2 | — | — | — | 160 | 190 | 235 | 165 | 195 | 240 | 165 | 190 | 235 | 155 | 180 | 225 | — | — | — |
| M3 | — | — | — | 130 | 155 | 185 | 135 | 155 | 190 | 135 | 155 | 185 | 125 | 145 | 180 | — | — | — |
| M4 | — | — | — | 105 | 125 | 145 | 105 | 130 | 150 | 105 | 125 | 150 | 100 | 120 | 140 | — | — | — |
| M5 | — | — | — | 85 | 105 | 125 | 90 | 105 | 125 | 90 | 105 | 125 | 85 | 100 | 115 | — | — | — |
| K1 | 210 | 245 | 305 | 220 | 255 | 310 | 220 | 260 | 315 | 210 | 245 | 300 | — | — | — | 170 | 195 | 245 |
| K2 | 185 | 220 | 270 | 190 | 225 | 280 | 195 | 230 | 285 | 185 | 220 | 270 | — | — | — | 150 | 175 | 215 |
| K3 | 160 | 185 | 230 | 165 | 190 | 235 | 165 | 195 | 240 | 155 | 185 | 230 | — | — | — | 125 | 150 | 185 |
| K4 | 150 | 175 | 220 | 155 | 180 | 225 | 160 | 185 | 230 | 150 | 175 | 215 | — | — | — | 120 | 140 | 175 |
| K5 | 90 | 110 | 135 | 95 | 115 | 135 | 100 | 115 | 140 | 95 | 110 | 130 | — | — | — | 75 | 85 | 105 |
| K6 | 135 | 155 | 190 | 135 | 160 | 200 | 140 | 165 | 200 | 130 | 155 | 190 | — | — | — | 105 | 125 | 155 |
| K7 | 120 | 140 | 170 | 125 | 145 | 175 | 125 | 145 | 180 | 120 | 140 | 170 | — | — | — | 95 | 110 | 135 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | 620 | 730 | 890 | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | 410 | 485 | 600 | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | 50 | 60 | 70 | — | — | — | 49 | 60 | 70 | 47 | 55 | 65 | — | — | — |
| S2 | — | — | — | 41 | 50 | 60 | — | — | — | 40 | 48 | 55 | 37 | 45 | 55 | — | — | — |
| S3 | — | — | — | 36 | 44 | 50 | — | — | — | 35 | 42 | 50 | 33 | 40 | 47 | — | — | — |
| S11 | — | — | — | 70 | 85 | 100 | — | — | — | 70 | 80 | 95 | 65 | 75 | 90 | — | — | — |
| S12 | — | — | — | 49 | 60 | 70 | — | — | — | 47 | 55 | 65 | 44 | 55 | 65 | — | — | — |
| S13 | — | — | — | 29 | 35 | 40 | — | — | — | 28 | 33 | 39 | 26 | 32 | 37 | — | — | — |
| H5 | 47 | 55 | 65 | 43 | 50 | 60 | 44 | 50 | 60 | 43 | 50 | 60 | 42 | 49 | 60 | 38 | 44 | 55 |
| H8 | 50 | 60 | 70 | 46 | 55 | 65 | 47 | 55 | 65 | 46 | 55 | 65 | 45 | 55 | 65 | 41 | 47 | 55 |
| H11 | 60 | 70 | 85 | 55 | 65 | 75 | 55 | 65 | 80 | 55 | 65 | 75 | 55 | 60 | 75 | 48 | 55 | 65 |
| H12 | 90 | 105 | 130 | 90 | 110 | 130 | 95 | 110 | 130 | 90 | 105 | 125 | 80 | 95 | 115 | 75 | 85 | 105 |
| H21 | 50 | 60 | 70 | 46 | 55 | 65 | 47 | 55 | 65 | 46 | 55 | 65 | 45 | 55 | 65 | 41 | 47 | 55 |

| SMG | F40M | | | MK2050 | | | MS2050 | | | MS2500 | | | MH1000 | | | H25 | | |
|-----|------|------|------|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|------|------|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 220 | 255 | 310 | 235 | 275 | 345 | — | — | — | 315 | 370 | 450 | — | — | — | — | — | — |
| P2 | 210 | 250 | 305 | 230 | 270 | 335 | — | — | — | 305 | 360 | 435 | — | — | — | — | — | — |
| P3 | 185 | 220 | 265 | 205 | 240 | 295 | — | — | — | 270 | 315 | 380 | — | — | — | — | — | — |
| P4 | 165 | 190 | 235 | 180 | 210 | 260 | — | — | — | 235 | 275 | 335 | — | — | — | — | — | — |
| P5 | 155 | 185 | 225 | 170 | 200 | 250 | — | — | — | 225 | 265 | 325 | — | — | — | — | — | — |
| P6 | 175 | 205 | 255 | 190 | 225 | 280 | — | — | — | 255 | 295 | 365 | — | — | — | — | — | — |
| P7 | 165 | 195 | 240 | 180 | 215 | 260 | — | — | — | 240 | 280 | 345 | — | — | — | — | — | — |
| P8 | 155 | 185 | 225 | 170 | 200 | 250 | — | — | — | 225 | 265 | 320 | — | — | — | — | — | — |
| P11 | 160 | 190 | 235 | 175 | 205 | 255 | — | — | — | 230 | 270 | 335 | — | — | — | — | — | — |
| P12 | 105 | 120 | 150 | 120 | 135 | 165 | 115 | 135 | 165 | 155 | 175 | 215 | 130 | 150 | 185 | — | — | — |
| M1 | 170 | 200 | 245 | — | — | — | 190 | 220 | 270 | 220 | 255 | 315 | — | — | — | — | — | — |
| M2 | 140 | 165 | 205 | — | — | — | 155 | 180 | 225 | 180 | 210 | 260 | — | — | — | — | — | — |
| M3 | 115 | 135 | 160 | — | — | — | 125 | 145 | 180 | 145 | 170 | 205 | — | — | — | — | — | — |
| M4 | 90 | 110 | 130 | — | — | — | 100 | 120 | 140 | 115 | 140 | 165 | — | — | — | — | — | — |
| M5 | 75 | 90 | 105 | — | — | — | 85 | 100 | 115 | 95 | 115 | 135 | — | — | — | — | — | — |
| K1 | 170 | 195 | 240 | 250 | 290 | 360 | — | — | — | — | — | — | 205 | 240 | 295 | — | — | — |
| K2 | 150 | 175 | 215 | 220 | 260 | 320 | — | — | — | — | — | — | 180 | 215 | 260 | — | — | — |
| K3 | 125 | 150 | 180 | 185 | 220 | 270 | — | — | — | — | — | — | 155 | 180 | 220 | — | — | — |
| K4 | 120 | 140 | 175 | 180 | 210 | 260 | — | — | — | — | — | — | 145 | 170 | 210 | — | — | — |
| K5 | 75 | 85 | 105 | 110 | 130 | 160 | — | — | — | — | — | — | 90 | 105 | 130 | — | — | — |
| K6 | 105 | 125 | 155 | 155 | 185 | 230 | — | — | — | — | — | — | 130 | 150 | 185 | — | — | — |
| K7 | 95 | 110 | 135 | 140 | 165 | 200 | — | — | — | — | — | — | 115 | 135 | 165 | — | — | — |
| N1 | 1225 | 1450 | 1775 | — | — | — | — | — | — | — | — | — | — | — | — | 1300 | 1525 | 1850 |
| N2 | 495 | 580 | 720 | — | — | — | — | — | — | — | — | — | — | — | — | 530 | 620 | 750 |
| N3 | 330 | 385 | 475 | — | — | — | — | — | — | — | — | — | — | — | — | 350 | 410 | 500 |
| N11 | 375 | 445 | 550 | — | — | — | — | — | — | — | — | — | — | — | — | 400 | 470 | 570 |
| S1 | 42 | 50 | 60 | — | — | — | 47 | 55 | 65 | 55 | 70 | 80 | — | — | — | — | — | — |
| S2 | 34 | 41 | 48 | — | — | — | 37 | 45 | 55 | 46 | 55 | 65 | — | — | — | — | — | — |
| S3 | 30 | 36 | 43 | — | — | — | 33 | 40 | 47 | 40 | 48 | 55 | — | — | — | — | — | — |
| S11 | 60 | 70 | 80 | — | — | — | 65 | 75 | 90 | 80 | 90 | 110 | — | — | — | — | — | — |
| S12 | 40 | 48 | 55 | — | — | — | 44 | 55 | 65 | 55 | 65 | 75 | — | — | — | — | — | — |
| S13 | 24 | 29 | 34 | — | — | — | 26 | 32 | 37 | 32 | 38 | 45 | — | — | — | — | — | — |
| H5 | 37 | 42 | 50 | — | — | — | — | — | — | — | — | — | 46 | 55 | 65 | — | — | — |
| H8 | 40 | 46 | 55 | — | — | — | — | — | — | — | — | — | 49 | 55 | 70 | — | — | — |
| H11 | 47 | 55 | 65 | — | — | — | — | — | — | — | — | — | 60 | 65 | 80 | — | — | — |
| H12 | 70 | 85 | 100 | — | — | — | — | — | — | — | — | — | 90 | 105 | 125 | — | — | — |
| H21 | 40 | 46 | 55 | — | — | — | — | — | — | — | — | — | 49 | 55 | 70 | — | — | — |

R217/220.21-R230 – Insert selection

| SMG | | a_p | f_z | | |
|-----|-----------------------------|-------|-------|------|------|
| | | | 100% | 70% | 30% |
| P1 | 218.21-230TR-06-ME13 T350M | 1,6 | 0,85 | 0,85 | 0,95 |
| P2 | 218.21-230TR-06-ME13 T350M | 1,6 | 0,90 | 0,90 | 0,95 |
| P3 | 218.21-230TR-06-ME13 T350M | 1,6 | 0,85 | 0,85 | 0,90 |
| P4 | 218.21-230TR-06-M15 MP2500 | 1,6 | 0,95 | 0,95 | 1,0 |
| P5 | 218.21-230TR-06-M15 MP2500 | 1,6 | 0,90 | 0,90 | 1,0 |
| P6 | 218.21-230TR-06-M15 MP2500 | 1,6 | 0,90 | 0,90 | 1,0 |
| P7 | 218.21-230TR-06-M15 MP2500 | 1,6 | 0,90 | 0,90 | 1,0 |
| P8 | 218.21-230TR-06-M15 MP2500 | 1,6 | 0,95 | 0,95 | 1,0 |
| P11 | 218.21-230TR-06-M15 MS2500 | 1,6 | 0,90 | 0,90 | 1,0 |
| P12 | 218.21-230TR-06-M15 MS2500 | 1,3 | 0,75 | 0,75 | 0,80 |
| M1 | 218.21-230TR-06-ME13 T350M | 1,6 | 0,90 | 0,90 | 0,95 |
| M2 | 218.21-230TR-06-ME13 T350M | 1,6 | 0,80 | 0,80 | 0,90 |
| M3 | 218.21-230TR-06-ME13 T350M | 1,3 | 0,75 | 0,75 | 0,85 |
| M4 | 218.21-230TR-06-ME13 MM4500 | 0,90 | 0,70 | 0,70 | 0,80 |
| M5 | 218.21-230TR-06-ME13 MM4500 | 0,90 | 0,70 | 0,70 | 0,80 |
| K1 | 218.21-230TR-06-MD17 MK2050 | 1,6 | 1,2 | 1,2 | 1,3 |
| K2 | 218.21-230TR-06-MD17 MK2050 | 1,6 | 1,1 | 1,1 | 1,2 |
| K3 | 218.21-230TR-06-MD17 MK2050 | 1,6 | 1,1 | 1,1 | 1,2 |
| K4 | 218.21-230TR-06-MD17 MK2050 | 1,6 | 1,1 | 1,1 | 1,2 |
| K5 | 218.21-230TR-06-MD17 MK2050 | 1,6 | 1,0 | 1,0 | 1,1 |
| K6 | 218.21-230TR-06-MD17 MK2050 | 1,6 | 1,1 | 1,1 | 1,2 |
| K7 | 218.21-230TR-06-MD17 MK2050 | 1,6 | 1,0 | 1,0 | 1,1 |
| S1 | 218.21-230TR-06-ME13 MS2500 | 0,90 | 0,70 | 0,70 | 0,80 |
| S2 | 218.21-230TR-06-ME13 MS2500 | 0,90 | 0,70 | 0,70 | 0,80 |
| S3 | 218.21-230TR-06-M15 F40M | 0,90 | 0,75 | 0,75 | 0,80 |
| S11 | 218.21-230TR-06-ME13 MS2050 | 1,1 | 0,80 | 0,80 | 0,90 |
| S12 | 218.21-230TR-06-ME13 MS2050 | 1,1 | 0,80 | 0,80 | 0,90 |
| S13 | 218.21-230TR-06-ME13 MS2050 | 0,90 | 0,70 | 0,70 | 0,80 |
| H5 | 218.21-230TR-06-MD17 MP3000 | 1,0 | 0,80 | 0,80 | 0,90 |
| H8 | 218.21-230TR-06-MD17 MP3000 | 0,90 | 0,65 | 0,65 | 0,70 |
| H11 | 218.21-230TR-06-M15 T350M | 1,0 | 0,65 | 0,65 | 0,75 |
| H12 | 218.21-230TR-06-M15 T350M | 0,90 | 0,50 | 0,50 | 0,55 |
| H21 | 218.21-230TR-06-MD17 MP3000 | 0,90 | 0,65 | 0,65 | 0,70 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R217/220.21-R230 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2050 | | | MP2500 | | | MP3000 | | | T350M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 260 | 300 | 370 | 255 | 295 | 365 | 260 | 300 | 370 | 245 | 285 | 350 | 225 | 265 | 320 | 195 | 230 | 280 |
| P2 | 250 | 290 | 360 | 250 | 290 | 355 | 255 | 295 | 360 | 240 | 280 | 340 | 220 | 255 | 315 | 190 | 225 | 270 |
| P3 | 215 | 250 | 310 | 220 | 250 | 310 | 220 | 255 | 320 | 210 | 245 | 300 | 195 | 225 | 275 | 170 | 195 | 240 |
| P4 | 195 | 225 | 280 | 190 | 220 | 275 | 195 | 225 | 280 | 185 | 215 | 265 | 170 | 195 | 245 | 150 | 170 | 210 |
| P5 | 185 | 215 | 265 | 185 | 215 | 265 | 190 | 220 | 265 | 180 | 210 | 255 | 165 | 190 | 235 | 145 | 165 | 205 |
| P6 | 210 | 245 | 300 | 210 | 240 | 295 | 215 | 245 | 300 | 200 | 235 | 285 | 185 | 215 | 260 | 160 | 185 | 225 |
| P7 | 200 | 230 | 280 | 195 | 230 | 280 | 200 | 235 | 285 | 190 | 220 | 270 | 175 | 205 | 245 | 150 | 175 | 215 |
| P8 | 180 | 210 | 260 | 185 | 210 | 265 | 185 | 215 | 265 | 175 | 205 | 255 | 160 | 190 | 235 | 140 | 165 | 205 |
| P11 | 190 | 225 | 275 | 190 | 220 | 270 | 195 | 225 | 275 | 185 | 215 | 260 | 170 | 195 | 240 | 150 | 170 | 210 |
| P12 | 125 | 150 | 180 | 125 | 150 | 180 | 125 | 150 | 180 | 120 | 140 | 170 | 110 | 130 | 160 | 95 | 115 | 135 |
| M1 | — | — | — | 180 | 205 | 255 | 185 | 210 | 260 | 180 | 210 | 255 | 170 | 200 | 240 | 155 | 180 | 220 |
| M2 | — | — | — | 150 | 175 | 210 | 155 | 175 | 215 | 150 | 175 | 210 | 140 | 165 | 200 | 130 | 150 | 180 |
| M3 | — | — | — | 120 | 145 | 170 | 125 | 145 | 175 | 120 | 145 | 170 | 115 | 135 | 165 | 105 | 125 | 150 |
| M4 | — | — | — | 100 | 120 | 140 | 100 | 120 | 140 | 100 | 120 | 140 | 95 | 110 | 130 | 85 | 100 | 120 |
| M5 | — | — | — | 80 | 100 | 115 | 85 | 100 | 120 | 85 | 100 | 115 | 80 | 95 | 110 | 70 | 85 | 100 |
| K1 | 200 | 230 | 285 | 195 | 230 | 280 | 200 | 235 | 285 | 190 | 220 | 270 | — | — | — | 150 | 175 | 215 |
| K2 | 175 | 205 | 250 | 175 | 205 | 250 | 180 | 210 | 255 | 170 | 200 | 240 | — | — | — | 135 | 160 | 190 |
| K3 | 150 | 175 | 215 | 150 | 175 | 210 | 150 | 175 | 215 | 145 | 165 | 205 | — | — | — | 115 | 135 | 165 |
| K4 | 145 | 165 | 205 | 145 | 165 | 200 | 145 | 170 | 205 | 140 | 160 | 195 | — | — | — | 110 | 130 | 155 |
| K5 | 90 | 100 | 125 | 90 | 100 | 125 | 90 | 105 | 125 | 85 | 100 | 120 | — | — | — | 70 | 80 | 95 |
| K6 | 125 | 145 | 180 | 125 | 145 | 175 | 130 | 150 | 180 | 120 | 140 | 170 | — | — | — | 95 | 110 | 135 |
| K7 | 110 | 130 | 160 | 115 | 130 | 160 | 115 | 135 | 160 | 110 | 125 | 150 | — | — | — | 85 | 100 | 120 |
| S1 | — | — | — | 48 | 55 | 65 | — | — | — | 46 | 55 | 65 | 44 | 50 | 60 | 40 | 48 | 55 |
| S2 | — | — | — | 39 | 46 | 55 | — | — | — | 37 | 45 | 50 | 35 | 42 | 50 | 32 | 38 | 45 |
| S3 | — | — | — | 34 | 41 | 48 | — | — | — | 33 | 39 | 46 | 31 | 37 | 44 | 28 | 34 | 40 |
| S11 | — | — | — | 65 | 80 | 95 | — | — | — | 60 | 75 | 90 | 60 | 70 | 85 | 55 | 65 | 75 |
| S12 | — | — | — | 45 | 55 | 65 | — | — | — | 43 | 50 | 60 | 41 | 49 | 60 | 37 | 45 | 55 |
| S13 | — | — | — | 27 | 32 | 38 | — | — | — | 26 | 31 | 36 | 25 | 30 | 35 | 22 | 27 | 31 |
| H5 | 46 | 50 | 65 | 41 | 47 | 55 | 42 | 48 | 55 | 41 | 47 | 55 | 40 | 46 | 55 | 35 | 40 | 48 |
| H8 | 49 | 55 | 70 | 44 | 50 | 60 | 45 | 50 | 60 | 44 | 50 | 60 | 43 | 50 | 60 | 38 | 44 | 50 |
| H11 | 60 | 65 | 80 | 50 | 60 | 70 | 55 | 60 | 75 | 50 | 60 | 70 | 50 | 60 | 70 | 44 | 50 | 60 |
| H12 | 90 | 100 | 120 | 85 | 100 | 120 | 90 | 105 | 125 | 85 | 100 | 115 | 80 | 90 | 105 | 70 | 80 | 95 |
| H21 | 49 | 55 | 70 | 44 | 50 | 60 | 45 | 50 | 60 | 44 | 50 | 60 | 43 | 50 | 60 | 38 | 44 | 50 |

| SMG | MM4500 | | | MK2050 | | | MS2050 | | | MS2500 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 175 | 200 | 245 | 225 | 260 | 320 | — | — | — | 285 | 330 | 405 |
| P2 | 165 | 190 | 235 | 220 | 255 | 315 | — | — | — | 275 | 320 | 390 |
| P3 | 145 | 170 | 205 | 190 | 220 | 270 | — | — | — | 240 | 280 | 345 |
| P4 | 130 | 150 | 180 | 170 | 200 | 245 | — | — | — | 215 | 245 | 305 |
| P5 | 125 | 145 | 175 | 165 | 190 | 230 | — | — | — | 205 | 240 | 290 |
| P6 | 140 | 160 | 195 | 185 | 210 | 260 | — | — | — | 230 | 270 | 325 |
| P7 | 130 | 150 | 185 | 175 | 200 | 245 | — | — | — | 220 | 255 | 310 |
| P8 | 120 | 140 | 175 | 160 | 185 | 225 | — | — | — | 205 | 235 | 290 |
| P11 | 130 | 150 | 180 | 170 | 195 | 240 | — | — | — | 215 | 245 | 300 |
| P12 | 85 | 100 | 120 | 110 | 130 | 160 | 105 | 125 | 150 | 140 | 165 | 200 |
| M1 | 140 | 165 | 205 | — | — | — | 170 | 200 | 240 | 200 | 230 | 280 |
| M2 | 120 | 140 | 165 | — | — | — | 140 | 165 | 200 | 165 | 190 | 235 |
| M3 | 95 | 115 | 135 | — | — | — | 115 | 135 | 165 | 135 | 160 | 190 |
| M4 | 80 | 95 | 110 | — | — | — | 95 | 110 | 130 | 110 | 130 | 155 |
| M5 | 65 | 80 | 90 | — | — | — | 80 | 95 | 110 | 90 | 110 | 130 |
| K1 | — | — | — | 235 | 275 | 335 | — | — | — | — | — | — |
| K2 | — | — | — | 210 | 245 | 300 | — | — | — | — | — | — |
| K3 | — | — | — | 180 | 205 | 255 | — | — | — | — | — | — |
| K4 | — | — | — | 170 | 195 | 240 | — | — | — | — | — | — |
| K5 | — | — | — | 105 | 120 | 150 | — | — | — | — | — | — |
| K6 | — | — | — | 150 | 175 | 215 | — | — | — | — | — | — |
| K7 | — | — | — | 135 | 155 | 190 | — | — | — | — | — | — |
| S1 | 24 | 29 | 33 | — | — | — | 44 | 50 | 60 | 55 | 65 | 75 |
| S2 | 19 | 23 | 27 | — | — | — | 35 | 42 | 50 | 43 | 50 | 60 |
| S3 | 17 | 20 | 24 | — | — | — | 31 | 37 | 44 | 38 | 45 | 55 |
| S11 | 32 | 39 | 46 | — | — | — | 60 | 70 | 85 | 70 | 85 | 105 |
| S12 | 30 | 36 | 43 | — | — | — | 41 | 49 | 60 | 50 | 60 | 70 |
| S13 | 18 | 21 | 25 | — | — | — | 25 | 30 | 35 | 30 | 36 | 42 |
| H5 | — | — | — | — | — | — | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | — | — | — |
| H21 | — | — | — | — | — | — | — | — | — | — | — | — |

R217/220.21-C – Insert selection

| SMG | | a_p | f_z | | |
|-----|----------------------------|-------|-------|------|------|
| | | | 100% | 70% | 30% |
| P1 | 218.19-160T-04-M08 T350M | 2,0 | 0,75 | 0,75 | 0,85 |
| P2 | 218.19-160T-04-M08 T350M | 2,0 | 0,80 | 0,80 | 0,85 |
| P3 | 218.19-160T-04-M08 T350M | 2,0 | 0,75 | 0,75 | 0,80 |
| P4 | 218.19-160T-04-M08 MP2500 | 2,0 | 0,70 | 0,70 | 0,80 |
| P5 | 218.19-160T-04-MD11 MP2500 | 2,0 | 0,95 | 0,95 | 1,1 |
| P6 | 218.19-160T-04-MD11 MP2500 | 2,0 | 0,95 | 0,95 | 1,1 |
| P7 | 218.19-160T-04-MD11 MP2500 | 2,0 | 0,95 | 0,95 | 1,1 |
| P8 | 218.19-160T-04-MD11 MP2500 | 2,0 | 1,0 | 1,0 | 1,1 |
| P11 | 218.19-160T-04-MD11 MS2500 | 2,0 | 0,95 | 0,95 | 1,1 |
| P12 | 218.19-160T-04-MD11 MS2500 | 1,8 | 0,70 | 0,70 | 0,75 |
| M1 | 218.19-160T-04-M08 F40M | 2,0 | 0,80 | 0,80 | 0,85 |
| M2 | 218.19-160T-04-M08 F40M | 2,0 | 0,70 | 0,70 | 0,75 |
| M3 | 218.19-160T-04-M08 T350M | 1,8 | 0,60 | 0,60 | 0,65 |
| M4 | 218.19-160T-04-M08 T350M | 1,4 | 0,60 | 0,60 | 0,65 |
| M5 | 218.19-160T-04-M08 T350M | 1,4 | 0,60 | 0,60 | 0,65 |
| K1 | 218.19-160T-04-MD11 MK2050 | 2,0 | 1,1 | 1,1 | 1,2 |
| K2 | 218.19-160T-04-MD11 MK2050 | 2,0 | 0,95 | 0,95 | 1,1 |
| K3 | 218.19-160T-04-MD11 MK2050 | 2,0 | 0,95 | 0,95 | 1,1 |
| K4 | 218.19-160T-04-MD11 MK2050 | 2,0 | 0,95 | 0,95 | 1,1 |
| K5 | 218.19-160T-04-MD11 MK2050 | 2,0 | 0,85 | 0,85 | 0,95 |
| K6 | 218.19-160T-04-MD11 MK2050 | 2,0 | 0,95 | 0,95 | 1,1 |
| K7 | 218.19-160T-04-MD11 MK2050 | 2,0 | 0,85 | 0,85 | 0,95 |
| N1 | 218.19-160-04-E07 H25 | 2,0 | 0,85 | 0,85 | 0,95 |
| N2 | 218.19-160-04-E07 H25 | 2,0 | 0,85 | 0,85 | 0,95 |
| N3 | 218.19-160-04-E07 H25 | 2,0 | 0,85 | 0,85 | 0,95 |
| N11 | 218.19-160-04-E07 H25 | 2,0 | 0,85 | 0,85 | 0,95 |
| S1 | 218.19-160T-04-M08 T350M | 1,4 | 0,60 | 0,60 | 0,65 |
| S2 | 218.19-160T-04-M08 T350M | 1,4 | 0,60 | 0,60 | 0,65 |
| S3 | 218.19-160T-04-M08 T350M | 1,4 | 0,55 | 0,55 | 0,60 |
| S11 | 218.19-160T-04-M08 MS2050 | 1,5 | 0,65 | 0,65 | 0,70 |
| S12 | 218.19-160T-04-M08 MS2050 | 1,5 | 0,65 | 0,65 | 0,70 |
| S13 | 218.19-160T-04-M08 MS2050 | 1,4 | 0,60 | 0,60 | 0,65 |
| H5 | 218.19-160T-04-MD11 MH1000 | 1,4 | 0,70 | 0,70 | 0,75 |
| H8 | 218.19-160T-04-MD11 MH1000 | 1,2 | 0,55 | 0,55 | 0,60 |
| H11 | 218.19-160T-04-MD09 MP3000 | 1,4 | 0,55 | 0,55 | 0,60 |
| H12 | 218.19-160T-04-M08 T350M | 1,2 | 0,42 | 0,42 | 0,44 |
| H21 | 218.19-160T-04-MD11 MH1000 | 1,2 | 0,55 | 0,55 | 0,60 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

R217/220.21-C – Cutting data $v_c =$ (m/min)

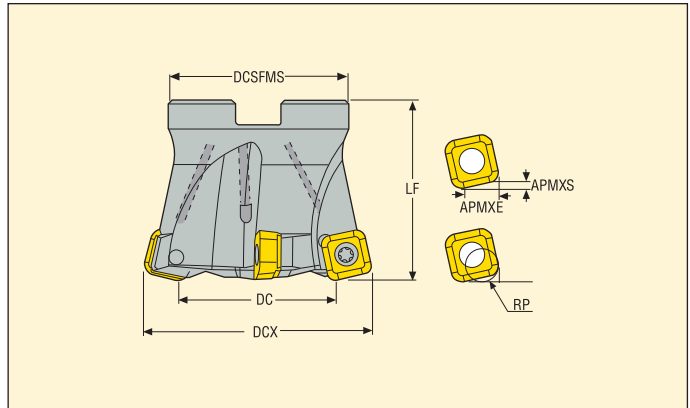
| SMG | MP1500 | | | MP2050 | | | MP2500 | | | T350M | | | F15M | | | F40M | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|-----|-----|------|------|------|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 290 | 325 | 400 | 265 | 300 | 365 | 270 | 305 | 370 | 235 | 265 | 325 | — | — | — | 205 | 230 | 280 |
| P2 | 275 | 305 | 380 | 255 | 285 | 355 | 260 | 290 | 360 | 225 | 255 | 315 | — | — | — | 195 | 220 | 275 |
| P3 | 245 | 275 | 335 | 225 | 250 | 310 | 230 | 255 | 315 | 200 | 225 | 275 | — | — | — | 175 | 195 | 240 |
| P4 | 215 | 240 | 295 | 200 | 225 | 275 | 205 | 230 | 280 | 180 | 200 | 245 | — | — | — | 155 | 175 | 210 |
| P5 | 210 | 235 | 280 | 190 | 215 | 265 | 195 | 220 | 270 | 170 | 190 | 235 | — | — | — | 150 | 165 | 205 |
| P6 | 235 | 260 | 315 | 215 | 245 | 300 | 220 | 250 | 305 | 190 | 215 | 265 | — | — | — | 165 | 190 | 230 |
| P7 | 220 | 245 | 300 | 205 | 230 | 285 | 210 | 235 | 290 | 180 | 205 | 250 | — | — | — | 155 | 175 | 220 |
| P8 | 205 | 230 | 280 | 190 | 210 | 260 | 190 | 215 | 265 | 165 | 190 | 230 | — | — | — | 145 | 165 | 200 |
| P11 | 215 | 240 | 290 | 200 | 225 | 275 | 200 | 225 | 280 | 175 | 200 | 245 | — | — | — | 155 | 170 | 210 |
| P12 | 140 | 160 | 195 | 130 | 150 | 180 | 135 | 150 | 180 | 115 | 130 | 160 | 100 | 115 | 140 | 100 | 115 | 140 |
| M1 | — | — | — | 185 | 205 | 255 | 185 | 210 | 260 | 175 | 195 | 245 | — | — | — | 160 | 180 | 220 |
| M2 | — | — | — | 155 | 175 | 215 | 160 | 175 | 220 | 145 | 165 | 205 | — | — | — | 135 | 150 | 185 |
| M3 | — | — | — | 125 | 140 | 170 | 130 | 140 | 175 | 120 | 135 | 165 | — | — | — | 110 | 120 | 150 |
| M4 | — | — | — | 95 | 110 | 135 | 100 | 115 | 135 | 95 | 105 | 125 | — | — | — | 85 | 95 | 115 |
| M5 | — | — | — | 80 | 95 | 110 | 85 | 95 | 115 | 75 | 90 | 105 | — | — | — | 70 | 80 | 95 |
| K1 | 215 | 245 | 300 | 200 | 225 | 280 | 205 | 230 | 285 | — | — | — | 155 | 175 | 220 | 155 | 175 | 215 |
| K2 | 195 | 220 | 270 | 185 | 205 | 255 | 185 | 210 | 260 | — | — | — | 145 | 160 | 195 | 140 | 160 | 195 |
| K3 | 165 | 185 | 225 | 155 | 175 | 215 | 155 | 175 | 220 | — | — | — | 120 | 135 | 165 | 120 | 135 | 165 |
| K4 | 160 | 180 | 215 | 145 | 165 | 205 | 150 | 170 | 210 | — | — | — | 115 | 130 | 155 | 115 | 130 | 160 |
| K5 | 100 | 110 | 135 | 90 | 100 | 125 | 90 | 105 | 125 | — | — | — | 70 | 80 | 100 | 70 | 80 | 95 |
| K6 | 140 | 160 | 190 | 130 | 145 | 180 | 130 | 150 | 185 | — | — | — | 100 | 115 | 140 | 100 | 115 | 140 |
| K7 | 125 | 140 | 175 | 115 | 130 | 160 | 115 | 130 | 160 | — | — | — | 90 | 105 | 125 | 90 | 100 | 125 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1150 | 1300 | 1575 |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 465 | 520 | 640 |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 310 | 345 | 425 |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 355 | 395 | 490 |
| S1 | — | — | — | 47 | 55 | 65 | — | — | — | 43 | 50 | 60 | — | — | — | 39 | 45 | 55 |
| S2 | — | — | — | 38 | 44 | 50 | — | — | — | 35 | 40 | 48 | — | — | — | 32 | 36 | 43 |
| S3 | — | — | — | 34 | 39 | 46 | — | — | — | 31 | 35 | 42 | — | — | — | 28 | 32 | 38 |
| S11 | — | — | — | 65 | 75 | 90 | — | — | — | 60 | 70 | 85 | — | — | — | 55 | 60 | 75 |
| S12 | — | — | — | 46 | 50 | 65 | — | — | — | 42 | 47 | 55 | — | — | — | 38 | 43 | 50 |
| S13 | — | — | — | 27 | 31 | 37 | — | — | — | 24 | 28 | 33 | — | — | — | 22 | 25 | 30 |
| H5 | 49 | 55 | 65 | 41 | 46 | 55 | 42 | 47 | 55 | 40 | 45 | 55 | 35 | 40 | 49 | 35 | 39 | 47 |
| H8 | 55 | 60 | 70 | 43 | 49 | 60 | 44 | 50 | 60 | 43 | 48 | 60 | 39 | 43 | 50 | 37 | 42 | 50 |
| H11 | 60 | 70 | 85 | 50 | 60 | 70 | 55 | 60 | 70 | 50 | 55 | 70 | 45 | 50 | 60 | 44 | 50 | 60 |
| H12 | 95 | 105 | 130 | 85 | 100 | 115 | 90 | 100 | 120 | 75 | 85 | 105 | 70 | 75 | 95 | 65 | 75 | 90 |
| H21 | 55 | 60 | 70 | 43 | 49 | 60 | 44 | 50 | 60 | 43 | 48 | 60 | 39 | 43 | 50 | 37 | 42 | 50 |

| SMG | MK2050 | | | MS2050 | | | MS2500 | | | MH1000 | | | H25 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|------|-----|-----|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 230 | 255 | 315 | — | — | — | 280 | 315 | 385 | — | — | — | — | — | — |
| P2 | 215 | 240 | 300 | — | — | — | 265 | 295 | 365 | — | — | — | — | — | — |
| P3 | 190 | 215 | 265 | — | — | — | 235 | 265 | 325 | — | — | — | — | — | — |
| P4 | 170 | 190 | 230 | — | — | — | 205 | 230 | 285 | — | — | — | — | — | — |
| P5 | 165 | 185 | 220 | — | — | — | 200 | 225 | 275 | — | — | — | — | — | — |
| P6 | 185 | 205 | 250 | — | — | — | 225 | 255 | 305 | — | — | — | — | — | — |
| P7 | 175 | 195 | 235 | — | — | — | 215 | 240 | 290 | — | — | — | — | — | — |
| P8 | 160 | 180 | 220 | — | — | — | 195 | 220 | 275 | — | — | — | — | — | — |
| P11 | 170 | 190 | 230 | — | — | — | 205 | 230 | 280 | — | — | — | — | — | — |
| P12 | 110 | 125 | 150 | 110 | 125 | 150 | 135 | 155 | 185 | 125 | 140 | 170 | — | — | — |
| M1 | — | — | — | 175 | 195 | 245 | 190 | 215 | 265 | — | — | — | — | — | — |
| M2 | — | — | — | 145 | 165 | 205 | 160 | 180 | 220 | — | — | — | — | — | — |
| M3 | — | — | — | 120 | 130 | 165 | 130 | 145 | 180 | — | — | — | — | — | — |
| M4 | — | — | — | 95 | 105 | 125 | 105 | 115 | 140 | — | — | — | — | — | — |
| M5 | — | — | — | 75 | 90 | 105 | 85 | 95 | 115 | — | — | — | — | — | — |
| K1 | 230 | 260 | 320 | — | — | — | — | — | — | 190 | 215 | 265 | — | — | — |
| K2 | 210 | 235 | 285 | — | — | — | — | — | — | 175 | 195 | 235 | — | — | — |
| K3 | 180 | 200 | 240 | — | — | — | — | — | — | 145 | 165 | 200 | — | — | — |
| K4 | 170 | 190 | 230 | — | — | — | — | — | — | 140 | 155 | 190 | — | — | — |
| K5 | 105 | 120 | 145 | — | — | — | — | — | — | 85 | 95 | 120 | — | — | — |
| K6 | 150 | 170 | 205 | — | — | — | — | — | — | 125 | 140 | 165 | — | — | — |
| K7 | 135 | 150 | 185 | — | — | — | — | — | — | 110 | 125 | 150 | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | 43 | 50 | 60 | 50 | 55 | 65 | — | — | — | — | — | — |
| S2 | — | — | — | 35 | 40 | 48 | 40 | 46 | 55 | — | — | — | — | — | — |
| S3 | — | — | — | 31 | 35 | 42 | 35 | 40 | 48 | — | — | — | — | — | — |
| S11 | — | — | — | 60 | 70 | 85 | 70 | 80 | 95 | — | — | — | — | — | — |
| S12 | — | — | — | 42 | 47 | 55 | 48 | 55 | 65 | — | — | — | — | — | — |
| S13 | — | — | — | 24 | 28 | 33 | 28 | 32 | 38 | — | — | — | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — | 43 | 48 | 60 | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | 47 | 50 | 65 | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | 55 | 60 | 75 | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | 85 | 95 | 115 | — | — | — |
| H21 | — | — | — | — | — | — | — | — | — | 47 | 50 | 65 | — | — | — |

R220.21-SC



- For insert selection and cutting data recommendations, see page(s) 470-471
- For complete insert programme, see page(s) 658
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | | RMPX° | C min | C max | | | | Insert |
|----------------------|------------------|------------------|-------|-------|-------|------|--------|------|-----|------|-------|-------|-------|-------|-------|------------|--|--------|
| | | APMXE | APMXS | DCX | DC | DCB | DCSFMS | LF | RP | | | | | | | | | |
| R220.21-0050-SC12.4A | Arbor | 9,0 | 2,0 | 50,0 | 31,0 | 22,0 | 42,0 | 40,0 | 4,4 | 2,3 | 81,0 | 98,0 | 4 | 0,3 | 10700 | SCET120630 | | |
| R220.21-0050-SC12.5A | Arbor | 9,0 | 2,0 | 50,0 | 31,0 | 22,0 | 42,0 | 40,0 | 4,4 | 2,1 | 81,0 | 98,0 | 5 | 0,4 | 10700 | SCET120630 | | |
| R220.21-0052-SC12.4A | Arbor | 9,0 | 2,0 | 52,0 | 33,0 | 22,0 | 42,0 | 40,0 | 4,4 | 2,2 | 85,0 | 102,0 | 4 | 0,3 | 10500 | SCET120630 | | |
| R220.21-0052-SC12.5A | Arbor | 9,0 | 2,0 | 52,0 | 33,0 | 22,0 | 47,0 | 40,0 | 4,5 | 2,0 | 85,0 | 102,0 | 5 | 0,4 | 10500 | SCET120630 | | |
| R220.21-0063-SC12.4A | Arbor | 9,0 | 2,0 | 63,0 | 44,0 | 27,0 | 50,0 | 50,0 | 4,4 | 0,9 | 107,0 | 124,0 | 4 | 0,6 | 9600 | SCET120630 | | |
| R220.21-0063-SC12.5A | Arbor | 9,0 | 2,0 | 63,0 | 44,0 | 27,0 | 50,0 | 50,0 | 4,4 | 0,9 | 107,0 | 124,0 | 5 | 0,6 | 9600 | SCET120630 | | |
| R220.21-0063-SC12.6A | Arbor | 9,0 | 2,0 | 63,0 | 44,0 | 27,0 | 50,0 | 50,0 | 4,4 | 0,6 | 107,0 | 124,0 | 6 | 0,7 | 9600 | SCET120630 | | |
| R220.21-0066-SC12.4A | Arbor | 9,0 | 2,0 | 66,0 | 47,0 | 27,0 | 60,0 | 50,0 | 4,4 | 0,85 | 113,0 | 130,0 | 4 | 0,6 | 9400 | SCET120630 | | |
| R220.21-0066-SC12.6A | Arbor | 9,0 | 2,0 | 66,0 | 47,1 | 27,0 | 62,0 | 50,0 | 4,4 | 0,7 | 113,0 | 130,0 | 6 | 0,9 | 9400 | SCET120630 | | |
| R220.21-0080-SC12.5A | Arbor | 9,0 | 2,0 | 80,0 | 61,0 | 27,0 | 62,0 | 50,0 | 4,4 | 0,8 | 141,0 | 158,0 | 5 | 1,0 | 8500 | SCET120630 | | |
| R220.21-0080-SC12.6A | Arbor | 9,0 | 2,0 | 80,0 | 61,0 | 27,0 | 62,0 | 50,0 | 4,4 | 0,8 | 141,0 | 158,0 | 6 | 1,0 | 8500 | SCET120630 | | |
| R220.21-0080-SC12.7A | Arbor | 9,0 | 2,0 | 80,0 | 61,1 | 27,0 | 62,0 | 50,0 | 4,4 | 0,8 | 141,0 | 158,0 | 7 | 1,0 | 8500 | SCET120630 | | |
| R220.21-0084-SC12.5A | Arbor | 9,0 | 2,0 | 84,0 | 65,0 | 32,0 | 77,0 | 55,0 | 4,4 | 0,8 | 149,0 | 166,0 | 5 | 1,2 | 8300 | SCET120630 | | |
| R220.21-0084-SC12.6A | Arbor | 9,0 | 2,0 | 84,0 | 65,1 | 32,0 | 77,0 | 55,0 | 4,4 | 0,8 | 149,0 | 166,0 | 6 | 1,4 | 8300 | SCET120630 | | |
| R220.21-0100-SC12.5A | Arbor | 9,0 | 2,0 | 100,0 | 81,0 | 32,0 | 77,0 | 50,0 | 4,4 | 0,75 | 181,0 | 198,0 | 5 | 1,3 | 7600 | SCET120630 | | |
| R220.21-0100-SC12.7A | Arbor | 9,0 | 2,0 | 100,0 | 81,0 | 32,0 | 77,0 | 50,0 | 4,4 | 0,75 | 181,0 | 198,0 | 7 | 1,5 | 7600 | SCET120630 | | |
| R220.21-0100-SC12.8A | Arbor | 9,0 | 2,0 | 100,0 | 81,0 | 32,0 | 77,0 | 50,0 | 4,4 | 0,6 | 181,0 | 198,0 | 8 | 1,5 | 7600 | SCET120630 | | |
| R220.21-0125-SC12.6A | Arbor | 9,0 | 2,0 | 125,0 | 106,0 | 40,0 | 90,0 | 63,0 | 4,4 | 0,7 | 231,0 | 248,0 | 6 | 2,4 | 6800 | SCET120630 | | |
| R220.21-8160-SC12.7 | Arbor | 9,0 | 2,0 | 160,0 | 141,0 | 40,0 | 90,0 | 63,0 | 4,4 | - | - | - | 7 | 3,8 | 6000 | SCET120630 | | |

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R220.21-0050-0052 | DOUBLE-T | C45011-T20P | H6B-T20P | - | 5,0 |
| R220.21-0063-0080 | DOUBLE-T | C45011-T20P | H6B-T20P | MC6S12X35 | 5,0 |
| R220.21-0084 | DOUBLE-T | C45011-T20P | H6B-T20PL | MC6S16X40 | 5,0 |
| R220.21-0100 | DOUBLE-T | C45011-T20P | H6B-T20PL | MLC6S16X35 | 5,0 |
| R220.21-0125-8160 | DOUBLE-T | C45011-T20P | H6B-T20PL | - | 5,0 |

Please check availability in current price and stock-list

Torque keys, see page 732

R220.21-SC12- Insert selection

| SMG | | a_p | f_z | | |
|-----|-------------------------|-------|-------|------|------|
| | | | 100% | 70% | 30% |
| P1 | SCET120630T-M14 T350M | 0,90 | 1,0 | 1,0 | 1,1 |
| P2 | SCET120630T-M14 T350M | 0,90 | 1,0 | 1,0 | 1,1 |
| P3 | SCET120630T-M14 T350M | 0,90 | 0,95 | 0,95 | 1,0 |
| P4 | SCET120630T-MD16 MS2500 | 0,90 | 1,1 | 1,1 | 1,2 |
| P5 | SCET120630T-MD16 MS2500 | 0,90 | 1,0 | 1,0 | 1,1 |
| P6 | SCET120630T-MD16 MS2500 | 0,90 | 1,0 | 1,0 | 1,1 |
| P7 | SCET120630T-MD16 MS2500 | 0,90 | 1,0 | 1,0 | 1,1 |
| P8 | SCET120630T-MD16 MP2500 | 0,90 | 1,1 | 1,1 | 1,2 |
| P11 | SCET120630T-MD16 MS2500 | 0,90 | 1,0 | 1,0 | 1,1 |
| P12 | SCET120630T-MD16 MS2500 | 0,75 | 0,70 | 0,70 | 0,80 |
| M1 | SCET120630T-M14 F40M | 0,90 | 1,0 | 1,0 | 1,1 |
| M2 | SCET120630T-M14 F40M | 0,90 | 0,90 | 0,90 | 1,0 |
| M3 | SCET120630T-M14 F40M | 0,75 | 0,75 | 0,75 | 0,80 |
| M4 | SCET120630T-M14 F40M | 0,60 | 0,65 | 0,65 | 0,70 |
| M5 | SCET120630T-M14 F40M | 0,60 | 0,65 | 0,65 | 0,70 |
| K1 | SCET120630T-MD16 MP1500 | 0,90 | 1,1 | 1,1 | 1,2 |
| K2 | SCET120630T-MD16 MP1500 | 0,90 | 1,0 | 1,0 | 1,1 |
| K3 | SCET120630T-MD16 MP1500 | 0,90 | 1,0 | 1,0 | 1,1 |
| K4 | SCET120630T-MD16 MP1500 | 0,90 | 1,0 | 1,0 | 1,1 |
| K5 | SCET120630T-MD16 MP1500 | 0,90 | 0,95 | 0,95 | 1,0 |
| K6 | SCET120630T-MD16 MP1500 | 0,90 | 1,0 | 1,0 | 1,1 |
| K7 | SCET120630T-MD16 MP1500 | 0,90 | 0,95 | 0,95 | 1,0 |
| S1 | SCET120630T-M14 MS2500 | 0,60 | 0,65 | 0,65 | 0,70 |
| S2 | SCET120630T-M14 MS2500 | 0,60 | 0,65 | 0,65 | 0,70 |
| S3 | SCET120630T-M14 MS2500 | 0,60 | 0,60 | 0,60 | 0,65 |
| S11 | SCET120630T-M14 MS2500 | 0,70 | 0,75 | 0,75 | 0,80 |
| S12 | SCET120630T-M14 MS2500 | 0,70 | 0,75 | 0,75 | 0,80 |
| S13 | SCET120630T-M14 MS2500 | 0,60 | 0,65 | 0,65 | 0,70 |
| H5 | SCET120630T-MD16 MP1500 | 0,75 | 0,70 | 0,70 | 0,80 |
| H8 | SCET120630T-MD16 MP1500 | 0,70 | 0,55 | 0,55 | 0,60 |
| H11 | SCET120630T-MD16 T350M | 0,75 | 0,70 | 0,70 | 0,80 |
| H12 | SCET120630T-MD16 T350M | 0,70 | 0,55 | 0,55 | 0,60 |
| H21 | SCET120630T-MD16 MP1500 | 0,70 | 0,55 | 0,55 | 0,60 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R220.21-SC12 – Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2500 | | | MP3000 | | | T350M | | | F40M | | | MK2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|-------|-----|-----|------|------|------|--------|-----|-----|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 305 | 345 | 425 | 270 | 305 | 380 | 260 | 300 | 365 | 240 | 275 | 340 | 210 | 240 | 295 | 270 | 310 | 380 |
| P2 | 295 | 335 | 415 | 260 | 300 | 370 | 255 | 290 | 360 | 235 | 270 | 330 | 205 | 235 | 285 | 265 | 305 | 370 |
| P3 | 255 | 290 | 355 | 225 | 255 | 315 | 225 | 255 | 315 | 205 | 235 | 290 | 180 | 205 | 255 | 230 | 265 | 330 |
| P4 | 225 | 255 | 315 | 200 | 225 | 280 | 200 | 225 | 280 | 185 | 210 | 255 | 160 | 180 | 225 | 205 | 235 | 290 |
| P5 | 220 | 250 | 310 | 195 | 220 | 275 | 190 | 215 | 265 | 175 | 200 | 245 | 150 | 175 | 215 | 200 | 225 | 275 |
| P6 | 245 | 280 | 345 | 220 | 250 | 305 | 215 | 245 | 300 | 195 | 225 | 275 | 170 | 195 | 240 | 220 | 255 | 310 |
| P7 | 235 | 265 | 325 | 205 | 235 | 290 | 200 | 230 | 280 | 185 | 210 | 260 | 160 | 185 | 225 | 210 | 240 | 295 |
| P8 | 215 | 245 | 300 | 190 | 215 | 265 | 185 | 215 | 265 | 170 | 195 | 245 | 150 | 170 | 215 | 195 | 220 | 275 |
| P11 | 225 | 260 | 315 | 200 | 230 | 280 | 195 | 225 | 275 | 180 | 205 | 250 | 155 | 180 | 220 | 205 | 235 | 285 |
| P12 | 150 | 165 | 200 | 130 | 145 | 180 | 130 | 145 | 175 | 120 | 130 | 160 | 105 | 115 | 140 | 135 | 150 | 180 |
| M1 | — | — | — | 190 | 215 | 265 | 190 | 220 | 270 | 180 | 205 | 255 | 165 | 190 | 230 | — | — | — |
| M2 | — | — | — | 155 | 180 | 220 | 160 | 180 | 220 | 150 | 170 | 210 | 135 | 155 | 190 | — | — | — |
| M3 | — | — | — | 125 | 140 | 175 | 125 | 145 | 175 | 120 | 135 | 170 | 110 | 125 | 155 | — | — | — |
| M4 | — | — | — | 95 | 110 | 130 | 100 | 110 | 135 | 95 | 105 | 125 | 85 | 95 | 115 | — | — | — |
| M5 | — | — | — | 80 | 90 | 110 | 85 | 90 | 110 | 80 | 85 | 105 | 70 | 80 | 95 | — | — | — |
| K1 | 235 | 265 | 330 | 205 | 235 | 290 | 200 | 230 | 285 | — | — | — | 160 | 185 | 225 | 285 | 325 | 400 |
| K2 | 210 | 240 | 295 | 185 | 210 | 260 | 180 | 205 | 250 | — | — | — | 145 | 165 | 200 | 255 | 290 | 360 |
| K3 | 175 | 200 | 250 | 155 | 180 | 220 | 155 | 175 | 215 | — | — | — | 120 | 140 | 170 | 215 | 245 | 305 |
| K4 | 170 | 190 | 235 | 150 | 170 | 210 | 145 | 165 | 205 | — | — | — | 115 | 135 | 165 | 205 | 235 | 290 |
| K5 | 100 | 115 | 145 | 90 | 105 | 130 | 90 | 105 | 125 | — | — | — | 70 | 80 | 100 | 125 | 145 | 175 |
| K6 | 150 | 170 | 210 | 130 | 150 | 185 | 130 | 145 | 180 | — | — | — | 105 | 115 | 145 | 180 | 210 | 255 |
| K7 | 130 | 150 | 185 | 115 | 130 | 165 | 115 | 130 | 160 | — | — | — | 90 | 105 | 130 | 165 | 185 | 225 |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 1175 | 1350 | 1675 | — | — | — |
| N2 | — | — | — | — | — | — | 600 | 680 | 840 | — | — | — | 475 | 540 | 670 | — | — | — |
| N3 | — | — | — | — | — | — | 395 | 450 | 560 | — | — | — | 315 | 360 | 450 | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 365 | 415 | 510 | — | — | — |
| S1 | — | — | — | — | — | — | 46 | 50 | 60 | 44 | 49 | 60 | 40 | 44 | 55 | — | — | — |
| S2 | — | — | — | — | — | — | 37 | 41 | 50 | 35 | 39 | 48 | 32 | 36 | 43 | — | — | — |
| S3 | — | — | — | — | — | — | 33 | 36 | 44 | 31 | 34 | 42 | 28 | 31 | 38 | — | — | — |
| S11 | — | — | — | — | — | — | 65 | 75 | 90 | 60 | 70 | 85 | 55 | 65 | 75 | — | — | — |
| S12 | — | — | — | — | — | — | 45 | 50 | 60 | 42 | 48 | 60 | 38 | 43 | 55 | — | — | — |
| S13 | — | — | — | — | — | — | 26 | 29 | 35 | 25 | 27 | 33 | 22 | 25 | 30 | — | — | — |
| H5 | 49 | 55 | 65 | — | — | — | 40 | 44 | 55 | 39 | 44 | 55 | 34 | 38 | 46 | — | — | — |
| H8 | 50 | 60 | 70 | — | — | — | 43 | 47 | 55 | 42 | 46 | 55 | 36 | 40 | 49 | — | — | — |
| H11 | 60 | 70 | 85 | — | — | — | 50 | 55 | 70 | 50 | 55 | 70 | 44 | 48 | 60 | — | — | — |
| H12 | 95 | 105 | 130 | — | — | — | 80 | 90 | 110 | 75 | 85 | 100 | 65 | 75 | 90 | — | — | — |
| H21 | 50 | 60 | 70 | — | — | — | 43 | 47 | 55 | 42 | 46 | 55 | 36 | 40 | 49 | — | — | — |

| SMG | MS2500 | | |
|-----|--------|-----|-----|
| | 100% | 70% | 30% |
| P1 | 300 | 345 | 425 |
| P2 | 295 | 335 | 410 |
| P3 | 255 | 295 | 365 |
| P4 | 230 | 260 | 320 |
| P5 | 220 | 250 | 305 |
| P6 | 245 | 280 | 345 |
| P7 | 230 | 265 | 325 |
| P8 | 215 | 245 | 305 |
| P11 | 225 | 260 | 315 |
| P12 | 150 | 165 | 200 |
| M1 | 210 | 240 | 295 |
| M2 | 175 | 200 | 245 |
| M3 | 140 | 160 | 195 |
| M4 | 110 | 120 | 145 |
| M5 | 90 | 100 | 125 |
| K1 | — | — | — |
| K2 | — | — | — |
| K3 | — | — | — |
| K4 | — | — | — |
| K5 | — | — | — |
| K6 | — | — | — |
| K7 | — | — | — |
| N1 | — | — | — |
| N2 | — | — | — |
| N3 | — | — | — |
| N11 | — | — | — |
| S1 | 55 | 60 | 70 |
| S2 | 43 | 48 | 60 |
| S3 | 38 | 42 | 50 |
| S11 | 75 | 85 | 105 |
| S12 | 50 | 60 | 70 |
| S13 | 30 | 33 | 41 |
| H5 | — | — | — |
| H8 | — | — | — |
| H11 | — | — | — |
| H12 | — | — | — |
| H21 | — | — | — |

R220.21-ON09 – Insert selection

| SMG | | a_p | f_z | | |
|-----|----------------------------|-------|-------|------|------|
| | | | 100% | 70% | 30% |
| P1 | ONMU090520ANTN-M12 MP2500 | 1,4 | 0,60 | 0,60 | 0,65 |
| P2 | ONMU090520ANTN-M12 MP2500 | 1,4 | 0,60 | 0,60 | 0,70 |
| P3 | ONMU090520ANTN-M12 MP2500 | 1,4 | 0,60 | 0,60 | 0,65 |
| P4 | ONMU090520ANTN-M12 MP2500 | 1,4 | 0,60 | 0,60 | 0,65 |
| P5 | ONMU090520ANTN-M12 MP2500 | 1,4 | 0,55 | 0,55 | 0,60 |
| P6 | ONMU090520ANTN-M12 MP2500 | 1,4 | 0,55 | 0,55 | 0,60 |
| P7 | ONMU090520ANTN-MD16 MP1500 | 1,4 | 0,75 | 0,75 | 0,80 |
| P8 | ONMU090520ANTN-MD16 MP1500 | 1,4 | 0,80 | 0,80 | 0,85 |
| P11 | ONMU090520ANTN-MD16 MP1500 | 1,4 | 0,75 | 0,75 | 0,80 |
| P12 | ONMU090520ANTN-MD16 MP1500 | 1,1 | 0,50 | 0,50 | 0,55 |
| K1 | ONMU090520ANTN-M14 MK2050 | 1,4 | 0,75 | 0,75 | 0,80 |
| K2 | ONMU090520ANTN-M14 MK2050 | 1,4 | 0,65 | 0,65 | 0,70 |
| K3 | ONMU090520ANTN-M14 MK2050 | 1,4 | 0,65 | 0,65 | 0,70 |
| K4 | ONMU090520ANTN-M14 MK2050 | 1,4 | 0,65 | 0,65 | 0,70 |
| K5 | ONMU090520ANTN-M14 MK2050 | 1,4 | 0,60 | 0,60 | 0,65 |
| K6 | ONMU090520ANTN-MD16 MK1500 | 1,4 | 0,75 | 0,75 | 0,85 |
| K7 | ONMU090520ANTN-MD16 MK1500 | 1,4 | 0,70 | 0,70 | 0,75 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

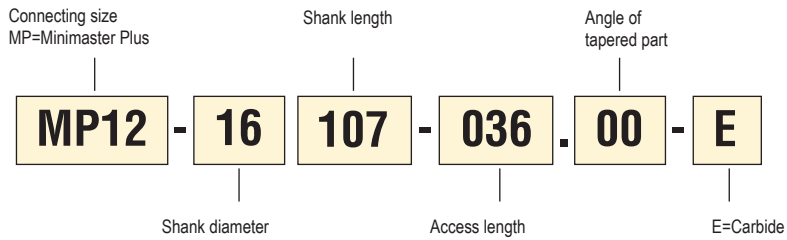
All cutting data are start values

R220.21-ON09 – Cutting data v_c = (m/min)

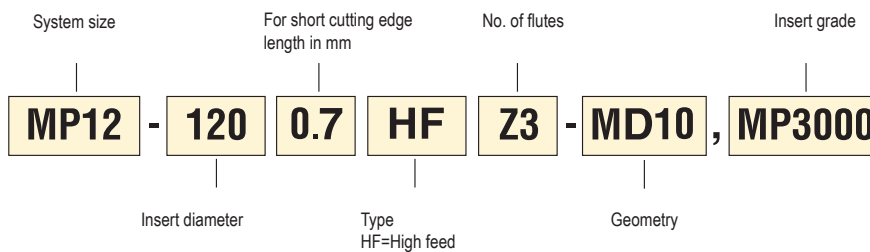
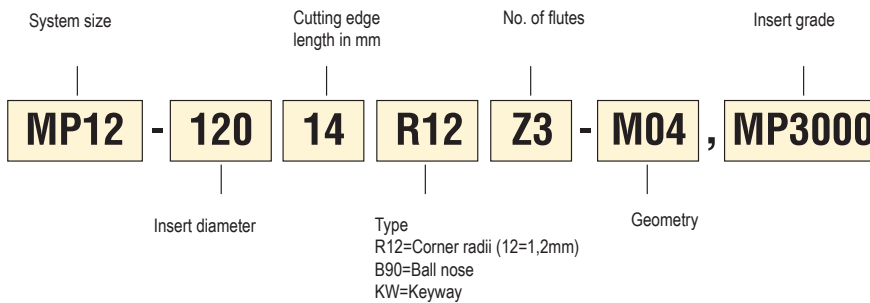
| SMG | MP1500 | | | MP2050 | | | MP2500 | | | MK1500 | | | MK2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% | 100% | 70% | 30% |
| P1 | 315 | 350 | 430 | 275 | 305 | 375 | 280 | 310 | 380 | — | — | — | 275 | 305 | 375 |
| P2 | 305 | 345 | 410 | 265 | 300 | 355 | 270 | 305 | 365 | — | — | — | 270 | 300 | 360 |
| P3 | 265 | 295 | 360 | 230 | 255 | 315 | 235 | 260 | 320 | — | — | — | 230 | 255 | 315 |
| P4 | 235 | 260 | 320 | 200 | 225 | 275 | 205 | 230 | 280 | — | — | — | 205 | 225 | 275 |
| P5 | 230 | 255 | 310 | 200 | 220 | 270 | 200 | 225 | 275 | — | — | — | 200 | 220 | 270 |
| P6 | 255 | 285 | 350 | 225 | 250 | 305 | 225 | 255 | 310 | — | — | — | 225 | 250 | 305 |
| P7 | 240 | 270 | 330 | 210 | 235 | 285 | 215 | 240 | 290 | — | — | — | 210 | 235 | 285 |
| P8 | 220 | 250 | 305 | 195 | 215 | 265 | 195 | 220 | 270 | — | — | — | 195 | 215 | 265 |
| P11 | 235 | 260 | 320 | 205 | 230 | 280 | 210 | 230 | 285 | — | — | — | 205 | 230 | 280 |
| P12 | 155 | 170 | 205 | 135 | 145 | 180 | 135 | 150 | 180 | — | — | — | 135 | 145 | 180 |
| K1 | 245 | 270 | 325 | 210 | 235 | 285 | 215 | 240 | 290 | 305 | 340 | 410 | 290 | 320 | 385 |
| K2 | 215 | 240 | 295 | 190 | 210 | 255 | 190 | 215 | 260 | 270 | 305 | 370 | 255 | 285 | 350 |
| K3 | 185 | 205 | 250 | 160 | 180 | 215 | 160 | 180 | 220 | 230 | 255 | 315 | 220 | 245 | 295 |
| K4 | 175 | 195 | 240 | 150 | 170 | 205 | 155 | 175 | 210 | 220 | 245 | 300 | 210 | 230 | 285 |
| K5 | 105 | 120 | 145 | 95 | 105 | 125 | 95 | 105 | 130 | 135 | 150 | 180 | 125 | 140 | 175 |
| K6 | 155 | 170 | 210 | 135 | 150 | 180 | 135 | 150 | 185 | 195 | 215 | 265 | 185 | 205 | 250 |
| K7 | 135 | 155 | 185 | 120 | 135 | 160 | 120 | 135 | 165 | 170 | 190 | 235 | 165 | 180 | 220 |



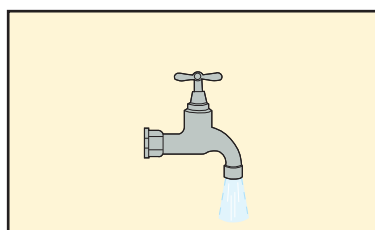
Code key shanks



Code key inserts



Internal through coolant



Choice of insert, shank and cutting data

Select taper size

- The design of the workpiece and the machining operations determines suitable taper size

- Select the largest possible taper size for best strength and stability.

Select insert

- Use the tables beginning on page 734 to classify the workpiece material into a Seco material group.

- Look up the pages for the selected taper size and choose a suitable insert in the insert selection table.

Select shank

- Look up the pages for the selected taper size and choose a suitable shank in the tool data table.

- Always choose the shortest shank possible (to get maximum stability).

Select cutting data

- Maximum recommended axial cutting depth is in the cutting data conversion table. (See figure 1.)

- Cutting speed recommendations are in the cutting data tables

Notice that the recommendations are for a fully engaged cutter in stable machining condition.

- Maximum RPM that for safety reasons should never be exceeded are shown on each shank page.

- Feed per tooth f_z recommendations are in the cutting data conversion table.

- **If the cutter is not fully engaged** the feed per tooth and the cutting speed should be increased compared to the recommendations for a fully engaged cutter. The reason for that is to keep the average chip thickness and the working temperature in the cutting zone at the same value as for a fully engaged cutter. (See figure 2.)

- Divide the radial cutting depth with the cutter diameter to get the actual cutter engagement percentage ($a_e/D_c\%$).

- Use the percentage to get a correct feed per tooth and cutting speed recommendation for the actual cutter engagement.

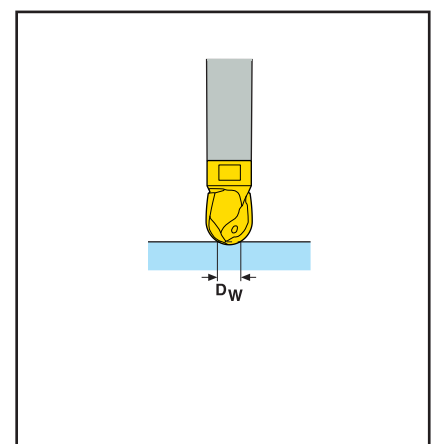
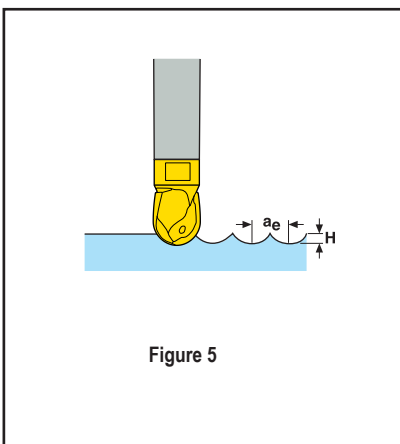
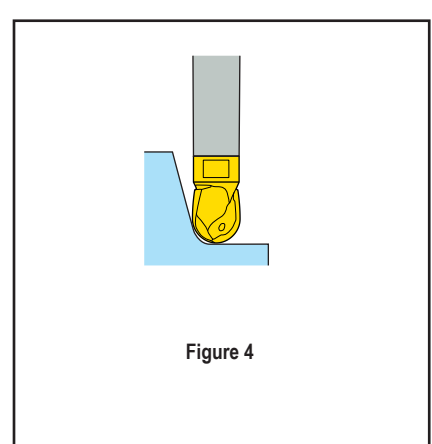
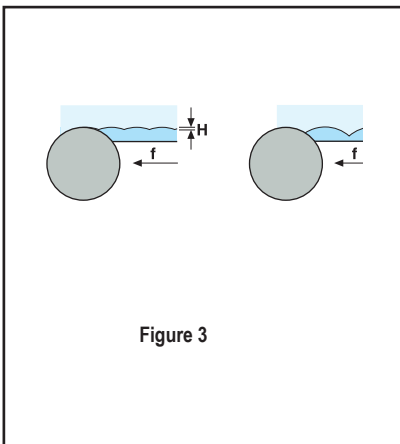
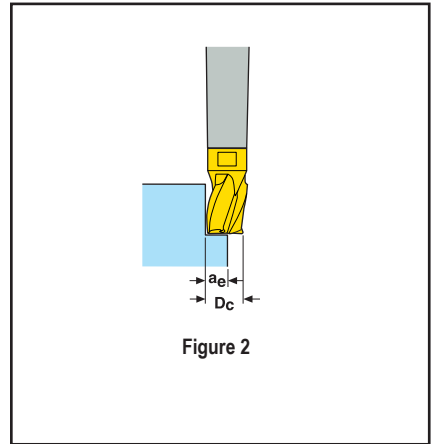
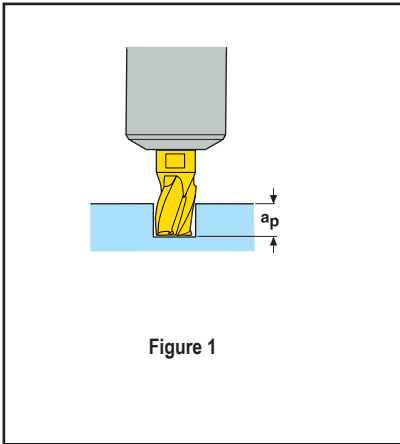
- When calculating feed per revolution and feed speed always use the ZAFP-value. That is the effective number of teeth to use for cutting data calculation. The ZAFP-value is in the insert selection table.

- Notice that there will be a deterioration of the surface finish on the workpiece when the feed rate is increased (See figure 3).

- When milling in corners and bottoms of cavities the feed rate should be reduced due to the increase of the chip thickness. Use the feed per tooth recommendations for a fully engaged cutter. (See figure 4.)

- **When steep down copying** with an angle bigger than 40° or steep up copying with an angle bigger than 30° in combination with small depths of cut use the diameter (D_c) as working diameter instead of D_w (See figure 5)

- **Calculate surface finish.** Use the profile height value (H) from the cutting data conversion table to calculate the expected surface finish for the actual operation. (See figure 5).



Torque wrench information



We recommend a torque wrench when mounting the insert for best precision and extended tool life.

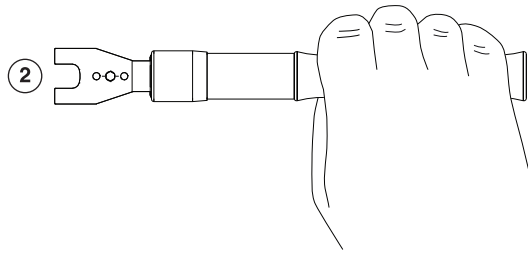
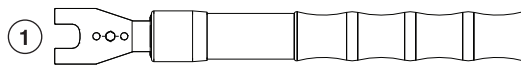
Different torque values for assembly

- MP10: 11Nm
- MP12: 15Nm
- MP16: 19Nm

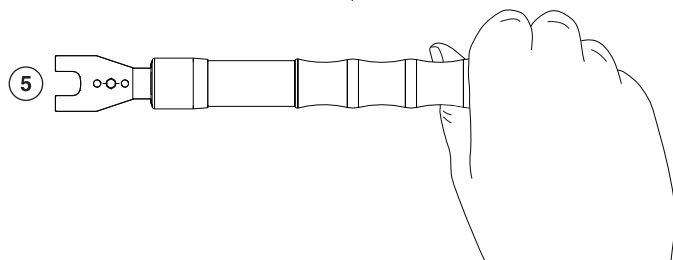
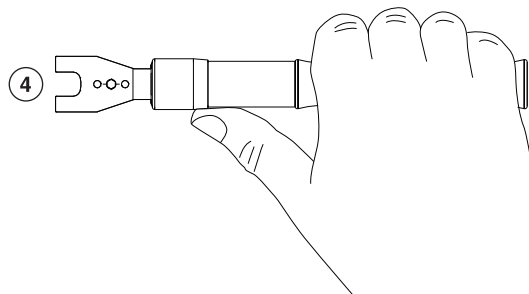
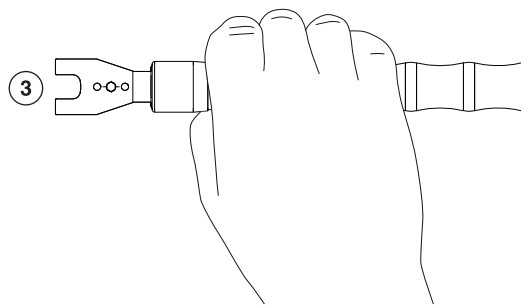
Do not use worn out replaceable blades

Note: Torque wrenches and standard keys must be ordered separately!

User instructions Torque wrench

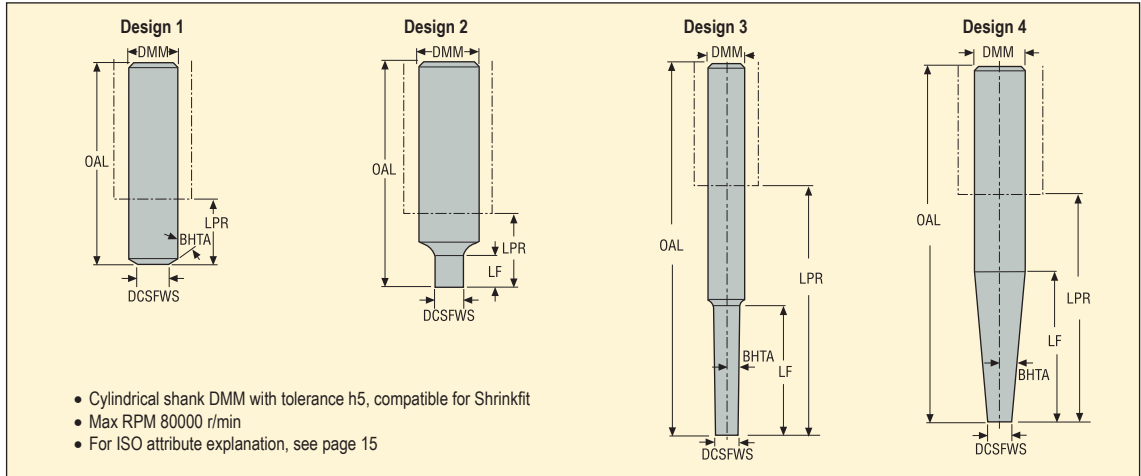


Use the arched handle (fig. 1) to grip the wrench by hand as shown (fig. 2)



Do not grip the wrench as shown on figure 3-5, there is a risk that the applied torque might be incorrect and the insert will not be properly seated.

MP10 Shank



| Designation | Connecting size | Dimensions in mm | | | | | | Design | | |
|---------------------|-----------------|------------------|------|-------|-------|-------|-------|--------|---|-----|
| | | DCSFWS | DMM | OAL | LPR | LF | BHTA° | | | |
| MP10-10055-010.00 | MP10 | 9,8 | 10,0 | 55,0 | 15,0 | 10,0 | 0,0 | 2 | ✓ | 0,1 |
| MP10-16068-000.60 | MP10 | 9,5 | 16,0 | 68,0 | 20,0 | 0,0 | 60,0 | 1 | ✓ | 0,2 |
| MP10-16073-015.00 | MP10 | 9,8 | 16,0 | 73,0 | 25,0 | 15,0 | 0,0 | 2 | ✓ | 0,1 |
| MP10-16118-035.01 | MP10 | 9,5 | 16,0 | 118,0 | 70,0 | 35,0 | 1,0 | 3 | ✓ | 0,2 |
| MP10-16158-060.01 | MP10 | 9,5 | 16,0 | 158,0 | 110,0 | 60,0 | 1,0 | 3 | ✓ | 0,2 |
| MP10-20100-045.03 | MP10 | 9,5 | 20,0 | 100,0 | 50,0 | 45,0 | 3,0 | 3 | ✓ | 0,2 |
| MP10-20140-085.03 | MP10 | 9,5 | 20,0 | 140,0 | 90,0 | 85,0 | 3,0 | 3 | ✓ | 0,3 |
| MP10-20140-090.05 | MP10 | 9,5 | 20,0 | 140,0 | 90,0 | 60,0 | 5,0 | 4 | ✓ | 0,3 |
| MP10-12095-030.00-E | MP10 | 9,8 | 12,0 | 95,0 | 50,0 | 30,0 | 0,0 | 2 | ✓ | 0,2 |
| MP10-12105-040.00-E | MP10 | 9,8 | 12,0 | 105,0 | 60,0 | 40,0 | 0,0 | 2 | ✓ | 0,2 |
| MP10-12125-060.00-E | MP10 | 9,8 | 12,0 | 125,0 | 80,0 | 60,0 | 0,0 | 2 | ✓ | 0,2 |
| MP10-16120-050.01-E | MP10 | 9,5 | 16,0 | 120,0 | 72,0 | 50,0 | 1,0 | 3 | ✓ | 0,3 |
| MP10-16150-080.01-E | MP10 | 9,5 | 16,0 | 150,0 | 102,0 | 80,0 | 1,0 | 3 | ✓ | 0,3 |
| MP10-16170-100.01-E | MP10 | 9,5 | 16,0 | 170,0 | 122,0 | 100,0 | 1,0 | 3 | ✓ | 0,4 |
| MP10-16140-092.03-E | MP10 | 9,5 | 16,0 | 140,0 | 92,0 | 62,0 | 3,0 | 4 | ✓ | 0,4 |
| MP10-16170-122.03-E | MP10 | 9,5 | 16,0 | 170,0 | 122,0 | 62,0 | 3,0 | 4 | ✓ | 0,4 |

Accessories

| Inserts | Torque key | Replacement blade | Key |
|---------|-------------|-------------------|--------|
| | | | |
| MP10 | MP00-10.110 | MP00-10M | MP1016 |
| | | | |
| | | | |
| | | | |

Blades are included with the torque key

MP10 High feed milling – Insert selection

| SMG | | a_p | f_z | | | |
|-----|-----------------------------|-------|-------|------|------|------|
| | | | 100% | 70% | 30% | 20% |
| P1 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,46 | 0,46 | 0,50 | 0,60 |
| P2 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,46 | 0,46 | 0,50 | 0,65 |
| P3 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,44 | 0,44 | 0,50 | 0,60 |
| P4 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,44 | 0,44 | 0,48 | 0,60 |
| P5 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,42 | 0,42 | 0,48 | 0,55 |
| P6 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,42 | 0,42 | 0,46 | 0,55 |
| P7 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,42 | 0,42 | 0,46 | 0,55 |
| P8 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,44 | 0,44 | 0,50 | 0,60 |
| P11 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,42 | 0,42 | 0,46 | 0,55 |
| P12 | MP10-0950.6HFZ3-MD08 MP3000 | 0,34 | 0,30 | 0,30 | 0,34 | 0,40 |
| M1 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,46 | 0,46 | 0,50 | 0,65 |
| M2 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,42 | 0,42 | 0,48 | 0,55 |
| M3 | MP10-1000.6HFZ3-MD08 MP3000 | 0,34 | 0,36 | 0,36 | 0,40 | 0,48 |
| M4 | MP10-1000.6HFZ3-MD08 MP3000 | 0,26 | 0,32 | 0,32 | 0,34 | 0,40 |
| M5 | MP10-1000.6HFZ3-MD08 MP3000 | 0,26 | 0,32 | 0,32 | 0,34 | 0,40 |
| K1 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,46 | 0,46 | 0,50 | 0,65 |
| K2 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,42 | 0,42 | 0,48 | 0,55 |
| K3 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,42 | 0,42 | 0,48 | 0,55 |
| K4 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,42 | 0,42 | 0,48 | 0,55 |
| K5 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,38 | 0,38 | 0,42 | 0,50 |
| K6 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,42 | 0,42 | 0,48 | 0,55 |
| K7 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,38 | 0,38 | 0,42 | 0,50 |
| N1 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,60 | 0,60 | 0,65 | 0,80 |
| N2 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,60 | 0,60 | 0,65 | 0,80 |
| N3 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,60 | 0,60 | 0,65 | 0,80 |
| N11 | MP10-1000.6HFZ3-MD08 MP3000 | 0,42 | 0,60 | 0,60 | 0,65 | 0,80 |
| S1 | MP10-1000.6HFZ3-MD08 MP3000 | 0,26 | 0,32 | 0,32 | 0,34 | 0,40 |
| S2 | MP10-1000.6HFZ3-MD08 MP3000 | 0,26 | 0,32 | 0,32 | 0,34 | 0,40 |
| S3 | MP10-1000.6HFZ3-MD08 MP3000 | 0,26 | 0,30 | 0,30 | 0,32 | 0,38 |
| S11 | MP10-1000.6HFZ3-MD08 MP3000 | 0,30 | 0,36 | 0,36 | 0,40 | 0,48 |
| S12 | MP10-1000.6HFZ3-MD08 MP3000 | 0,30 | 0,36 | 0,36 | 0,40 | 0,48 |
| S13 | MP10-1000.6HFZ3-MD08 MP3000 | 0,26 | 0,32 | 0,32 | 0,34 | 0,40 |
| H5 | MP10-1000.6HFZ3-MD08 MP3000 | 0,34 | 0,30 | 0,30 | 0,34 | 0,40 |
| H8 | MP10-1000.6HFZ3-MD08 MP3000 | 0,30 | 0,24 | 0,24 | 0,26 | 0,30 |
| H11 | MP10-1000.6HFZ3-MD08 MP3000 | 0,34 | 0,30 | 0,30 | 0,34 | 0,40 |
| H12 | MP10-1000.6HFZ3-MD08 MP3000 | 0,30 | 0,24 | 0,24 | 0,26 | 0,30 |
| H21 | MP10-1000.6HFZ3-MD08 MP3000 | 0,30 | 0,24 | 0,24 | 0,26 | 0,30 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MP10 High feed milling – Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | |
|-----|--------|------|------|------|
| | 100% | 70% | 30% | 20% |
| P1 | 250 | 310 | 375 | 395 |
| P2 | 245 | 305 | 365 | 380 |
| P3 | 210 | 265 | 315 | 330 |
| P4 | 185 | 235 | 280 | 290 |
| P5 | 180 | 225 | 265 | 285 |
| P6 | 200 | 250 | 300 | 320 |
| P7 | 190 | 240 | 285 | 300 |
| P8 | 175 | 220 | 265 | 280 |
| P11 | 185 | 230 | 275 | 290 |
| P12 | 120 | 150 | 175 | 185 |
| M1 | 180 | 225 | 275 | 285 |
| M2 | 150 | 190 | 220 | 235 |
| M3 | 120 | 150 | 175 | 190 |
| M4 | 95 | 115 | 135 | 145 |
| M5 | 80 | 95 | 115 | 120 |
| K1 | 190 | 240 | 290 | 300 |
| K2 | 170 | 215 | 255 | 270 |
| K3 | 145 | 180 | 215 | 230 |
| K4 | 135 | 170 | 205 | 220 |
| K5 | 85 | 105 | 125 | 130 |
| K6 | 120 | 150 | 180 | 190 |
| K7 | 105 | 135 | 160 | 170 |
| N1 | 1425 | 1800 | 2150 | 2275 |
| N2 | 580 | 720 | 870 | 920 |
| N3 | 385 | 480 | 580 | 610 |
| N11 | 440 | 550 | 660 | 700 |
| S1 | 44 | 55 | 65 | 70 |
| S2 | 36 | 43 | 50 | 55 |
| S3 | 31 | 38 | 45 | 48 |
| S11 | 60 | 75 | 90 | 95 |
| S12 | 43 | 50 | 60 | 65 |
| S13 | 25 | 30 | 36 | 38 |
| H5 | 37 | 46 | 55 | 55 |
| H8 | 39 | 48 | 55 | 60 |
| H11 | 47 | 60 | 70 | 75 |
| H12 | 75 | 90 | 110 | 115 |
| H21 | 39 | 48 | 55 | 60 |

MP10 Slot milling – Insert selection

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 100% | 30% | 10% | 5% |
| P1 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,042 | 0,046 | 0,070 | 0,10 |
| P2 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,044 | 0,048 | 0,075 | 0,10 |
| P3 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,040 | 0,044 | 0,070 | 0,095 |
| P4 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,040 | 0,044 | 0,065 | 0,095 |
| P5 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,040 | 0,042 | 0,065 | 0,090 |
| P6 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,038 | 0,042 | 0,065 | 0,090 |
| P7 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,038 | 0,042 | 0,065 | 0,090 |
| P8 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,040 | 0,044 | 0,070 | 0,095 |
| P11 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,038 | 0,042 | 0,065 | 0,090 |
| P12 | MP10-10007R04Z3-M03 MP3000 | 2,5 | 0,026 | 0,030 | 0,044 | 0,060 |
| M1 | MP10-10007R04Z3-E03 F40M | 3,5 | 0,044 | 0,048 | 0,075 | 0,10 |
| M2 | MP10-10007R04Z3-E03 F40M | 3,5 | 0,040 | 0,042 | 0,065 | 0,090 |
| M3 | MP10-10007R04Z3-E03 F40M | 2,5 | 0,032 | 0,034 | 0,055 | 0,075 |
| M4 | MP10-10007R04Z3-E03 F40M | 2,0 | 0,028 | 0,030 | 0,046 | 0,065 |
| M5 | MP10-10007R04Z3-E03 F40M | 2,0 | 0,028 | 0,030 | 0,046 | 0,065 |
| K1 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,044 | 0,048 | 0,075 | 0,10 |
| K2 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,040 | 0,042 | 0,065 | 0,090 |
| K3 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,040 | 0,042 | 0,065 | 0,090 |
| K4 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,040 | 0,042 | 0,065 | 0,090 |
| K5 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,036 | 0,038 | 0,060 | 0,080 |
| K6 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,040 | 0,042 | 0,065 | 0,090 |
| K7 | MP10-10007R04Z3-M03 MP3000 | 3,5 | 0,036 | 0,038 | 0,060 | 0,080 |
| N1 | MP10-10007R04Z3-E03 F40M | 3,5 | 0,055 | 0,060 | 0,095 | 0,13 |
| N2 | MP10-10007R04Z3-E03 F40M | 3,5 | 0,055 | 0,060 | 0,095 | 0,13 |
| N3 | MP10-10007R04Z3-E03 F40M | 3,5 | 0,055 | 0,060 | 0,095 | 0,13 |
| N11 | MP10-10007R04Z3-E03 F40M | 3,5 | 0,055 | 0,060 | 0,095 | 0,13 |
| S1 | MP10-10007R04Z3-E03 F40M | 2,0 | 0,028 | 0,030 | 0,046 | 0,065 |
| S2 | MP10-10007R04Z3-E03 F40M | 2,0 | 0,028 | 0,030 | 0,046 | 0,065 |
| S3 | MP10-10007R04Z3-E03 F40M | 2,0 | 0,026 | 0,028 | 0,044 | 0,060 |
| S11 | MP10-10007R04Z3-E03 F40M | 2,5 | 0,032 | 0,034 | 0,055 | 0,075 |
| S12 | MP10-10007R04Z3-E03 F40M | 2,5 | 0,032 | 0,034 | 0,055 | 0,075 |
| S13 | MP10-10007R04Z3-E03 F40M | 2,0 | 0,028 | 0,030 | 0,046 | 0,065 |
| H5 | MP10-10007R04Z3-M03 MP3000 | 2,5 | 0,026 | 0,030 | 0,044 | 0,060 |
| H8 | MP10-10007R04Z3-M03 MP3000 | 2,5 | 0,020 | 0,022 | 0,034 | 0,048 |
| H11 | MP10-10007R04Z3-M03 MP3000 | 2,5 | 0,026 | 0,030 | 0,044 | 0,060 |
| H12 | MP10-10007R04Z3-M03 MP3000 | 2,5 | 0,020 | 0,022 | 0,034 | 0,048 |
| H21 | MP10-10007R04Z3-M03 MP3000 | 2,5 | 0,020 | 0,022 | 0,034 | 0,048 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MP10 Slot milling – Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | | F40M | | | |
|-----|--------|------|------|------|------|------|------|------|
| | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% |
| P1 | 265 | 345 | 405 | 435 | 250 | 325 | 380 | 410 |
| P2 | 255 | 335 | 395 | 425 | 240 | 315 | 370 | 400 |
| P3 | 225 | 290 | 340 | 365 | 210 | 275 | 320 | 345 |
| P4 | 195 | 255 | 300 | 325 | 185 | 240 | 285 | 305 |
| P5 | 190 | 245 | 290 | 310 | 175 | 235 | 270 | 295 |
| P6 | 215 | 275 | 325 | 350 | 200 | 260 | 305 | 330 |
| P7 | 200 | 260 | 305 | 330 | 190 | 245 | 290 | 310 |
| P8 | 190 | 245 | 285 | 310 | 175 | 230 | 270 | 290 |
| P11 | 195 | 255 | 295 | 320 | 185 | 240 | 280 | 305 |
| P12 | 125 | 160 | 185 | 200 | 115 | 150 | 175 | 190 |
| M1 | 190 | 250 | 295 | 315 | 195 | 255 | 300 | 320 |
| M2 | 155 | 205 | 240 | 260 | 160 | 210 | 245 | 265 |
| M3 | 125 | 165 | 190 | 205 | 125 | 165 | 195 | 210 |
| M4 | 95 | 125 | 145 | 155 | 100 | 130 | 145 | 160 |
| M5 | 80 | 105 | 120 | 130 | 80 | 105 | 125 | 135 |
| K1 | 200 | 265 | 310 | 335 | 190 | 250 | 295 | 315 |
| K2 | 180 | 235 | 275 | 295 | 170 | 220 | 260 | 280 |
| K3 | 150 | 200 | 230 | 250 | 140 | 185 | 220 | 235 |
| K4 | 145 | 190 | 220 | 240 | 135 | 180 | 210 | 225 |
| K5 | 85 | 115 | 135 | 145 | 80 | 110 | 125 | 135 |
| K6 | 125 | 165 | 195 | 210 | 120 | 155 | 185 | 200 |
| K7 | 110 | 145 | 170 | 185 | 105 | 140 | 160 | 175 |
| N1 | 1525 | 2000 | 2350 | 2525 | 1450 | 1875 | 2225 | 2375 |
| N2 | 620 | 810 | 950 | 1025 | 580 | 760 | 900 | 960 |
| N3 | 410 | 540 | 630 | 680 | 390 | 510 | 600 | 640 |
| N11 | — | — | — | — | 445 | 580 | 680 | 730 |
| S1 | 45 | 60 | 70 | 75 | 46 | 60 | 70 | 75 |
| S2 | 36 | 47 | 55 | 60 | 37 | 48 | 55 | 60 |
| S3 | 31 | 41 | 47 | 50 | 32 | 42 | 48 | 50 |
| S11 | 65 | 85 | 95 | 105 | 65 | 85 | 100 | 105 |
| S12 | 44 | 55 | 65 | 70 | 45 | 60 | 70 | 75 |
| S13 | 25 | 33 | 38 | 41 | 26 | 34 | 39 | 42 |
| H5 | 38 | 49 | 60 | 60 | 39 | 50 | 60 | 65 |
| H8 | 40 | 50 | 60 | 65 | 40 | 50 | 60 | 65 |
| H11 | 49 | 65 | 75 | 80 | 49 | 65 | 75 | 80 |
| H12 | 75 | 100 | 115 | 125 | 70 | 95 | 110 | 115 |
| H21 | 40 | 50 | 60 | 65 | 40 | 50 | 60 | 65 |

MP10 Copy milling – Insert selection

| SMG | | a_p | f_z | | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|-------|
| | | | 100% | 30% | 10% | 5% | 2% |
| P1 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,048 | 0,050 | 0,065 | 0,075 | 0,080 |
| P2 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,048 | 0,050 | 0,065 | 0,075 | 0,085 |
| P3 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,046 | 0,048 | 0,060 | 0,070 | 0,080 |
| P4 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,046 | 0,046 | 0,060 | 0,070 | 0,080 |
| P5 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,044 | 0,046 | 0,060 | 0,065 | 0,075 |
| P6 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,044 | 0,046 | 0,060 | 0,065 | 0,075 |
| P7 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,044 | 0,046 | 0,060 | 0,065 | 0,075 |
| P8 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,046 | 0,048 | 0,060 | 0,070 | 0,080 |
| P11 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,044 | 0,046 | 0,060 | 0,065 | 0,075 |
| P12 | MP10-10007B90Z3-M03 MP3000 | 2.5 | 0,032 | 0,032 | 0,038 | 0,042 | 0,046 |
| M1 | MP10-10007B90Z3-E03 F40M | 3.5 | 0,048 | 0,050 | 0,065 | 0,075 | 0,085 |
| M2 | MP10-10007B90Z3-E03 F40M | 3.5 | 0,044 | 0,046 | 0,060 | 0,065 | 0,075 |
| M3 | MP10-10007B90Z3-E03 F40M | 2.5 | 0,038 | 0,038 | 0,046 | 0,050 | 0,055 |
| M4 | MP10-10007B90Z3-E03 F40M | 2.0 | 0,034 | 0,034 | 0,040 | 0,042 | 0,046 |
| M5 | MP10-10007B90Z3-E03 F40M | 2.0 | 0,034 | 0,034 | 0,040 | 0,042 | 0,046 |
| K1 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,048 | 0,050 | 0,065 | 0,075 | 0,085 |
| K2 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,044 | 0,046 | 0,060 | 0,065 | 0,075 |
| K3 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,044 | 0,046 | 0,060 | 0,065 | 0,075 |
| K4 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,044 | 0,046 | 0,060 | 0,065 | 0,075 |
| K5 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,040 | 0,042 | 0,055 | 0,060 | 0,070 |
| K6 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,044 | 0,046 | 0,060 | 0,065 | 0,075 |
| K7 | MP10-10007B90Z3-M03 MP3000 | 3.5 | 0,040 | 0,042 | 0,055 | 0,060 | 0,070 |
| N1 | MP10-10007B90Z3-E03 F40M | 3.5 | 0,060 | 0,065 | 0,080 | 0,095 | 0,11 |
| N2 | MP10-10007B90Z3-E03 F40M | 3.5 | 0,060 | 0,065 | 0,080 | 0,095 | 0,11 |
| N3 | MP10-10007B90Z3-E03 F40M | 3.5 | 0,060 | 0,065 | 0,080 | 0,095 | 0,11 |
| N11 | MP10-10007B90Z3-E03 F40M | 3.5 | 0,060 | 0,065 | 0,080 | 0,095 | 0,11 |
| S1 | MP10-10007B90Z3-E03 F40M | 2.0 | 0,034 | 0,034 | 0,040 | 0,042 | 0,046 |
| S2 | MP10-10007B90Z3-E03 F40M | 2.0 | 0,034 | 0,034 | 0,040 | 0,042 | 0,046 |
| S3 | MP10-10007B90Z3-E03 F40M | 2.0 | 0,032 | 0,032 | 0,036 | 0,040 | 0,042 |
| S11 | MP10-10007B90Z3-E03 F40M | 2.5 | 0,038 | 0,038 | 0,046 | 0,050 | 0,055 |
| S12 | MP10-10007B90Z3-E03 F40M | 2.5 | 0,038 | 0,038 | 0,046 | 0,050 | 0,055 |
| S13 | MP10-10007B90Z3-E03 F40M | 2.0 | 0,034 | 0,034 | 0,040 | 0,042 | 0,046 |
| H5 | MP10-10007B90Z3-M03 MP3000 | 2.5 | 0,032 | 0,032 | 0,038 | 0,042 | 0,046 |
| H8 | MP10-10007B90Z3-M03 MP3000 | 2.5 | 0,024 | 0,026 | 0,030 | 0,032 | 0,036 |
| H11 | MP10-10007B90Z3-M03 MP3000 | 2.5 | 0,032 | 0,032 | 0,038 | 0,042 | 0,046 |
| H12 | MP10-10007B90Z3-M03 MP3000 | 2.5 | 0,024 | 0,026 | 0,030 | 0,032 | 0,036 |
| H21 | MP10-10007B90Z3-M03 MP3000 | 2.5 | 0,024 | 0,026 | 0,030 | 0,032 | 0,036 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MP10 Copy milling – Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | | | F40M | | | | |
|-----|--------|------|------|------|------|------|------|------|------|------|
| | 100% | 30% | 10% | 5% | 2% | 100% | 30% | 10% | 5% | 2% |
| P1 | 275 | 330 | 360 | 385 | 385 | 260 | 310 | 340 | 365 | 365 |
| P2 | 265 | 320 | 345 | 375 | 375 | 250 | 300 | 325 | 355 | 355 |
| P3 | 230 | 280 | 300 | 325 | 325 | 220 | 265 | 285 | 310 | 310 |
| P4 | 205 | 245 | 265 | 290 | 290 | 195 | 230 | 250 | 270 | 270 |
| P5 | 195 | 235 | 255 | 275 | 275 | 185 | 225 | 240 | 260 | 260 |
| P6 | 220 | 265 | 285 | 310 | 310 | 205 | 250 | 270 | 295 | 295 |
| P7 | 205 | 250 | 270 | 295 | 295 | 195 | 235 | 255 | 275 | 280 |
| P8 | 195 | 235 | 255 | 275 | 275 | 185 | 220 | 240 | 260 | 260 |
| P11 | 200 | 245 | 265 | 285 | 285 | 190 | 230 | 250 | 270 | 270 |
| P12 | 125 | 155 | 165 | 175 | 175 | 120 | 145 | 155 | 165 | 165 |
| M1 | 200 | 240 | 260 | 280 | 280 | 205 | 245 | 265 | 285 | 285 |
| M2 | 165 | 195 | 215 | 230 | 230 | 165 | 200 | 215 | 235 | 235 |
| M3 | 130 | 160 | 165 | 180 | 180 | 135 | 165 | 170 | 185 | 185 |
| M4 | 100 | 125 | 125 | 140 | 140 | 105 | 125 | 130 | 140 | 140 |
| M5 | 85 | 105 | 105 | 115 | 115 | 85 | 105 | 110 | 115 | 115 |
| K1 | 210 | 255 | 275 | 300 | 300 | 200 | 240 | 260 | 280 | 280 |
| K2 | 185 | 225 | 245 | 265 | 260 | 175 | 210 | 230 | 250 | 245 |
| K3 | 155 | 190 | 205 | 220 | 220 | 150 | 180 | 195 | 210 | 210 |
| K4 | 150 | 180 | 195 | 210 | 210 | 140 | 170 | 185 | 200 | 200 |
| K5 | 90 | 110 | 120 | 130 | 130 | 85 | 105 | 110 | 120 | 120 |
| K6 | 130 | 160 | 175 | 185 | 185 | 125 | 150 | 165 | 175 | 175 |
| K7 | 115 | 140 | 150 | 165 | 165 | 110 | 130 | 145 | 155 | 155 |
| N1 | 1600 | 1925 | 2100 | 2275 | 2275 | 1500 | 1825 | 1975 | 2150 | 2150 |
| N2 | 650 | 780 | 840 | 920 | 920 | 610 | 730 | 800 | 860 | 870 |
| N3 | 430 | 520 | 560 | 610 | 610 | 405 | 490 | 530 | 580 | 580 |
| N11 | — | — | — | — | — | 465 | 560 | 610 | 660 | 660 |
| S1 | 48 | 60 | 60 | 65 | 65 | 48 | 60 | 60 | 65 | 65 |
| S2 | 38 | 46 | 48 | 50 | 50 | 39 | 47 | 49 | 55 | 55 |
| S3 | 33 | 40 | 42 | 45 | 45 | 34 | 41 | 42 | 46 | 46 |
| S11 | 65 | 80 | 85 | 90 | 90 | 70 | 85 | 85 | 95 | 95 |
| S12 | 46 | 55 | 60 | 65 | 65 | 47 | 60 | 60 | 65 | 65 |
| S13 | 27 | 32 | 33 | 36 | 36 | 27 | 33 | 34 | 37 | 37 |
| H5 | 39 | 48 | 50 | 55 | 55 | 40 | 49 | 50 | 55 | 55 |
| H8 | 41 | 50 | 50 | 55 | 55 | 41 | 50 | 50 | 55 | 55 |
| H11 | 50 | 60 | 65 | 70 | 70 | 50 | 60 | 65 | 70 | 70 |
| H12 | 80 | 95 | 100 | 110 | 110 | 75 | 90 | 95 | 100 | 100 |
| H21 | 41 | 50 | 50 | 55 | 55 | 41 | 50 | 50 | 55 | 55 |

MP10 Centre drilling – Insert selection

| SMG | | f_z | a_{so} |
|-----|--------------------------|-------|----------|
| | | | 100% |
| P1 | MP10-10006C90Z2-M03 F40M | 0,042 | 2,5 |
| P2 | MP10-10006C90Z2-M03 F40M | 0,042 | 2,5 |
| P3 | MP10-10006C90Z2-M03 F40M | 0,040 | 2,5 |
| P4 | MP10-10006C90Z2-M03 F40M | 0,040 | 2,5 |
| P5 | MP10-10006C90Z2-M03 F40M | 0,040 | 2,5 |
| P6 | MP10-10006C90Z2-M03 F40M | 0,038 | 2,5 |
| P7 | MP10-10006C90Z2-M03 F40M | 0,038 | 2,5 |
| P8 | MP10-10006C90Z2-M03 F40M | 0,040 | 2,5 |
| P11 | MP10-10006C90Z2-M03 F40M | 0,038 | 2,5 |
| P12 | MP10-10006C90Z2-M03 F40M | 0,026 | 2,0 |
| M1 | MP10-10006C90Z2-M03 F40M | 0,042 | 2,5 |
| M2 | MP10-10006C90Z2-M03 F40M | 0,040 | 2,5 |
| M3 | MP10-10006C90Z2-M03 F40M | 0,032 | 2,0 |
| M4 | MP10-10006C90Z2-M03 F40M | 0,028 | 1,6 |
| M5 | MP10-10006C90Z2-M03 F40M | 0,028 | 1,6 |
| K1 | MP10-10006C90Z2-M03 F40M | 0,042 | 2,5 |
| K2 | MP10-10006C90Z2-M03 F40M | 0,040 | 2,5 |
| K3 | MP10-10006C90Z2-M03 F40M | 0,040 | 2,5 |
| K4 | MP10-10006C90Z2-M03 F40M | 0,040 | 2,5 |
| K5 | MP10-10006C90Z2-M03 F40M | 0,036 | 2,5 |
| K6 | MP10-10006C90Z2-M03 F40M | 0,040 | 2,5 |
| K7 | MP10-10006C90Z2-M03 F40M | 0,036 | 2,5 |
| N1 | MP10-10006C90Z2-M03 F40M | 0,055 | 2,5 |
| N2 | MP10-10006C90Z2-M03 F40M | 0,055 | 2,5 |
| N3 | MP10-10006C90Z2-M03 F40M | 0,055 | 2,5 |
| N11 | MP10-10006C90Z2-M03 F40M | 0,055 | 2,5 |
| S1 | MP10-10006C90Z2-M03 F40M | 0,028 | 1,6 |
| S2 | MP10-10006C90Z2-M03 F40M | 0,028 | 1,6 |
| S3 | MP10-10006C90Z2-M03 F40M | 0,026 | 1,6 |
| S11 | MP10-10006C90Z2-M03 F40M | 0,032 | 1,9 |
| S12 | MP10-10006C90Z2-M03 F40M | 0,032 | 1,9 |
| S13 | MP10-10006C90Z2-M03 F40M | 0,028 | 1,6 |
| H5 | MP10-10006C90Z2-M03 F40M | 0,026 | 2,0 |
| H8 | MP10-10006C90Z2-M03 F40M | 0,020 | 1,9 |
| H11 | MP10-10006C90Z2-M03 F40M | 0,026 | 2,0 |
| H12 | MP10-10006C90Z2-M03 F40M | 0,020 | 1,9 |
| H21 | MP10-10006C90Z2-M03 F40M | 0,020 | 1,9 |
| H31 | MP10-10006C90Z2-M03 F40M | — | — |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MP10 Centre drilling – Cutting data $v_c =$ (m/min)

| SMG | F40M |
|-----|------|
| | 100% |
| P1 | 225 |
| P2 | 215 |
| P3 | 190 |
| P4 | 165 |
| P5 | 160 |
| P6 | 180 |
| P7 | 170 |
| P8 | 160 |
| P11 | 165 |
| P12 | 105 |
| M1 | 175 |
| M2 | 145 |
| M3 | 115 |
| M4 | 90 |
| M5 | 75 |
| K1 | 170 |
| K2 | 150 |
| K3 | 125 |
| K4 | 120 |
| K5 | 75 |
| K6 | 105 |
| K7 | 95 |
| N1 | 1275 |
| N2 | 510 |
| N3 | 345 |
| N11 | 390 |
| S1 | 41 |
| S2 | 33 |
| S3 | 29 |
| S11 | 60 |
| S12 | 40 |
| S13 | 23 |
| H5 | 35 |
| H8 | 37 |
| H11 | 45 |
| H12 | 65 |
| H21 | 37 |
| H31 | — |

MP10 Chamfering – Insert selection

| SMG | | a_p | f_z | | | | |
|-----|--------------------------|-------|-------|-------|-------|-------|-------|
| | | | 100% | 50% | 30% | 20% | 10% |
| P1 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,060 | 0,060 | 0,060 | 0,060 | 0,060 |
| P2 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,060 | 0,060 | 0,060 | 0,060 | 0,060 |
| P3 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,055 | 0,055 |
| P4 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,055 | 0,055 |
| P5 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,055 | 0,055 |
| P6 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,055 | 0,055 |
| P7 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,055 | 0,055 |
| P8 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,055 | 0,055 |
| P11 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,055 | 0,055 |
| P12 | MP10-10006C90Z2-M03 F40M | 1,7 | 0,038 | 0,038 | 0,038 | 0,038 | 0,038 |
| M1 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,060 | 0,060 | 0,060 | 0,060 | 0,060 |
| M2 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,055 | 0,055 |
| M3 | MP10-10006C90Z2-M03 F40M | 1,7 | 0,044 | 0,044 | 0,044 | 0,044 | 0,044 |
| M4 | MP10-10006C90Z2-M03 F40M | 1,3 | 0,038 | 0,038 | 0,038 | 0,038 | 0,038 |
| M5 | MP10-10006C90Z2-M03 F40M | 1,3 | 0,038 | 0,038 | 0,038 | 0,038 | 0,038 |
| K1 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,060 | 0,060 | 0,060 | 0,060 | 0,060 |
| K2 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,055 | 0,055 |
| K3 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,055 | 0,055 |
| K4 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,055 | 0,055 |
| K5 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,050 | 0,050 | 0,050 | 0,050 | 0,050 |
| K6 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,055 | 0,055 |
| K7 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,050 | 0,050 | 0,050 | 0,050 | 0,050 |
| N1 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| N2 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| N3 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| N11 | MP10-10006C90Z2-M03 F40M | 2,0 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| S1 | MP10-10006C90Z2-M03 F40M | 1,3 | 0,038 | 0,038 | 0,038 | 0,038 | 0,038 |
| S2 | MP10-10006C90Z2-M03 F40M | 1,3 | 0,038 | 0,038 | 0,038 | 0,038 | 0,038 |
| S3 | MP10-10006C90Z2-M03 F40M | 1,3 | 0,036 | 0,036 | 0,036 | 0,036 | 0,036 |
| S11 | MP10-10006C90Z2-M03 F40M | 1,5 | 0,044 | 0,044 | 0,044 | 0,044 | 0,044 |
| S12 | MP10-10006C90Z2-M03 F40M | 1,5 | 0,044 | 0,044 | 0,044 | 0,044 | 0,044 |
| S13 | MP10-10006C90Z2-M03 F40M | 1,3 | 0,038 | 0,038 | 0,038 | 0,038 | 0,038 |
| H5 | MP10-10006C90Z2-M03 F40M | 1,7 | 0,038 | 0,038 | 0,038 | 0,038 | 0,038 |
| H8 | MP10-10006C90Z2-M03 F40M | 1,5 | 0,028 | 0,028 | 0,028 | 0,028 | 0,028 |
| H11 | MP10-10006C90Z2-M03 F40M | 1,7 | 0,038 | 0,038 | 0,038 | 0,038 | 0,038 |
| H12 | MP10-10006C90Z2-M03 F40M | 1,5 | 0,028 | 0,028 | 0,028 | 0,028 | 0,028 |
| H21 | MP10-10006C90Z2-M03 F40M | 1,5 | 0,028 | 0,028 | 0,028 | 0,028 | 0,028 |
| H31 | MP10-10006C90Z2-M03 F40M | — | — | — | — | — | — |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MP10 Chamfering – Cutting data $v_c =$ (m/min)

| SMG | F40M | | | | |
|-----|------|------|------|------|------|
| | 100% | 50% | 30% | 20% | 10% |
| P1 | 355 | 305 | 365 | 405 | 475 |
| P2 | 345 | 295 | 355 | 390 | 460 |
| P3 | 300 | 260 | 310 | 345 | 405 |
| P4 | 265 | 230 | 275 | 305 | 355 |
| P5 | 255 | 220 | 260 | 290 | 340 |
| P6 | 285 | 245 | 295 | 325 | 380 |
| P7 | 270 | 230 | 275 | 305 | 360 |
| P8 | 255 | 220 | 260 | 290 | 340 |
| P11 | 260 | 225 | 270 | 300 | 350 |
| P12 | 165 | 0 | 155 | 180 | 220 |
| M1 | 280 | 240 | 285 | 315 | 370 |
| M2 | 230 | 195 | 235 | 260 | 305 |
| M3 | 180 | 0 | 170 | 195 | 245 |
| M4 | 140 | 95 | 120 | 0 | 185 |
| M5 | 115 | 80 | 100 | 0 | 155 |
| K1 | 275 | 235 | 280 | 310 | 365 |
| K2 | 240 | 205 | 250 | 275 | 325 |
| K3 | 205 | 175 | 210 | 230 | 275 |
| K4 | 195 | 165 | 200 | 220 | 260 |
| K5 | 120 | 100 | 120 | 135 | 160 |
| K6 | 170 | 145 | 175 | 195 | 230 |
| K7 | 150 | 130 | 155 | 170 | 200 |
| N1 | 2050 | 1725 | 2100 | 2325 | 2750 |
| N2 | 830 | 700 | 850 | 940 | 1125 |
| N3 | 550 | 465 | 570 | 630 | 740 |
| N11 | 630 | 530 | 650 | 720 | 850 |
| S1 | 65 | 45 | 55 | 0 | 85 |
| S2 | 55 | 37 | 44 | 0 | 70 |
| S3 | 46 | 32 | 39 | 0 | 60 |
| S11 | 90 | 70 | 80 | 95 | 125 |
| S12 | 65 | 47 | 55 | 65 | 85 |
| S13 | 37 | 26 | 31 | 0 | 49 |
| H5 | 55 | 0 | 50 | 60 | 75 |
| H8 | 60 | 45 | 55 | 60 | 75 |
| H11 | 70 | 0 | 65 | 75 | 95 |
| H12 | 105 | 80 | 95 | 110 | 140 |
| H21 | 60 | 45 | 55 | 60 | 75 |
| H31 | — | — | — | — | — |

MP12 Shank

Design 1

Design 2

Design 3

Design 4

- Cylindrical shank DMM with tolerance h5, compatible for Shrinkfit
- Max RPM 72700 r/min
- For ISO attribute explanation, see page 15

| Designation | Connecting size | Dimensions in mm | | | | | | Design | | |
|---------------------|-----------------|------------------|------|-------|-------|-------|-------|--------|---|-----|
| | | DCSFWS | DMM | OAL | LPR | LF | BHTA° | | | |
| MP12-12060-012.00 | MP12 | 11,5 | 12,0 | 60,0 | 15,0 | 12,0 | 0,0 | 2 | ✓ | 0,1 |
| MP12-16068-000.60 | MP12 | 11,5 | 16,0 | 68,0 | 20,0 | 0,0 | 60,0 | 1 | ✓ | 0,2 |
| MP12-16078-018.00 | MP12 | 11,5 | 16,0 | 78,0 | 30,0 | 18,0 | 0,0 | 2 | ✓ | 0,1 |
| MP12-16153-042.01 | MP12 | 11,5 | 16,0 | 153,0 | 105,0 | 42,0 | 1,0 | 3 | ✓ | 0,2 |
| MP12-20170-072.01 | MP12 | 11,5 | 20,0 | 170,0 | 120,0 | 72,0 | 1,0 | 3 | ✓ | 0,3 |
| MP12-20110-055.03 | MP12 | 11,5 | 20,0 | 110,0 | 60,0 | 55,0 | 3,0 | 3 | ✓ | 0,2 |
| MP12-20150-100.03 | MP12 | 11,5 | 20,0 | 150,0 | 100,0 | 81,1 | 3,0 | 4 | ✓ | 0,3 |
| MP12-20155-105.05 | MP12 | 11,5 | 20,0 | 155,0 | 105,0 | 48,6 | 5,0 | 4 | ✓ | 0,4 |
| MP12-16107-036.00-E | MP12 | 11,5 | 16,0 | 107,0 | 59,0 | 36,0 | 0,0 | 2 | ✓ | 0,3 |
| MP12-16120-048.00-E | MP12 | 11,5 | 16,0 | 120,0 | 72,0 | 48,0 | 0,0 | 2 | ✓ | 0,3 |
| MP12-16150-072.00-E | MP12 | 11,5 | 16,0 | 150,0 | 102,0 | 72,0 | 0,0 | 2 | ✓ | 0,3 |
| MP12-16120-060.01-E | MP12 | 11,5 | 16,0 | 120,0 | 72,0 | 60,0 | 1,0 | 3 | ✓ | 0,3 |
| MP12-16150-096.01-E | MP12 | 11,5 | 16,0 | 150,0 | 102,0 | 96,0 | 1,0 | 3 | ✓ | 0,4 |
| MP12-16175-120.01-E | MP12 | 11,5 | 16,0 | 175,0 | 127,0 | 120,0 | 1,0 | 3 | ✓ | 0,4 |
| MP12-16155-107.03-E | MP12 | 11,5 | 16,0 | 155,0 | 107,0 | 42,9 | 3,0 | 4 | ✓ | 0,4 |
| MP12-16180-132.03-E | MP12 | 11,5 | 16,0 | 180,0 | 132,0 | 42,9 | 3,0 | 4 | ✓ | 0,5 |

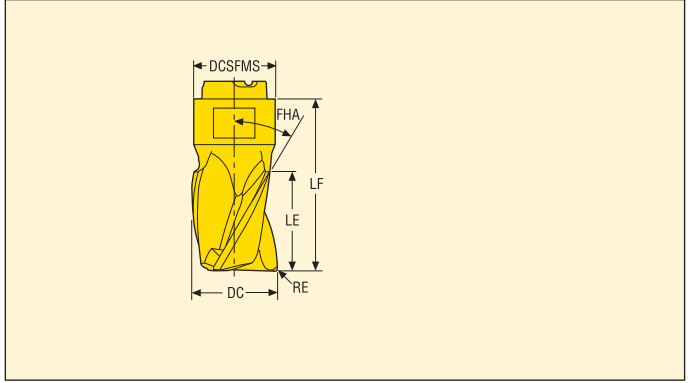
Accessories

| Inserts | Torque key | Replacement blade | Key |
|---------|-------------|-------------------|--------|
| | | | |
| MP12 | MP00-12.150 | MP00-12M | MP1016 |
| | | | |
| | | | |
| | | | |
| | | | |

Blades are included with the torque key

MP12 Square shoulder

Slotting and contouring



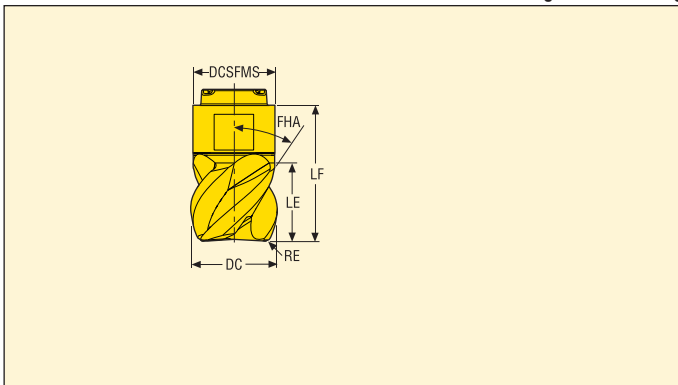
Z3



| Designation | Dimensions in mm | | | | | | ZNP | | Coated | | | | | |
|---------------------|------------------|-----|------|--------|------|------|-----|---|--------|-------|--|--|--|--|
| | DC | RE | LE | DCSFMS | FHA° | LF | | | Grades | | | | | |
| | | | | | | | | | MP3000 | F-40M | | | | |
| MP12-11714KWZ3-E04 | 11,7 | 0,3 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | | ■ | | | | |
| MP12-12014R04Z3-E04 | 12,0 | 0,4 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | | ■ | | | | |
| MP12-12014R04Z3-M04 | 12,0 | 0,4 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | ■ | | | | | |
| MP12-12014R05Z3-E04 | 12,0 | 0,5 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | | ■ | | | | |
| MP12-12014R08Z3-E04 | 12,0 | 0,8 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | | ■ | | | | |
| MP12-12014R08Z3-M04 | 12,0 | 0,8 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | ■ | | | | | |
| MP12-12014R12Z3-E04 | 12,0 | 1,2 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | | ■ | | | | |
| MP12-12014R12Z3-M04 | 12,0 | 1,2 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | ■ | | | | | |
| MP12-12014R16Z3-E04 | 12,0 | 1,6 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | | ■ | | | | |
| MP12-12014R20Z3-E04 | 12,0 | 2,0 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | | ■ | | | | |
| MP12-12014R24Z3-E04 | 12,0 | 2,4 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | | ■ | | | | |
| MP12-12014R31Z3-E04 | 12,0 | 3,1 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | | ■ | | | | |
| | | | | | | | | | | | | | | |
| MP12-11708KWZ3-E04 | 11,7 | 0,3 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | | ■ | | | | |
| MP12-12008R04Z3-E04 | 12,0 | 0,4 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | | ■ | | | | |
| MP12-12008R04Z3-M04 | 12,0 | 0,4 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | ■ | | | | | |
| MP12-12008R05Z3-E04 | 12,0 | 0,5 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | | ■ | | | | |
| MP12-12008R08Z3-E04 | 12,0 | 0,8 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | | ■ | | | | |
| MP12-12008R08Z3-M04 | 12,0 | 0,8 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | ■ | | | | | |
| MP12-12008R12Z3-E04 | 12,0 | 1,2 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | | ■ | | | | |
| MP12-12008R12Z3-M04 | 12,0 | 1,2 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | ■ | | | | | |
| MP12-12008R16Z3-E04 | 12,0 | 1,6 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | | ■ | | | | |
| MP12-12008R20Z3-E04 | 12,0 | 2,0 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | | ■ | | | | |
| MP12-12008R24Z3-E04 | 12,0 | 2,4 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | | ■ | | | | |
| MP12-12008R31Z3-E04 | 12,0 | 3,1 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | | ■ | | | | |
| | | | | | | | | | | | | | | |
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MP12 Square shoulder

Slotting and contouring



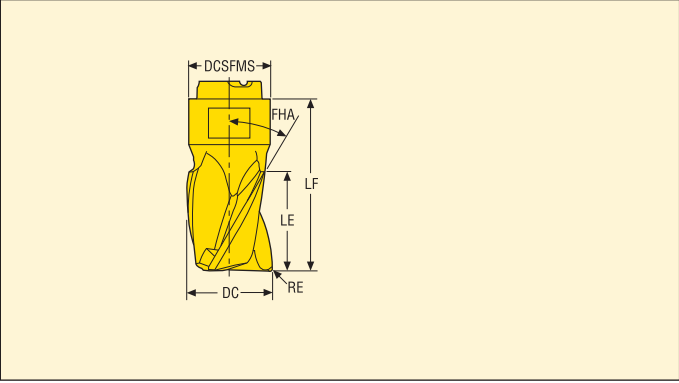
Z4



| Designation | Dimensions in mm | | | | | | ZNP |  | Coated | | | | |
|---------------------|------------------|-----|------|--------|------|------|-----|---|--------|------|--|--|--|
| | DC | RE | LE | DCSFMS | FHA° | LF | | | Grades | | | | |
| | | | | | | | | | MP3000 | F40M | | | |
| MP12-12008R04Z4-E03 | 12,0 | 0,4 | 8,0 | 11,5 | 50 | 18,8 | 4 | | | ■ | | | |
| MP12-12008R04Z4-M03 | 12,0 | 0,4 | 8,0 | 11,5 | 50 | 18,8 | 4 | ■ | | ■ | | | |
| MP12-12008R05Z4-E03 | 12,0 | 0,5 | 8,0 | 11,5 | 50 | 18,8 | 4 | | | ■ | | | |
| MP12-12008R08Z4-E03 | 12,0 | 0,8 | 8,0 | 11,5 | 50 | 18,8 | 4 | | | ■ | | | |
| MP12-12008R08Z4-M03 | 12,0 | 0,8 | 8,0 | 11,5 | 50 | 18,8 | 4 | ■ | | ■ | | | |
| MP12-12008R12Z4-E03 | 12,0 | 1,2 | 8,0 | 11,5 | 50 | 18,8 | 4 | | | ■ | | | |
| MP12-12008R12Z4-M03 | 12,0 | 1,2 | 8,0 | 11,5 | 50 | 18,8 | 4 | ■ | | ■ | | | |
| MP12-12008R16Z4-E03 | 12,0 | 1,6 | 8,0 | 11,5 | 50 | 18,8 | 4 | | | ■ | | | |
| MP12-12008R16Z4-M03 | 12,0 | 1,6 | 8,0 | 11,5 | 50 | 18,8 | 4 | ■ | | ■ | | | |
| MP12-12008R20Z4-E03 | 12,0 | 2,0 | 8,0 | 11,5 | 50 | 18,8 | 4 | | | ■ | | | |
| MP12-12008R24Z4-E03 | 12,0 | 2,4 | 8,0 | 11,5 | 50 | 18,8 | 4 | | | ■ | | | |
| MP12-12014R04Z4-E03 | 12,0 | 0,4 | 14,0 | 11,5 | 50 | 24,0 | 4 | | | ■ | | | |
| MP12-12014R04Z4-M03 | 12,0 | 0,4 | 14,0 | 11,5 | 50 | 24,0 | 4 | ■ | | ■ | | | |
| MP12-12014R05Z4-E03 | 12,0 | 0,5 | 14,0 | 11,5 | 50 | 24,0 | 4 | | | ■ | | | |
| MP12-12014R08Z4-E03 | 12,0 | 0,8 | 14,0 | 11,5 | 50 | 24,0 | 4 | | | ■ | | | |
| MP12-12014R08Z4-M03 | 12,0 | 0,8 | 14,0 | 11,5 | 50 | 24,0 | 4 | ■ | | ■ | | | |
| MP12-12014R12Z4-E03 | 12,0 | 1,2 | 14,0 | 11,5 | 50 | 24,0 | 4 | | | ■ | | | |
| MP12-12014R12Z4-M03 | 12,0 | 1,2 | 14,0 | 11,5 | 50 | 24,0 | 4 | ■ | | ■ | | | |
| MP12-12014R16Z4-E03 | 12,0 | 1,6 | 14,0 | 11,5 | 50 | 24,0 | 4 | | | ■ | | | |
| MP12-12014R20Z4-E03 | 12,0 | 2,0 | 14,0 | 11,5 | 50 | 24,0 | 4 | | | ■ | | | |
| MP12-12014R24Z4-E03 | 12,0 | 2,4 | 14,0 | 11,5 | 50 | 24,0 | 4 | | | ■ | | | |
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MP12 Square shoulder

Contouring only

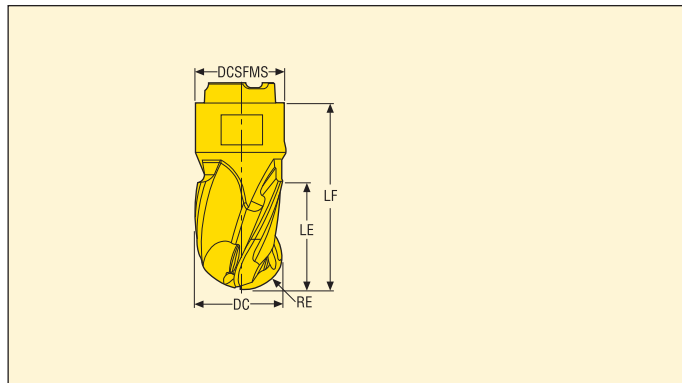


Z6



| Designation | Dimensions in mm | | | | | | ZNP |  | Coated | | | | | |
|---------------------|------------------|-----|------|--------|------|------|-----|---|--------|------|--|--|--|--|
| | DC | RE | LE | DCSFMS | FHA° | LF | | | Grades | | | | | |
| | | | | | | | | | MP3000 | F40M | | | | |
| MP12-12014R04Z6-M03 | 12,0 | 0,4 | 14,0 | 11,5 | 40 | 24,0 | 6 |  | | | | | | |
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MP12 Ball nose design




Z3

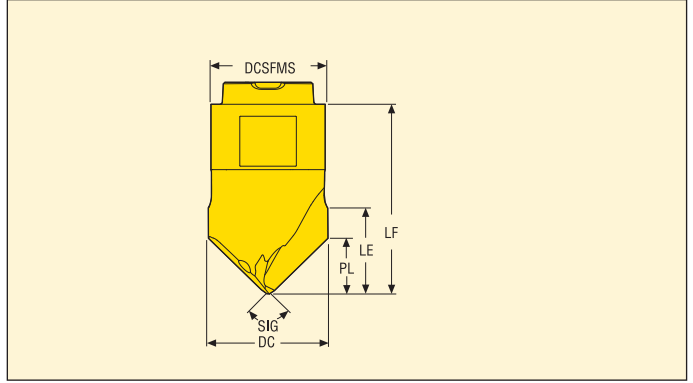
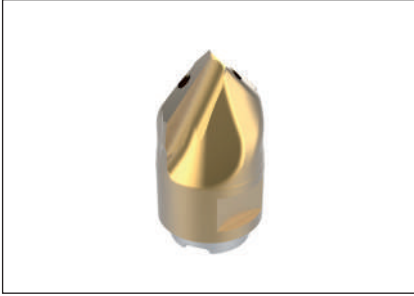


Z4



| Designation | Dimensions in mm | | | | | | ZNP |  | Coated | | | |
|---------------------|------------------|-----|------|--------|------|------|-----|---|--------|------|--|--|
| | DC | RE | LE | DCSFMS | FHA° | LF | | | Grades | | | |
| | | | | | | | | | MP3000 | F40M | | |
| MP12-12008B90Z3-E04 | 12,0 | 6,0 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | ■ | ■ | | |
| MP12-12008B90Z3-M04 | 12,0 | 6,0 | 8,0 | 11,5 | 30 | 18,8 | 3 | ✓ | ■ | ■ | | |
| MP12-12014B90Z3-E04 | 12,0 | 6,0 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | ■ | ■ | | |
| MP12-12014B90Z3-M04 | 12,0 | 6,0 | 14,0 | 11,5 | 30 | 24,0 | 3 | ✓ | ■ | ■ | | |
| MP12-12008B90Z4-E03 | 12,0 | 6,0 | 8,0 | 11,5 | 20 | 18,7 | 4 | | ■ | ■ | | |
| MP12-12008B90Z4-M03 | 12,0 | 6,0 | 8,0 | 11,5 | 20 | 18,7 | 4 | | ■ | ■ | | |
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MP12 Centre drilling

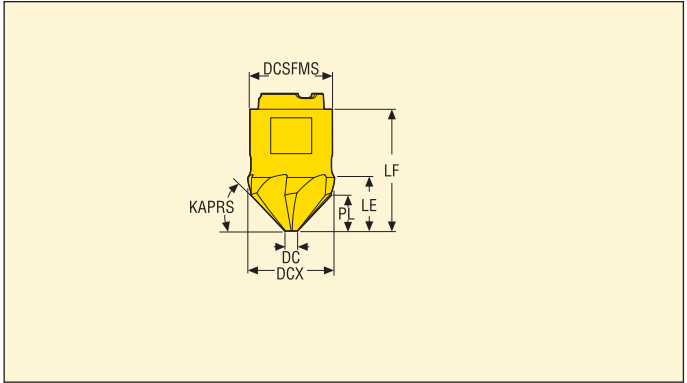
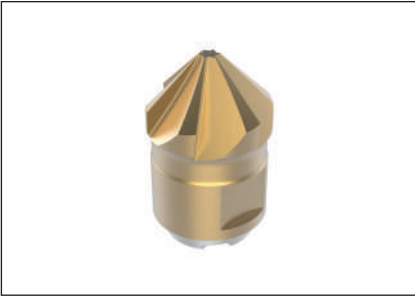


Z2




| Designation | Dimensions in mm | | | | | | ZNP | | Coated | | | |
|---------------------|------------------|--------|-----|-----|------|------|-----|---|--------|-------|--|--|
| | DC | DCSFMS | PL | LE | LF | SIG° | | | Grades | | | |
| | | | | | | | | | MP3000 | F-40M | | |
| MP12-12007C90Z2-M04 | 12,0 | 11,5 | 5,6 | 8,7 | 19,0 | 90,0 | 2 | ✓ | ■ | | | |
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MP12 Chamfering



Z6



| Designation | Dimensions in mm | | | | | | KAPRS° | ZNP |  | Coated | | | |
|---------------------|------------------|------|--------|-----|-----|------|--------|-----|---|--------|------|--|--|
| | DCX | DC | DCSFMS | PL | LE | LF | | | | Grades | | | |
| | | | | | | | | | | MP3000 | F40M | | |
| MP12-12007C90Z6-M04 | 12,1 | 2,95 | 11,5 | 4,4 | 4,4 | 18,0 | 45,0 | 6 | | | ■ | | |
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MP12 High feed milling – Insert selection

| SMG | | a_p | f_z | | | |
|-----|-----------------------------|-------|-------|------|------|------|
| | | | 100% | 70% | 30% | 20% |
| P1 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,55 | 0,55 | 0,60 | 0,75 |
| P2 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,55 | 0,55 | 0,60 | 0,75 |
| P3 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,55 | 0,55 | 0,60 | 0,70 |
| P4 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,50 | 0,50 | 0,60 | 0,70 |
| P5 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,50 | 0,50 | 0,55 | 0,70 |
| P6 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,50 | 0,50 | 0,55 | 0,65 |
| P7 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,50 | 0,50 | 0,55 | 0,65 |
| P8 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,55 | 0,55 | 0,60 | 0,70 |
| P11 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,50 | 0,50 | 0,55 | 0,65 |
| P12 | MP12-1200.7HFZ3-MD10 MP3000 | 0,40 | 0,36 | 0,36 | 0,40 | 0,46 |
| M1 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,55 | 0,55 | 0,60 | 0,75 |
| M2 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,50 | 0,50 | 0,55 | 0,70 |
| M3 | MP12-1200.7HFZ3-MD10 MP3000 | 0,40 | 0,42 | 0,42 | 0,46 | 0,55 |
| M4 | MP12-1200.7HFZ3-MD10 MP3000 | 0,30 | 0,36 | 0,36 | 0,40 | 0,48 |
| M5 | MP12-1200.7HFZ3-MD10 MP3000 | 0,30 | 0,36 | 0,36 | 0,40 | 0,48 |
| K1 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,55 | 0,55 | 0,60 | 0,75 |
| K2 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,50 | 0,50 | 0,55 | 0,70 |
| K3 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,50 | 0,50 | 0,55 | 0,70 |
| K4 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,50 | 0,50 | 0,55 | 0,70 |
| K5 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,46 | 0,46 | 0,50 | 0,60 |
| K6 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,50 | 0,50 | 0,55 | 0,70 |
| K7 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,46 | 0,46 | 0,50 | 0,60 |
| N1 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,70 | 0,70 | 0,80 | 1,0 |
| N2 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,70 | 0,70 | 0,80 | 1,0 |
| N3 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,70 | 0,70 | 0,80 | 1,0 |
| N11 | MP12-1200.7HFZ3-MD10 MP3000 | 0,48 | 0,70 | 0,70 | 0,80 | 1,0 |
| S1 | MP12-1200.7HFZ3-MD10 MP3000 | 0,30 | 0,36 | 0,36 | 0,40 | 0,48 |
| S2 | MP12-1200.7HFZ3-MD10 MP3000 | 0,30 | 0,36 | 0,36 | 0,40 | 0,48 |
| S3 | MP12-1200.7HFZ3-MD10 MP3000 | 0,30 | 0,34 | 0,34 | 0,38 | 0,44 |
| S11 | MP12-1200.7HFZ3-MD10 MP3000 | 0,34 | 0,42 | 0,42 | 0,46 | 0,55 |
| S12 | MP12-1200.7HFZ3-MD10 MP3000 | 0,34 | 0,42 | 0,42 | 0,46 | 0,55 |
| S13 | MP12-1200.7HFZ3-MD10 MP3000 | 0,30 | 0,36 | 0,36 | 0,40 | 0,48 |
| H5 | MP12-1200.7HFZ3-MD10 MP3000 | 0,40 | 0,36 | 0,36 | 0,40 | 0,46 |
| H8 | MP12-1200.7HFZ3-MD10 MP3000 | 0,34 | 0,28 | 0,28 | 0,30 | 0,34 |
| H11 | MP12-1200.7HFZ3-MD10 MP3000 | 0,40 | 0,36 | 0,36 | 0,40 | 0,46 |
| H12 | MP12-1200.7HFZ3-MD10 MP3000 | 0,34 | 0,28 | 0,28 | 0,30 | 0,34 |
| H21 | MP12-1200.7HFZ3-MD10 MP3000 | 0,34 | 0,28 | 0,28 | 0,30 | 0,34 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MP12 High feed milling – Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | |
|-----|--------|------|------|------|
| | 100% | 70% | 30% | 20% |
| P1 | 240 | 300 | 360 | 380 |
| P2 | 235 | 290 | 350 | 370 |
| P3 | 200 | 250 | 300 | 320 |
| P4 | 180 | 225 | 265 | 285 |
| P5 | 175 | 215 | 260 | 270 |
| P6 | 195 | 245 | 290 | 310 |
| P7 | 185 | 230 | 275 | 290 |
| P8 | 170 | 210 | 255 | 270 |
| P11 | 180 | 220 | 265 | 285 |
| P12 | 115 | 145 | 170 | 180 |
| M1 | 175 | 220 | 265 | 275 |
| M2 | 145 | 180 | 215 | 225 |
| M3 | 115 | 145 | 170 | 180 |
| M4 | 95 | 110 | 130 | 140 |
| M5 | 75 | 95 | 110 | 115 |
| K1 | 185 | 230 | 280 | 290 |
| K2 | 165 | 205 | 245 | 255 |
| K3 | 140 | 175 | 210 | 215 |
| K4 | 130 | 165 | 200 | 205 |
| K5 | 80 | 100 | 120 | 130 |
| K6 | 115 | 145 | 175 | 185 |
| K7 | 105 | 130 | 155 | 165 |
| N1 | 1375 | 1725 | 2050 | 2150 |
| N2 | 560 | 700 | 830 | 870 |
| N3 | 370 | 465 | 550 | 580 |
| N11 | 425 | 530 | 630 | 660 |
| S1 | 43 | 50 | 60 | 65 |
| S2 | 35 | 42 | 50 | 55 |
| S3 | 30 | 36 | 44 | 46 |
| S11 | 60 | 75 | 85 | 90 |
| S12 | 41 | 50 | 60 | 65 |
| S13 | 24 | 29 | 35 | 37 |
| H5 | 36 | 44 | 55 | 55 |
| H8 | 38 | 47 | 55 | 60 |
| H11 | 46 | 55 | 65 | 70 |
| H12 | 75 | 90 | 105 | 110 |
| H21 | 38 | 47 | 55 | 60 |

MP12 Slot milling – Insert selection

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 100% | 30% | 10% | 5% |
| P1 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,055 | 0,060 | 0,095 | 0,13 |
| P2 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,055 | 0,065 | 0,095 | 0,13 |
| P3 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,055 | 0,060 | 0,090 | 0,13 |
| P4 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,055 | 0,060 | 0,090 | 0,12 |
| P5 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,050 | 0,055 | 0,090 | 0,12 |
| P6 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,050 | 0,055 | 0,085 | 0,12 |
| P7 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,050 | 0,055 | 0,085 | 0,12 |
| P8 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,055 | 0,060 | 0,090 | 0,13 |
| P11 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,050 | 0,055 | 0,085 | 0,12 |
| P12 | MP12-12008R08Z3-M04 MP3000 | 3,0 | 0,036 | 0,040 | 0,060 | 0,085 |
| M1 | MP12-12008R04Z3-E04 F40M | 4,0 | 0,055 | 0,065 | 0,095 | 0,13 |
| M2 | MP12-12008R04Z3-E04 F40M | 4,0 | 0,050 | 0,055 | 0,090 | 0,12 |
| M3 | MP12-12008R04Z3-E04 F40M | 3,0 | 0,042 | 0,046 | 0,070 | 0,10 |
| M4 | MP12-12008R04Z3-E04 F40M | 2,5 | 0,036 | 0,040 | 0,060 | 0,085 |
| M5 | MP12-12008R04Z3-E04 F40M | 2,5 | 0,036 | 0,040 | 0,060 | 0,085 |
| K1 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,055 | 0,065 | 0,095 | 0,13 |
| K2 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,050 | 0,055 | 0,090 | 0,12 |
| K3 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,050 | 0,055 | 0,090 | 0,12 |
| K4 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,050 | 0,055 | 0,090 | 0,12 |
| K5 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,048 | 0,050 | 0,080 | 0,11 |
| K6 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,050 | 0,055 | 0,090 | 0,12 |
| K7 | MP12-12008R04Z3-M04 MP3000 | 4,0 | 0,048 | 0,050 | 0,080 | 0,11 |
| N1 | MP12-12008R04Z3-E04 F40M | 4,0 | 0,075 | 0,080 | 0,12 | 0,17 |
| N2 | MP12-12008R04Z3-E04 F40M | 4,0 | 0,075 | 0,080 | 0,12 | 0,17 |
| N3 | MP12-12008R04Z3-E04 F40M | 4,0 | 0,075 | 0,080 | 0,12 | 0,17 |
| N11 | MP12-12008R04Z3-E04 F40M | 4,0 | 0,075 | 0,080 | 0,12 | 0,17 |
| S1 | MP12-12008R04Z3-E04 F40M | 2,5 | 0,036 | 0,040 | 0,060 | 0,085 |
| S2 | MP12-12008R04Z3-E04 F40M | 2,5 | 0,036 | 0,040 | 0,060 | 0,085 |
| S3 | MP12-12008R04Z3-E04 F40M | 2,5 | 0,034 | 0,038 | 0,055 | 0,080 |
| S11 | MP12-12008R04Z3-E04 F40M | 2,5 | 0,042 | 0,046 | 0,070 | 0,10 |
| S12 | MP12-12008R04Z3-E04 F40M | 2,5 | 0,042 | 0,046 | 0,070 | 0,10 |
| S13 | MP12-12008R04Z3-E04 F40M | 2,5 | 0,036 | 0,040 | 0,060 | 0,085 |
| H5 | MP12-12008R04Z3-M04 MP3000 | 3,0 | 0,036 | 0,038 | 0,060 | 0,085 |
| H8 | MP12-12008R04Z3-M04 MP3000 | 2,5 | 0,028 | 0,030 | 0,046 | 0,065 |
| H11 | MP12-12008R04Z3-M04 MP3000 | 3,0 | 0,036 | 0,038 | 0,060 | 0,085 |
| H12 | MP12-12008R04Z3-M04 MP3000 | 2,5 | 0,028 | 0,030 | 0,046 | 0,065 |
| H21 | MP12-12008R04Z3-M04 MP3000 | 2,5 | 0,028 | 0,030 | 0,046 | 0,065 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MP12 Slot milling – Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | | F40M | | | |
|-----|--------|------|------|------|------|------|------|------|
| | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% |
| P1 | 250 | 325 | 380 | 415 | 235 | 310 | 360 | 390 |
| P2 | 240 | 315 | 370 | 405 | 225 | 295 | 350 | 380 |
| P3 | 210 | 275 | 320 | 345 | 200 | 260 | 305 | 325 |
| P4 | 185 | 240 | 285 | 310 | 175 | 230 | 270 | 295 |
| P5 | 180 | 235 | 275 | 295 | 170 | 220 | 260 | 280 |
| P6 | 200 | 265 | 310 | 330 | 190 | 250 | 290 | 315 |
| P7 | 190 | 250 | 290 | 315 | 180 | 235 | 275 | 295 |
| P8 | 175 | 230 | 270 | 290 | 165 | 215 | 255 | 275 |
| P11 | 185 | 240 | 280 | 305 | 175 | 230 | 265 | 290 |
| P12 | 115 | 155 | 175 | 195 | 110 | 145 | 165 | 180 |
| M1 | 180 | 235 | 275 | 300 | 180 | 240 | 280 | 305 |
| M2 | 150 | 195 | 230 | 245 | 150 | 200 | 235 | 250 |
| M3 | 120 | 155 | 180 | 195 | 120 | 160 | 185 | 200 |
| M4 | 90 | 120 | 140 | 150 | 95 | 120 | 140 | 155 |
| M5 | 75 | 100 | 115 | 125 | 75 | 100 | 120 | 125 |
| K1 | 190 | 250 | 295 | 320 | 180 | 235 | 275 | 300 |
| K2 | 170 | 220 | 260 | 280 | 160 | 210 | 245 | 265 |
| K3 | 145 | 190 | 220 | 240 | 135 | 180 | 210 | 225 |
| K4 | 140 | 180 | 210 | 225 | 130 | 170 | 200 | 215 |
| K5 | 85 | 110 | 125 | 135 | 80 | 105 | 120 | 130 |
| K6 | 120 | 160 | 185 | 200 | 115 | 150 | 175 | 190 |
| K7 | 105 | 140 | 160 | 175 | 100 | 130 | 155 | 165 |
| N1 | 1425 | 1875 | 2200 | 2375 | 1350 | 1775 | 2100 | 2250 |
| N2 | 570 | 760 | 890 | 960 | 540 | 720 | 840 | 910 |
| N3 | 385 | 500 | 600 | 640 | 360 | 475 | 560 | 610 |
| N11 | — | — | — | — | 415 | 540 | 640 | 690 |
| S1 | 43 | 55 | 65 | 70 | 43 | 55 | 65 | 70 |
| S2 | 34 | 45 | 50 | 55 | 35 | 46 | 55 | 55 |
| S3 | 30 | 39 | 46 | 49 | 31 | 40 | 46 | 50 |
| S11 | 60 | 80 | 90 | 100 | 60 | 80 | 95 | 100 |
| S12 | 42 | 55 | 65 | 70 | 42 | 55 | 65 | 70 |
| S13 | 24 | 31 | 36 | 39 | 24 | 32 | 37 | 40 |
| H5 | 36 | 47 | 55 | 60 | 36 | 48 | 55 | 60 |
| H8 | 38 | 49 | 55 | 60 | 38 | 50 | 60 | 60 |
| H11 | 46 | 60 | 70 | 75 | 46 | 60 | 70 | 75 |
| H12 | 70 | 95 | 110 | 120 | 70 | 90 | 105 | 110 |
| H21 | 38 | 49 | 55 | 60 | 38 | 50 | 60 | 60 |

MP12 Copy milling – Insert selection

| SMG | | a_p | f_z | | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|------|
| | | | 100% | 30% | 10% | 5% | 2% |
| P1 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.055 | 0.060 | 0.095 | 0.13 | 0.22 |
| P2 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.055 | 0.065 | 0.095 | 0.13 | 0.22 |
| P3 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.055 | 0.060 | 0.090 | 0.13 | 0.20 |
| P4 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.055 | 0.060 | 0.090 | 0.12 | 0.20 |
| P5 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.050 | 0.055 | 0.090 | 0.12 | 0.20 |
| P6 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.050 | 0.055 | 0.085 | 0.12 | 0.20 |
| P7 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.050 | 0.055 | 0.085 | 0.12 | 0.20 |
| P8 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.055 | 0.060 | 0.090 | 0.13 | 0.20 |
| P11 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.050 | 0.055 | 0.085 | 0.12 | 0.20 |
| P12 | MP12-12008R04Z3-M04 MP3000 | 3.0 | 0.036 | 0.038 | 0.060 | 0.085 | 0.13 |
| M1 | MP12-12008R04Z3-E04 F40M | 4.0 | 0.055 | 0.065 | 0.095 | 0.13 | 0.22 |
| M2 | MP12-12008R04Z3-E04 F40M | 4.0 | 0.050 | 0.055 | 0.090 | 0.12 | 0.20 |
| M3 | MP12-12008R04Z3-E04 F40M | 3.0 | 0.042 | 0.046 | 0.070 | 0.10 | 0.16 |
| M4 | MP12-12008R04Z3-E04 F40M | 2.5 | 0.036 | 0.040 | 0.060 | 0.085 | 0.14 |
| M5 | MP12-12008R04Z3-E04 F40M | 2.5 | 0.036 | 0.040 | 0.060 | 0.085 | 0.14 |
| K1 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.055 | 0.065 | 0.095 | 0.13 | 0.22 |
| K2 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.050 | 0.055 | 0.090 | 0.12 | 0.20 |
| K3 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.050 | 0.055 | 0.090 | 0.12 | 0.20 |
| K4 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.050 | 0.055 | 0.090 | 0.12 | 0.20 |
| K5 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.048 | 0.050 | 0.080 | 0.11 | 0.18 |
| K6 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.050 | 0.055 | 0.090 | 0.12 | 0.20 |
| K7 | MP12-12008R04Z3-M04 MP3000 | 4.0 | 0.048 | 0.050 | 0.080 | 0.11 | 0.18 |
| N1 | MP12-12008R04Z3-E04 F40M | 4.0 | 0.075 | 0.080 | 0.12 | 0.17 | 0.28 |
| N2 | MP12-12008R04Z3-E04 F40M | 4.0 | 0.075 | 0.080 | 0.12 | 0.17 | 0.28 |
| N3 | MP12-12008R04Z3-E04 F40M | 4.0 | 0.075 | 0.080 | 0.12 | 0.17 | 0.28 |
| N11 | MP12-12008R04Z3-E04 F40M | 4.0 | 0.075 | 0.080 | 0.12 | 0.17 | 0.28 |
| S1 | MP12-12008R04Z3-E04 F40M | 2.5 | 0.036 | 0.040 | 0.060 | 0.085 | 0.14 |
| S2 | MP12-12008R04Z3-E04 F40M | 2.5 | 0.036 | 0.040 | 0.060 | 0.085 | 0.14 |
| S3 | MP12-12008R04Z3-E04 F40M | 2.5 | 0.034 | 0.038 | 0.055 | 0.080 | 0.13 |
| S11 | MP12-12008R04Z3-E04 F40M | 2.5 | 0.042 | 0.046 | 0.070 | 0.10 | 0.16 |
| S12 | MP12-12008R04Z3-E04 F40M | 2.5 | 0.042 | 0.046 | 0.070 | 0.10 | 0.16 |
| S13 | MP12-12008R04Z3-E04 F40M | 2.5 | 0.036 | 0.040 | 0.060 | 0.085 | 0.14 |
| H5 | MP12-12008R04Z3-M04 MP3000 | 3.0 | 0.036 | 0.038 | 0.060 | 0.085 | 0.13 |
| H8 | MP12-12008R04Z3-M04 MP3000 | 2.5 | 0.028 | 0.030 | 0.046 | 0.065 | 0.10 |
| H11 | MP12-12008R04Z3-M04 MP3000 | 3.0 | 0.036 | 0.038 | 0.060 | 0.085 | 0.13 |
| H12 | MP12-12008R04Z3-M04 MP3000 | 2.5 | 0.028 | 0.030 | 0.046 | 0.065 | 0.10 |
| H21 | MP12-12008R04Z3-M04 MP3000 | 2.5 | 0.028 | 0.030 | 0.046 | 0.065 | 0.10 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MP12 Copy milling – Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | | | F40M | | | | |
|-----|--------|------|------|------|------|------|------|------|------|------|
| | 100% | 30% | 10% | 5% | 2% | 100% | 30% | 10% | 5% | 2% |
| P1 | 265 | 320 | 345 | 375 | 375 | 250 | 300 | 325 | 355 | 355 |
| P2 | 255 | 310 | 335 | 365 | 365 | 240 | 295 | 315 | 345 | 345 |
| P3 | 220 | 270 | 290 | 315 | 315 | 210 | 255 | 275 | 295 | 300 |
| P4 | 195 | 240 | 255 | 280 | 280 | 185 | 225 | 240 | 265 | 265 |
| P5 | 190 | 230 | 245 | 265 | 265 | 175 | 215 | 230 | 250 | 250 |
| P6 | 210 | 255 | 275 | 300 | 300 | 200 | 240 | 260 | 285 | 285 |
| P7 | 200 | 240 | 260 | 285 | 285 | 190 | 230 | 245 | 265 | 270 |
| P8 | 185 | 230 | 245 | 265 | 265 | 175 | 215 | 230 | 250 | 250 |
| P11 | 195 | 235 | 255 | 275 | 275 | 185 | 220 | 240 | 260 | 260 |
| P12 | 120 | 150 | 160 | 170 | 175 | 115 | 145 | 150 | 160 | 165 |
| M1 | 190 | 230 | 250 | 270 | 275 | 190 | 235 | 255 | 275 | 280 |
| M2 | 155 | 190 | 205 | 225 | 225 | 160 | 195 | 210 | 225 | 225 |
| M3 | 125 | 155 | 160 | 175 | 175 | 130 | 160 | 165 | 180 | 180 |
| M4 | 100 | 120 | 125 | 135 | 135 | 100 | 120 | 125 | 135 | 135 |
| M5 | 85 | 100 | 105 | 110 | 110 | 85 | 100 | 105 | 115 | 115 |
| K1 | 200 | 245 | 265 | 290 | 290 | 190 | 235 | 250 | 270 | 275 |
| K2 | 180 | 215 | 230 | 255 | 255 | 170 | 205 | 220 | 240 | 240 |
| K3 | 150 | 185 | 195 | 215 | 215 | 140 | 175 | 185 | 200 | 200 |
| K4 | 145 | 175 | 185 | 205 | 205 | 135 | 165 | 175 | 195 | 195 |
| K5 | 85 | 105 | 115 | 125 | 125 | 80 | 100 | 105 | 115 | 115 |
| K6 | 125 | 155 | 165 | 180 | 180 | 120 | 145 | 155 | 170 | 170 |
| K7 | 110 | 135 | 145 | 160 | 160 | 105 | 130 | 135 | 150 | 150 |
| N1 | 1525 | 1850 | 2000 | 2175 | 2175 | 1450 | 1750 | 1900 | 2050 | 2075 |
| N2 | 620 | 750 | 810 | 880 | 880 | 580 | 710 | 770 | 830 | 830 |
| N3 | 410 | 500 | 540 | 580 | 590 | 390 | 470 | 510 | 550 | 560 |
| N11 | — | — | — | — | — | 445 | 540 | 580 | 630 | 630 |
| S1 | 46 | 55 | 60 | 65 | 65 | 47 | 55 | 60 | 65 | 65 |
| S2 | 37 | 45 | 47 | 50 | 50 | 38 | 46 | 47 | 50 | 50 |
| S3 | 32 | 39 | 41 | 44 | 44 | 33 | 40 | 41 | 45 | 45 |
| S11 | 65 | 80 | 80 | 90 | 90 | 65 | 80 | 85 | 90 | 90 |
| S12 | 44 | 55 | 55 | 60 | 60 | 45 | 55 | 60 | 65 | 65 |
| S13 | 26 | 31 | 33 | 35 | 35 | 27 | 32 | 33 | 36 | 36 |
| H5 | 38 | 47 | 49 | 55 | 55 | 38 | 48 | 49 | 55 | 55 |
| H8 | 40 | 49 | 50 | 55 | 55 | 40 | 49 | 50 | 55 | 55 |
| H11 | 48 | 60 | 60 | 70 | 70 | 49 | 60 | 65 | 70 | 70 |
| H12 | 75 | 95 | 95 | 105 | 105 | 70 | 90 | 90 | 100 | 100 |
| H21 | 40 | 49 | 50 | 55 | 55 | 40 | 49 | 50 | 55 | 55 |

MP12 Centre drilling – Insert selection

| SMG | | f_z | a_{so} | | | | |
|-----|--------------------------|-------|----------|-----|-----|-----|-----|
| | | | 100% | 50% | 30% | 20% | 10% |
| P1 | MP12-12007C90Z2-M04 F40M | 0,055 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| P2 | MP12-12007C90Z2-M04 F40M | 0,055 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| P3 | MP12-12007C90Z2-M04 F40M | 0,055 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| P4 | MP12-12007C90Z2-M04 F40M | 0,055 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| P5 | MP12-12007C90Z2-M04 F40M | 0,050 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| P6 | MP12-12007C90Z2-M04 F40M | 0,050 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| P7 | MP12-12007C90Z2-M04 F40M | 0,050 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| P8 | MP12-12007C90Z2-M04 F40M | 0,055 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| P11 | MP12-12007C90Z2-M04 F40M | 0,050 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| P12 | MP12-12007C90Z2-M04 F40M | 0,036 | 2,5 | 2,5 | 3,0 | 4,7 | 3,5 |
| M1 | MP12-12007C90Z2-M04 F40M | 0,055 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| M2 | MP12-12007C90Z2-M04 F40M | 0,050 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| M3 | MP12-12007C90Z2-M04 F40M | 0,042 | 2,5 | 2,5 | 3,0 | 4,7 | 3,5 |
| M4 | MP12-12007C90Z2-M04 F40M | 0,036 | 2,0 | 2,0 | 2,5 | 3,0 | 3,5 |
| M5 | MP12-12007C90Z2-M04 F40M | 0,036 | 2,0 | 2,0 | 2,5 | 3,0 | 3,5 |
| K1 | MP12-12007C90Z2-M04 F40M | 0,055 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| K2 | MP12-12007C90Z2-M04 F40M | 0,050 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| K3 | MP12-12007C90Z2-M04 F40M | 0,050 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| K4 | MP12-12007C90Z2-M04 F40M | 0,050 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| K5 | MP12-12007C90Z2-M04 F40M | 0,046 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| K6 | MP12-12007C90Z2-M04 F40M | 0,050 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| K7 | MP12-12007C90Z2-M04 F40M | 0,046 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| N1 | MP12-12007C90Z2-M04 F40M | 0,075 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| N2 | MP12-12007C90Z2-M04 F40M | 0,075 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| N3 | MP12-12007C90Z2-M04 F40M | 0,075 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| N11 | MP12-12007C90Z2-M04 F40M | 0,075 | 3,5 | 3,5 | 5,0 | 4,7 | 3,5 |
| S1 | MP12-12007C90Z2-M04 F40M | 0,036 | 2,0 | 2,0 | 2,5 | 3,0 | 3,5 |
| S2 | MP12-12007C90Z2-M04 F40M | 0,036 | 2,0 | 2,0 | 2,5 | 3,0 | 3,5 |
| S3 | MP12-12007C90Z2-M04 F40M | 0,034 | 2,0 | 2,0 | 2,5 | 3,0 | 3,5 |
| S11 | MP12-12007C90Z2-M04 F40M | 0,042 | 2,5 | 2,5 | 3,0 | 4,7 | 3,5 |
| S12 | MP12-12007C90Z2-M04 F40M | 0,042 | 2,5 | 2,5 | 3,0 | 4,7 | 3,5 |
| S13 | MP12-12007C90Z2-M04 F40M | 0,036 | 2,0 | 2,0 | 2,5 | 3,0 | 3,5 |
| H5 | MP12-12007C90Z2-M04 F40M | 0,036 | 2,5 | 2,5 | 3,0 | 4,7 | 3,5 |
| H8 | MP12-12007C90Z2-M04 F40M | 0,028 | 2,5 | 2,5 | 3,0 | 4,7 | 3,5 |
| H11 | MP12-12007C90Z2-M04 F40M | 0,036 | 2,5 | 2,5 | 3,0 | 4,7 | 3,5 |
| H12 | MP12-12007C90Z2-M04 F40M | 0,028 | 2,5 | 2,5 | 3,0 | 4,7 | 3,5 |
| H21 | MP12-12007C90Z2-M04 F40M | 0,028 | 2,5 | 2,5 | 3,0 | 4,7 | 3,5 |
| H31 | MP12-12007C90Z2-M04 F40M | — | — | — | — | — | — |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MP12 Centre drilling – Cutting data $v_c =$ (m/min)

| SMG | F40M | | | | |
|-----|------|------|------|------|------|
| | 100% | 50% | 30% | 20% | 10% |
| P1 | 205 | 245 | 265 | 280 | 305 |
| P2 | 200 | 240 | 255 | 270 | 300 |
| P3 | 175 | 205 | 220 | 235 | 255 |
| P4 | 150 | 180 | 195 | 205 | 225 |
| P5 | 150 | 175 | 190 | 200 | 220 |
| P6 | 165 | 200 | 215 | 225 | 250 |
| P7 | 155 | 185 | 200 | 215 | 235 |
| P8 | 145 | 175 | 185 | 195 | 215 |
| P11 | 155 | 180 | 195 | 210 | 230 |
| P12 | 95 | 115 | 125 | 130 | 145 |
| M1 | 160 | 190 | 205 | 220 | 240 |
| M2 | 135 | 160 | 170 | 180 | 200 |
| M3 | 105 | 125 | 135 | 145 | 160 |
| M4 | 85 | 100 | 105 | 110 | 125 |
| M5 | 70 | 80 | 90 | 95 | 100 |
| K1 | 160 | 190 | 205 | 215 | 235 |
| K2 | 140 | 170 | 180 | 190 | 210 |
| K3 | 120 | 140 | 155 | 160 | 180 |
| K4 | 115 | 135 | 145 | 155 | 170 |
| K5 | 70 | 80 | 90 | 95 | 105 |
| K6 | 100 | 120 | 130 | 135 | 150 |
| K7 | 90 | 105 | 115 | 120 | 130 |
| N1 | 1150 | 1375 | 1475 | 1575 | 1725 |
| N2 | 470 | 560 | 600 | 630 | 700 |
| N3 | 310 | 370 | 400 | 425 | 465 |
| N11 | 355 | 425 | 455 | 485 | 530 |
| S1 | 39 | 46 | 49 | 50 | 55 |
| S2 | 31 | 37 | 40 | 42 | 46 |
| S3 | 27 | 32 | 35 | 37 | 40 |
| S11 | 55 | 65 | 70 | 75 | 80 |
| S12 | 37 | 44 | 48 | 50 | 55 |
| S13 | 22 | 26 | 28 | 29 | 32 |
| H5 | 32 | 38 | 42 | 44 | 48 |
| H8 | 34 | 41 | 44 | 46 | 50 |
| H11 | 41 | 49 | 55 | 55 | 60 |
| H12 | 60 | 75 | 80 | 85 | 90 |
| H21 | 34 | 41 | 44 | 46 | 50 |
| H31 | — | — | — | — | — |

MP12 Chamfering – Insert selection

| SMG | | a_p | f_z | | | | |
|-----|--------------------------|-------|-------|-------|-------|-------|-------|
| | | | 100% | 50% | 30% | 20% | 10% |
| P1 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,080 | 0,080 | 0,080 | 0,080 | 0,080 |
| P2 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,080 | 0,080 | 0,080 | 0,080 | 0,080 |
| P3 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| P4 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| P5 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| P6 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| P7 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| P8 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| P11 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| P12 | MP12-12007C90Z2-M04 F40M | 2,0 | 0,050 | 0,050 | 0,050 | 0,050 | 0,050 |
| M1 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,080 | 0,080 | 0,080 | 0,080 | 0,080 |
| M2 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| M3 | MP12-12007C90Z2-M04 F40M | 2,0 | 0,060 | 0,060 | 0,060 | 0,060 | 0,060 |
| M4 | MP12-12007C90Z2-M04 F40M | 1,6 | 0,050 | 0,050 | 0,050 | 0,050 | 0,050 |
| M5 | MP12-12007C90Z2-M04 F40M | 1,6 | 0,050 | 0,050 | 0,050 | 0,050 | 0,050 |
| K1 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,080 | 0,080 | 0,080 | 0,080 | 0,080 |
| K2 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| K3 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| K4 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| K5 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,065 | 0,065 | 0,065 | 0,065 | 0,065 |
| K6 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| K7 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,065 | 0,065 | 0,065 | 0,065 | 0,065 |
| N1 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,10 | 0,10 | 0,10 | 0,10 | 0,10 |
| N2 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,10 | 0,10 | 0,10 | 0,10 | 0,10 |
| N3 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,10 | 0,10 | 0,10 | 0,10 | 0,10 |
| N11 | MP12-12007C90Z2-M04 F40M | 2,5 | 0,10 | 0,10 | 0,10 | 0,10 | 0,10 |
| S1 | MP12-12007C90Z2-M04 F40M | 1,6 | 0,050 | 0,050 | 0,050 | 0,050 | 0,050 |
| S2 | MP12-12007C90Z2-M04 F40M | 1,6 | 0,050 | 0,050 | 0,050 | 0,050 | 0,050 |
| S3 | MP12-12007C90Z2-M04 F40M | 1,6 | 0,048 | 0,048 | 0,048 | 0,048 | 0,048 |
| S11 | MP12-12007C90Z2-M04 F40M | 1,9 | 0,060 | 0,060 | 0,060 | 0,060 | 0,060 |
| S12 | MP12-12007C90Z2-M04 F40M | 1,9 | 0,060 | 0,060 | 0,060 | 0,060 | 0,060 |
| S13 | MP12-12007C90Z2-M04 F40M | 1,6 | 0,050 | 0,050 | 0,050 | 0,050 | 0,050 |
| H5 | MP12-12007C90Z2-M04 F40M | 2,0 | 0,050 | 0,050 | 0,050 | 0,050 | 0,050 |
| H8 | MP12-12007C90Z2-M04 F40M | 1,9 | 0,038 | 0,038 | 0,038 | 0,038 | 0,038 |
| H11 | MP12-12007C90Z2-M04 F40M | 2,0 | 0,050 | 0,050 | 0,050 | 0,050 | 0,050 |
| H12 | MP12-12007C90Z2-M04 F40M | 1,9 | 0,038 | 0,038 | 0,038 | 0,038 | 0,038 |
| H21 | MP12-12007C90Z2-M04 F40M | 1,9 | 0,038 | 0,038 | 0,038 | 0,038 | 0,038 |
| H31 | MP12-12007C90Z2-M04 F40M | — | — | — | — | — | — |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MP12 Chamfering – Cutting data $v_c =$ (m/min)

| SMG | F40M | | | | |
|-----|------|------|------|------|------|
| | 100% | 50% | 30% | 20% | 10% |
| P1 | 330 | 280 | 335 | 370 | 460 |
| P2 | 320 | 270 | 330 | 365 | 445 |
| P3 | 280 | 240 | 285 | 315 | 390 |
| P4 | 245 | 210 | 250 | 280 | 345 |
| P5 | 235 | 200 | 240 | 265 | 330 |
| P6 | 265 | 225 | 270 | 300 | 370 |
| P7 | 250 | 215 | 255 | 280 | 345 |
| P8 | 235 | 200 | 240 | 265 | 330 |
| P11 | 240 | 205 | 250 | 275 | 335 |
| P12 | 155 | 125 | 145 | 170 | 215 |
| M1 | 255 | 220 | 265 | 290 | 360 |
| M2 | 210 | 180 | 215 | 240 | 295 |
| M3 | 170 | 130 | 160 | 185 | 235 |
| M4 | 130 | 90 | 110 | 130 | 185 |
| M5 | 110 | 75 | 95 | 110 | 150 |
| K1 | 255 | 215 | 260 | 285 | 355 |
| K2 | 225 | 190 | 230 | 255 | 310 |
| K3 | 190 | 160 | 195 | 215 | 265 |
| K4 | 180 | 155 | 185 | 205 | 250 |
| K5 | 110 | 95 | 115 | 125 | 155 |
| K6 | 160 | 135 | 165 | 180 | 220 |
| K7 | 140 | 120 | 145 | 160 | 195 |
| N1 | 1900 | 1600 | 1925 | 2150 | 2650 |
| N2 | 760 | 640 | 780 | 870 | 1075 |
| N3 | 510 | 430 | 520 | 580 | 710 |
| N11 | 580 | 490 | 600 | 660 | 820 |
| S1 | 60 | 41 | 50 | 60 | 85 |
| S2 | 50 | 33 | 42 | 49 | 70 |
| S3 | 43 | 29 | 36 | 43 | 60 |
| S11 | 85 | 60 | 75 | 90 | 120 |
| S12 | 60 | 43 | 50 | 60 | 80 |
| S13 | 35 | 23 | 29 | 34 | 48 |
| H5 | 50 | 41 | 49 | 55 | 70 |
| H8 | 55 | 41 | 49 | 55 | 75 |
| H11 | 65 | 50 | 60 | 70 | 90 |
| H12 | 100 | 75 | 90 | 100 | 135 |
| H21 | 55 | 41 | 49 | 55 | 75 |
| H31 | — | — | — | — | — |

MP16 Shank

Design 1

Design 2

Design 3

Design 4

- Cylindrical shank DMM with tolerance h5, compatible for Shrinkfit
- Max RPM 63600 r/min
- For ISO attribute explanation, see page 15

| Designation | Connecting size | Dimensions in mm | | | | | | Design | | |
|---------------------|-----------------|------------------|------|-------|-------|-------|-------|--------|---|-----|
| | | DCSFWS | DMM | OAL | LPR | LF | BHTA° | | | |
| MP16-16068-016.00 | MP16 | 15,2 | 16,0 | 68,0 | 20,0 | 16,0 | 0,0 | 2 | ✓ | 0,1 |
| MP16-20070-000.60 | MP16 | 15,2 | 20,0 | 70,0 | 20,0 | 0,0 | 60,0 | 1 | ✓ | 0,2 |
| MP16-20090-024.00 | MP16 | 15,2 | 20,0 | 90,0 | 40,0 | 24,0 | 0,0 | 2 | ✓ | 0,2 |
| MP16-20190-056.01 | MP16 | 15,2 | 20,0 | 190,0 | 140,0 | 56,0 | 1,0 | 3 | ✓ | 0,4 |
| MP16-20195-095.01 | MP16 | 15,2 | 20,0 | 195,0 | 145,0 | 95,0 | 1,0 | 3 | ✓ | 0,4 |
| MP16-25136-075.03 | MP16 | 15,2 | 25,0 | 136,0 | 80,0 | 75,0 | 3,0 | 3 | ✓ | 0,4 |
| MP16-25181-125.03 | MP16 | 15,2 | 25,0 | 181,0 | 125,0 | 93,5 | 3,0 | 4 | ✓ | 0,6 |
| MP16-25181-125.05 | MP16 | 15,2 | 25,0 | 181,0 | 125,0 | 56,0 | 5,0 | 4 | ✓ | 0,6 |
| MP16-16126-048.00-E | MP16 | 15,2 | 16,0 | 126,0 | 78,0 | 48,0 | 0,0 | 2 | ✓ | 0,4 |
| MP16-16140-064.00-E | MP16 | 15,2 | 16,0 | 140,0 | 92,0 | 64,0 | 0,0 | 2 | ✓ | 0,4 |
| MP16-16180-096.00-E | MP16 | 15,2 | 16,0 | 180,0 | 132,0 | 96,0 | 0,0 | 2 | ✓ | 0,5 |
| MP16-20135-080.01-E | MP16 | 15,2 | 20,0 | 135,0 | 85,0 | 80,0 | 1,0 | 3 | ✓ | 0,5 |
| MP16-20180-128.01-E | MP16 | 15,2 | 20,0 | 180,0 | 130,0 | 128,0 | 1,0 | 3 | ✓ | 0,7 |
| MP16-20200-150.01-E | MP16 | 15,2 | 20,0 | 200,0 | 150,0 | 137,5 | 1,0 | 4 | ✓ | 0,8 |
| MP16-20180-130.03-E | MP16 | 15,2 | 20,0 | 180,0 | 130,0 | 45,8 | 3,0 | 4 | ✓ | 0,8 |
| MP16-20210-160.03-E | MP16 | 15,2 | 20,0 | 210,0 | 160,0 | 45,8 | 3,0 | 4 | ✓ | 0,9 |

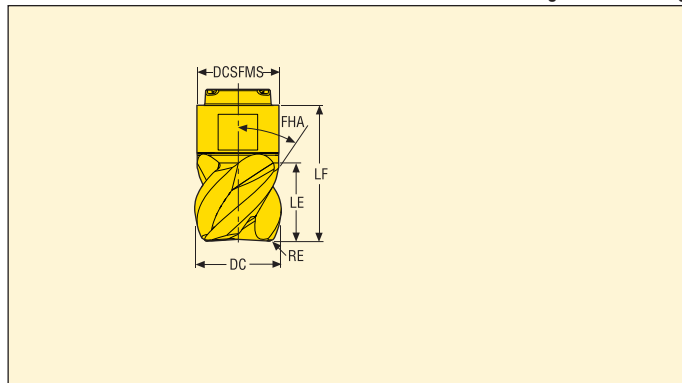
Accessories

| Inserts | Torque key | Replacement blade | Key |
|---------|-------------|-------------------|--------|
| | | | |
| MP16 | MP00-16.190 | MP00-16M | MP1016 |
| | | | |
| | | | |
| | | | |
| | | | |

Blades are included with the torque key


MP16 Square shoulder

Slotting and contouring



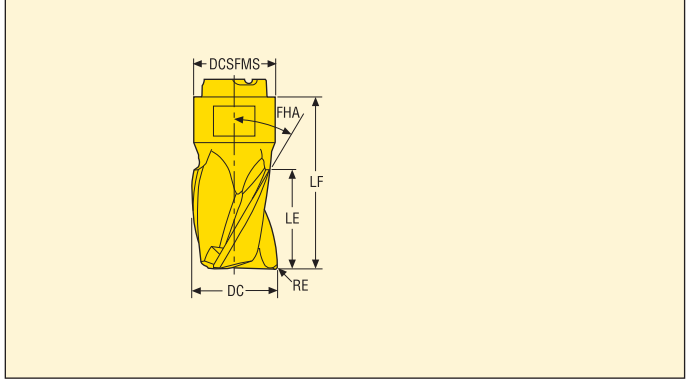
Z4



| Designation | Dimensions in mm | | | | | | ZNP |  | Coated | | | | |
|---------------------|------------------|-----|------|--------|------|------|-----|---|--------|------|---|--|--|
| | DC | RE | LE | DCSFMS | FHA° | LF | | | Grades | | | | |
| | | | | | | | | | MP3000 | F40M | | | |
| MP16-16010R04Z4-E04 | 16,0 | 0,4 | 10,0 | 15,4 | 50 | 24,6 | 4 | | | ■ | | | |
| MP16-16010R04Z4-M04 | 16,0 | 0,4 | 10,0 | 15,4 | 50 | 24,6 | 4 | ■ | | | ■ | | |
| MP16-16010R05Z4-E04 | 16,0 | 0,5 | 10,0 | 15,4 | 50 | 24,6 | 4 | | | | ■ | | |
| MP16-16010R08Z4-E04 | 16,0 | 0,8 | 10,0 | 15,4 | 50 | 24,6 | 4 | | | | ■ | | |
| MP16-16010R08Z4-M04 | 16,0 | 0,8 | 10,0 | 15,4 | 50 | 24,6 | 4 | ■ | | | | | |
| MP16-16010R12Z4-E04 | 16,0 | 1,2 | 10,0 | 15,4 | 50 | 24,6 | 4 | | | | ■ | | |
| MP16-16010R12Z4-M04 | 16,0 | 1,2 | 10,0 | 15,4 | 50 | 24,6 | 4 | ■ | | | | | |
| MP16-16010R16Z4-E04 | 16,0 | 1,6 | 10,0 | 15,4 | 50 | 24,6 | 4 | | | | ■ | | |
| MP16-16010R16Z4-M04 | 16,0 | 1,6 | 10,0 | 15,4 | 50 | 24,6 | 4 | ■ | | | | | |
| MP16-16010R20Z4-E04 | 16,0 | 2,0 | 10,0 | 15,4 | 50 | 24,6 | 4 | | | | ■ | | |
| MP16-16010R24Z4-E04 | 16,0 | 2,4 | 10,0 | 15,4 | 50 | 24,6 | 4 | | | | ■ | | |
| MP16-16010R31Z4-E04 | 16,0 | 3,1 | 10,0 | 15,4 | 50 | 24,6 | 4 | | | | ■ | | |
| MP16-16019R04Z4-E04 | 16,0 | 0,4 | 19,0 | 15,4 | 50 | 32,6 | 4 | | | | ■ | | |
| MP16-16019R04Z4-M04 | 16,0 | 0,4 | 19,0 | 15,4 | 50 | 32,6 | 4 | ■ | | | | | |
| MP16-16019R05Z4-E04 | 16,0 | 0,5 | 19,0 | 15,4 | 50 | 32,6 | 4 | | | | ■ | | |
| MP16-16019R08Z4-E04 | 16,0 | 0,8 | 19,0 | 15,4 | 50 | 32,6 | 4 | | | | ■ | | |
| MP16-16019R08Z4-M04 | 16,0 | 0,8 | 19,0 | 15,4 | 50 | 32,6 | 4 | ■ | | | | | |
| MP16-16019R12Z4-E04 | 16,0 | 1,2 | 19,0 | 15,4 | 50 | 32,6 | 4 | | | | ■ | | |
| MP16-16019R12Z4-M04 | 16,0 | 1,2 | 19,0 | 15,4 | 50 | 32,6 | 4 | ■ | | | | | |
| MP16-16019R16Z4-E04 | 16,0 | 1,6 | 19,0 | 15,4 | 50 | 32,6 | 4 | | | | ■ | | |
| MP16-16019R20Z4-E04 | 16,0 | 2,0 | 19,0 | 15,4 | 50 | 32,6 | 4 | | | | ■ | | |
| MP16-16019R24Z4-E04 | 16,0 | 2,4 | 19,0 | 15,4 | 50 | 32,6 | 4 | | | | ■ | | |
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MP16 Square shoulder

Contouring only

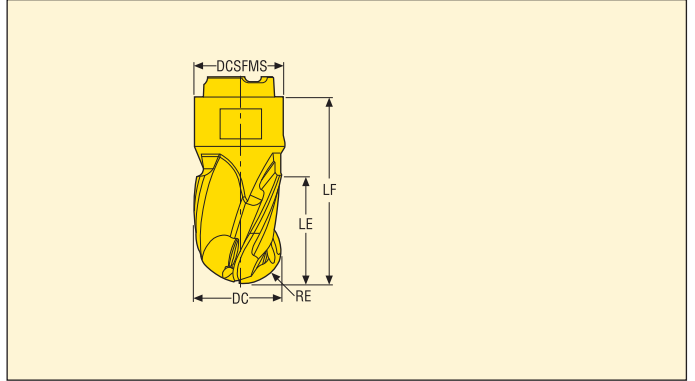


Z6/Z8



| Designation | Dimensions in mm | | | | | | ZNP |  | Coated | | | | | |
|---------------------|------------------|-----|------|--------|------|------|-----|---|--------|------|--|--|--|--|
| | DC | RE | LE | DCSFMS | FHA° | LF | | | Grades | | | | | |
| | | | | | | | | | MP3000 | F40M | | | | |
| MP16-16019R04Z6-M04 | 16,0 | 0,4 | 19,0 | 15,4 | 40 | 32,6 | 6 | ✓ | ■ | | | | | |
| MP16-16019R04Z8-M04 | 16,0 | 0,4 | 19,0 | 15,4 | 40 | 32,6 | 8 | ✓ | ■ | | | | | |
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MP16 Ball nose design



Z3

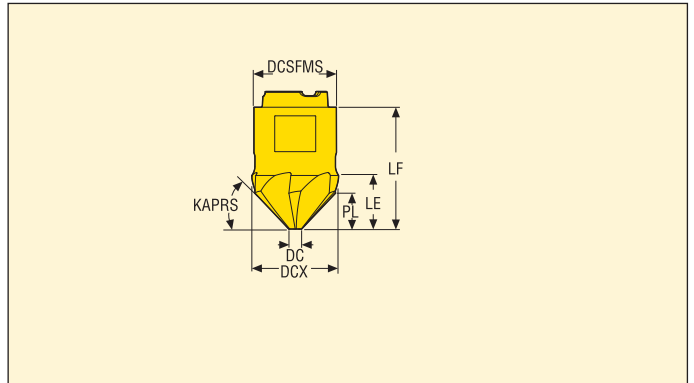
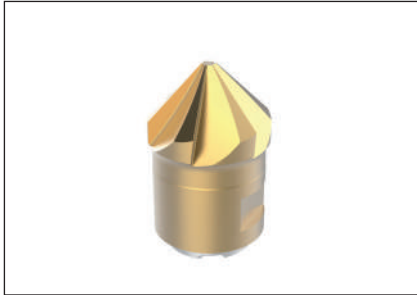


Z4



| Designation | Dimensions in mm | | | | | | ZNP | | Coated | | | | | | | | | | | |
|---------------------|------------------|-----|------|--------|------|------|-----|---|--------|------|---|--|--|--|--|--|--|--|--|--|
| | DC | RE | LE | DCSFMS | FHA° | LF | | | Grades | | | | | | | | | | | |
| | | | | | | | | | MP3000 | F40M | | | | | | | | | | |
| MP16-16010B90Z3-E05 | 16,0 | 8,0 | 10,0 | 15,4 | 30 | 24,6 | 3 | ✓ | ■ | ■ | | | | | | | | | | |
| MP16-16010B90Z3-M05 | 16,0 | 8,0 | 10,0 | 15,4 | 30 | 24,6 | 3 | ✓ | ■ | | | | | | | | | | | |
| MP16-16019B90Z3-E05 | 16,0 | 8,0 | 19,0 | 15,4 | 30 | 32,6 | 3 | ✓ | | ■ | | | | | | | | | | |
| MP16-16019B90Z3-M05 | 16,0 | 8,0 | 19,0 | 15,4 | 30 | 32,6 | 3 | ✓ | ■ | | | | | | | | | | | |
| MP16-16010B90Z4-E04 | 16,0 | 8,0 | 10,0 | 15,4 | 20 | 24,6 | 4 | | | | ■ | | | | | | | | | |
| MP16-16010B90Z4-M04 | 16,0 | 8,0 | 10,0 | 15,4 | 20 | 24,6 | 4 | | ■ | | | | | | | | | | | |
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MP16 Chamfering



Z6



| Designation | Dimensions in mm | | | | | | KAPRS° | ZNP | | Coated | | | | |
|---------------------|------------------|------|--------|-----|-----|------|--------|-----|--|--------|------|--|--|--|
| | DCX | DC | DCSFMS | PL | LE | LF | | | | Grades | | | | |
| | | | | | | | | | | MP3000 | F40M | | | |
| MP16-16009C90Z6-M05 | 16,4 | 3,95 | 15,4 | 6,0 | 6,0 | 23,5 | 45,0 | 6 | | ■ | | | | |
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MP16 High feed milling – Insert selection

| SMG | | a_p | f_z | | | |
|-----|-----------------------------|-------|-------|------|------|------|
| | | | 100% | 70% | 30% | 20% |
| P1 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,60 | 0,60 | 0,70 | 0,80 |
| P2 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,65 | 0,65 | 0,70 | 0,85 |
| P3 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,60 | 0,60 | 0,65 | 0,80 |
| P4 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,60 | 0,60 | 0,65 | 0,75 |
| P5 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,55 | 0,55 | 0,65 | 0,75 |
| P6 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,55 | 0,55 | 0,65 | 0,75 |
| P7 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,55 | 0,55 | 0,65 | 0,75 |
| P8 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,60 | 0,60 | 0,65 | 0,80 |
| P11 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,55 | 0,55 | 0,65 | 0,75 |
| P12 | MP16-1600.9HFZ3-MD12 MP3000 | 0,50 | 0,44 | 0,44 | 0,50 | 0,60 |
| M1 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,65 | 0,65 | 0,70 | 0,85 |
| M2 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,55 | 0,55 | 0,65 | 0,75 |
| M3 | MP16-1600.9HFZ3-MD12 MP3000 | 0,50 | 0,50 | 0,50 | 0,60 | 0,70 |
| M4 | MP16-1600.9HFZ3-MD12 MP3000 | 0,38 | 0,48 | 0,48 | 0,50 | 0,60 |
| M5 | MP16-1600.9HFZ3-MD12 MP3000 | 0,38 | 0,48 | 0,48 | 0,50 | 0,60 |
| K1 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,65 | 0,65 | 0,70 | 0,85 |
| K2 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,55 | 0,55 | 0,65 | 0,75 |
| K3 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,55 | 0,55 | 0,65 | 0,75 |
| K4 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,55 | 0,55 | 0,65 | 0,75 |
| K5 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,50 | 0,50 | 0,55 | 0,65 |
| K6 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,55 | 0,55 | 0,65 | 0,75 |
| K7 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,50 | 0,50 | 0,55 | 0,65 |
| N1 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,80 | 0,80 | 0,90 | 1,1 |
| N2 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,80 | 0,80 | 0,90 | 1,1 |
| N3 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,80 | 0,80 | 0,90 | 1,1 |
| N11 | MP16-1600.9HFZ3-MD12 MP3000 | 0,65 | 0,80 | 0,80 | 0,90 | 1,1 |
| S1 | MP16-1600.9HFZ3-MD12 MP3000 | 0,38 | 0,48 | 0,48 | 0,50 | 0,60 |
| S2 | MP16-1600.9HFZ3-MD12 MP3000 | 0,38 | 0,48 | 0,48 | 0,50 | 0,60 |
| S3 | MP16-1600.9HFZ3-MD12 MP3000 | 0,38 | 0,44 | 0,44 | 0,48 | 0,55 |
| S11 | MP16-1600.9HFZ3-MD12 MP3000 | 0,44 | 0,55 | 0,55 | 0,60 | 0,70 |
| S12 | MP16-1600.9HFZ3-MD12 MP3000 | 0,44 | 0,55 | 0,55 | 0,60 | 0,70 |
| S13 | MP16-1600.9HFZ3-MD12 MP3000 | 0,38 | 0,48 | 0,48 | 0,50 | 0,60 |
| H5 | MP16-1600.9HFZ3-MD12 MP3000 | 0,50 | 0,44 | 0,44 | 0,50 | 0,60 |
| H7 | MP16-1600.9HFZ3-MD12 MP3000 | — | — | — | — | — |
| H11 | MP16-1600.9HFZ3-MD12 MP3000 | 0,50 | 0,44 | 0,44 | 0,50 | 0,60 |
| H12 | MP16-1600.9HFZ3-MD12 MP3000 | 0,44 | 0,34 | 0,34 | 0,38 | 0,44 |
| H21 | MP16-1600.9HFZ3-MD12 MP3000 | 0,44 | 0,34 | 0,34 | 0,38 | 0,44 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MP16 High feed milling – Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | |
|-----|--------|------|------|------|
| | 100% | 70% | 30% | 20% |
| P1 | 225 | 280 | 330 | 355 |
| P2 | 215 | 265 | 320 | 340 |
| P3 | 190 | 235 | 280 | 295 |
| P4 | 165 | 205 | 250 | 265 |
| P5 | 160 | 200 | 235 | 255 |
| P6 | 180 | 225 | 265 | 285 |
| P7 | 170 | 210 | 250 | 270 |
| P8 | 160 | 195 | 235 | 250 |
| P11 | 165 | 205 | 245 | 260 |
| P12 | 105 | 135 | 160 | 170 |
| M1 | 160 | 200 | 240 | 255 |
| M2 | 135 | 165 | 200 | 210 |
| M3 | 110 | 135 | 160 | 170 |
| M4 | 85 | 105 | 125 | 130 |
| M5 | 70 | 85 | 105 | 110 |
| K1 | 170 | 210 | 255 | 270 |
| K2 | 155 | 190 | 225 | 240 |
| K3 | 130 | 160 | 190 | 205 |
| K4 | 125 | 155 | 180 | 195 |
| K5 | 75 | 95 | 115 | 120 |
| K6 | 110 | 135 | 160 | 170 |
| K7 | 95 | 120 | 145 | 155 |
| N1 | 1275 | 1575 | 1900 | 2000 |
| N2 | 510 | 630 | 760 | 800 |
| N3 | 340 | 420 | 510 | 540 |
| N11 | 390 | 485 | 580 | 610 |
| S1 | 40 | 48 | 60 | 60 |
| S2 | 32 | 39 | 47 | 50 |
| S3 | 28 | 34 | 41 | 43 |
| S11 | 55 | 65 | 80 | 85 |
| S12 | 38 | 47 | 55 | 60 |
| S13 | 22 | 27 | 32 | 35 |
| H5 | 33 | 41 | 49 | 50 |
| H8 | 36 | 44 | 50 | 55 |
| H11 | 42 | 55 | 65 | 65 |
| H12 | 70 | 85 | 100 | 105 |
| H21 | 36 | 44 | 50 | 55 |

MP16 Slot milling – Insert selection

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 100% | 30% | 10% | 5% |
| P1 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,070 | 0,075 | 0,12 | 0,16 |
| P2 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,070 | 0,080 | 0,12 | 0,17 |
| P3 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,070 | 0,075 | 0,11 | 0,16 |
| P4 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,065 | 0,075 | 0,11 | 0,16 |
| P5 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,065 | 0,070 | 0,11 | 0,15 |
| P6 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,065 | 0,070 | 0,11 | 0,15 |
| P7 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,065 | 0,070 | 0,11 | 0,15 |
| P8 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,070 | 0,075 | 0,11 | 0,16 |
| P11 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,065 | 0,070 | 0,11 | 0,15 |
| P12 | MP16-16010R04Z3-M05 MP3000 | 4,0 | 0,044 | 0,048 | 0,075 | 0,10 |
| M1 | MP16-16010R04Z3-E05 F40M | 5,0 | 0,070 | 0,080 | 0,12 | 0,17 |
| M2 | MP16-16010R04Z3-E05 F40M | 5,0 | 0,065 | 0,070 | 0,11 | 0,15 |
| M3 | MP16-16010R04Z3-E05 F40M | 4,0 | 0,050 | 0,055 | 0,090 | 0,12 |
| M4 | MP16-16010R04Z3-E05 F40M | 3,0 | 0,046 | 0,050 | 0,075 | 0,11 |
| M5 | MP16-16010R04Z3-E05 F40M | 3,0 | 0,046 | 0,050 | 0,075 | 0,11 |
| K1 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,070 | 0,080 | 0,12 | 0,17 |
| K2 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,065 | 0,070 | 0,11 | 0,15 |
| K3 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,065 | 0,070 | 0,11 | 0,15 |
| K4 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,065 | 0,070 | 0,11 | 0,15 |
| K5 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,060 | 0,065 | 0,10 | 0,14 |
| K6 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,065 | 0,070 | 0,11 | 0,15 |
| K7 | MP16-16010R04Z3-M05 MP3000 | 5,0 | 0,060 | 0,065 | 0,10 | 0,14 |
| N1 | MP16-16010R04Z3-E05 F40M | 5,0 | 0,090 | 0,10 | 0,15 | 0,22 |
| N2 | MP16-16010R04Z3-E05 F40M | 5,0 | 0,090 | 0,10 | 0,15 | 0,22 |
| N3 | MP16-16010R04Z3-E05 F40M | 5,0 | 0,090 | 0,10 | 0,15 | 0,22 |
| N11 | MP16-16010R04Z3-E05 F40M | 5,0 | 0,090 | 0,10 | 0,15 | 0,22 |
| S1 | MP16-16010R04Z3-E05 F40M | 3,0 | 0,046 | 0,050 | 0,075 | 0,11 |
| S2 | MP16-16010R04Z3-E05 F40M | 3,0 | 0,046 | 0,050 | 0,075 | 0,11 |
| S3 | MP16-16010R04Z3-E05 F40M | 3,0 | 0,042 | 0,046 | 0,070 | 0,10 |
| S11 | MP16-16010R04Z3-E05 F40M | 3,5 | 0,050 | 0,055 | 0,090 | 0,12 |
| S12 | MP16-16010R04Z3-E05 F40M | 3,5 | 0,050 | 0,055 | 0,090 | 0,12 |
| S13 | MP16-16010R04Z3-E05 F40M | 3,0 | 0,046 | 0,050 | 0,075 | 0,11 |
| H5 | MP16-16010R04Z3-M05 MP3000 | 4,0 | 0,044 | 0,048 | 0,075 | 0,10 |
| H8 | MP16-16010R04Z3-M05 MP3000 | 3,5 | 0,034 | 0,038 | 0,055 | 0,080 |
| H11 | MP16-16010R04Z3-M05 MP3000 | 4,0 | 0,044 | 0,048 | 0,075 | 0,10 |
| H12 | MP16-16010R04Z3-M05 MP3000 | 3,5 | 0,034 | 0,038 | 0,055 | 0,080 |
| H21 | MP16-16010R04Z3-M05 MP3000 | 3,5 | 0,034 | 0,038 | 0,055 | 0,080 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MP16 Slot milling – Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | | F40M | | | |
|-----|--------|------|------|------|------|------|------|------|
| | 100% | 30% | 10% | 5% | 100% | 30% | 10% | 5% |
| P1 | 235 | 310 | 360 | 395 | 220 | 295 | 340 | 375 |
| P2 | 230 | 300 | 350 | 380 | 215 | 280 | 330 | 360 |
| P3 | 195 | 260 | 310 | 330 | 185 | 245 | 290 | 315 |
| P4 | 175 | 230 | 270 | 290 | 165 | 215 | 255 | 275 |
| P5 | 170 | 220 | 260 | 280 | 160 | 210 | 245 | 265 |
| P6 | 190 | 250 | 290 | 315 | 180 | 235 | 275 | 300 |
| P7 | 180 | 235 | 275 | 300 | 170 | 220 | 260 | 280 |
| P8 | 165 | 220 | 260 | 280 | 155 | 205 | 245 | 265 |
| P11 | 175 | 230 | 265 | 290 | 165 | 215 | 250 | 275 |
| P12 | 110 | 145 | 170 | 185 | 105 | 140 | 160 | 175 |
| M1 | 170 | 225 | 265 | 285 | 175 | 225 | 270 | 290 |
| M2 | 140 | 185 | 215 | 235 | 145 | 190 | 220 | 240 |
| M3 | 115 | 150 | 175 | 190 | 115 | 150 | 175 | 190 |
| M4 | 85 | 115 | 135 | 145 | 90 | 115 | 135 | 145 |
| M5 | 75 | 95 | 110 | 120 | 75 | 95 | 115 | 120 |
| K1 | 180 | 235 | 280 | 300 | 170 | 225 | 265 | 285 |
| K2 | 160 | 210 | 245 | 270 | 150 | 200 | 235 | 255 |
| K3 | 135 | 180 | 210 | 225 | 130 | 170 | 195 | 215 |
| K4 | 130 | 170 | 200 | 215 | 120 | 160 | 190 | 205 |
| K5 | 80 | 105 | 120 | 130 | 75 | 95 | 115 | 125 |
| K6 | 115 | 150 | 175 | 190 | 110 | 140 | 165 | 180 |
| K7 | 100 | 130 | 155 | 165 | 95 | 125 | 145 | 160 |
| N1 | 1350 | 1775 | 2100 | 2250 | 1275 | 1675 | 1975 | 2125 |
| N2 | 550 | 720 | 850 | 910 | 520 | 680 | 800 | 850 |
| N3 | 365 | 475 | 560 | 600 | 345 | 450 | 530 | 570 |
| N11 | — | — | — | — | 395 | 510 | 610 | 650 |
| S1 | 41 | 55 | 60 | 65 | 41 | 55 | 65 | 70 |
| S2 | 33 | 43 | 50 | 55 | 33 | 44 | 50 | 55 |
| S3 | 29 | 38 | 44 | 47 | 29 | 38 | 45 | 48 |
| S11 | 60 | 75 | 90 | 95 | 60 | 75 | 90 | 95 |
| S12 | 40 | 50 | 60 | 65 | 41 | 55 | 60 | 65 |
| S13 | 23 | 30 | 35 | 38 | 23 | 31 | 36 | 38 |
| H5 | 35 | 45 | 55 | 60 | 35 | 46 | 55 | 60 |
| H8 | 36 | 47 | 55 | 60 | 37 | 48 | 55 | 60 |
| H11 | 44 | 60 | 65 | 75 | 45 | 60 | 70 | 75 |
| H12 | 70 | 90 | 105 | 115 | 65 | 85 | 100 | 110 |
| H21 | 36 | 47 | 55 | 60 | 37 | 48 | 55 | 60 |

MP16 Copy milling – Insert selection

| SMG | | a_p | f_z | | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|-------|
| | | | 100% | 30% | 10% | 5% | 2% |
| P1 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,080 | 0,085 | 0,10 | 0,12 | 0,13 |
| P2 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,085 | 0,085 | 0,11 | 0,12 | 0,13 |
| P3 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,080 | 0,080 | 0,10 | 0,11 | 0,13 |
| P4 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,075 | 0,080 | 0,10 | 0,11 | 0,12 |
| P5 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,075 | 0,080 | 0,095 | 0,11 | 0,12 |
| P6 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,075 | 0,075 | 0,095 | 0,11 | 0,12 |
| P7 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,075 | 0,075 | 0,095 | 0,11 | 0,12 |
| P8 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,080 | 0,080 | 0,10 | 0,11 | 0,13 |
| P11 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,075 | 0,075 | 0,095 | 0,11 | 0,12 |
| P12 | MP16-16010B90Z3-M05 MP3000 | 4,0 | 0,055 | 0,055 | 0,065 | 0,070 | 0,075 |
| M1 | MP16-16010B90Z3-E05 F40M | 5,0 | 0,085 | 0,085 | 0,11 | 0,12 | 0,13 |
| M2 | MP16-16010B90Z3-E05 F40M | 5,0 | 0,075 | 0,080 | 0,095 | 0,11 | 0,12 |
| M3 | MP16-16010B90Z3-E05 F40M | 4,0 | 0,065 | 0,065 | 0,075 | 0,085 | 0,090 |
| M4 | MP16-16010B90Z3-E05 F40M | 3,0 | 0,060 | 0,060 | 0,065 | 0,070 | 0,075 |
| M5 | MP16-16010B90Z3-E05 F40M | 3,0 | 0,060 | 0,060 | 0,065 | 0,070 | 0,075 |
| K1 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,085 | 0,085 | 0,11 | 0,12 | 0,13 |
| K2 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,075 | 0,080 | 0,095 | 0,11 | 0,12 |
| K3 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,075 | 0,080 | 0,095 | 0,11 | 0,12 |
| K4 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,075 | 0,080 | 0,095 | 0,11 | 0,12 |
| K5 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,070 | 0,070 | 0,085 | 0,10 | 0,11 |
| K6 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,075 | 0,080 | 0,095 | 0,11 | 0,12 |
| K7 | MP16-16010B90Z3-M05 MP3000 | 5,0 | 0,070 | 0,070 | 0,085 | 0,10 | 0,11 |
| N1 | MP16-16010B90Z3-E05 F40M | 5,0 | 0,11 | 0,11 | 0,14 | 0,15 | 0,17 |
| N2 | MP16-16010B90Z3-E05 F40M | 5,0 | 0,11 | 0,11 | 0,14 | 0,15 | 0,17 |
| N3 | MP16-16010B90Z3-E05 F40M | 5,0 | 0,11 | 0,11 | 0,14 | 0,15 | 0,17 |
| N11 | MP16-16010B90Z3-E05 F40M | 5,0 | 0,11 | 0,11 | 0,14 | 0,15 | 0,17 |
| S1 | MP16-16010B90Z3-E05 F40M | 3,0 | 0,060 | 0,060 | 0,065 | 0,070 | 0,075 |
| S2 | MP16-16010B90Z3-E05 F40M | 3,0 | 0,060 | 0,060 | 0,065 | 0,070 | 0,075 |
| S3 | MP16-16010B90Z3-E05 F40M | 3,0 | 0,055 | 0,055 | 0,060 | 0,065 | 0,070 |
| S11 | MP16-16010B90Z3-E05 F40M | 3,5 | 0,065 | 0,065 | 0,075 | 0,080 | 0,090 |
| S12 | MP16-16010B90Z3-E05 F40M | 3,5 | 0,065 | 0,065 | 0,075 | 0,080 | 0,090 |
| S13 | MP16-16010B90Z3-E05 F40M | 3,0 | 0,060 | 0,060 | 0,065 | 0,070 | 0,075 |
| H5 | MP16-16010B90Z3-M05 MP3000 | 4,0 | 0,055 | 0,055 | 0,065 | 0,070 | 0,075 |
| H8 | MP16-16010B90Z3-M05 MP3000 | 3,5 | 0,042 | 0,042 | 0,050 | 0,055 | 0,055 |
| H11 | MP16-16010B90Z3-M05 MP3000 | 4,0 | 0,055 | 0,055 | 0,065 | 0,070 | 0,075 |
| H12 | MP16-16010B90Z3-M05 MP3000 | 3,5 | 0,042 | 0,042 | 0,050 | 0,055 | 0,055 |
| H21 | MP16-16010B90Z3-M05 MP3000 | 3,5 | 0,042 | 0,042 | 0,050 | 0,055 | 0,055 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MP16 Copy milling – Cutting data $v_c =$ (m/min)

| SMG | MP3000 | | | | | F40M | | | | |
|-----|--------|------|------|------|------|------|------|------|------|------|
| | 100% | 30% | 10% | 5% | 2% | 100% | 30% | 10% | 5% | 2% |
| P1 | 250 | 305 | 330 | 360 | 355 | 235 | 290 | 310 | 340 | 335 |
| P2 | 240 | 295 | 320 | 345 | 345 | 225 | 280 | 300 | 325 | 330 |
| P3 | 210 | 255 | 280 | 300 | 305 | 200 | 240 | 265 | 285 | 285 |
| P4 | 185 | 225 | 245 | 265 | 265 | 175 | 215 | 235 | 250 | 250 |
| P5 | 180 | 215 | 235 | 255 | 255 | 170 | 205 | 220 | 240 | 240 |
| P6 | 200 | 245 | 265 | 285 | 285 | 190 | 230 | 250 | 270 | 270 |
| P7 | 190 | 230 | 250 | 270 | 270 | 180 | 215 | 235 | 255 | 255 |
| P8 | 175 | 215 | 235 | 250 | 255 | 165 | 205 | 220 | 240 | 240 |
| P11 | 185 | 225 | 240 | 265 | 260 | 175 | 210 | 230 | 250 | 250 |
| P12 | 120 | 145 | 150 | 165 | 165 | 110 | 135 | 145 | 155 | 155 |
| M1 | 180 | 220 | 240 | 260 | 260 | 185 | 225 | 245 | 265 | 265 |
| M2 | 150 | 180 | 195 | 215 | 215 | 150 | 185 | 200 | 215 | 215 |
| M3 | 120 | 150 | 155 | 170 | 170 | 125 | 155 | 160 | 170 | 170 |
| M4 | 95 | 115 | 120 | 130 | 130 | 95 | 120 | 120 | 130 | 130 |
| M5 | 80 | 95 | 100 | 105 | 105 | 80 | 100 | 100 | 110 | 110 |
| K1 | 190 | 235 | 255 | 275 | 275 | 180 | 220 | 240 | 260 | 260 |
| K2 | 170 | 205 | 225 | 245 | 240 | 160 | 195 | 210 | 230 | 230 |
| K3 | 145 | 175 | 190 | 205 | 205 | 135 | 165 | 180 | 195 | 195 |
| K4 | 135 | 165 | 180 | 195 | 195 | 130 | 155 | 170 | 185 | 185 |
| K5 | 80 | 100 | 110 | 120 | 120 | 80 | 95 | 105 | 110 | 110 |
| K6 | 120 | 145 | 160 | 175 | 170 | 115 | 140 | 150 | 165 | 165 |
| K7 | 105 | 130 | 140 | 150 | 150 | 100 | 125 | 130 | 145 | 145 |
| N1 | 1425 | 1775 | 1900 | 2050 | 2050 | 1350 | 1675 | 1775 | 1950 | 1950 |
| N2 | 580 | 720 | 760 | 830 | 830 | 550 | 680 | 720 | 780 | 790 |
| N3 | 385 | 480 | 510 | 550 | 550 | 365 | 450 | 480 | 520 | 520 |
| N11 | — | — | — | — | — | 415 | 520 | 550 | 600 | 600 |
| S1 | 44 | 55 | 55 | 60 | 60 | 45 | 55 | 55 | 60 | 60 |
| S2 | 36 | 44 | 45 | 48 | 48 | 36 | 45 | 46 | 49 | 49 |
| S3 | 31 | 38 | 39 | 42 | 43 | 32 | 38 | 40 | 43 | 43 |
| S11 | 60 | 75 | 80 | 85 | 85 | 65 | 75 | 80 | 85 | 85 |
| S12 | 43 | 55 | 55 | 60 | 60 | 44 | 55 | 55 | 60 | 60 |
| S13 | 25 | 31 | 31 | 34 | 34 | 25 | 31 | 32 | 34 | 34 |
| H5 | 37 | 45 | 47 | 50 | 50 | 37 | 46 | 48 | 50 | 50 |
| H8 | 39 | 47 | 49 | 55 | 55 | 39 | 48 | 50 | 55 | 55 |
| H11 | 47 | 55 | 60 | 65 | 65 | 47 | 60 | 60 | 65 | 65 |
| H12 | 75 | 90 | 95 | 100 | 105 | 70 | 85 | 90 | 95 | 95 |
| H21 | 39 | 47 | 49 | 55 | 55 | 39 | 48 | 50 | 55 | 55 |

MP16 Centre drilling – Insert selection

| SMG | | f_z | a_{so} |
|-----|--------------------------|-------|----------|
| | | | 100% |
| P1 | MP16-16009C90Z2-M05 F40M | 0,070 | 4,5 |
| P2 | MP16-16009C90Z2-M05 F40M | 0,070 | 4,5 |
| P3 | MP16-16009C90Z2-M05 F40M | 0,070 | 4,5 |
| P4 | MP16-16009C90Z2-M05 F40M | 0,065 | 4,5 |
| P5 | MP16-16009C90Z2-M05 F40M | 0,065 | 4,5 |
| P6 | MP16-16009C90Z2-M05 F40M | 0,065 | 4,5 |
| P7 | MP16-16009C90Z2-M05 F40M | 0,065 | 4,5 |
| P8 | MP16-16009C90Z2-M05 F40M | 0,070 | 4,5 |
| P11 | MP16-16009C90Z2-M05 F40M | 0,065 | 4,5 |
| P12 | MP16-16009C90Z2-M05 F40M | 0,044 | 3,5 |
| M1 | MP16-16009C90Z2-M05 F40M | 0,070 | 4,5 |
| M2 | MP16-16009C90Z2-M05 F40M | 0,065 | 4,5 |
| M3 | MP16-16009C90Z2-M05 F40M | 0,050 | 3,5 |
| M4 | MP16-16009C90Z2-M05 F40M | 0,046 | 2,5 |
| M5 | MP16-16009C90Z2-M05 F40M | 0,046 | 2,5 |
| K1 | MP16-16009C90Z2-M05 F40M | 0,070 | 4,5 |
| K2 | MP16-16009C90Z2-M05 F40M | 0,065 | 4,5 |
| K3 | MP16-16009C90Z2-M05 F40M | 0,065 | 4,5 |
| K4 | MP16-16009C90Z2-M05 F40M | 0,065 | 4,5 |
| K5 | MP16-16009C90Z2-M05 F40M | 0,060 | 4,5 |
| K6 | MP16-16009C90Z2-M05 F40M | 0,065 | 4,5 |
| K7 | MP16-16009C90Z2-M05 F40M | 0,060 | 4,5 |
| N1 | MP16-16009C90Z2-M05 F40M | 0,090 | 4,5 |
| N2 | MP16-16009C90Z2-M05 F40M | 0,090 | 4,5 |
| N3 | MP16-16009C90Z2-M05 F40M | 0,090 | 4,5 |
| N11 | MP16-16009C90Z2-M05 F40M | 0,090 | 4,5 |
| S1 | MP16-16009C90Z2-M05 F40M | 0,046 | 2,5 |
| S2 | MP16-16009C90Z2-M05 F40M | 0,046 | 2,5 |
| S3 | MP16-16009C90Z2-M05 F40M | 0,042 | 2,5 |
| S11 | MP16-16009C90Z2-M05 F40M | 0,050 | 3,0 |
| S12 | MP16-16009C90Z2-M05 F40M | 0,050 | 3,0 |
| S13 | MP16-16009C90Z2-M05 F40M | 0,046 | 2,5 |
| H5 | MP16-16009C90Z2-M05 F40M | 0,044 | 3,5 |
| H8 | MP16-16009C90Z2-M05 F40M | 0,034 | 3,0 |
| H11 | MP16-16009C90Z2-M05 F40M | 0,044 | 3,5 |
| H12 | MP16-16009C90Z2-M05 F40M | 0,034 | 3,0 |
| H21 | MP16-16009C90Z2-M05 F40M | 0,034 | 3,0 |
| H31 | MP16-16009C90Z2-M05 F40M | — | — |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MP16 Centre drilling – Cutting data $v_c =$ (m/min)

| SMG | F40M | | | | |
|-----|------|------|------|------|------|
| | 100% | 50% | 30% | 20% | 10% |
| P1 | 315 | 270 | 320 | 355 | 440 |
| P2 | 305 | 260 | 315 | 345 | 425 |
| P3 | 265 | 230 | 275 | 305 | 370 |
| P4 | 235 | 200 | 240 | 265 | 325 |
| P5 | 230 | 195 | 235 | 260 | 315 |
| P6 | 255 | 220 | 260 | 290 | 355 |
| P7 | 240 | 205 | 245 | 275 | 335 |
| P8 | 225 | 195 | 230 | 255 | 310 |
| P11 | 235 | 200 | 240 | 265 | 325 |
| P12 | 150 | 110 | 135 | 160 | 205 |
| M1 | 245 | 210 | 255 | 280 | 345 |
| M2 | 205 | 175 | 210 | 235 | 285 |
| M3 | 165 | 120 | 150 | 175 | 225 |
| M4 | 125 | 80 | 105 | 130 | 175 |
| M5 | 105 | 70 | 85 | 105 | 145 |
| K1 | 245 | 210 | 250 | 275 | 340 |
| K2 | 215 | 185 | 220 | 245 | 300 |
| K3 | 185 | 155 | 185 | 210 | 255 |
| K4 | 175 | 150 | 180 | 200 | 245 |
| K5 | 105 | 90 | 110 | 120 | 145 |
| K6 | 155 | 130 | 160 | 175 | 215 |
| K7 | 135 | 115 | 140 | 155 | 185 |
| N1 | 1775 | 1500 | 1825 | 2025 | 2500 |
| N2 | 720 | 610 | 740 | 820 | 1000 |
| N3 | 480 | 405 | 490 | 540 | 670 |
| N11 | 550 | 465 | 560 | 620 | 770 |
| S1 | 60 | 38 | 49 | 60 | 80 |
| S2 | 48 | 31 | 39 | 48 | 65 |
| S3 | 42 | 27 | 35 | 42 | 60 |
| S11 | 85 | 55 | 70 | 85 | 115 |
| S12 | 55 | 40 | 49 | 60 | 80 |
| S13 | 33 | 22 | 27 | 34 | 46 |
| H5 | 50 | 37 | 45 | 55 | 70 |
| H8 | 55 | 39 | 46 | 55 | 75 |
| H11 | 65 | 47 | 60 | 65 | 85 |
| H12 | 95 | 70 | 85 | 95 | 130 |
| H21 | 55 | 39 | 46 | 55 | 75 |
| H31 | — | — | — | — | — |

MP16 Chamfering – Insert selection

| SMG | | a_p | f_z | | | | |
|-----|--------------------------|-------|-------|-------|-------|-------|-------|
| | | | 100% | 50% | 30% | 20% | 10% |
| P1 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,10 | 0,10 | 0,10 | 0,10 | 0,10 |
| P2 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,10 | 0,10 | 0,10 | 0,10 | 0,10 |
| P3 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,095 | 0,095 | 0,095 | 0,095 | 0,095 |
| P4 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,095 | 0,095 | 0,095 | 0,095 | 0,095 |
| P5 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,090 | 0,090 | 0,090 | 0,090 | 0,090 |
| P6 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,090 | 0,090 | 0,090 | 0,090 | 0,090 |
| P7 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,090 | 0,090 | 0,090 | 0,090 | 0,090 |
| P8 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,095 | 0,095 | 0,095 | 0,095 | 0,095 |
| P11 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,090 | 0,090 | 0,090 | 0,090 | 0,090 |
| P12 | MP16-16009C90Z2-M05 F40M | 3,0 | 0,065 | 0,065 | 0,065 | 0,065 | 0,065 |
| M1 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,10 | 0,10 | 0,10 | 0,10 | 0,10 |
| M2 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,090 | 0,090 | 0,090 | 0,090 | 0,090 |
| M3 | MP16-16009C90Z2-M05 F40M | 3,0 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| M4 | MP16-16009C90Z2-M05 F40M | 2,0 | 0,065 | 0,065 | 0,065 | 0,065 | 0,065 |
| M5 | MP16-16009C90Z2-M05 F40M | 2,0 | 0,065 | 0,065 | 0,065 | 0,065 | 0,065 |
| K1 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,10 | 0,10 | 0,10 | 0,10 | 0,10 |
| K2 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,090 | 0,090 | 0,090 | 0,090 | 0,090 |
| K3 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,090 | 0,090 | 0,090 | 0,090 | 0,090 |
| K4 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,090 | 0,090 | 0,090 | 0,090 | 0,090 |
| K5 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,085 | 0,085 | 0,085 | 0,085 | 0,085 |
| K6 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,090 | 0,090 | 0,090 | 0,090 | 0,090 |
| K7 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,085 | 0,085 | 0,085 | 0,085 | 0,085 |
| N1 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,13 | 0,13 | 0,13 | 0,13 | 0,13 |
| N2 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,13 | 0,13 | 0,13 | 0,13 | 0,13 |
| N3 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,13 | 0,13 | 0,13 | 0,13 | 0,13 |
| N11 | MP16-16009C90Z2-M05 F40M | 3,5 | 0,13 | 0,13 | 0,13 | 0,13 | 0,13 |
| S1 | MP16-16009C90Z2-M05 F40M | 2,0 | 0,065 | 0,065 | 0,065 | 0,065 | 0,065 |
| S2 | MP16-16009C90Z2-M05 F40M | 2,0 | 0,065 | 0,065 | 0,065 | 0,065 | 0,065 |
| S3 | MP16-16009C90Z2-M05 F40M | 2,0 | 0,060 | 0,060 | 0,060 | 0,060 | 0,060 |
| S11 | MP16-16009C90Z2-M05 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| S12 | MP16-16009C90Z2-M05 F40M | 2,5 | 0,075 | 0,075 | 0,075 | 0,075 | 0,075 |
| S13 | MP16-16009C90Z2-M05 F40M | 2,0 | 0,065 | 0,065 | 0,065 | 0,065 | 0,065 |
| H5 | MP16-16009C90Z2-M05 F40M | 3,0 | 0,065 | 0,065 | 0,065 | 0,065 | 0,065 |
| H8 | MP16-16009C90Z2-M05 F40M | 2,5 | 0,048 | 0,048 | 0,048 | 0,048 | 0,048 |
| H11 | MP16-16009C90Z2-M05 F40M | 3,0 | 0,065 | 0,065 | 0,065 | 0,065 | 0,065 |
| H12 | MP16-16009C90Z2-M05 F40M | 2,5 | 0,048 | 0,048 | 0,048 | 0,048 | 0,048 |
| H21 | MP16-16009C90Z2-M05 F40M | 2,5 | 0,048 | 0,048 | 0,048 | 0,048 | 0,048 |
| H31 | MP16-16009C90Z2-M05 F40M | — | — | — | — | — | — |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

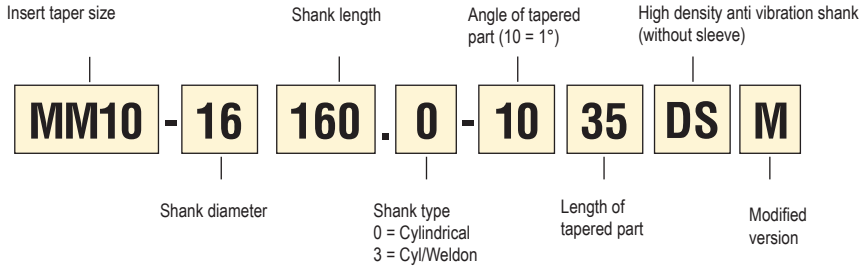
All cutting data are start values

MP16 Chamfering – Cutting data $v_c =$ (m/min)

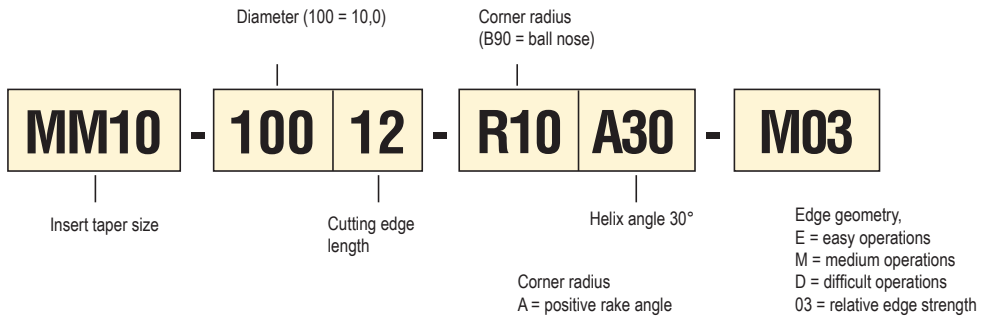
| SMG | F40M | | | | |
|-----|------|------|------|------|------|
| | 100% | 50% | 30% | 20% | 10% |
| P1 | 315 | 270 | 320 | 355 | 440 |
| P2 | 305 | 260 | 315 | 345 | 425 |
| P3 | 265 | 230 | 275 | 305 | 370 |
| P4 | 235 | 200 | 240 | 265 | 325 |
| P5 | 230 | 195 | 235 | 260 | 315 |
| P6 | 255 | 220 | 260 | 290 | 355 |
| P7 | 240 | 205 | 245 | 275 | 335 |
| P8 | 225 | 195 | 230 | 255 | 310 |
| P11 | 235 | 200 | 240 | 265 | 325 |
| P12 | 150 | 110 | 135 | 160 | 205 |
| M1 | 245 | 210 | 255 | 280 | 345 |
| M2 | 205 | 175 | 210 | 235 | 285 |
| M3 | 165 | 120 | 150 | 175 | 225 |
| M4 | 125 | 80 | 105 | 130 | 175 |
| M5 | 105 | 70 | 85 | 105 | 145 |
| K1 | 245 | 210 | 250 | 275 | 340 |
| K2 | 215 | 185 | 220 | 245 | 300 |
| K3 | 185 | 155 | 185 | 210 | 255 |
| K4 | 175 | 150 | 180 | 200 | 245 |
| K5 | 105 | 90 | 110 | 120 | 145 |
| K6 | 155 | 130 | 160 | 175 | 215 |
| K7 | 135 | 115 | 140 | 155 | 185 |
| N1 | 1775 | 1500 | 1825 | 2025 | 2500 |
| N2 | 720 | 610 | 740 | 820 | 1000 |
| N3 | 480 | 405 | 490 | 540 | 670 |
| N11 | 550 | 465 | 560 | 620 | 770 |
| S1 | 60 | 38 | 49 | 60 | 80 |
| S2 | 48 | 31 | 39 | 48 | 65 |
| S3 | 42 | 27 | 35 | 42 | 60 |
| S11 | 85 | 55 | 70 | 85 | 115 |
| S12 | 55 | 40 | 49 | 60 | 80 |
| S13 | 33 | 22 | 27 | 34 | 46 |
| H5 | 50 | 37 | 45 | 55 | 70 |
| H8 | 55 | 39 | 46 | 55 | 75 |
| H11 | 65 | 47 | 60 | 65 | 85 |
| H12 | 95 | 70 | 85 | 95 | 130 |
| H21 | 55 | 39 | 46 | 55 | 75 |
| H31 | — | — | — | — | — |

Note that parts of the code can vary for different types of insert or shanks

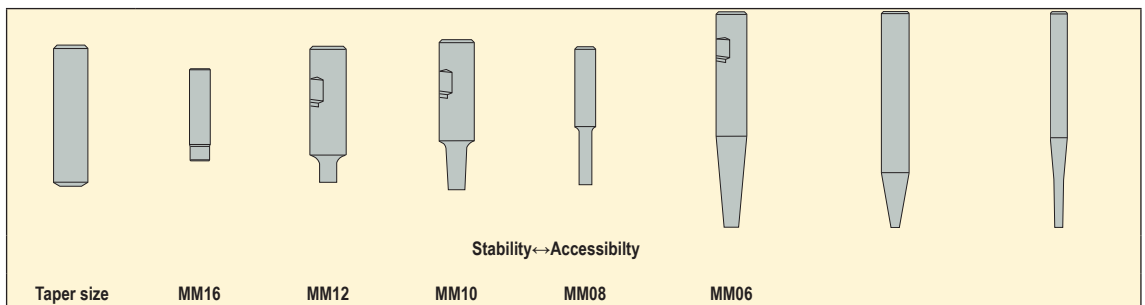
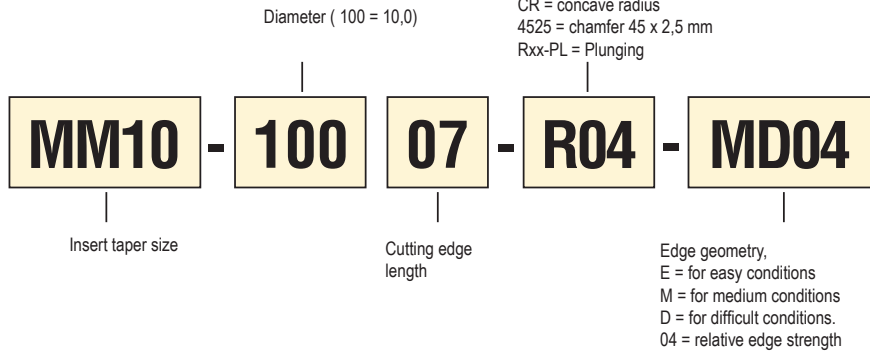
Code key shanks



Code key, 3-flute Minimaster inserts

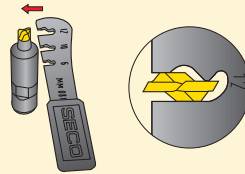
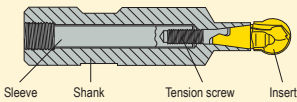


Code key, 2-flute Minimaster inserts



Mounting instructions for 2-flute Minimaster

During normal operations inserts are exchanged using the Minimaster wrench

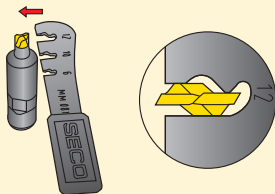


- The sleeve must be securely tightened in the shank before the tension screw and insert are fitted.
- If the wrench cannot be used for changing the insert (If the insert has broken off or jammed in the shank) , the sleeve can be released, which will also release the insert.
- Use Allen key (turn it anti-clockwise) to back off the sleeve until the insert is free.
- Re-tighten the sleeve in the shank before fitting the tension screw and the new insert.

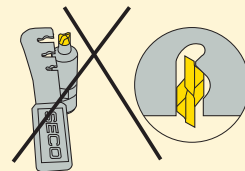
Make sure that the wrench is used correctly.

For 3-flute Minimaster another key (MM0416) must be used (Key grip on hexagonal part of the insert.)

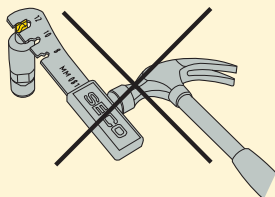
Mounting instructions for 2-flute Minimaster



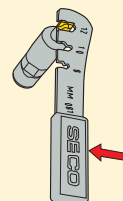
Make sure that the wrench is used correctly...



...if used on the wrong side, it will cause damage.



Do not use excessive force...



...normal hand-power is quite sufficient.

Choice of shanks, inserts and cutting data.

1 - Select taper size

The design of the workpiece and the machining operations determines suitable taper size. Select the largest possible taper size for best strength and stability.

2 - Select insert

- a. Use the tables beginning on page 734 to classify the workpiece material into a Seco material group
- b. Look up the pages for the selected taper size and choose a suitable insert in the insert selection table

3 - Select shank

- a. Look up the pages for the selected taper size and choose a suitable shank in the tool data table
- b. Always choose the shortest shank possible (to achieve best possible stability)

4 - Select cutting data

- a. Cutting speed recommendations are found in the cutting data tables for each selected taper size. NOTE! Cutting data recommendations are based on stable conditions and might therefore need to be adjusted depending on the stability in the application (tooling, machine & workpiece fixturing). General rule for max a_p in slotting is $DC \cdot 0.3 = \text{Max } a_p$ (See figure 1)
- b. Feed and cutting speed recommendations are found in the cutting speed tables for the selected taper size and type
- c. Maximum RPM that for safety reasons should never be exceeded, are shown on page 631
- d. Feed per tooth recommendations are found in the selection tables for each selected taper size
- e. If the cutter is not fully engaged the feed per tooth and the cutting speed should be increased compared to the recommendations for a fully engaged cutter. The reason for that is to keep the average chip thickness and the working temperature in the cutting zone.
- f. Divide the radial depth of cut with the cutter diameter to get the actual cutter engagement percentage ($a_e/DC\%$), for ball nose cutters use the effective working diameter D_w instead of DC (See figure 2 & 3)
- g. Use the the percentage to get a correct feed per tooth and cutting speed recommendation

5. For Copy milling

- a. When milling in corners and bottoms of cavities the feed rate should be reduced due to the increase of the average chip thickness. Use the feed per tooth recommendations for a fully engaged cutter.
- b. When step down copying with an angle of more than 40° or step up copying with an angle bigger than 30° in combination with small depth of cut, use the diameter (DC)

6. General

- a. When calculating feed per revolution and feed speed, always use the ZAFP-value. That is the effective number of teeth to use for cutting data calculations. The ZAFP-value can be found in the insert selection table.
- b. NOTE: There will be a deterioration in the surface finish on the workpiece when the feed rate is increased (See figure 5 & 6)

Figure 1

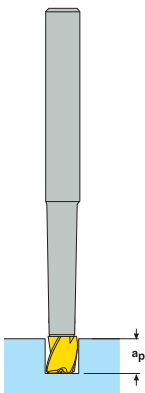


Figure 4

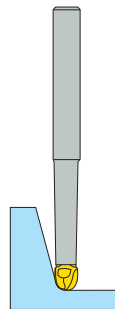


Figure 2

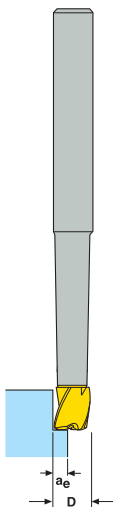


Figure 5

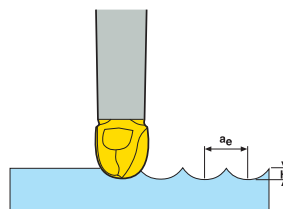


Figure 6

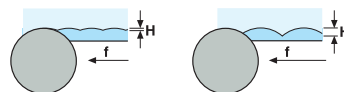
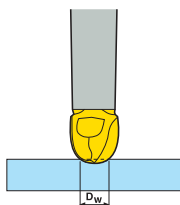


Figure 3



| Taper size | For slot milling, with 3 flutes | For keyway milling, with 3 flutes | For copy milling, with 3 flutes | For slot milling | For slot milling, with positive (= easy cutting) geometry | For square shoulder milling | For keyway milling |
|-------------|---------------------------------|-----------------------------------|---------------------------------|------------------|---|-----------------------------|--------------------|
| MM16 | D = 16, D = 20 | D = 15,7, D = 19,7 | D = 16, D = 20 | D = 16, D = 20 | D = 16, D = 20 | D = 16, D = 20 | D = 15,7 |
| MM12 | D = 12 | D = 11,7 | D = 12 | D = 12, D = 14 | D = 12, D = 14 | D = 12, D = 14 | D = 11,7, D = 13,7 |
| MM10 | D = 10 | D = 9,525 | D = 10 | D = 10 | D = 10 | D = 10 | D = 9,8 |
| MM08 | D = 08 | D = 7,8 | D = 08 | D = 08 | D = 08 | D = 08 | D = 7,8 |
| MM06 | D = 06 | D = 5,8 | D = 06 | D = 06 | D = 06 | D = 06 | D = 5,8 |

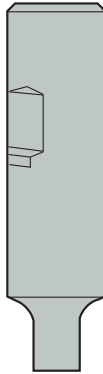
| Taper size | For centre drilling | For chamfer milling | For milling of external radius | For copying with 90° cutting angle | For copying, with 120° cutting angle | For plunge milling |
|-------------|---------------------|---------------------|--------------------------------|------------------------------------|--------------------------------------|--------------------|
| MM16 | D = 16 | D = 16 | - | D = 16, D = 20 | D = 20 | D = 16 |
| MM12 | D = 12 | - | D = 12 | D = 12, D = 14 | D = 14, D = 16 | D = 12 |
| MM10 | D = 10 | D = 10 | - | D = 10 | D = 12 | D = 10 |
| MM08 | D = 08 | D = 08 | - | D = 08 | D = 10 | D = 08 |
| MM06 | D = 06 | D = 06 | - | D = 06 | D = 08 | D = 06 |

Design 1



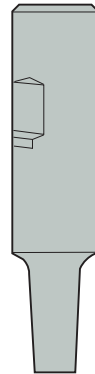
Keyway shank

Design 2



Cylindrical/Weldon back end and 90° front

Design 3



Cylindrical/Weldon back end tapered front 87°/89°

Design 4

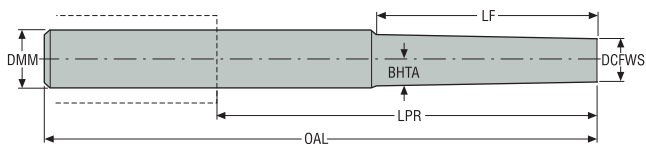


Cylindrical/Weldon back end tapered front 80°/85°/87°


Design 5



Cylindrical back end double tapered front end 89°/85°



MM06

| Design | Designation | Connecting size | Dimensions in mm | | | | | |  KG | Spare part no. |
|--------|---------------------|-----------------|------------------|------|-------|------|-------|-------|--|----------------|
| | | | DCSFWS | DMM | BHTA° | LF | OAL | LPR | | |
| 1 | MM06-12065.0-0000 | MM06 | 5,7 | 12,0 | 60,0 | 0,0 | 65,0 | 15,0 | 0,1 | 1 |
| 2 | MM06-10040.0-0007 | MM06 | 5,75 | 10,0 | 0,0 | 7,0 | 40,0 | 7,0 | 0,1 | 2 |
| 2 | MM06-10050.0-0007DS | MM06 | 5,75 | 10,0 | 0,0 | 7,0 | 50,0 | 7,0 | 0,1 | 3 |
| 2 | MM06-12070.3-0005 | MM06 | 5,75 | 12,0 | 0,0 | 5,0 | 70,0 | 25,0 | 0,1 | 1 |
| 2 | MM06-16090.0-0012DS | MM06 | 5,75 | 16,0 | 0,0 | 12,0 | 90,0 | 42,0 | 0,3 | 3 |
| 2 | MM06-16095.0-0024DS | MM06 | 5,75 | 16,0 | 0,0 | 24,0 | 95,0 | 47,0 | 0,3 | 3 |
| 3 | MM06-16075.3-3009 | MM06 | 5,75 | 16,0 | 3,0 | 9,0 | 75,0 | 27,0 | 0,1 | 1 |
| 4 | MM06-10075.0-3041DS | MM06 | 5,75 | 10,0 | 3,0 | 40,5 | 75,0 | 35,0 | 0,1 | 3 |
| 3 | MM06-12120.0-1050DS | MM06 | 5,75 | 12,0 | 1,0 | 50,0 | 120,0 | 75,0 | 0,2 | 3 |
| 4 | MM06-16110.3-5058 | MM06 | 5,75 | 16,0 | 5,0 | 58,6 | 110,0 | 62,0 | 0,2 | 4 |
| 3 | MM06-16140.0-1020M | MM06 | 5,75 | 16,0 | 1,0 | 20,0 | 140,0 | 92,0 | 0,2 | 5 |
| 3 | MM06-16140.0-1035M | MM06 | 5,75 | 16,0 | 1,0 | 35,0 | 140,0 | 92,0 | 0,2 | 6 |
| 3 | MM06-16140.0-1035DS | MM06 | 5,75 | 16,0 | 1,0 | 35,0 | 140,0 | 92,0 | 0,4 | 3 |
| 5 | MM06-20250.0-1035DS | MM06 | 5,75 | 20,0 | 1,0 | 35,0 | 250,0 | 190,0 | 1,0 | 3 |
| 3 | MM06-16140.0-1050DS | MM06 | 5,75 | 16,0 | 1,0 | 50,0 | 140,0 | 92,0 | 0,3 | 3 |
| 3 | MM06-16140.0-1050M | MM06 | 5,75 | 16,0 | 1,0 | 50,0 | 140,0 | 92,0 | 0,2 | 6 |
| 3 | MM06-10100.0-1035DS | MM06 | 5,75 | 10,0 | 1,0 | 35,0 | 100,0 | 60,0 | 0,1 | 3 |

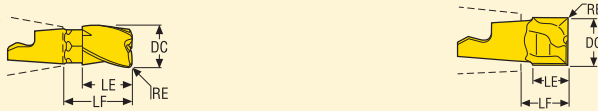
Spare Parts

| Spare part no. | Tension screw | Sleeve |
|----------------|---------------|-----------|
| | | - |
| 1 | MM06-03518 | MM-035046 |
| 2 | MM06-03518 | MM-035023 |
| 3 | MM06-03518 | - |
| 4 | MM06-03518 | MM-035091 |
| 5 | MM06-03544 | MM-035046 |
| 6 | MM06-03564 | MM-035046 |

Please check availability in current price and stock-list
Allen key H05-4 for sleeve to be ordered separately.

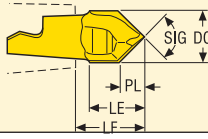
For wrench types, see insert pages

Slot milling/square shoulder milling



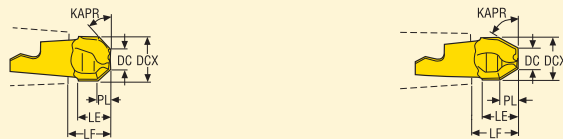
| Insert type | Designation | Dimensions in mm | | | | ZNP | Wrench | Coated | | | | |
|----------------|-----------------------|------------------|------|-----|------|-----|--------|--------|------|------|------|---|
| | | LE | DC | RE | LF | | | Grades | | | | |
| | | | | | | | | T60M | F15M | F30M | F40M | |
| 3-flute | MM06-06007-A30-E02 | 7,5 | 6,0 | 0,0 | 9,9 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM06-06007-R05A30-M02 | 7,5 | 6,0 | 0,5 | 9,9 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM06-06007-R10A30-E02 | 7,5 | 6,0 | 1,0 | 9,9 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM06-06007-R10A30-M02 | 7,5 | 6,0 | 1,0 | 9,9 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM06-06007-R10A30-D02 | 7,5 | 6,0 | 1,0 | 9,9 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM06-06007-R20A30-M02 | 7,5 | 6,0 | 2,0 | 9,9 | 3 | MM0416 | | | | | ■ |
| 3-flute | MM06-06407-A30-E02 | 7,5 | 6,35 | 0,0 | 9,9 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM06-06407-R04A30-M02 | 7,5 | 6,35 | 0,4 | 9,9 | 3 | MM0416 | | | | | ■ |
| 3-flute | MM06-06407-R08A30-M02 | 7,5 | 6,35 | 0,8 | 9,9 | 3 | MM0416 | | | | | ■ |
| 2-flute | MM06-06004-M02 | 4,1 | 6,0 | 0,0 | 5,09 | 2 | MM0612 | ■ | | | | |
| 2-flute | MM06-06004-R04-MD02 | 4,1 | 6,0 | 0,4 | 5,08 | 2 | MM0612 | ■ | | | ■ | |
| 2-flute | MM06-06004-R10-MD02 | 4,1 | 6,0 | 1,0 | 5,06 | 2 | MM0612 | | | | ■ | |
| 2-flute | MM06-06004-R20-MD02 | 4,1 | 6,0 | 2,0 | 5,05 | 2 | MM0612 | | | | ■ | |
| 2-flute | MM06-06404-R04-MD02 | 4,1 | 6,35 | 0,4 | 5,08 | 2 | MM0612 | ■ | | | | |
| 2-flute | MM06-06404-M02 | 4,1 | 6,35 | 0,0 | 5,09 | 2 | MM0612 | ■ | | | | |
| Keyway 3-flute | MM06-05807-R02A30-M02 | 7,5 | 5,8 | 0,2 | 9,9 | 3 | MM0612 | | | | | ■ |
| Keyway 2-flute | MM06-05804T-R02-D02 | 4,1 | 5,8 | 0,2 | 5,08 | 2 | MM0612 | ■ | | | | |

Centre drilling



| Insert type | Designation | Dimensions in mm | | | | | | | Coated | | | | |
|-------------|---------------------|------------------|------|------|------|-------|-----|--------|--------|------|------|------|--|
| | | DC | LE | LF | PL | SIG° | ZNP | Wrench | Grades | | | | |
| | | | | | | | | | T60M | F15M | F30M | F40M | |
| 90° | MM06-06003-C90-M02 | 6,0 | 6,0 | 7,12 | 2,86 | 90,0 | 2 | MM0612 | ■ | | | | |
| 120° | MM06-06003-C120-M02 | 6,0 | 6,27 | 7,19 | 1,6 | 120,0 | 2 | MM0612 | ■ | | | | |
| | | | | | | | | | | | | | |
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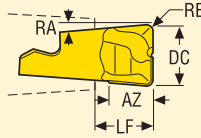
Chamfering



| Insert type | Designation | Dimensions in mm | | | | | | | Coated | | | | |
|-------------|---------------------|------------------|-----|-----|------|-----|-------|-----|--------|--------|------|------|------|
| | | DC | DCX | LE | LF | PL | KAPR° | ZNP | Wrench | Grades | | | |
| | | | | | | | | | | T60M | F15M | F30M | F40M |
| 45° | MM06-06004-4515-E02 | 1,8 | 6,0 | 4,0 | 5,1 | 2,1 | 45,0 | 2 | MM0612 | ■ | | | |
| 60° | MM06-06004-6015-E02 | 3,14 | 6,0 | 4,6 | 5,75 | 2,4 | 60,0 | 2 | MM0612 | ■ | | | |
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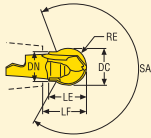
For Torque keys and torque values, see page 631

Plunge milling



| Insert type | Designation | Dimensions in mm | | | | | RA° | ZNP | Wrench | Coated | | | |
|-------------|------------------------|------------------|-----|-----|------|--------|-----|--------|--------|--------|------|------|--|
| | | DC | RE | AZ | LF | Grades | | | | | | | |
| | | | | | | T60M | | | | F15M | F30M | F40M | |
| 2-flute | MM06-06004-R10-PL-MD02 | 6,0 | 1,0 | 4,3 | 5,08 | 5,0 | 2 | MM0612 | | | ■ | | |
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Precision inserts for semi-finishing in all materials



| Insert type | Designation | Dimensions in mm | | | | | SA° | ZNP | Wrench | Coated | | | |
|-------------|-----------------------|------------------|-----|-----|------|-----|-------|-----|--------|--------|------|------|------|
| | | DC | RE | LE | LF | DN | | | | Grades | | | |
| | | | | | | | | | | T60M | F15M | F30M | F40M |
| 2-flute | MM06-08008-B120PF-M01 | 8,0 | 4,0 | 8,0 | 8,73 | 6,0 | 263,0 | 2 | MM0612 | | ■ | | |
| 2-flute | MM06-08008-B120P-M03 | 8,0 | 4,0 | 8,0 | 8,73 | 6,0 | 263,0 | 2 | MM0612 | | | ■ | |
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For Torque keys and torque values, see page 631

MM06-General Selection

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM06-06007-R05A30-M02 F40M | 1,3 | 0,030 | 0,030 | 0,038 | 0,050 |
| P2 | MM06-06007-R05A30-M02 F40M | 1,3 | 0,030 | 0,032 | 0,038 | 0,050 |
| P3 | MM06-06007-R05A30-M02 F40M | 1,3 | 0,028 | 0,030 | 0,036 | 0,048 |
| P4 | MM06-06007-R05A30-M02 F40M | 1,3 | 0,028 | 0,030 | 0,036 | 0,048 |
| P5 | MM06-06007-R05A30-M02 F40M | 1,3 | 0,028 | 0,028 | 0,034 | 0,046 |
| P6 | MM06-06007-R05A30-M02 F40M | 1,3 | 0,028 | 0,028 | 0,034 | 0,046 |
| P7 | MM06-06007-R05A30-M02 F40M | 1,3 | 0,028 | 0,028 | 0,034 | 0,046 |
| P8 | MM06-06007-R05A30-M02 F40M | 1,3 | 0,028 | 0,030 | 0,036 | 0,048 |
| P11 | MM06-06007-R05A30-M02 F40M | 1,3 | 0,028 | 0,028 | 0,034 | 0,046 |
| P12 | MM06-06007-R05A30-M02 F40M | 1,0 | 0,020 | 0,020 | 0,024 | 0,034 |
| M1 | MM06-06007-R05A30-M02 F40M | 1,3 | 0,030 | 0,032 | 0,038 | 0,050 |
| M2 | MM06-06007-R05A30-M02 F40M | 1,3 | 0,028 | 0,028 | 0,034 | 0,046 |
| M3 | MM06-06007-R05A30-M02 F40M | 1,0 | 0,024 | 0,024 | 0,030 | 0,040 |
| M4 | MM06-06007-R05A30-M02 F40M | 0,75 | 0,022 | 0,022 | 0,028 | 0,036 |
| M5 | MM06-06007-R05A30-M02 F40M | 0,75 | 0,022 | 0,022 | 0,028 | 0,036 |
| K1 | MM06-06007-R10A30-D02 F30M | 1,3 | 0,036 | 0,036 | 0,046 | 0,060 |
| K2 | MM06-06007-R10A30-D02 F30M | 1,3 | 0,032 | 0,034 | 0,042 | 0,055 |
| K3 | MM06-06007-R10A30-D02 F30M | 1,3 | 0,032 | 0,034 | 0,042 | 0,055 |
| K4 | MM06-06007-R10A30-D02 F30M | 1,3 | 0,032 | 0,034 | 0,042 | 0,055 |
| K5 | MM06-06007-R10A30-D02 F30M | 1,3 | 0,030 | 0,030 | 0,036 | 0,050 |
| K6 | MM06-06007-R10A30-D02 F30M | 1,3 | 0,032 | 0,034 | 0,042 | 0,055 |
| K7 | MM06-06007-R10A30-D02 F30M | 1,3 | 0,030 | 0,030 | 0,036 | 0,050 |
| N1 | MM06-06007-R10A30-E02 F30M | 1,3 | 0,046 | 0,046 | 0,055 | 0,075 |
| N2 | MM06-06007-R10A30-E02 F30M | 1,3 | 0,046 | 0,046 | 0,055 | 0,075 |
| N3 | MM06-06007-R10A30-E02 F30M | 1,3 | 0,046 | 0,046 | 0,055 | 0,075 |
| N11 | MM06-06007-R10A30-E02 F30M | 1,3 | 0,046 | 0,046 | 0,055 | 0,075 |
| S1 | MM06-06007-R10A30-D02 F30M | 0,75 | 0,030 | 0,030 | 0,036 | 0,046 |
| S2 | MM06-06007-R10A30-D02 F30M | 0,75 | 0,030 | 0,030 | 0,036 | 0,046 |
| S3 | MM06-06007-R10A30-D02 F30M | 0,75 | 0,028 | 0,028 | 0,034 | 0,042 |
| S11 | MM06-06007-R05A30-M02 F40M | 0,90 | 0,024 | 0,024 | 0,030 | 0,040 |
| S12 | MM06-06007-R05A30-M02 F40M | 0,90 | 0,024 | 0,024 | 0,030 | 0,040 |
| S13 | MM06-06007-R05A30-M02 F40M | 0,75 | 0,022 | 0,022 | 0,028 | 0,036 |
| H5 | MM06-06007-R10A30-D02 F30M | 1,0 | 0,026 | 0,026 | 0,030 | 0,040 |
| H8 | MM06-06007-R10A30-D02 F30M | 0,90 | 0,020 | 0,020 | 0,024 | 0,032 |
| H11 | MM06-06007-R10A30-D02 F30M | 1,0 | 0,026 | 0,026 | 0,030 | 0,040 |
| H12 | MM06-06007-R10A30-D02 F30M | 0,90 | 0,020 | 0,020 | 0,024 | 0,032 |
| H21 | MM06-06007-R10A30-D02 F30M | 0,90 | 0,020 | 0,020 | 0,024 | 0,032 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MM06-General – Cutting data

| SMG | F15M | | | | F30M | | | | F40M | | | | T60M | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 100% | 40% | 20% | 10% | 100% | 40% | 20% | 10% | 100% | 40% | 20% | 10% | 100% | 40% | 20% | 10% |
| P1 | 395 | 670 | 720 | 710 | 280 | 350 | 395 | 435 | 270 | 335 | 375 | 410 | 220 | 270 | 300 | 330 |
| P2 | 385 | 650 | 690 | 690 | 275 | 340 | 380 | 420 | 265 | 330 | 365 | 400 | 210 | 260 | 295 | 320 |
| P3 | 330 | 560 | 600 | 600 | 240 | 295 | 330 | 365 | 230 | 280 | 315 | 345 | 185 | 230 | 255 | 280 |
| P4 | 295 | 495 | 530 | 530 | 210 | 260 | 295 | 320 | 200 | 250 | 280 | 305 | 160 | 200 | 225 | 245 |
| P5 | 280 | 475 | 510 | 500 | 200 | 250 | 280 | 310 | 195 | 240 | 265 | 290 | 155 | 190 | 215 | 235 |
| P6 | 315 | 530 | 570 | 570 | 225 | 280 | 315 | 345 | 215 | 270 | 300 | 330 | 175 | 215 | 240 | 265 |
| P7 | 300 | 500 | 540 | 530 | 215 | 265 | 295 | 325 | 205 | 255 | 285 | 310 | 165 | 205 | 230 | 250 |
| P8 | 280 | 470 | 500 | 500 | 200 | 250 | 280 | 305 | 195 | 235 | 265 | 290 | 155 | 190 | 215 | 235 |
| P11 | 290 | 485 | 520 | 520 | 210 | 255 | 290 | 320 | 200 | 245 | 275 | 300 | 160 | 200 | 220 | 245 |
| P12 | 175 | 270 | 310 | 315 | 130 | 160 | 180 | 195 | 125 | 150 | 170 | 185 | 100 | 125 | 135 | 150 |
| M1 | 310 | 520 | 560 | 560 | — | — | — | — | 215 | 265 | 295 | 320 | 170 | 210 | 235 | 260 |
| M2 | 255 | 425 | 455 | 455 | — | — | — | — | 175 | 215 | 240 | 265 | 140 | 170 | 195 | 210 |
| M3 | 195 | 300 | 345 | 350 | — | — | — | — | 135 | 170 | 190 | 205 | 110 | 135 | 150 | 165 |
| M4 | 145 | 205 | 250 | 265 | — | — | — | — | 105 | 125 | 145 | 155 | 85 | 105 | 115 | 125 |
| M5 | 120 | 170 | 210 | 220 | — | — | — | — | 85 | 105 | 120 | 130 | 70 | 90 | 95 | 105 |
| K1 | 305 | 510 | 550 | 550 | 215 | 270 | 305 | 335 | 210 | 260 | 290 | 315 | 165 | 210 | 230 | 255 |
| K2 | 265 | 450 | 480 | 480 | 190 | 235 | 265 | 295 | 185 | 225 | 255 | 280 | 150 | 180 | 205 | 225 |
| K3 | 225 | 380 | 405 | 405 | 160 | 200 | 225 | 250 | 155 | 190 | 215 | 235 | 125 | 155 | 175 | 190 |
| K4 | 215 | 365 | 390 | 385 | 155 | 190 | 215 | 235 | 150 | 185 | 205 | 225 | 120 | 145 | 165 | 180 |
| K5 | 130 | 220 | 235 | 230 | 95 | 115 | 130 | 145 | 90 | 110 | 125 | 135 | 70 | 90 | 100 | 110 |
| K6 | 190 | 320 | 340 | 340 | 135 | 170 | 190 | 210 | 130 | 160 | 180 | 195 | 105 | 130 | 145 | 160 |
| K7 | 165 | 280 | 300 | 295 | 120 | 150 | 165 | 180 | 115 | 140 | 155 | 175 | 90 | 115 | 125 | 140 |
| N1 | 2325 | 3950 | 4250 | 4150 | 1650 | 2075 | 2325 | 2525 | 1600 | 1975 | 2200 | 2425 | 1275 | 1575 | 1775 | 1950 |
| N2 | 930 | 1600 | 1725 | 1675 | 670 | 830 | 930 | 1025 | 640 | 790 | 890 | 980 | 510 | 640 | 710 | 790 |
| N3 | 620 | 1075 | 1150 | 1125 | 445 | 560 | 620 | 680 | 430 | 530 | 590 | 650 | 340 | 425 | 475 | 530 |
| N11 | 710 | 1225 | 1300 | 1275 | 510 | 640 | 710 | 780 | 490 | 610 | 680 | 750 | 390 | 485 | 540 | 600 |
| S1 | 70 | 95 | 115 | 125 | 50 | 65 | 70 | 75 | 48 | 60 | 65 | 75 | 39 | 49 | 55 | 60 |
| S2 | 55 | 75 | 95 | 100 | 41 | 50 | 55 | 60 | 39 | 48 | 55 | 60 | 32 | 40 | 44 | 48 |
| S3 | 48 | 65 | 80 | 85 | 36 | 44 | 49 | 55 | 34 | 42 | 47 | 50 | 28 | 34 | 38 | 41 |
| S11 | 100 | 145 | 170 | 180 | — | — | — | — | 70 | 85 | 95 | 105 | 55 | 70 | 75 | 85 |
| S12 | 70 | 100 | 120 | 125 | — | — | — | — | 47 | 60 | 65 | 70 | 39 | 48 | 55 | 60 |
| S13 | 38 | 55 | 65 | 70 | — | — | — | — | 27 | 33 | 37 | 41 | 22 | 28 | 30 | 33 |
| H5 | 60 | 90 | 105 | 105 | 43 | 55 | 60 | 65 | 41 | 50 | 55 | 60 | 33 | 41 | 46 | 50 |
| H8 | 60 | 85 | 100 | 105 | 44 | 55 | 60 | 65 | 42 | 50 | 60 | 65 | 34 | 42 | 46 | 50 |
| H11 | 75 | 115 | 130 | 135 | 55 | 65 | 75 | 85 | 50 | 65 | 70 | 80 | 42 | 50 | 60 | 65 |
| H12 | 110 | 155 | 185 | 190 | 80 | 100 | 110 | 120 | 75 | 90 | 105 | 115 | 60 | 75 | 85 | 90 |
| H21 | 60 | 85 | 100 | 105 | 44 | 55 | 60 | 65 | 42 | 50 | 60 | 65 | 34 | 42 | 46 | 50 |

MM06 Z3-Copy – Insert selection – Roughing

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM06-06007-B90A30-M02 F40M | 1,3 | 0,036 | 0,036 | 0,038 | 0,040 |
| P2 | MM06-06007-B90A30-M02 F40M | 1,3 | 0,036 | 0,036 | 0,038 | 0,042 |
| P3 | MM06-06007-B90A30-M02 F40M | 1,3 | 0,034 | 0,034 | 0,036 | 0,040 |
| P4 | MM06-06007-B90A30-M02 F40M | 1,3 | 0,034 | 0,034 | 0,036 | 0,038 |
| P5 | MM06-06007-B90A30-M02 F40M | 1,3 | 0,032 | 0,032 | 0,034 | 0,038 |
| P6 | MM06-06007-B90A30-M02 F40M | 1,3 | 0,032 | 0,032 | 0,034 | 0,038 |
| P7 | MM06-06007-B90A30-M02 F40M | 1,3 | 0,032 | 0,032 | 0,034 | 0,038 |
| P8 | MM06-06007-B90A30-M02 F40M | 1,3 | 0,034 | 0,034 | 0,036 | 0,040 |
| P11 | MM06-06007-B90A30-M02 F40M | 1,3 | 0,032 | 0,032 | 0,034 | 0,038 |
| P12 | MM06-06007-B90A30-M02 F40M | 1,0 | 0,024 | 0,024 | 0,024 | 0,026 |
| M1 | MM06-06007-B90A30-M02 F40M | 1,3 | 0,036 | 0,036 | 0,038 | 0,042 |
| M2 | MM06-06007-B90A30-M02 F40M | 1,3 | 0,032 | 0,032 | 0,034 | 0,038 |
| M3 | MM06-06007-B90A30-M02 F40M | 1,0 | 0,028 | 0,028 | 0,028 | 0,030 |
| M4 | MM06-06007-B90A30-M02 F40M | 0,75 | 0,026 | 0,026 | 0,026 | 0,028 |
| M5 | MM06-06007-B90A30-M02 F40M | 0,75 | 0,026 | 0,026 | 0,026 | 0,028 |
| K1 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,036 | 0,038 | 0,042 |
| K2 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,032 | 0,032 | 0,034 | 0,038 |
| K3 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,032 | 0,032 | 0,034 | 0,038 |
| K4 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,032 | 0,032 | 0,034 | 0,038 |
| K5 | MM06-06407-B90A30-D02 F30M | 1,3 | 0,030 | 0,030 | 0,032 | 0,034 |
| K6 | MM06-06407-B90A30-D02 F30M | 1,3 | 0,034 | 0,034 | 0,034 | 0,038 |
| K7 | MM06-06407-B90A30-D02 F30M | 1,3 | 0,030 | 0,030 | 0,032 | 0,034 |
| N1 | MM06-06407-B90A30-E02 F30M | 1,3 | 0,046 | 0,046 | 0,048 | 0,055 |
| N2 | MM06-06407-B90A30-E02 F30M | 1,3 | 0,046 | 0,046 | 0,048 | 0,055 |
| N3 | MM06-06407-B90A30-E02 F30M | 1,3 | 0,046 | 0,046 | 0,048 | 0,055 |
| N11 | MM06-06407-B90A30-E02 F30M | 1,3 | 0,046 | 0,046 | 0,048 | 0,055 |
| S1 | MM06-06407-B90A30-D02 F30M | 0,75 | 0,026 | 0,026 | 0,026 | 0,028 |
| S2 | MM06-06407-B90A30-D02 F30M | 0,75 | 0,026 | 0,026 | 0,026 | 0,028 |
| S3 | MM06-06407-B90A30-D02 F30M | 0,75 | 0,024 | 0,024 | 0,024 | 0,026 |
| S11 | MM06-06007-R05A30-M02 F40M | 0,90 | 0,024 | 0,024 | 0,030 | 0,040 |
| S12 | MM06-06007-R05A30-M02 F40M | 0,90 | 0,024 | 0,024 | 0,030 | 0,040 |
| S13 | MM06-06007-R05A30-M02 F40M | 0,75 | 0,022 | 0,022 | 0,028 | 0,036 |
| H5 | MM06-06407-B90A30-D02 F30M | 1,0 | 0,024 | 0,024 | 0,024 | 0,026 |
| H8 | MM06-06407-B90A30-D02 F30M | 0,90 | 0,018 | 0,018 | 0,018 | 0,020 |
| H11 | MM06-06407-B90A30-D02 F30M | 1,0 | 0,024 | 0,024 | 0,024 | 0,026 |
| H12 | MM06-06407-B90A30-D02 F30M | 0,90 | 0,018 | 0,018 | 0,018 | 0,020 |
| H21 | MM06-06407-B90A30-D02 F30M | 0,90 | 0,018 | 0,018 | 0,018 | 0,020 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MM06 Z3-Copy – Insert selection – Semi finishing

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,038 | 0,040 | 0,044 | 0,048 |
| P2 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,040 | 0,042 | 0,046 | 0,048 |
| P3 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,038 | 0,040 | 0,042 | 0,046 |
| P4 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| P5 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| P6 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,040 | 0,044 |
| P7 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,040 | 0,044 |
| P8 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,038 | 0,040 | 0,042 | 0,046 |
| P11 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,040 | 0,044 |
| P12 | MM06-06007-B90A30-E02 F30M | 1,0 | 0,024 | 0,026 | 0,028 | 0,030 |
| M1 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,040 | 0,042 | 0,046 | 0,048 |
| M2 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| M3 | MM06-06007-B90A30-E02 F30M | 1,0 | 0,030 | 0,030 | 0,032 | 0,034 |
| M4 | MM06-06007-B90A30-E02 F30M | 0,75 | 0,026 | 0,028 | 0,028 | 0,030 |
| M5 | MM06-06007-B90A30-E02 F30M | 0,75 | 0,026 | 0,028 | 0,028 | 0,030 |
| K1 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,040 | 0,042 | 0,046 | 0,048 |
| K2 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| K3 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| K4 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| K5 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,032 | 0,034 | 0,038 | 0,040 |
| K6 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| K7 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,032 | 0,034 | 0,038 | 0,040 |
| N1 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,050 | 0,055 | 0,060 | 0,060 |
| N2 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,050 | 0,055 | 0,060 | 0,060 |
| N3 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,050 | 0,055 | 0,060 | 0,060 |
| N11 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,050 | 0,055 | 0,060 | 0,060 |
| S1 | MM06-06007-B90A30-E02 F30M | 0,75 | 0,026 | 0,028 | 0,028 | 0,030 |
| S2 | MM06-06007-B90A30-E02 F30M | 0,75 | 0,026 | 0,028 | 0,028 | 0,030 |
| S3 | MM06-06407-B90A30-D02 F30M | 0,75 | 0,024 | 0,026 | 0,026 | 0,028 |
| S11 | MM06-06007-B90A30-E02 F30M | 0,90 | 0,030 | 0,030 | 0,032 | 0,034 |
| S12 | MM06-06007-B90A30-E02 F30M | 0,90 | 0,030 | 0,030 | 0,032 | 0,034 |
| S13 | MM06-06007-B90A30-E02 F30M | 0,75 | 0,026 | 0,028 | 0,028 | 0,030 |
| H5 | MM06-06407-B90A30-E02 F30M | 1,0 | 0,024 | 0,026 | 0,028 | 0,028 |
| H8 | MM06-06407-B90A30-E02 F30M | 0,90 | 0,019 | 0,020 | 0,022 | 0,022 |
| H11 | MM06-06407-B90A30-E02 F30M | 1,0 | 0,024 | 0,026 | 0,028 | 0,028 |
| H12 | MM06-06407-B90A30-E02 F30M | 0,90 | 0,019 | 0,020 | 0,022 | 0,022 |
| H21 | MM06-06407-B90A30-E02 F30M | 0,90 | 0,019 | 0,020 | 0,022 | 0,022 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MM06 Z3-Copy Selection – Finishing

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,038 | 0,040 | 0,044 | 0,048 |
| P2 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,040 | 0,042 | 0,046 | 0,048 |
| P3 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,038 | 0,040 | 0,042 | 0,046 |
| P4 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| P5 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| P6 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,040 | 0,044 |
| P7 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,040 | 0,044 |
| P8 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,038 | 0,040 | 0,042 | 0,046 |
| P11 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,040 | 0,044 |
| P12 | MM06-06007-B90A30-E02 F30M | 1,0 | 0,024 | 0,026 | 0,028 | 0,030 |
| M1 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,040 | 0,042 | 0,046 | 0,048 |
| M2 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| M3 | MM06-06007-B90A30-E02 F30M | 1,0 | 0,030 | 0,030 | 0,032 | 0,034 |
| M4 | MM06-06007-B90A30-E02 F30M | 0,75 | 0,026 | 0,028 | 0,028 | 0,030 |
| M5 | MM06-06007-B90A30-E02 F30M | 0,75 | 0,026 | 0,028 | 0,028 | 0,030 |
| K1 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,040 | 0,042 | 0,046 | 0,048 |
| K2 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| K3 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| K4 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| K5 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,032 | 0,034 | 0,038 | 0,040 |
| K6 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,036 | 0,038 | 0,042 | 0,044 |
| K7 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,032 | 0,034 | 0,038 | 0,040 |
| N1 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,050 | 0,055 | 0,060 | 0,060 |
| N2 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,050 | 0,055 | 0,060 | 0,060 |
| N3 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,050 | 0,055 | 0,060 | 0,060 |
| N11 | MM06-06007-B90A30-E02 F30M | 1,3 | 0,050 | 0,055 | 0,060 | 0,060 |
| S1 | MM06-06007-B90A30-E02 F30M | 0,75 | 0,026 | 0,028 | 0,028 | 0,030 |
| S2 | MM06-06007-B90A30-E02 F30M | 0,75 | 0,026 | 0,028 | 0,028 | 0,030 |
| S3 | MM06-06007-B90A30-E02 F30M | 0,75 | 0,024 | 0,026 | 0,026 | 0,028 |
| S11 | MM06-06007-B90A30-E02 F30M | 0,90 | 0,030 | 0,030 | 0,032 | 0,034 |
| S12 | MM06-06007-B90A30-E02 F30M | 0,90 | 0,030 | 0,030 | 0,032 | 0,034 |
| S13 | MM06-06007-B90A30-E02 F30M | 0,75 | 0,026 | 0,028 | 0,028 | 0,030 |
| H5 | MM06-06007-B90A30-E02 F30M | 1,0 | 0,024 | 0,026 | 0,028 | 0,030 |
| H8 | MM06-06007-B90A30-E02 F30M | 0,90 | 0,019 | 0,020 | 0,022 | 0,022 |
| H11 | MM06-06007-B90A30-E02 F30M | 1,0 | 0,024 | 0,026 | 0,028 | 0,030 |
| H12 | MM06-06007-B90A30-E02 F30M | 0,90 | 0,019 | 0,020 | 0,022 | 0,022 |
| H21 | MM06-06007-B90A30-E02 F30M | 0,90 | 0,019 | 0,020 | 0,022 | 0,022 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MM06 Z3-Copy – Cutting data

| SMG | F30M | | | | | F40M | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|
| | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% |
| P1 | 295 | 350 | 370 | 405 | 400 | 280 | 330 | 355 | 385 | 380 |
| P2 | 285 | 340 | 360 | 395 | 390 | 275 | 325 | 345 | 375 | 370 |
| P3 | 250 | 295 | 315 | 340 | 340 | 235 | 280 | 300 | 320 | 325 |
| P4 | 220 | 260 | 275 | 300 | 300 | 210 | 245 | 265 | 285 | 285 |
| P5 | 210 | 245 | 265 | 285 | 285 | 200 | 235 | 250 | 275 | 270 |
| P6 | 235 | 280 | 295 | 320 | 320 | 225 | 265 | 285 | 305 | 305 |
| P7 | 225 | 265 | 280 | 305 | 300 | 210 | 250 | 265 | 290 | 285 |
| P8 | 210 | 245 | 265 | 285 | 285 | 200 | 235 | 250 | 270 | 270 |
| P11 | 215 | 255 | 270 | 295 | 295 | 205 | 245 | 260 | 280 | 280 |
| P12 | 135 | 165 | 165 | 180 | 180 | 125 | 160 | 160 | 170 | 170 |
| M1 | — | — | — | — | — | 220 | 260 | 280 | 300 | 300 |
| M2 | — | — | — | — | — | 180 | 210 | 225 | 245 | 245 |
| M3 | — | — | — | — | — | 140 | 175 | 175 | 190 | 190 |
| M4 | — | — | — | — | — | 95 | 135 | 135 | 145 | 145 |
| M5 | — | — | — | — | — | 80 | 115 | 110 | 120 | 120 |
| K1 | 230 | 270 | 285 | 310 | 310 | 215 | 255 | 275 | 295 | 295 |
| K2 | 200 | 235 | 250 | 270 | 270 | 190 | 225 | 240 | 260 | 255 |
| K3 | 170 | 200 | 210 | 230 | 230 | 160 | 190 | 200 | 220 | 220 |
| K4 | 160 | 190 | 205 | 220 | 220 | 155 | 180 | 195 | 210 | 210 |
| K5 | 95 | 115 | 120 | 130 | 130 | 90 | 110 | 115 | 125 | 125 |
| K6 | 140 | 165 | 180 | 195 | 190 | 135 | 160 | 170 | 185 | 185 |
| K7 | 125 | 145 | 155 | 170 | 170 | 120 | 140 | 150 | 160 | 160 |
| N1 | 1750 | 2075 | 2200 | 2375 | 2375 | 1675 | 1975 | 2100 | 2275 | 2250 |
| N2 | 710 | 830 | 890 | 960 | 950 | 670 | 790 | 850 | 920 | 910 |
| N3 | 470 | 560 | 590 | 640 | 640 | 450 | 530 | 570 | 610 | 610 |
| N11 | 540 | 630 | 680 | 730 | 730 | 510 | 600 | 650 | 700 | 690 |
| S1 | 47 | 65 | 65 | 70 | 70 | 45 | 65 | 65 | 70 | 65 |
| S2 | 38 | 55 | 55 | 55 | 55 | 36 | 50 | 50 | 55 | 55 |
| S3 | 33 | 47 | 46 | 50 | 49 | 32 | 44 | 44 | 47 | 47 |
| S11 | — | — | — | — | — | 70 | 90 | 90 | 95 | 95 |
| S12 | — | — | — | — | — | 48 | 60 | 60 | 65 | 65 |
| S13 | — | — | — | — | — | 25 | 36 | 35 | 38 | 38 |
| H5 | 44 | 55 | 55 | 60 | 60 | 42 | 55 | 55 | 55 | 55 |
| H8 | 44 | 55 | 55 | 60 | 60 | 42 | 55 | 55 | 60 | 60 |
| H11 | 55 | 70 | 70 | 75 | 75 | 55 | 65 | 65 | 70 | 75 |
| H12 | 80 | 100 | 100 | 110 | 110 | 75 | 95 | 95 | 105 | 105 |
| H21 | 44 | 55 | 55 | 60 | 60 | 42 | 55 | 55 | 60 | 60 |

MM06 Z2-Copy – Insert selection – Roughing

| SMG | | a_p | f_z | | | |
|-----|--------------------------|-------|-------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM06-06006-B90S-E02 F30M | 2,5 | 0,030 | 0,032 | 0,036 | 0,044 |
| P2 | MM06-06006-B90S-E02 F30M | 2,5 | 0,032 | 0,032 | 0,036 | 0,044 |
| P3 | MM06-06006-B90S-E02 F30M | 2,5 | 0,030 | 0,030 | 0,034 | 0,042 |
| P4 | MM06-06006-B90-MD02 F30M | 2,5 | 0,030 | 0,030 | 0,034 | 0,040 |
| P5 | MM06-06006-B90-MD02 F30M | 2,5 | 0,028 | 0,028 | 0,034 | 0,040 |
| P6 | MM06-06006-B90-MD02 F30M | 2,5 | 0,028 | 0,028 | 0,032 | 0,040 |
| P7 | MM06-06006-B90-MD02 F30M | 2,5 | 0,028 | 0,028 | 0,032 | 0,040 |
| P8 | MM06-06006-B90-MD02 F30M | 2,5 | 0,030 | 0,030 | 0,034 | 0,042 |
| P11 | MM06-06006-B90-MD02 F30M | 2,5 | 0,028 | 0,028 | 0,032 | 0,040 |
| P12 | MM06-06006-B90-MD02 F30M | 1,9 | 0,020 | 0,020 | 0,022 | 0,026 |
| M1 | MM06-06006-B90S-E02 F30M | 2,5 | 0,032 | 0,032 | 0,036 | 0,044 |
| M2 | MM06-06006-B90S-E02 F30M | 2,5 | 0,028 | 0,028 | 0,034 | 0,040 |
| M3 | MM06-06006-B90S-E02 F30M | 1,9 | 0,024 | 0,024 | 0,026 | 0,030 |
| M4 | MM06-06006-B90-MD02 F30M | 1,4 | 0,022 | 0,022 | 0,024 | 0,026 |
| M5 | MM06-06006-B90-MD02 F30M | 1,4 | 0,022 | 0,022 | 0,024 | 0,026 |
| K1 | MM06-06006-B90S-E02 F30M | 2,5 | 0,032 | 0,032 | 0,036 | 0,044 |
| K2 | MM06-06006-B90S-E02 F30M | 2,5 | 0,028 | 0,028 | 0,034 | 0,040 |
| K3 | MM06-06006-B90S-E02 F30M | 2,5 | 0,028 | 0,028 | 0,034 | 0,040 |
| K4 | MM06-06006-B90S-E02 F30M | 2,5 | 0,028 | 0,028 | 0,034 | 0,040 |
| K5 | MM06-06006-B90S-E02 F30M | 2,5 | 0,026 | 0,026 | 0,030 | 0,036 |
| K6 | MM06-06006-B90-MD02 F30M | 2,5 | 0,028 | 0,028 | 0,034 | 0,040 |
| K7 | MM06-06006-B90-MD02 F30M | 2,5 | 0,026 | 0,026 | 0,030 | 0,036 |
| N1 | MM06-06006-B90S-E02 F30M | 2,5 | 0,040 | 0,040 | 0,046 | 0,055 |
| N2 | MM06-06006-B90S-E02 F30M | 2,5 | 0,040 | 0,040 | 0,046 | 0,055 |
| N3 | MM06-06006-B90S-E02 F30M | 2,5 | 0,040 | 0,040 | 0,046 | 0,055 |
| N11 | MM06-06006-B90S-E02 F30M | 2,5 | 0,040 | 0,040 | 0,046 | 0,055 |
| S1 | MM06-06006-B90-MD02 F30M | 1,4 | 0,022 | 0,022 | 0,024 | 0,026 |
| S2 | MM06-06006-B90-MD02 F30M | 1,4 | 0,022 | 0,022 | 0,024 | 0,026 |
| S3 | MM06-06006-B90-MD02 F30M | 1,4 | 0,020 | 0,020 | 0,022 | 0,024 |
| S11 | MM06-06006-B90-MD02 F30M | 1,7 | 0,024 | 0,024 | 0,026 | 0,030 |
| S12 | MM06-06006-B90-MD02 F30M | 1,7 | 0,024 | 0,024 | 0,026 | 0,030 |
| S13 | MM06-06006-B90-MD02 F30M | 1,4 | 0,022 | 0,022 | 0,024 | 0,026 |
| H5 | MM06-06006-B90-MD02 F30M | 1,9 | 0,020 | 0,020 | 0,022 | 0,026 |
| H8 | MM06-06006-B90-MD02 F30M | 1,7 | 0,016 | 0,016 | 0,017 | 0,020 |
| H11 | MM06-06006-B90-MD02 F30M | 1,9 | 0,020 | 0,020 | 0,022 | 0,026 |
| H12 | MM06-06006-B90-MD02 F30M | 1,7 | 0,016 | 0,016 | 0,017 | 0,020 |
| H21 | MM06-06006-B90-MD02 F30M | 1,7 | 0,016 | 0,016 | 0,017 | 0,020 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MM06 Z2-Copy – Insert selection – Finishing

| SMG | | a _p | f _z | | | |
|-----|---------------------------|----------------|----------------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,019 | 0,022 | 0,026 | 0,030 |
| P2 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,020 | 0,022 | 0,026 | 0,030 |
| P3 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,019 | 0,020 | 0,024 | 0,030 |
| P4 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,018 | 0,020 | 0,024 | 0,028 |
| P5 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,018 | 0,020 | 0,024 | 0,028 |
| P6 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,018 | 0,020 | 0,024 | 0,028 |
| P7 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,018 | 0,020 | 0,024 | 0,028 |
| P8 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,019 | 0,020 | 0,024 | 0,030 |
| P11 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,018 | 0,020 | 0,024 | 0,028 |
| P12 | MM06-06006-B90PF-M01 F15M | 1,9 | 0,012 | 0,013 | 0,015 | 0,016 |
| M1 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,020 | 0,022 | 0,026 | 0,030 |
| M2 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,018 | 0,020 | 0,024 | 0,028 |
| M3 | MM06-06006-B90PF-M01 F15M | 1,9 | 0,014 | 0,015 | 0,017 | 0,019 |
| M4 | MM06-06006-B90PF-M01 F15M | 1,4 | 0,012 | 0,013 | 0,014 | 0,016 |
| M5 | MM06-06006-B90PF-M01 F15M | 1,4 | 0,012 | 0,013 | 0,014 | 0,016 |
| K1 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,020 | 0,022 | 0,026 | 0,030 |
| K2 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,018 | 0,020 | 0,024 | 0,028 |
| K3 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,018 | 0,020 | 0,024 | 0,028 |
| K4 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,018 | 0,020 | 0,024 | 0,028 |
| K5 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,016 | 0,018 | 0,022 | 0,026 |
| K6 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,018 | 0,020 | 0,024 | 0,028 |
| K7 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,016 | 0,018 | 0,022 | 0,026 |
| N1 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,026 | 0,028 | 0,034 | 0,040 |
| N2 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,026 | 0,028 | 0,034 | 0,040 |
| N3 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,026 | 0,028 | 0,034 | 0,040 |
| N11 | MM06-06006-B90PF-M01 F15M | 2,5 | 0,026 | 0,028 | 0,034 | 0,040 |
| S1 | MM06-06006-B90PF-M01 F15M | 1,4 | 0,012 | 0,013 | 0,014 | 0,016 |
| S2 | MM06-06006-B90PF-M01 F15M | 1,4 | 0,012 | 0,013 | 0,014 | 0,016 |
| S3 | MM06-06006-B90PF-M01 F15M | 1,4 | 0,012 | 0,012 | 0,013 | 0,014 |
| S11 | MM06-06006-B90PF-M01 F15M | 1,7 | 0,014 | 0,015 | 0,017 | 0,019 |
| S12 | MM06-06006-B90PF-M01 F15M | 1,7 | 0,014 | 0,015 | 0,017 | 0,019 |
| S13 | MM06-06006-B90PF-M01 F15M | 1,4 | 0,012 | 0,013 | 0,014 | 0,016 |
| H5 | MM06-06006-B90PF-M01 F15M | 1,9 | 0,012 | 0,013 | 0,015 | 0,016 |
| H8 | MM06-06006-B90PF-M01 F15M | 1,7 | 0,0090 | 0,010 | 0,011 | 0,012 |
| H11 | MM06-06006-B90PF-M01 F15M | 1,9 | 0,012 | 0,013 | 0,015 | 0,016 |
| H12 | MM06-06006-B90PF-M01 F15M | 1,7 | 0,0090 | 0,010 | 0,011 | 0,012 |
| H21 | MM06-06006-B90PF-M01 F15M | 1,7 | 0,0090 | 0,010 | 0,011 | 0,012 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_φ/DC = %

All cutting data are start values

MM06 Z2-Copy_ – Insert selection – Semi finishing

| SMG | | a _p | f _z | | | |
|-----|--------------------------|----------------|----------------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM06-06006-B90P-M02 F30M | 2,5 | 0,038 | 0,044 | 0,050 | 0,060 |
| P2 | MM06-06006-B90P-M02 F30M | 2,5 | 0,040 | 0,044 | 0,055 | 0,060 |
| P3 | MM06-06006-B90P-M02 F30M | 2,5 | 0,038 | 0,042 | 0,050 | 0,060 |
| P4 | MM06-06006-B90P-M02 F30M | 2,5 | 0,036 | 0,040 | 0,048 | 0,060 |
| P5 | MM06-06006-B90P-M02 F30M | 2,5 | 0,036 | 0,040 | 0,048 | 0,055 |
| P6 | MM06-06006-B90P-M02 F30M | 2,5 | 0,036 | 0,040 | 0,048 | 0,055 |
| P7 | MM06-06006-B90P-M02 F30M | 2,5 | 0,036 | 0,040 | 0,048 | 0,055 |
| P8 | MM06-06006-B90P-M02 F30M | 2,5 | 0,038 | 0,042 | 0,050 | 0,060 |
| P11 | MM06-06006-B90P-M02 F30M | 2,5 | 0,036 | 0,040 | 0,048 | 0,055 |
| P12 | MM06-06006-B90P-M02 F30M | 1,9 | 0,024 | 0,026 | 0,030 | 0,032 |
| M1 | MM06-06006-B90P-M02 F30M | 2,5 | 0,040 | 0,044 | 0,055 | 0,060 |
| M2 | MM06-06006-B90P-M02 F30M | 2,5 | 0,036 | 0,040 | 0,048 | 0,055 |
| M3 | MM06-06006-B90P-M02 F30M | 1,9 | 0,028 | 0,030 | 0,034 | 0,038 |
| M4 | MM06-06006-B90P-M02 F30M | 1,4 | 0,024 | 0,026 | 0,028 | 0,032 |
| M5 | MM06-06006-B90P-M02 F30M | 1,4 | 0,024 | 0,026 | 0,028 | 0,032 |
| K1 | MM06-06006-B90P-M02 F30M | 2,5 | 0,040 | 0,044 | 0,055 | 0,060 |
| K2 | MM06-06006-B90P-M02 F30M | 2,5 | 0,036 | 0,040 | 0,048 | 0,055 |
| K3 | MM06-06006-B90P-M02 F30M | 2,5 | 0,036 | 0,040 | 0,048 | 0,055 |
| K4 | MM06-06006-B90P-M02 F30M | 2,5 | 0,036 | 0,040 | 0,048 | 0,055 |
| K5 | MM06-06006-B90P-M02 F30M | 2,5 | 0,032 | 0,036 | 0,044 | 0,050 |
| K6 | MM06-06006-B90P-M02 F30M | 2,5 | 0,036 | 0,040 | 0,048 | 0,055 |
| K7 | MM06-06006-B90P-M02 F30M | 2,5 | 0,032 | 0,036 | 0,044 | 0,050 |
| N1 | MM06-06006-B90P-M02 F30M | 2,5 | 0,050 | 0,055 | 0,065 | 0,080 |
| N2 | MM06-06006-B90P-M02 F30M | 2,5 | 0,050 | 0,055 | 0,065 | 0,080 |
| N3 | MM06-06006-B90P-M02 F30M | 2,5 | 0,050 | 0,055 | 0,065 | 0,080 |
| N11 | MM06-06006-B90P-M02 F30M | 2,5 | 0,050 | 0,055 | 0,065 | 0,080 |
| S1 | MM06-06006-B90P-M02 F30M | 1,4 | 0,024 | 0,026 | 0,028 | 0,032 |
| S2 | MM06-06006-B90P-M02 F30M | 1,4 | 0,024 | 0,026 | 0,028 | 0,032 |
| S3 | MM06-06006-B90P-M02 F30M | 1,4 | 0,024 | 0,024 | 0,026 | 0,028 |
| S11 | MM06-06006-B90P-M02 F30M | 1,7 | 0,028 | 0,030 | 0,034 | 0,038 |
| S12 | MM06-06006-B90P-M02 F30M | 1,7 | 0,028 | 0,030 | 0,034 | 0,038 |
| S13 | MM06-06006-B90P-M02 F30M | 1,4 | 0,024 | 0,026 | 0,028 | 0,032 |
| H5 | MM06-06006-B90P-M02 F30M | 1,9 | 0,024 | 0,026 | 0,030 | 0,032 |
| H8 | MM06-06006-B90P-M02 F30M | 1,7 | 0,018 | 0,020 | 0,022 | 0,024 |
| H11 | MM06-06006-B90P-M02 F30M | 1,9 | 0,024 | 0,026 | 0,030 | 0,032 |
| H12 | MM06-06006-B90P-M02 F30M | 1,7 | 0,018 | 0,020 | 0,022 | 0,024 |
| H21 | MM06-06006-B90P-M02 F30M | 1,7 | 0,018 | 0,020 | 0,022 | 0,024 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MM06 Z2-Copy – Cutting data

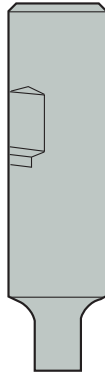
| SMG | F15M | | | | | F30M | | | | | T60M | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% |
| P1 | 315 | 395 | 430 | 465 | 465 | 275 | 345 | 375 | 405 | 405 | 225 | 280 | 305 | 330 | 325 |
| P2 | 305 | 385 | 420 | 450 | 450 | 265 | 335 | 365 | 395 | 395 | 215 | 270 | 295 | 320 | 320 |
| P3 | 265 | 330 | 360 | 390 | 390 | 230 | 290 | 315 | 340 | 340 | 190 | 235 | 255 | 275 | 275 |
| P4 | 235 | 290 | 320 | 345 | 345 | 205 | 255 | 280 | 305 | 300 | 165 | 205 | 225 | 245 | 245 |
| P5 | 225 | 280 | 305 | 330 | 330 | 195 | 245 | 265 | 290 | 290 | 160 | 200 | 215 | 235 | 235 |
| P6 | 250 | 315 | 340 | 370 | 370 | 220 | 275 | 300 | 325 | 325 | 180 | 225 | 245 | 265 | 260 |
| P7 | 235 | 295 | 320 | 350 | 350 | 210 | 260 | 285 | 305 | 305 | 170 | 210 | 230 | 250 | 245 |
| P8 | 225 | 280 | 305 | 325 | 330 | 195 | 245 | 265 | 285 | 290 | 160 | 200 | 215 | 230 | 235 |
| P11 | 230 | 285 | 310 | 340 | 340 | 200 | 255 | 275 | 300 | 295 | 165 | 205 | 220 | 240 | 240 |
| P12 | 145 | 180 | 185 | 200 | 200 | 130 | 160 | 170 | 180 | 180 | 105 | 130 | 135 | 145 | 145 |
| M1 | 250 | 310 | 335 | 365 | 365 | 215 | 270 | 295 | 320 | 315 | 175 | 220 | 240 | 260 | 255 |
| M2 | 200 | 250 | 275 | 295 | 295 | 175 | 220 | 240 | 260 | 260 | 145 | 180 | 195 | 210 | 210 |
| M3 | 160 | 200 | 210 | 225 | 225 | 145 | 180 | 185 | 205 | 200 | 115 | 145 | 150 | 165 | 165 |
| M4 | 125 | 160 | 160 | 170 | 170 | 110 | 145 | 140 | 155 | 155 | 90 | 115 | 115 | 125 | 125 |
| M5 | 105 | 135 | 130 | 140 | 140 | 95 | 120 | 120 | 130 | 130 | 75 | 100 | 95 | 105 | 105 |
| K1 | 245 | 305 | 330 | 355 | 355 | 210 | 265 | 290 | 315 | 310 | 170 | 215 | 235 | 255 | 250 |
| K2 | 215 | 265 | 290 | 310 | 310 | 185 | 230 | 255 | 275 | 275 | 150 | 190 | 205 | 220 | 220 |
| K3 | 180 | 225 | 245 | 265 | 265 | 160 | 195 | 215 | 230 | 230 | 130 | 160 | 175 | 190 | 185 |
| K4 | 170 | 215 | 235 | 250 | 250 | 150 | 185 | 205 | 220 | 220 | 120 | 150 | 165 | 180 | 180 |
| K5 | 105 | 130 | 140 | 150 | 150 | 90 | 115 | 125 | 135 | 135 | 75 | 90 | 100 | 110 | 105 |
| K6 | 150 | 190 | 205 | 220 | 220 | 135 | 165 | 180 | 195 | 195 | 105 | 135 | 145 | 160 | 155 |
| K7 | 130 | 165 | 180 | 190 | 190 | 115 | 145 | 155 | 170 | 170 | 95 | 115 | 125 | 140 | 140 |
| N1 | 1900 | 2350 | 2575 | 2800 | 2775 | 1625 | 2050 | 2225 | 2400 | 2375 | 1325 | 1650 | 1800 | 1950 | 1925 |
| N2 | 760 | 950 | 1050 | 1125 | 1125 | 660 | 820 | 900 | 970 | 960 | 530 | 670 | 730 | 790 | 780 |
| N3 | 510 | 630 | 690 | 750 | 750 | 440 | 550 | 600 | 650 | 640 | 355 | 445 | 485 | 520 | 520 |
| N11 | 580 | 730 | 790 | 860 | 850 | 500 | 630 | 680 | 740 | 730 | 405 | 510 | 550 | 600 | 590 |
| S1 | 60 | 75 | 75 | 80 | 80 | 50 | 70 | 65 | 70 | 70 | 42 | 55 | 55 | 60 | 60 |
| S2 | 47 | 60 | 60 | 65 | 65 | 42 | 55 | 55 | 60 | 60 | 34 | 44 | 43 | 47 | 47 |
| S3 | 40 | 50 | 50 | 55 | 55 | 37 | 47 | 46 | 50 | 50 | 30 | 38 | 38 | 40 | 40 |
| S11 | 80 | 105 | 105 | 115 | 115 | 75 | 95 | 95 | 105 | 100 | 60 | 75 | 75 | 85 | 85 |
| S12 | 55 | 75 | 75 | 80 | 80 | 50 | 65 | 65 | 70 | 70 | 41 | 55 | 55 | 55 | 55 |
| S13 | 33 | 42 | 41 | 45 | 45 | 29 | 38 | 37 | 40 | 40 | 24 | 31 | 30 | 33 | 33 |
| H5 | 47 | 60 | 60 | 65 | 65 | 43 | 55 | 55 | 60 | 60 | 35 | 44 | 45 | 49 | 49 |
| H8 | 48 | 60 | 60 | 65 | 65 | 44 | 55 | 55 | 60 | 60 | 36 | 46 | 46 | 50 | 50 |
| H11 | 60 | 75 | 80 | 85 | 85 | 55 | 70 | 70 | 75 | 75 | 44 | 55 | 55 | 60 | 60 |
| H12 | 85 | 110 | 110 | 120 | 120 | 80 | 100 | 100 | 110 | 110 | 65 | 80 | 85 | 90 | 90 |
| H21 | 48 | 60 | 60 | 65 | 65 | 44 | 55 | 55 | 60 | 60 | 36 | 46 | 46 | 50 | 50 |

Design 1



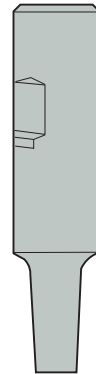
Keyway shank

Design 2



Cylindrical/Weldon back end and 90° front

Design 3



Cylindrical/Weldon back end tapered front 87°/89°

Design 4

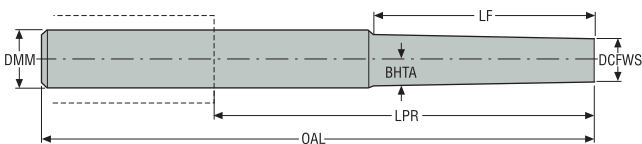


Cylindrical/Weldon back end tapered front 80°/85°/87°

Design 5



Cylindrical back end double tapered front end 89°/85°



MM08

| Design | Designation | Connecting size | Dimensions in mm | | | | | | | Spare part no. |
|--------|---------------------|-----------------|------------------|------|-------|------|-------|-------|-----|----------------|
| | | | DCSFWS | DMM | BHTA° | LF | OAL | LPR | | |
| 1 | MM08-12065.0-0000 | MM08 | 7,6 | 12,0 | 60,0 | 0,0 | 65,0 | 20,0 | 0,1 | 1 |
| 2 | MM08-10040.0-0007 | MM08 | 7,6 | 10,0 | 0,0 | 7,0 | 40,0 | 7,0 | 0,1 | 2 |
| 2 | MM08-10050.0-0007DS | MM08 | 7,6 | 10,0 | 0,0 | 7,0 | 50,0 | 10,0 | 0,1 | 3 |
| 2 | MM08-16070.3-0007 | MM08 | 7,6 | 16,0 | 0,0 | 7,6 | 70,0 | 22,0 | 0,1 | 1 |
| 2 | MM08-16085.0-0016DS | MM08 | 7,6 | 16,0 | 0,0 | 16,0 | 85,0 | 37,0 | 0,3 | 3 |
| 2 | MM08-16100.0-0032DS | MM08 | 7,6 | 16,0 | 0,0 | 32,0 | 100,0 | 52,0 | 0,3 | 3 |
| 3 | MM08-16075.3-3012 | MM08 | 7,6 | 16,0 | 3,0 | 12,0 | 75,0 | 27,0 | 0,1 | 1 |
| 4 | MM08-10080.0-3023DS | MM08 | 7,6 | 10,0 | 3,0 | 22,9 | 80,0 | 40,0 | 0,1 | 3 |
| 4 | MM08-16120.3-5048M | MM08 | 7,6 | 16,0 | 5,0 | 48,0 | 120,0 | 72,0 | 0,2 | 1 |
| 3 | MM08-16150.0-1030M | MM08 | 7,6 | 16,0 | 1,0 | 30,0 | 150,0 | 102,0 | 0,2 | 5 |
| 3 | MM08-12100.0-1035DS | MM08 | 7,6 | 12,0 | 1,0 | 35,0 | 100,0 | 55,0 | 0,2 | 2 |
| 3 | MM08-12120.0-1050DS | MM08 | 7,6 | 12,0 | 1,0 | 50,0 | 120,0 | 75,0 | 0,2 | 2 |
| 3 | MM08-16150.0-1050M | MM08 | 7,6 | 16,0 | 1,0 | 50,0 | 150,0 | 102,0 | 0,2 | 6 |
| 3 | MM08-16150.0-1050DS | MM08 | 7,6 | 16,0 | 1,0 | 50,0 | 150,0 | 102,0 | 0,4 | 3 |
| 3 | MM08-16150.0-1070M | MM08 | 7,6 | 16,0 | 1,0 | 70,0 | 150,0 | 102,0 | 0,2 | 6 |
| 3 | MM08-16150.0-1070DS | MM08 | 7,6 | 16,0 | 1,0 | 70,0 | 150,0 | 102,0 | 0,3 | 3 |
| 5 | MM08-20250.0-1050DS | MM08 | 7,6 | 20,0 | 1,0 | 50,0 | 250,0 | 200,0 | 1,0 | 3 |

*For design 9, the l₁ value is valid on the 89° tapered part

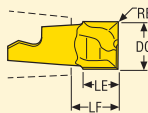
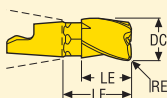
Spare Parts

| Spare part no. | Tension screw | Sleeve |
|----------------|---------------|----------|
| | | – |
| 1 | MM08-0524 | MM-05044 |
| 2 | MM08-0524 | MM-05019 |
| 3 | MM08-0524 | – |
| 5 | MM08-0543 | MM-05044 |
| 6 | MM08-0582 | MM-05044 |

Please check availability in current price and stock-list
Allen key H05-4 for sleeve to be ordered separately.

For wrench types, see insert pages

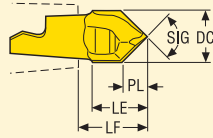
Slot milling/square shoulder milling



| Insert type | Designation | Dimensions in mm | | | | ZNP | Wrench | Coated | | | | |
|----------------|------------------------------|------------------|-----|-----|------|-----|--------|--------|------|------|------|---|
| | | LE | DC | RE | LF | | | Grades | | | | |
| | | | | | | | | T60M | F15M | F30M | F40M | |
| 3-flute | MM08-08009-A30-E03 | 10,0 | 8,0 | 0,0 | 13,0 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM08-08009-R05A30-M03 | 10,0 | 8,0 | 0,5 | 13,0 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM08-08009-R10A30-D03 | 10,0 | 8,0 | 1,0 | 13,0 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM08-08009-R10A30-E03 | 10,0 | 8,0 | 1,0 | 13,0 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM08-08009-R10A30-M03 | 10,0 | 8,0 | 1,0 | 13,0 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM08-08009-R20A30-M03 | 10,0 | 8,0 | 2,0 | 13,0 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM08-08009-R30A30-M03 | 10,0 | 8,0 | 3,0 | 13,0 | 3 | MM0416 | | | | ■ | |
| 2-flute | MM08-08005-M03 | 5,5 | 8,0 | 0,0 | 6,8 | 2 | MM0612 | ■ | | | | |
| 2-flute | MM08-08005-R04-MD03 | 5,5 | 8,0 | 0,4 | 6,79 | 2 | MM0612 | ■ | | ■ | | |
| 2-flute | MM08-08005-R04P-M02 | 5,4 | 8,0 | 0,4 | 6,71 | 2 | MM0612 | | | ■ | | |
| 2-flute | MM08-08005-R10-MD03 | 5,48 | 8,0 | 1,0 | 6,78 | 2 | MM0612 | | | ■ | | |
| 2-flute | MM08-08005-R04A8-E03 | 5,4 | 8,0 | 0,4 | 6,71 | 2 | MM0612 | ■ | | ■ | | |
| Keyway 3-flute | MM08-07809-R02A30-M03 | 10,0 | 7,8 | 0,2 | 13,0 | 3 | MM0416 | | | | | ■ |
| Keyway 2-flute | MM08-07805T-R02-D03 | 5,49 | 7,8 | 0,2 | 6,79 | 2 | MM0612 | ■ | | | | |

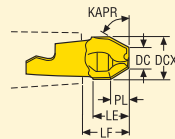
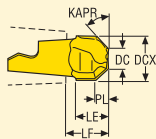
For Torque keys and torque values, see page 631

Centre drilling



| Insert type | Designation | Dimensions in mm | | | | SIG° | ZNP | Wrench | Coated | | | | |
|-------------|---------------------|------------------|------|------|------|-------|-----|--------|--------|------|------|------|--|
| | | DC | LE | LF | PL | | | | Grades | | | | |
| | | | | | | | | | T60M | F15M | F30M | F40M | |
| 90° | MM08-08004-C90-M03 | 8,0 | 8,0 | 9,5 | 3,79 | 90,0 | 2 | MM0612 | ■ | | | | |
| 120° | MM08-08006-C120-M03 | 8,0 | 8,32 | 9,46 | 2,15 | 120,0 | 2 | MM0612 | ■ | | | | |
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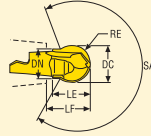
Chamfering



| Insert type | Designation | Dimensions in mm | | | | KAPR° | ZNP | Wrench | Coated | | | | | |
|-------------|---------------------|------------------|-----|------|------|-------|------|--------|--------|--------|------|------|------|--|
| | | DC | DCX | LE | LF | | | | PL | Grades | | | | |
| | | | | | | | | | | T60M | F15M | F30M | F40M | |
| 45° | MM08-08005-4520-E03 | 3,87 | 8,0 | 5,5 | 6,7 | 2,0 | 45,0 | 2 | MM0612 | ■ | | | | |
| 60° | MM08-08006-6030-E03 | 4,19 | 8,0 | 6,45 | 7,66 | 3,3 | 60,0 | 2 | MM0612 | ■ | | | | |
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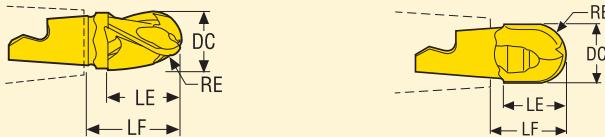
For Torque keys and torque values, see page 631

Precision inserts for semi-finishing in all materials



| Insert type | Designation | Dimensions in mm | | | | | | | | Coated | | | | |
|-------------|-----------------------|------------------|-----|------|-------|-----|-------|-----|--------|--------|------|------|------|--|
| | | DC | RE | LE | LF | DN | SA° | ZNP | Wrench | Grades | | | | |
| | | | | | | | | | | T60M | F15M | F30M | F40M | |
| 2-flute | MM08-10010-B120PF-M02 | 10,0 | 5,0 | 10,0 | 10,97 | 8,0 | 254,0 | 2 | MM0612 | | ■ | | | |
| 2-flute | MM08-10010-B120P-M04 | 10,0 | 5,0 | 10,0 | 10,97 | 8,0 | 254,0 | 2 | MM0612 | | | ■ | | |
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Copy milling



| Insert type | Designation | Dimensions in mm | | | | | Coated | | | | | |
|-------------|-----------------------|------------------|-----|-----|------|-----|--------|--------|------|------|------|--|
| | | LE | DC | RE | LF | ZNP | Wrench | Grades | | | | |
| | | | | | | | | T60M | F15M | F30M | F40M | |
| 3-flute | MM08-08009-B90A30-E03 | 10,0 | 8,0 | 4,0 | 13,0 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM08-08009-B90A30-M03 | 10,0 | 8,0 | 4,0 | 13,0 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM08-08009-B90A30-D03 | 10,0 | 8,0 | 4,0 | 13,0 | 3 | MM0416 | | | ■ | | |
| 2-flute | MM08-08008-B90-MD03 | 8,19 | 8,0 | 4,0 | 9,42 | 2 | MM0612 | ■ | | ■ | | |
| 2-flute | MM08-08008-B90S-E03 | 8,19 | 8,0 | 4,0 | 9,42 | 2 | MM0612 | | | ■ | | |
| 2-flute | MM08-08008-B90P-M03 | 6,98 | 8,0 | 4,0 | 9,39 | 2 | MM0612 | | | ■ | | |
| 2-flute | MM08-08008-B90PF-M01 | 6,98 | 8,0 | 4,0 | 9,39 | 2 | MM0612 | | ■ | | | |
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For Torque keys and torque values, see page 631

MM08 – General Insert selection

| SMG | | a _p | f _z | | | |
|-----|----------------------------|----------------|----------------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM08-08009-R05A30-M03 F40M | 1,8 | 0,044 | 0,044 | 0,055 | 0,075 |
| P2 | MM08-08009-R05A30-M03 F40M | 1,8 | 0,044 | 0,046 | 0,055 | 0,075 |
| P3 | MM08-08009-R05A30-M03 F40M | 1,8 | 0,042 | 0,042 | 0,055 | 0,070 |
| P4 | MM08-08009-R05A30-M03 F40M | 1,8 | 0,042 | 0,042 | 0,050 | 0,070 |
| P5 | MM08-08009-R05A30-M03 F40M | 1,8 | 0,040 | 0,042 | 0,050 | 0,070 |
| P6 | MM08-08009-R05A30-M03 F40M | 1,8 | 0,040 | 0,040 | 0,050 | 0,065 |
| P7 | MM08-08009-R05A30-M03 F40M | 1,8 | 0,040 | 0,040 | 0,050 | 0,065 |
| P8 | MM08-08009-R05A30-M03 F40M | 1,8 | 0,042 | 0,042 | 0,055 | 0,070 |
| P11 | MM08-08009-R05A30-M03 F40M | 1,8 | 0,040 | 0,040 | 0,050 | 0,065 |
| P12 | MM08-08009-R05A30-M03 F40M | 1,4 | 0,028 | 0,028 | 0,036 | 0,048 |
| M1 | MM08-08009-R05A30-M03 F40M | 1,8 | 0,044 | 0,046 | 0,055 | 0,075 |
| M2 | MM08-08009-R05A30-M03 F40M | 1,8 | 0,040 | 0,042 | 0,050 | 0,070 |
| M3 | MM08-08009-R05A30-M03 F40M | 1,4 | 0,034 | 0,034 | 0,042 | 0,055 |
| M4 | MM08-08009-R05A30-M03 F40M | 1,0 | 0,030 | 0,032 | 0,038 | 0,050 |
| M5 | MM08-08009-R05A30-M03 F40M | 1,0 | 0,030 | 0,032 | 0,038 | 0,050 |
| K1 | MM08-08009-R10A30-E03 F30M | 1,8 | 0,050 | 0,050 | 0,060 | 0,085 |
| K2 | MM08-08009-R10A30-E03 F30M | 1,8 | 0,044 | 0,046 | 0,055 | 0,075 |
| K3 | MM08-08009-R10A30-E03 F30M | 1,8 | 0,044 | 0,046 | 0,055 | 0,075 |
| K4 | MM08-08009-R10A30-E03 F30M | 1,8 | 0,044 | 0,046 | 0,055 | 0,075 |
| K5 | MM08-08009-R10A30-D03 F30M | 1,8 | 0,040 | 0,040 | 0,050 | 0,070 |
| K6 | MM08-08009-R10A30-D03 F30M | 1,8 | 0,044 | 0,046 | 0,055 | 0,075 |
| K7 | MM08-08009-R10A30-D03 F30M | 1,8 | 0,040 | 0,040 | 0,050 | 0,070 |
| N1 | MM08-08009-R10A30-E03 F30M | 1,8 | 0,060 | 0,065 | 0,080 | 0,11 |
| N2 | MM08-08009-R10A30-E03 F30M | 1,8 | 0,060 | 0,065 | 0,080 | 0,11 |
| N3 | MM08-08009-R10A30-E03 F30M | 1,8 | 0,060 | 0,065 | 0,080 | 0,11 |
| N11 | MM08-08009-R10A30-E03 F30M | 1,8 | 0,060 | 0,065 | 0,080 | 0,11 |
| S1 | MM08-08009-R10A30-D03 F30M | 1,0 | 0,038 | 0,040 | 0,048 | 0,065 |
| S2 | MM08-08009-R10A30-D03 F30M | 1,0 | 0,038 | 0,040 | 0,048 | 0,065 |
| S3 | MM08-08009-R10A30-D03 F30M | 1,0 | 0,036 | 0,036 | 0,044 | 0,060 |
| S11 | MM08-08009-R05A30-M03 F40M | 1,2 | 0,034 | 0,034 | 0,042 | 0,055 |
| S12 | MM08-08009-R05A30-M03 F40M | 1,2 | 0,034 | 0,034 | 0,042 | 0,055 |
| S13 | MM08-08009-R05A30-M03 F40M | 1,0 | 0,030 | 0,032 | 0,038 | 0,050 |
| H5 | MM08-08009-R10A30-E03 F30M | 1,4 | 0,032 | 0,034 | 0,040 | 0,055 |
| H8 | MM08-08009-R10A30-E03 F30M | 1,2 | 0,026 | 0,026 | 0,032 | 0,044 |
| H11 | MM08-08009-R10A30-E03 F30M | 1,4 | 0,032 | 0,034 | 0,040 | 0,055 |
| H12 | MM08-08009-R10A30-E03 F30M | 1,2 | 0,026 | 0,026 | 0,032 | 0,044 |
| H21 | MM08-08009-R10A30-E03 F30M | 1,2 | 0,026 | 0,026 | 0,032 | 0,044 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_φ/DC = %

All cutting data are start values

MM08 – General Cutting data

| SMG | F30M | | | | F40M | | | | T60M | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| | 100% | 40% | 20% | 10% | 100% | 40% | 20% | 10% | 100% | 40% | 20% | 10% |
| P1 | 265 | 330 | 370 | 410 | 255 | 315 | 350 | 385 | 205 | 250 | 280 | 310 |
| P2 | 255 | 320 | 360 | 390 | 245 | 305 | 340 | 375 | 195 | 245 | 275 | 300 |
| P3 | 225 | 280 | 315 | 340 | 215 | 265 | 295 | 325 | 170 | 210 | 240 | 260 |
| P4 | 195 | 245 | 275 | 300 | 190 | 235 | 260 | 290 | 150 | 185 | 210 | 230 |
| P5 | 190 | 235 | 265 | 290 | 180 | 225 | 250 | 275 | 145 | 180 | 200 | 220 |
| P6 | 215 | 265 | 295 | 325 | 205 | 255 | 280 | 310 | 160 | 200 | 225 | 250 |
| P7 | 200 | 250 | 280 | 310 | 190 | 240 | 265 | 290 | 155 | 190 | 215 | 235 |
| P8 | 190 | 235 | 265 | 285 | 180 | 225 | 250 | 270 | 145 | 180 | 200 | 220 |
| P11 | 195 | 245 | 270 | 300 | 185 | 230 | 260 | 285 | 150 | 185 | 210 | 230 |
| P12 | 120 | 150 | 170 | 185 | 115 | 145 | 160 | 175 | 95 | 115 | 130 | 145 |
| M1 | — | — | — | — | 200 | 245 | 275 | 305 | 160 | 195 | 220 | 240 |
| M2 | — | — | — | — | 165 | 200 | 225 | 250 | 130 | 160 | 180 | 200 |
| M3 | — | — | — | — | 130 | 160 | 180 | 195 | 105 | 130 | 145 | 155 |
| M4 | — | — | — | — | 100 | 120 | 135 | 150 | 80 | 100 | 110 | 120 |
| M5 | — | — | — | — | 80 | 100 | 115 | 125 | 65 | 85 | 90 | 100 |
| K1 | 205 | 255 | 285 | 310 | 195 | 240 | 270 | 300 | 155 | 195 | 215 | 235 |
| K2 | 180 | 225 | 250 | 275 | 170 | 210 | 235 | 260 | 135 | 170 | 190 | 210 |
| K3 | 155 | 190 | 210 | 235 | 145 | 180 | 200 | 220 | 115 | 145 | 160 | 180 |
| K4 | 145 | 180 | 200 | 225 | 140 | 170 | 190 | 210 | 110 | 140 | 155 | 170 |
| K5 | 90 | 110 | 120 | 135 | 85 | 105 | 115 | 125 | 65 | 85 | 95 | 100 |
| K6 | 130 | 160 | 180 | 195 | 120 | 150 | 170 | 185 | 95 | 120 | 135 | 150 |
| K7 | 115 | 140 | 155 | 170 | 110 | 135 | 150 | 165 | 85 | 105 | 120 | 130 |
| N1 | 1550 | 1950 | 2150 | 2350 | 1475 | 1850 | 2025 | 2250 | 1175 | 1475 | 1625 | 1800 |
| N2 | 630 | 780 | 870 | 950 | 600 | 750 | 820 | 910 | 475 | 590 | 660 | 720 |
| N3 | 420 | 520 | 580 | 630 | 400 | 495 | 550 | 610 | 315 | 395 | 440 | 485 |
| N11 | 480 | 600 | 660 | 720 | 455 | 570 | 630 | 690 | 360 | 455 | 500 | 550 |
| S1 | 48 | 60 | 65 | 75 | 46 | 55 | 65 | 70 | 37 | 47 | 50 | 55 |
| S2 | 39 | 48 | 55 | 60 | 37 | 46 | 50 | 55 | 30 | 37 | 41 | 45 |
| S3 | 34 | 42 | 47 | 50 | 32 | 40 | 45 | 49 | 26 | 33 | 36 | 39 |
| S11 | — | — | — | — | 65 | 80 | 90 | 100 | 50 | 65 | 75 | 80 |
| S12 | — | — | — | — | 45 | 55 | 60 | 70 | 36 | 45 | 50 | 55 |
| S13 | — | — | — | — | 26 | 32 | 36 | 39 | 21 | 26 | 29 | 31 |
| H5 | 41 | 50 | 55 | 60 | 39 | 48 | 55 | 60 | 31 | 39 | 43 | 47 |
| H8 | 42 | 50 | 60 | 65 | 40 | 50 | 55 | 60 | 33 | 40 | 45 | 49 |
| H11 | 50 | 65 | 70 | 80 | 49 | 60 | 70 | 75 | 39 | 49 | 55 | 60 |
| H12 | 75 | 95 | 105 | 115 | 70 | 90 | 100 | 110 | 60 | 70 | 80 | 90 |
| H21 | 42 | 50 | 60 | 65 | 40 | 50 | 55 | 60 | 33 | 40 | 45 | 49 |

MM08 Z3 – Copy Insert selection – Roughing

| SMG | | a _p | f _z | | | |
|-----|----------------------------|----------------|----------------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM08-08009-B90A30-M03 F40M | 1,8 | 0,055 | 0,055 | 0,055 | 0,060 |
| P2 | MM08-08009-B90A30-M03 F40M | 1,8 | 0,055 | 0,055 | 0,055 | 0,065 |
| P3 | MM08-08009-B90A30-M03 F40M | 1,8 | 0,050 | 0,050 | 0,055 | 0,060 |
| P4 | MM08-08009-B90A30-M03 F40M | 1,8 | 0,050 | 0,050 | 0,050 | 0,060 |
| P5 | MM08-08009-B90A30-M03 F40M | 1,8 | 0,048 | 0,048 | 0,050 | 0,055 |
| P6 | MM08-08009-B90A30-M03 F40M | 1,8 | 0,048 | 0,048 | 0,050 | 0,055 |
| P7 | MM08-08009-B90A30-M03 F40M | 1,8 | 0,048 | 0,048 | 0,050 | 0,055 |
| P8 | MM08-08009-B90A30-M03 F40M | 1,8 | 0,050 | 0,050 | 0,055 | 0,060 |
| P11 | MM08-08009-B90A30-M03 F40M | 1,8 | 0,048 | 0,048 | 0,050 | 0,055 |
| P12 | MM08-08009-B90A30-M03 F40M | 1,4 | 0,034 | 0,034 | 0,036 | 0,038 |
| M1 | MM08-08009-B90A30-M03 F40M | 1,8 | 0,055 | 0,055 | 0,055 | 0,065 |
| M2 | MM08-08009-B90A30-M03 F40M | 1,8 | 0,048 | 0,048 | 0,050 | 0,055 |
| M3 | MM08-08009-B90A30-M03 F40M | 1,4 | 0,040 | 0,040 | 0,042 | 0,046 |
| M4 | MM08-08009-B90A30-M03 F40M | 1,0 | 0,038 | 0,038 | 0,038 | 0,040 |
| M5 | MM08-08009-B90A30-M03 F40M | 1,0 | 0,038 | 0,038 | 0,038 | 0,040 |
| K1 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,055 | 0,065 |
| K2 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,048 | 0,048 | 0,050 | 0,055 |
| K3 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,048 | 0,048 | 0,050 | 0,055 |
| K4 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,048 | 0,048 | 0,050 | 0,055 |
| K5 | MM08-08009-B90A30-D03 F30M | 1,8 | 0,044 | 0,044 | 0,046 | 0,050 |
| K6 | MM08-08009-B90A30-D03 F30M | 1,8 | 0,048 | 0,048 | 0,050 | 0,055 |
| K7 | MM08-08009-B90A30-D03 F30M | 1,8 | 0,044 | 0,044 | 0,046 | 0,050 |
| N1 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,070 | 0,070 | 0,070 | 0,080 |
| N2 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,070 | 0,070 | 0,070 | 0,080 |
| N3 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,070 | 0,070 | 0,070 | 0,080 |
| N11 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,070 | 0,070 | 0,070 | 0,080 |
| S1 | MM08-08009-B90A30-D03 F30M | 1,0 | 0,038 | 0,038 | 0,038 | 0,040 |
| S2 | MM08-08009-B90A30-D03 F30M | 1,0 | 0,038 | 0,038 | 0,038 | 0,040 |
| S3 | MM08-08009-B90A30-D03 F30M | 1,0 | 0,036 | 0,036 | 0,036 | 0,038 |
| S11 | MM08-08009-B90A30-M03 F40M | 1,2 | 0,042 | 0,042 | 0,044 | 0,046 |
| S12 | MM08-08009-B90A30-M03 F40M | 1,2 | 0,042 | 0,042 | 0,044 | 0,046 |
| S13 | MM08-08009-B90A30-M03 F40M | 1,0 | 0,038 | 0,038 | 0,038 | 0,040 |
| H5 | MM08-08009-B90A30-D03 F30M | 1,4 | 0,034 | 0,034 | 0,036 | 0,038 |
| H8 | MM08-08009-B90A30-D03 F30M | 1,2 | 0,028 | 0,028 | 0,028 | 0,030 |
| H11 | MM08-08009-B90A30-D03 F30M | 1,4 | 0,034 | 0,034 | 0,036 | 0,038 |
| H12 | MM08-08009-B90A30-D03 F30M | 1,2 | 0,028 | 0,028 | 0,028 | 0,030 |
| H21 | MM08-08009-B90A30-D03 F30M | 1,2 | 0,028 | 0,028 | 0,028 | 0,030 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_φ/DC = %

All cutting data are start values

MM08 Z3 – Copy Insert selection – Semi finishing

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,060 | 0,060 | 0,065 | 0,070 |
| P2 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,060 | 0,065 | 0,070 | 0,075 |
| P3 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,060 | 0,065 | 0,070 |
| P4 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,060 | 0,065 | 0,070 |
| P5 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| P6 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| P7 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| P8 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,060 | 0,065 | 0,070 |
| P11 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| P12 | MM08-08009-B90A30-E03 F30M | 1,4 | 0,038 | 0,038 | 0,042 | 0,044 |
| M1 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,060 | 0,065 | 0,070 | 0,075 |
| M2 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| M3 | MM08-08009-B90A30-E03 F30M | 1,4 | 0,044 | 0,046 | 0,048 | 0,050 |
| M4 | MM08-08009-B90A30-E03 F30M | 1,0 | 0,040 | 0,040 | 0,042 | 0,044 |
| M5 | MM08-08009-B90A30-E03 F30M | 1,0 | 0,040 | 0,040 | 0,042 | 0,044 |
| K1 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,060 | 0,065 | 0,070 | 0,075 |
| K2 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| K3 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| K4 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| K5 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,048 | 0,050 | 0,055 | 0,060 |
| K6 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| K7 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,048 | 0,050 | 0,055 | 0,060 |
| N1 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,075 | 0,080 | 0,085 | 0,095 |
| N2 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,075 | 0,080 | 0,085 | 0,095 |
| N3 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,075 | 0,080 | 0,085 | 0,095 |
| N11 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,075 | 0,080 | 0,085 | 0,095 |
| S1 | MM08-08009-B90A30-E03 F30M | 1,0 | 0,040 | 0,040 | 0,042 | 0,044 |
| S2 | MM08-08009-B90A30-E03 F30M | 1,0 | 0,040 | 0,040 | 0,042 | 0,044 |
| S3 | MM08-08009-B90A30-D03 F30M | 1,0 | 0,036 | 0,038 | 0,040 | 0,042 |
| S11 | MM08-08009-B90A30-E03 F30M | 1,2 | 0,044 | 0,046 | 0,048 | 0,050 |
| S12 | MM08-08009-B90A30-E03 F30M | 1,2 | 0,044 | 0,046 | 0,048 | 0,050 |
| S13 | MM08-08009-B90A30-E03 F30M | 1,0 | 0,040 | 0,040 | 0,042 | 0,044 |
| H5 | MM08-08009-B90A30-E03 F30M | 1,4 | 0,038 | 0,038 | 0,042 | 0,044 |
| H8 | MM08-08009-B90A30-E03 F30M | 1,2 | 0,028 | 0,030 | 0,032 | 0,034 |
| H11 | MM08-08009-B90A30-E03 F30M | 1,4 | 0,038 | 0,038 | 0,042 | 0,044 |
| H12 | MM08-08009-B90A30-E03 F30M | 1,2 | 0,028 | 0,030 | 0,032 | 0,034 |
| H21 | MM08-08009-B90A30-E03 F30M | 1,2 | 0,028 | 0,030 | 0,032 | 0,034 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MM08 Z3 – Copy Insert selection – Finishing

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,060 | 0,060 | 0,065 | 0,070 |
| P2 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,060 | 0,065 | 0,070 | 0,075 |
| P3 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,060 | 0,065 | 0,070 |
| P4 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,060 | 0,065 | 0,070 |
| P5 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| P6 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| P7 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| P8 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,060 | 0,065 | 0,070 |
| P11 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| P12 | MM08-08009-B90A30-E03 F30M | 1,4 | 0,038 | 0,038 | 0,042 | 0,044 |
| M1 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,060 | 0,065 | 0,070 | 0,075 |
| M2 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| M3 | MM08-08009-B90A30-E03 F30M | 1,4 | 0,044 | 0,046 | 0,048 | 0,050 |
| M4 | MM08-08009-B90A30-E03 F30M | 1,0 | 0,040 | 0,040 | 0,042 | 0,044 |
| M5 | MM08-08009-B90A30-E03 F30M | 1,0 | 0,040 | 0,040 | 0,042 | 0,044 |
| K1 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,060 | 0,065 | 0,070 | 0,075 |
| K2 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| K3 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| K4 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| K5 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,048 | 0,050 | 0,055 | 0,060 |
| K6 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,055 | 0,055 | 0,060 | 0,065 |
| K7 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,048 | 0,050 | 0,055 | 0,060 |
| N1 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,075 | 0,080 | 0,085 | 0,095 |
| N2 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,075 | 0,080 | 0,085 | 0,095 |
| N3 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,075 | 0,080 | 0,085 | 0,095 |
| N11 | MM08-08009-B90A30-E03 F30M | 1,8 | 0,075 | 0,080 | 0,085 | 0,095 |
| S1 | MM08-08009-B90A30-E03 F30M | 1,0 | 0,040 | 0,040 | 0,042 | 0,044 |
| S2 | MM08-08009-B90A30-E03 F30M | 1,0 | 0,040 | 0,040 | 0,042 | 0,044 |
| S3 | MM08-08009-B90A30-E03 F30M | 1,0 | 0,036 | 0,038 | 0,040 | 0,042 |
| S11 | MM08-08009-B90A30-E03 F30M | 1,2 | 0,044 | 0,046 | 0,048 | 0,050 |
| S12 | MM08-08009-B90A30-E03 F30M | 1,2 | 0,044 | 0,046 | 0,048 | 0,050 |
| S13 | MM08-08009-B90A30-E03 F30M | 1,0 | 0,040 | 0,040 | 0,042 | 0,044 |
| H5 | MM08-08009-B90A30-E03 F30M | 1,4 | 0,038 | 0,038 | 0,042 | 0,044 |
| H8 | MM08-08009-B90A30-E03 F30M | 1,2 | 0,028 | 0,030 | 0,032 | 0,034 |
| H11 | MM08-08009-B90A30-E03 F30M | 1,4 | 0,038 | 0,038 | 0,042 | 0,044 |
| H12 | MM08-08009-B90A30-E03 F30M | 1,2 | 0,028 | 0,030 | 0,032 | 0,034 |
| H21 | MM08-08009-B90A30-E03 F30M | 1,2 | 0,028 | 0,030 | 0,032 | 0,034 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

MM08 Z3 – Copy Cutting data

| SMG | F30M | | | | | F40M | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|
| | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% |
| P1 | 280 | 330 | 355 | 380 | 380 | 265 | 315 | 335 | 360 | 360 |
| P2 | 270 | 325 | 345 | 370 | 365 | 260 | 310 | 325 | 350 | 350 |
| P3 | 235 | 280 | 295 | 320 | 320 | 225 | 270 | 280 | 305 | 300 |
| P4 | 210 | 250 | 265 | 280 | 280 | 200 | 235 | 250 | 270 | 270 |
| P5 | 200 | 235 | 250 | 270 | 270 | 190 | 225 | 240 | 260 | 255 |
| P6 | 225 | 265 | 280 | 305 | 305 | 215 | 255 | 270 | 290 | 290 |
| P7 | 210 | 250 | 265 | 290 | 285 | 200 | 240 | 255 | 275 | 270 |
| P8 | 200 | 235 | 250 | 270 | 265 | 190 | 225 | 235 | 255 | 255 |
| P11 | 205 | 245 | 260 | 280 | 275 | 195 | 230 | 245 | 265 | 265 |
| P12 | 130 | 160 | 160 | 175 | 175 | 125 | 150 | 155 | 165 | 165 |
| M1 | — | — | — | — | — | 210 | 250 | 265 | 285 | 280 |
| M2 | — | — | — | — | — | 170 | 205 | 215 | 235 | 230 |
| M3 | — | — | — | — | — | 135 | 170 | 170 | 180 | 180 |
| M4 | — | — | — | — | — | 95 | 135 | 130 | 140 | 140 |
| M5 | — | — | — | — | — | 80 | 110 | 105 | 115 | 115 |
| K1 | 215 | 255 | 270 | 295 | 290 | 205 | 245 | 260 | 280 | 275 |
| K2 | 190 | 225 | 240 | 260 | 255 | 180 | 215 | 225 | 245 | 245 |
| K3 | 160 | 190 | 200 | 220 | 215 | 155 | 180 | 190 | 210 | 205 |
| K4 | 155 | 180 | 190 | 210 | 205 | 145 | 175 | 185 | 200 | 195 |
| K5 | 90 | 110 | 115 | 125 | 125 | 90 | 105 | 110 | 120 | 120 |
| K6 | 135 | 160 | 170 | 185 | 180 | 130 | 150 | 160 | 175 | 175 |
| K7 | 120 | 140 | 150 | 160 | 160 | 110 | 135 | 140 | 155 | 155 |
| N1 | 1625 | 1950 | 2075 | 2225 | 2200 | 1550 | 1850 | 1975 | 2125 | 2100 |
| N2 | 660 | 790 | 830 | 900 | 890 | 630 | 750 | 790 | 850 | 840 |
| N3 | 440 | 520 | 560 | 600 | 590 | 420 | 500 | 530 | 570 | 560 |
| N11 | 500 | 600 | 640 | 680 | 670 | 480 | 570 | 610 | 650 | 640 |
| S1 | 46 | 65 | 65 | 70 | 70 | 44 | 60 | 60 | 65 | 65 |
| S2 | 37 | 50 | 50 | 55 | 55 | 35 | 50 | 48 | 50 | 50 |
| S3 | 32 | 46 | 44 | 48 | 48 | 31 | 43 | 42 | 45 | 45 |
| S11 | — | — | — | — | — | 65 | 85 | 85 | 90 | 90 |
| S12 | — | — | — | — | — | 47 | 60 | 60 | 65 | 65 |
| S13 | — | — | — | — | — | 25 | 35 | 34 | 36 | 37 |
| H5 | 43 | 55 | 55 | 60 | 55 | 41 | 50 | 50 | 55 | 55 |
| H8 | 43 | 55 | 55 | 60 | 60 | 41 | 55 | 50 | 55 | 55 |
| H11 | 55 | 65 | 70 | 75 | 75 | 50 | 65 | 65 | 70 | 70 |
| H12 | 75 | 100 | 100 | 105 | 105 | 75 | 95 | 95 | 100 | 100 |
| H21 | 43 | 55 | 55 | 60 | 60 | 41 | 55 | 50 | 55 | 55 |

MM08 Z2 – Copy Insert selection – Roughing

| SMG | | a _p | f _z | | | |
|-----|--------------------------|----------------|----------------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM08-08008-B90S-E03 F30M | 3,0 | 0,048 | 0,048 | 0,055 | 0,065 |
| P2 | MM08-08008-B90S-E03 F30M | 3,0 | 0,048 | 0,048 | 0,055 | 0,065 |
| P3 | MM08-08008-B90S-E03 F30M | 3,0 | 0,046 | 0,046 | 0,050 | 0,060 |
| P4 | MM08-08008-B90-MD03 F30M | 3,0 | 0,044 | 0,044 | 0,050 | 0,060 |
| P5 | MM08-08008-B90-MD03 F30M | 3,0 | 0,044 | 0,044 | 0,050 | 0,060 |
| P6 | MM08-08008-B90-MD03 F30M | 3,0 | 0,044 | 0,044 | 0,050 | 0,060 |
| P7 | MM08-08008-B90-MD03 F30M | 3,0 | 0,044 | 0,044 | 0,050 | 0,060 |
| P8 | MM08-08008-B90-MD03 F30M | 3,0 | 0,046 | 0,046 | 0,050 | 0,060 |
| P11 | MM08-08008-B90-MD03 F30M | 3,0 | 0,044 | 0,044 | 0,050 | 0,060 |
| P12 | MM08-08008-B90-MD03 F30M | 2,5 | 0,030 | 0,030 | 0,034 | 0,040 |
| M1 | MM08-08008-B90S-E03 F30M | 3,0 | 0,048 | 0,048 | 0,055 | 0,065 |
| M2 | MM08-08008-B90S-E03 F30M | 3,0 | 0,044 | 0,044 | 0,050 | 0,060 |
| M3 | MM08-08008-B90S-E03 F30M | 2,5 | 0,036 | 0,036 | 0,040 | 0,046 |
| M4 | MM08-08008-B90-MD03 F30M | 1,9 | 0,034 | 0,034 | 0,036 | 0,040 |
| M5 | MM08-08008-B90-MD03 F30M | 1,9 | 0,034 | 0,034 | 0,036 | 0,040 |
| K1 | MM08-08008-B90S-E03 F30M | 3,0 | 0,048 | 0,048 | 0,055 | 0,065 |
| K2 | MM08-08008-B90S-E03 F30M | 3,0 | 0,044 | 0,044 | 0,050 | 0,060 |
| K3 | MM08-08008-B90S-E03 F30M | 3,0 | 0,044 | 0,044 | 0,050 | 0,060 |
| K4 | MM08-08008-B90S-E03 F30M | 3,0 | 0,044 | 0,044 | 0,050 | 0,060 |
| K5 | MM08-08008-B90-MD03 F30M | 3,0 | 0,040 | 0,040 | 0,044 | 0,055 |
| K6 | MM08-08008-B90-MD03 F30M | 3,0 | 0,044 | 0,044 | 0,050 | 0,060 |
| K7 | MM08-08008-B90-MD03 F30M | 3,0 | 0,040 | 0,040 | 0,044 | 0,055 |
| N1 | MM08-08008-B90S-E03 F30M | 3,0 | 0,060 | 0,060 | 0,070 | 0,085 |
| N2 | MM08-08008-B90S-E03 F30M | 3,0 | 0,060 | 0,060 | 0,070 | 0,085 |
| N3 | MM08-08008-B90S-E03 F30M | 3,0 | 0,060 | 0,060 | 0,070 | 0,085 |
| N11 | MM08-08008-B90S-E03 F30M | 3,0 | 0,060 | 0,060 | 0,070 | 0,085 |
| S1 | MM08-08008-B90-MD03 F30M | 1,9 | 0,034 | 0,034 | 0,036 | 0,040 |
| S2 | MM08-08008-B90-MD03 F30M | 1,9 | 0,034 | 0,034 | 0,036 | 0,040 |
| S3 | MM08-08008-B90-MD03 F30M | 1,9 | 0,032 | 0,032 | 0,034 | 0,036 |
| S11 | MM08-08008-B90-MD03 F30M | 2,0 | 0,038 | 0,038 | 0,040 | 0,046 |
| S12 | MM08-08008-B90-MD03 F30M | 2,0 | 0,038 | 0,038 | 0,040 | 0,046 |
| S13 | MM08-08008-B90-MD03 F30M | 1,9 | 0,034 | 0,034 | 0,036 | 0,040 |
| H5 | MM08-08008-B90-MD03 F30M | 2,5 | 0,030 | 0,030 | 0,034 | 0,040 |
| H8 | MM08-08008-B90-MD03 F30M | 2,0 | 0,024 | 0,024 | 0,026 | 0,030 |
| H11 | MM08-08008-B90-MD03 F30M | 2,5 | 0,030 | 0,030 | 0,034 | 0,040 |
| H12 | MM08-08008-B90-MD03 F30M | 2,0 | 0,024 | 0,024 | 0,026 | 0,030 |
| H21 | MM08-08008-B90-MD03 F30M | 2,0 | 0,024 | 0,024 | 0,026 | 0,030 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_φ/DC = %

All cutting data are start values

MM08 Z2 – Copy Insert selection – Semi finishing

| SMG | | a_p | f_z | | | |
|-----|--------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM08-08008-B90P-M03 F30M | 3,0 | 0,060 | 0,065 | 0,075 | 0,085 |
| P2 | MM08-08008-B90P-M03 F30M | 3,0 | 0,060 | 0,065 | 0,075 | 0,085 |
| P3 | MM08-08008-B90P-M03 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P4 | MM08-08008-B90P-M03 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P5 | MM08-08008-B90P-M03 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P6 | MM08-08008-B90P-M03 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P7 | MM08-08008-B90P-M03 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P8 | MM08-08008-B90P-M03 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P11 | MM08-08008-B90P-M03 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P12 | MM08-08008-B90P-M03 F30M | 2,5 | 0,036 | 0,040 | 0,044 | 0,050 |
| M1 | MM08-08008-B90P-M03 F30M | 3,0 | 0,060 | 0,065 | 0,075 | 0,085 |
| M2 | MM08-08008-B90P-M03 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| M3 | MM08-08008-B90P-M03 F30M | 2,5 | 0,042 | 0,046 | 0,050 | 0,060 |
| M4 | MM08-08008-B90P-M03 F30M | 1,9 | 0,038 | 0,040 | 0,044 | 0,046 |
| M5 | MM08-08008-B90P-M03 F30M | 1,9 | 0,038 | 0,040 | 0,044 | 0,046 |
| K1 | MM08-08008-B90P-M03 F30M | 3,0 | 0,060 | 0,065 | 0,075 | 0,085 |
| K2 | MM08-08008-B90P-M03 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| K3 | MM08-08008-B90P-M03 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| K4 | MM08-08008-B90P-M03 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| K5 | MM08-08008-B90P-M03 F30M | 3,0 | 0,048 | 0,055 | 0,060 | 0,070 |
| K6 | MM08-08008-B90P-M03 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| K7 | MM08-08008-B90P-M03 F30M | 3,0 | 0,048 | 0,055 | 0,060 | 0,070 |
| N1 | MM08-08008-B90P-M03 F30M | 3,0 | 0,075 | 0,085 | 0,095 | 0,11 |
| N2 | MM08-08008-B90P-M03 F30M | 3,0 | 0,075 | 0,085 | 0,095 | 0,11 |
| N3 | MM08-08008-B90P-M03 F30M | 3,0 | 0,075 | 0,085 | 0,095 | 0,11 |
| N11 | MM08-08008-B90P-M03 F30M | 3,0 | 0,075 | 0,085 | 0,095 | 0,11 |
| S1 | MM08-08008-B90P-M03 F30M | 1,9 | 0,038 | 0,040 | 0,044 | 0,046 |
| S2 | MM08-08008-B90P-M03 F30M | 1,9 | 0,038 | 0,040 | 0,044 | 0,046 |
| S3 | MM08-08008-B90P-M03 F30M | 1,9 | 0,034 | 0,036 | 0,040 | 0,044 |
| S11 | MM08-08008-B90P-M03 F30M | 2,0 | 0,042 | 0,046 | 0,050 | 0,055 |
| S12 | MM08-08008-B90P-M03 F30M | 2,0 | 0,042 | 0,046 | 0,050 | 0,055 |
| S13 | MM08-08008-B90P-M03 F30M | 1,9 | 0,038 | 0,040 | 0,044 | 0,046 |
| H5 | MM08-08008-B90P-M03 F30M | 2,5 | 0,036 | 0,040 | 0,044 | 0,050 |
| H8 | MM08-08008-B90P-M03 F30M | 2,0 | 0,028 | 0,030 | 0,032 | 0,036 |
| H11 | MM08-08008-B90P-M03 F30M | 2,5 | 0,036 | 0,040 | 0,044 | 0,050 |
| H12 | MM08-08008-B90P-M03 F30M | 2,0 | 0,028 | 0,030 | 0,032 | 0,036 |
| H21 | MM08-08008-B90P-M03 F30M | 2,0 | 0,028 | 0,030 | 0,032 | 0,036 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MM08 Z2 – Copy Insert selection – Finishing

| SMG | | a_p | f_z | | | |
|-----|---------------------------|-------|--------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,019 | 0,022 | 0,024 | 0,028 |
| P2 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,020 | 0,022 | 0,026 | 0,028 |
| P3 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,018 | 0,020 | 0,024 | 0,028 |
| P4 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,018 | 0,020 | 0,024 | 0,026 |
| P5 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,018 | 0,020 | 0,022 | 0,026 |
| P6 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,018 | 0,019 | 0,022 | 0,026 |
| P7 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,018 | 0,019 | 0,022 | 0,026 |
| P8 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,018 | 0,020 | 0,024 | 0,028 |
| P11 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,018 | 0,019 | 0,022 | 0,026 |
| P12 | MM08-08008-B90PF-M01 F15M | 2,5 | 0,012 | 0,013 | 0,015 | 0,016 |
| M1 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,020 | 0,022 | 0,026 | 0,028 |
| M2 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,018 | 0,020 | 0,022 | 0,026 |
| M3 | MM08-08008-B90PF-M01 F15M | 2,5 | 0,014 | 0,015 | 0,017 | 0,019 |
| M4 | MM08-08008-B90PF-M01 F15M | 1,9 | 0,012 | 0,013 | 0,014 | 0,016 |
| M5 | MM08-08008-B90PF-M01 F15M | 1,9 | 0,012 | 0,013 | 0,014 | 0,016 |
| K1 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,020 | 0,022 | 0,026 | 0,028 |
| K2 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,018 | 0,020 | 0,022 | 0,026 |
| K3 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,018 | 0,020 | 0,022 | 0,026 |
| K4 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,018 | 0,020 | 0,022 | 0,026 |
| K5 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,016 | 0,018 | 0,020 | 0,024 |
| K6 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,018 | 0,020 | 0,022 | 0,026 |
| K7 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,016 | 0,018 | 0,020 | 0,024 |
| N1 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,024 | 0,028 | 0,032 | 0,036 |
| N2 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,024 | 0,028 | 0,032 | 0,036 |
| N3 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,024 | 0,028 | 0,032 | 0,036 |
| N11 | MM08-08008-B90PF-M01 F15M | 3,0 | 0,024 | 0,028 | 0,032 | 0,036 |
| S1 | MM08-08008-B90PF-M01 F15M | 1,9 | 0,012 | 0,013 | 0,014 | 0,016 |
| S2 | MM08-08008-B90PF-M01 F15M | 1,9 | 0,012 | 0,013 | 0,014 | 0,016 |
| S3 | MM08-08008-B90PF-M01 F15M | 1,9 | 0,012 | 0,012 | 0,013 | 0,014 |
| S11 | MM08-08008-B90PF-M01 F15M | 2,0 | 0,014 | 0,015 | 0,017 | 0,018 |
| S12 | MM08-08008-B90PF-M01 F15M | 2,0 | 0,014 | 0,015 | 0,017 | 0,018 |
| S13 | MM08-08008-B90PF-M01 F15M | 1,9 | 0,012 | 0,013 | 0,014 | 0,016 |
| H5 | MM08-08008-B90PF-M01 F15M | 2,5 | 0,012 | 0,013 | 0,015 | 0,016 |
| H8 | MM08-08008-B90PF-M01 F15M | 2,0 | 0,0090 | 0,010 | 0,011 | 0,012 |
| H11 | MM08-08008-B90PF-M01 F15M | 2,5 | 0,012 | 0,013 | 0,015 | 0,016 |
| H12 | MM08-08008-B90PF-M01 F15M | 2,0 | 0,0090 | 0,010 | 0,011 | 0,012 |
| H21 | MM08-08008-B90PF-M01 F15M | 2,0 | 0,0090 | 0,010 | 0,011 | 0,012 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MM08 Z2 – Copy Cutting data

| SMG | F15M | | | | | F30M | | | | | T60M | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% |
| P1 | 320 | 395 | 430 | 465 | 465 | 265 | 330 | 360 | 385 | 385 | 215 | 265 | 290 | 315 | 310 |
| P2 | 315 | 385 | 420 | 450 | 450 | 260 | 320 | 345 | 375 | 370 | 210 | 260 | 280 | 305 | 300 |
| P3 | 270 | 335 | 360 | 390 | 390 | 225 | 280 | 300 | 325 | 325 | 180 | 225 | 245 | 265 | 260 |
| P4 | 240 | 295 | 320 | 345 | 345 | 200 | 245 | 265 | 285 | 285 | 160 | 200 | 215 | 230 | 230 |
| P5 | 225 | 280 | 305 | 330 | 330 | 190 | 235 | 255 | 275 | 275 | 155 | 190 | 205 | 220 | 220 |
| P6 | 255 | 315 | 340 | 370 | 370 | 210 | 265 | 285 | 310 | 305 | 170 | 215 | 230 | 250 | 250 |
| P7 | 240 | 300 | 320 | 350 | 350 | 200 | 250 | 270 | 295 | 290 | 160 | 200 | 220 | 235 | 235 |
| P8 | 225 | 280 | 305 | 330 | 330 | 190 | 235 | 250 | 275 | 270 | 150 | 190 | 205 | 220 | 220 |
| P11 | 235 | 290 | 315 | 340 | 340 | 195 | 240 | 260 | 285 | 280 | 160 | 195 | 210 | 230 | 230 |
| P12 | 145 | 180 | 185 | 200 | 200 | 125 | 155 | 165 | 175 | 175 | 100 | 125 | 130 | 145 | 140 |
| M1 | 250 | 310 | 335 | 365 | 365 | 210 | 260 | 280 | 305 | 300 | 170 | 210 | 225 | 245 | 240 |
| M2 | 205 | 250 | 275 | 295 | 295 | 170 | 210 | 230 | 245 | 245 | 140 | 170 | 185 | 200 | 200 |
| M3 | 160 | 200 | 210 | 225 | 225 | 135 | 175 | 180 | 195 | 195 | 110 | 140 | 145 | 155 | 155 |
| M4 | 125 | 160 | 160 | 170 | 170 | 110 | 140 | 135 | 150 | 150 | 85 | 115 | 110 | 120 | 120 |
| M5 | 105 | 135 | 130 | 140 | 140 | 90 | 115 | 115 | 125 | 125 | 75 | 95 | 90 | 100 | 100 |
| K1 | 250 | 305 | 330 | 360 | 355 | 205 | 255 | 275 | 300 | 295 | 165 | 205 | 220 | 240 | 240 |
| K2 | 215 | 265 | 290 | 310 | 310 | 180 | 225 | 240 | 260 | 260 | 145 | 180 | 195 | 210 | 210 |
| K3 | 180 | 225 | 245 | 265 | 265 | 150 | 190 | 205 | 220 | 220 | 125 | 155 | 165 | 180 | 180 |
| K4 | 175 | 215 | 235 | 250 | 250 | 145 | 180 | 195 | 210 | 210 | 115 | 145 | 160 | 170 | 170 |
| K5 | 105 | 130 | 140 | 150 | 150 | 90 | 110 | 120 | 125 | 125 | 70 | 90 | 95 | 105 | 105 |
| K6 | 155 | 190 | 205 | 220 | 220 | 130 | 160 | 170 | 185 | 185 | 105 | 130 | 140 | 150 | 150 |
| K7 | 135 | 165 | 180 | 195 | 195 | 110 | 140 | 150 | 165 | 165 | 90 | 115 | 120 | 130 | 130 |
| N1 | 1925 | 2375 | 2575 | 2800 | 2775 | 1550 | 1925 | 2075 | 2250 | 2225 | 1250 | 1550 | 1675 | 1825 | 1800 |
| N2 | 780 | 960 | 1050 | 1125 | 1125 | 630 | 780 | 840 | 910 | 900 | 510 | 630 | 680 | 740 | 730 |
| N3 | 520 | 640 | 700 | 750 | 750 | 420 | 520 | 560 | 610 | 600 | 340 | 420 | 455 | 490 | 485 |
| N11 | 590 | 730 | 800 | 860 | 860 | 480 | 590 | 640 | 700 | 690 | 390 | 480 | 520 | 560 | 560 |
| S1 | 60 | 75 | 75 | 80 | 80 | 50 | 65 | 65 | 70 | 70 | 41 | 55 | 50 | 55 | 55 |
| S2 | 47 | 60 | 60 | 65 | 65 | 40 | 55 | 50 | 55 | 55 | 33 | 43 | 42 | 45 | 45 |
| S3 | 40 | 50 | 50 | 55 | 55 | 35 | 46 | 45 | 48 | 48 | 28 | 37 | 36 | 39 | 39 |
| S11 | 85 | 105 | 105 | 115 | 115 | 70 | 90 | 90 | 100 | 100 | 60 | 75 | 75 | 80 | 80 |
| S12 | 55 | 75 | 75 | 80 | 80 | 49 | 65 | 65 | 70 | 70 | 40 | 50 | 50 | 55 | 55 |
| S13 | 33 | 42 | 42 | 45 | 45 | 28 | 37 | 36 | 39 | 39 | 23 | 30 | 29 | 31 | 32 |
| H5 | 48 | 60 | 60 | 65 | 65 | 41 | 50 | 55 | 60 | 60 | 33 | 42 | 44 | 47 | 47 |
| H8 | 48 | 60 | 60 | 65 | 65 | 43 | 55 | 55 | 60 | 60 | 35 | 45 | 45 | 48 | 48 |
| H11 | 60 | 75 | 80 | 85 | 85 | 55 | 65 | 70 | 75 | 75 | 43 | 55 | 55 | 60 | 60 |
| H12 | 85 | 110 | 110 | 120 | 120 | 80 | 100 | 100 | 105 | 105 | 65 | 80 | 80 | 85 | 85 |
| H21 | 48 | 60 | 60 | 65 | 65 | 43 | 55 | 55 | 60 | 60 | 35 | 45 | 45 | 48 | 48 |

MM08 High-Feed Insert selection

| SMG | | a_p | f_z | | | |
|-----|-------------------------|-------|-------|------|------|------|
| | | | 100% | 70% | 30% | 20% |
| P1 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,32 | 0,32 | 0,34 | 0,42 |
| P2 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,32 | 0,32 | 0,36 | 0,42 |
| P3 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,30 | 0,30 | 0,34 | 0,40 |
| P4 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,30 | 0,30 | 0,32 | 0,38 |
| P5 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,28 | 0,28 | 0,32 | 0,38 |
| P6 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,28 | 0,28 | 0,32 | 0,38 |
| P7 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,28 | 0,28 | 0,32 | 0,38 |
| P8 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,30 | 0,30 | 0,34 | 0,40 |
| P11 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,28 | 0,28 | 0,32 | 0,38 |
| P12 | MM08-08.40-HF-MD06 F30M | 0,20 | 0,20 | 0,20 | 0,22 | 0,26 |
| M1 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,32 | 0,32 | 0,36 | 0,42 |
| M2 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,28 | 0,28 | 0,32 | 0,38 |
| M3 | MM08-08.40-HF-MD06 F30M | 0,20 | 0,24 | 0,24 | 0,26 | 0,32 |
| M4 | MM08-08.40-HF-MD06 F30M | 0,15 | 0,20 | 0,20 | 0,24 | 0,28 |
| M5 | MM08-08.40-HF-MD06 F30M | 0,15 | 0,20 | 0,20 | 0,24 | 0,28 |
| K1 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,32 | 0,32 | 0,36 | 0,42 |
| K2 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,28 | 0,28 | 0,32 | 0,38 |
| K3 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,28 | 0,28 | 0,32 | 0,38 |
| K4 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,28 | 0,28 | 0,32 | 0,38 |
| K5 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,26 | 0,26 | 0,28 | 0,34 |
| K6 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,28 | 0,28 | 0,32 | 0,38 |
| K7 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,26 | 0,26 | 0,28 | 0,34 |
| N1 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,40 | 0,40 | 0,46 | 0,55 |
| N2 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,40 | 0,40 | 0,46 | 0,55 |
| N3 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,40 | 0,40 | 0,46 | 0,55 |
| N11 | MM08-08.40-HF-MD06 F30M | 0,26 | 0,40 | 0,40 | 0,46 | 0,55 |
| S1 | MM08-08.40-HF-MD06 F30M | 0,15 | 0,20 | 0,20 | 0,24 | 0,28 |
| S2 | MM08-08.40-HF-MD06 F30M | 0,15 | 0,20 | 0,20 | 0,24 | 0,28 |
| S3 | MM08-08.40-HF-MD06 F30M | 0,15 | 0,19 | 0,19 | 0,22 | 0,26 |
| S11 | MM08-08.40-HF-MD06 F30M | 0,18 | 0,24 | 0,24 | 0,26 | 0,32 |
| S12 | MM08-08.40-HF-MD06 F30M | 0,18 | 0,24 | 0,24 | 0,26 | 0,32 |
| S13 | MM08-08.40-HF-MD06 F30M | 0,15 | 0,20 | 0,20 | 0,24 | 0,28 |
| H5 | MM08-08.40-HF-MD06 F30M | 0,20 | 0,20 | 0,20 | 0,22 | 0,26 |
| H8 | MM08-08.40-HF-MD06 F30M | 0,18 | 0,16 | 0,16 | 0,17 | 0,20 |
| H11 | MM08-08.40-HF-MD06 F30M | 0,20 | 0,20 | 0,20 | 0,22 | 0,26 |
| H12 | MM08-08.40-HF-MD06 F30M | 0,18 | 0,16 | 0,16 | 0,17 | 0,20 |
| H21 | MM08-08.40-HF-MD06 F30M | 0,18 | 0,16 | 0,16 | 0,17 | 0,20 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

MM08 High-Feed Cutting data

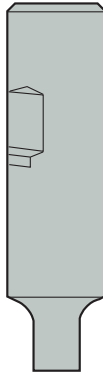
| SMG | F30M | | | |
|-----|------|------|------|------|
| | 100% | 70% | 30% | 20% |
| P1 | 250 | 305 | 365 | 385 |
| P2 | 245 | 300 | 355 | 375 |
| P3 | 215 | 260 | 310 | 325 |
| P4 | 190 | 230 | 275 | 290 |
| P5 | 180 | 220 | 260 | 275 |
| P6 | 205 | 250 | 295 | 310 |
| P7 | 195 | 235 | 275 | 295 |
| P8 | 180 | 220 | 260 | 275 |
| P11 | 185 | 230 | 270 | 285 |
| P12 | 120 | 145 | 170 | 180 |
| M1 | 195 | 240 | 285 | 305 |
| M2 | 165 | 200 | 235 | 250 |
| M3 | 130 | 155 | 185 | 195 |
| M4 | 105 | 120 | 145 | 150 |
| M5 | 85 | 100 | 120 | 125 |
| K1 | 195 | 235 | 280 | 300 |
| K2 | 170 | 210 | 250 | 265 |
| K3 | 145 | 180 | 210 | 220 |
| K4 | 140 | 170 | 200 | 210 |
| K5 | 85 | 105 | 120 | 130 |
| K6 | 125 | 150 | 175 | 185 |
| K7 | 110 | 130 | 155 | 165 |
| N1 | 1475 | 1800 | 2125 | 2250 |
| N2 | 590 | 720 | 860 | 900 |
| N3 | 395 | 485 | 570 | 600 |
| N11 | 450 | 550 | 650 | 690 |
| S1 | 48 | 55 | 65 | 70 |
| S2 | 39 | 46 | 55 | 55 |
| S3 | 34 | 40 | 47 | 50 |
| S11 | 65 | 80 | 95 | 100 |
| S12 | 46 | 55 | 65 | 70 |
| S13 | 27 | 32 | 37 | 40 |
| H5 | 40 | 48 | 55 | 60 |
| H8 | 41 | 50 | 60 | 60 |
| H11 | 50 | 60 | 70 | 75 |
| H12 | 75 | 90 | 105 | 110 |
| H21 | 41 | 50 | 60 | 60 |

Design 1



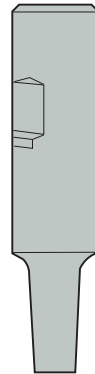
Keyway shank

Design 2



Cylindrical/Weldon back end and 90° front

Design 3



Cylindrical/Weldon back end tapered front 87°/89°

Design 4

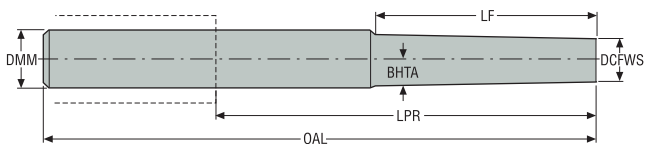


Cylindrical/Weldon back end tapered front 80°/85°/87°

Design 5



Cylindrical back end double tapered front end 89°/85°



MM10

| Design | Designation | Connecting size | Dimensions in mm | | | | | | KG | Spare part no. |
|--------|---------------------|-----------------|------------------|------|-------|------|-------|-------|--------|----------------|
| | | | DCSFWS | DMM | BHTA° | LF | OAL | LPR | | |
| 1 | MM10-16065.0-0000 | MM10 | 9,5 | 16,0 | 60,0 | 0,0 | 65,0 | 17,0 | 0,1 | 1 |
| 2 | MM10-10045.0-0007 | MM10 | 9,6 | 10,0 | 0,0 | 7,0 | 45,0 | 7,0 | 0,1 | 2 |
| 2 | MM10-12060.0-0007DS | MM10 | 9,6 | 12,0 | 0,0 | 7,0 | 60,0 | 15,0 | 0,1 | 3 |
| 2 | MM10-20075.3-0010 | MM10 | 9,5 | 20,0 | 0,0 | 10,0 | 75,0 | 25,0 | 0,2 | 4 |
| 2 | MM10-16085.0-0020DS | MM10 | 9,5 | 16,0 | 0,0 | 20,0 | 85,0 | 37,0 | 0,3 | 3 |
| 2 | MM10-16105.0-0040DS | MM10 | 9,5 | 16,0 | 0,0 | 40,0 | 105,0 | 57,0 | 0,3 | 3 |
| 3 | MM10-20085.3-3023 | MM10 | 9,5 | 20,0 | 3,0 | 23,0 | 85,0 | 35,0 | 0,2 | 4 |
| 4 | MM10-12085.0-3024DS | MM10 | 9,5 | 12,0 | 3,0 | 23,8 | 85,0 | 40,0 | 0,2 | 3 |
| 4 | MM10-20140.3-5060 | MM10 | 9,5 | 20,0 | 5,0 | 60,0 | 140,0 | 90,0 | 0,3 | 5 |
| 4 | MM10-32250.0-10063 | MM10 | 9,5 | 32,0 | 10,0 | 63,8 | 250,0 | 190,0 | 1,3 | 5 |
| 3 | MM10-16160.0-1035M | MM10 | 9,5 | 16,0 | 1,0 | 35,0 | 160,0 | 112,0 | 0,2 | 6 |
| 3 | MM10-12100.0-1035DS | MM10 | 9,5 | 12,0 | 1,0 | 35,0 | 100,0 | 55,0 | 0,2 | 3 |
| 3 | MM10-14120.0-1050DS | MM10 | 9,5 | 14,0 | 1,0 | 50,0 | 120,0 | 75,0 | 0,3 | 3 |
| 3 | MM10-16160.0-1055M | MM10 | 9,5 | 16,0 | 1,0 | 55,0 | 160,0 | 112,0 | 0,2 | 7 |
| 3 | MM10-16160.0-1055DS | MM10 | 9,5 | 16,0 | 1,0 | 55,0 | 160,0 | 112,0 | 0,4 | 3 |
| 3 | MM10-16160.0-1075M | MM10 | 9,5 | 16,0 | 1,0 | 75,0 | 160,0 | 112,0 | 0,2 | 7 |
| 3 | MM10-16160.0-1075DS | MM10 | 9,5 | 16,0 | 1,0 | 75,0 | 160,0 | 112,0 | 0,4 | 3 |
| 5 | MM10-20250.0-1055DS | MM10 | 9,5 | 20,0 | 1,0 | 55,0 | 250,0 | 200,0 | 1,0 | 3 |

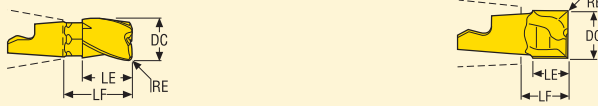
Spare Parts

| Spare part no. | Tension screw | Sleeve |
|----------------|---------------|----------|
| | | - |
| 1 | MM10-0627 | MM-06032 |
| 2 | MM10-0627 | MM-06020 |
| 3 | MM10-061027 | - |
| 4 | MM10-0627 | MM-06048 |
| 5 | MM10-0627 | MM-06116 |
| 6 | MM10-0651 | MM-06048 |
| 7 | MM10-0688 | MM-06032 |

Please check availability in current price and stock-list
Allen key H05-4 for sleeve to be ordered separately.

For wrench types, see insert pages

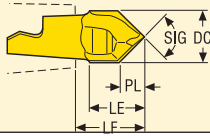
Slot milling/square shoulder milling



| Insert type | Designation | Dimensions in mm | | | | ZNP | Wrench | Coated | | | | |
|----------------|-----------------------|------------------|-------|-------|-------|-----|--------|--------|------|------|------|---|
| | | LE | DC | RE | LF | | | Grades | | | | |
| | | | | | | | | T60M | F15M | F30M | F40M | |
| 3-flute | MM10-10012-A30-E03 | 11,87 | 10,0 | 0,0 | 15,72 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM10-10012-R05A30-M03 | 11,87 | 10,0 | 0,5 | 15,72 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM10-10012-R10A30-D03 | 11,87 | 10,0 | 1,0 | 15,72 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM10-10012-R10A30-E03 | 11,87 | 10,0 | 1,0 | 15,72 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM10-10012-R10A30-M03 | 11,87 | 10,0 | 1,0 | 15,72 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM10-10012-R20A30-M03 | 11,87 | 10,0 | 2,0 | 15,72 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM10-10012-R30A30-M03 | 11,87 | 10,0 | 3,0 | 15,72 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM10-09512-A30-E03 | 11,87 | 9,525 | 0,0 | 15,72 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM10-09512-R04A30-M03 | 11,87 | 9,525 | 0,4 | 15,72 | 3 | MM0416 | | | | ■ | |
| 3-flute | | | | | | | MM0416 | | | | | |
| 3-flute | MM10-09512-R08A30-M03 | 11,87 | 9,525 | 0,8 | 15,72 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM10-09512-R16A30-M03 | 11,87 | 9,525 | 1,6 | 15,72 | 3 | MM0416 | | | | ■ | |
| 2-flute | MM10-10007-M03 | 6,87 | 10,0 | 0,0 | 8,5 | 2 | MM0612 | ■ | | | | |
| 2-flute | MM10-10007-R04-MD04 | 6,86 | 10,0 | 0,4 | 8,49 | 2 | MM0612 | ■ | | ■ | | |
| 2-flute | MM10-10007-R04P-M03 | 6,75 | 10,0 | 0,4 | 8,38 | 2 | MM0612 | | | ■ | | |
| 2-flute | MM10-10007-R10-MD04 | 6,85 | 10,0 | 1,0 | 8,48 | 2 | MM0612 | ■ | | ■ | | |
| 2-flute | MM10-10007-R20-MD04 | 6,83 | 10,0 | 2,0 | 8,46 | 2 | MM0612 | ■ | | ■ | | |
| 2-flute | MM10-10007-R30-MD04 | 6,81 | 10,0 | 3,0 | 8,44 | 2 | MM0612 | | | ■ | | |
| 2-flute | MM10-09510-M03 | 6,87 | 9,525 | 0,0 | 8,5 | 2 | MM0612 | ■ | | | | |
| 2-flute | MM10-09510-R04-MD04 | 6,86 | 9,525 | 0,4 | 8,49 | 2 | MM0612 | ■ | | | | |
| 2-flute | MM10-09510-R32-MD04 | 6,86 | 9,525 | 3,175 | 8,43 | 2 | MM0612 | | | ■ | | |
| 2-flute | MM10-10007-R04A8-E03 | 6,6 | 10,0 | 0,4 | 8,44 | 2 | MM0612 | ■ | | ■ | | |
| 2-flute | MM10-09510-R08A8-E03 | 6,6 | 9,525 | 0,8 | 8,37 | 2 | MM0612 | | | ■ | | |
| Keyway 3-flute | MM10-09512-R03A30-M03 | 11,87 | 9,525 | 0,3 | 15,72 | 3 | MM0416 | | | | | ■ |
| Keyway 2-flute | MM10-09307T-R02-D04 | 6,87 | 9,27 | 0,2 | 8,49 | 2 | MM0612 | ■ | | | | |
| Keyway 2-flute | MM10-09807T-R03-D04 | 6,87 | 9,8 | 0,3 | 8,49 | 2 | MM0612 | ■ | | | | |

For Torque keys and torque values, see page 631

Centre drilling



| Insert type | Designation | Dimensions in mm | | | | SIG° | ZNP | Wrench | Coated | | | | |
|-------------|---------------------|------------------|------|------|------|-------|-----|--------|--------|------|------|------|--|
| | | DC | LE | LF | PL | | | | Grades | | | | |
| | | | | | | | | | T60M | F15M | F30M | F40M | |
| 90° | MM10-10005-C90-M03 | 10,0 | 10,0 | 11,8 | 4,69 | 90,0 | 2 | MM0612 | ■ | | | | |
| 120° | MM10-10007-C120-M03 | 10,0 | 10,4 | 11,8 | 2,7 | 120,0 | 2 | MM0612 | ■ | | | | |
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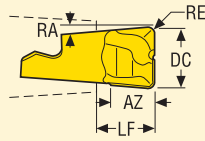
Chamfering



| Insert type | Designation | Dimensions in mm | | | | KAPR° | ZNP | Wrench | Coated | | | | | |
|-------------|---------------------|------------------|------|------|------|-------|------|--------|--------|--------|------|------|------|--|
| | | DC | DCX | LE | LF | | | | PL | Grades | | | | |
| | | | | | | | | | | T60M | F15M | F30M | F40M | |
| 45° | MM10-10007-4525-E03 | 4,82 | 10,0 | 6,94 | 8,48 | 2,6 | 45,0 | 2 | MM0612 | ■ | | | | |
| 60° | MM10-10008-6040-E03 | 5,24 | 10,0 | 8,05 | 9,6 | 4,2 | 60,0 | 2 | MM0612 | ■ | | | | |
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For Torque keys and torque values, see page 631

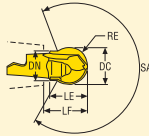
Plunge milling



| Insert type | Designation | Dimensions in mm | | | | RA° | ZNP | Wrench | Coated | | | | |
|-------------|------------------------|------------------|-----|------|--------|-----|--------|--------|--------|------|------|--|--|
| | | DC | AZ | LF | Grades | | | | | | | | |
| | | | | | T60M | | | | F15M | F30M | F40M | | |
| 2-flute | MM10-10007-R10-PL-MD04 | 10,0 | 7,1 | 8,48 | 5,0 | 2 | MM0612 | | | ■ | | | |
| 2-flute | MM10-10007-R10-PLP-M03 | 10,0 | 6,8 | 8,38 | 5,0 | 2 | MM0612 | | | ■ | | | |
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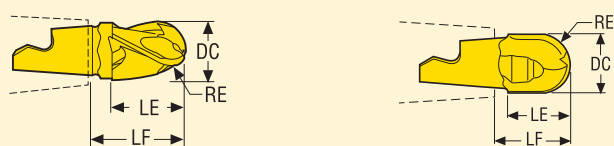
For Torque keys and torque values, see page 631

Precision inserts for semi-finishing in all materials



| Insert type | Designation | Dimensions in mm | | | | | SA° | ZNP | Wrench | Coated | | | |
|-------------|-----------------------|------------------|------|------|-------|------|-------|-----|--------|--------|------|------|------|
| | | DC | RE | LE | LF | DN | | | | Grades | | | |
| | | | | | | | | | | T60M | F15M | F30M | F40M |
| 2-flute | MM10-12012-B120PF-M02 | 12,0 | 6,0 | 12,0 | 13,2 | 10,0 | 247,0 | 2 | MM0612 | | ■ | | |
| 2-flute | MM10-12712-B120PF-M03 | 12,7 | 6,35 | 12,4 | 13,56 | 10,0 | 256,0 | 2 | MM1420 | | ■ | | |
| 2-flute | MM10-12012-B120P-M05 | 12,0 | 6,0 | 12,0 | 13,2 | 10,0 | 247,0 | 2 | MM0612 | | | ■ | |
| 2-flute | MM10-12712-B120P-M05 | 12,7 | 6,35 | 12,4 | 13,56 | 10,0 | 256,0 | 2 | MM1420 | | | ■ | |
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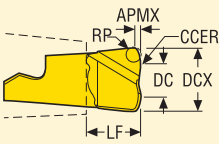
Copy milling



| Insert type | Designation | Dimensions in mm | | | | ZNP | Wrench | Coated | | | | |
|-------------|-----------------------|------------------|-------|-------|-------|-----|--------|--------|------|------|------|--|
| | | LE | DC | RE | LF | | | Grades | | | | |
| | | | | | | | | T60M | F15M | F30M | F40M | |
| 3-flute | MM10-10012-B90A30-E03 | 11,87 | 10,0 | 5,0 | 15,72 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM10-10012-B90A30-M03 | 11,87 | 10,0 | 5,0 | 15,72 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM10-10012-B90A30-D03 | 11,87 | 10,0 | 5,0 | 15,72 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM10-09512-B90A30-E03 | 11,87 | 9,525 | 4,763 | 15,72 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM10-09512-B90A30-M03 | 11,87 | 9,525 | 4,763 | 15,72 | 3 | MM0416 | | | | ■ | |
| | | | | | | | | | | | | |
| 2-flute | MM10-10010-B90-MD04 | 10,23 | 10,0 | 5,0 | 11,77 | 2 | MM0612 | ■ | | ■ | | |
| 2-flute | MM10-10010-B90S-E04 | 10,23 | 10,0 | 5,0 | 11,77 | 2 | MM0612 | | | ■ | | |
| 2-flute | MM10-09510-B90S-E04 | 10,23 | 9,525 | 4,763 | 11,77 | 2 | MM0612 | | | ■ | | |
| 2-flute | MM10-10010-B90P-M04 | 8,73 | 10,0 | 5,0 | 11,74 | 2 | MM0612 | | | ■ | | |
| 2-flute | MM10-10010-B90PF-M02 | 8,73 | 10,0 | 5,0 | 11,74 | 2 | MM0612 | | ■ | | | |
| 2-flute | MM10-09510-B90P-M04 | 8,73 | 9,525 | 4,763 | 11,74 | 2 | MM0612 | ■ | | ■ | | |
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For Torque keys and torque values, see page 631

High feed



| Insert type | Designation | Dimensions in mm | | | | | | ZNP | Wrench | Coated | | | | |
|-------------|--------------------|------------------|-----|------|------|------|-----|-----|--------|--------|------|------|------|--|
| | | APMX | DC | DCX | RP | CCER | LF | | | Grades | | | | |
| | | | | | | | | | | T60M | F15M | F30M | F40M | |
| 2-flute | MM10-10,50-HF-MD08 | 0,44 | 5,0 | 10,0 | 1,13 | 5,0 | 8,5 | 2 | MM0612 | | ■ | ■ | | |
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For Torque keys and torque values, see page 631

MM10 – General Insert selection

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM10-10012-R05A30-M03 F40M | 2,0 | 0,044 | 0,044 | 0,055 | 0,075 |
| P2 | MM10-10012-R05A30-M03 F40M | 2,0 | 0,044 | 0,046 | 0,055 | 0,075 |
| P3 | MM10-10012-R05A30-M03 F40M | 2,0 | 0,042 | 0,042 | 0,050 | 0,070 |
| P4 | MM10-10012-R05A30-M03 F40M | 2,0 | 0,042 | 0,042 | 0,050 | 0,070 |
| P5 | MM10-10012-R05A30-M03 F40M | 2,0 | 0,040 | 0,042 | 0,050 | 0,065 |
| P6 | MM10-10012-R05A30-M03 F40M | 2,0 | 0,040 | 0,040 | 0,050 | 0,065 |
| P7 | MM10-10012-R05A30-M03 F40M | 2,0 | 0,040 | 0,040 | 0,050 | 0,065 |
| P8 | MM10-10012-R05A30-M03 F40M | 2,0 | 0,042 | 0,042 | 0,050 | 0,070 |
| P11 | MM10-10012-R05A30-M03 F40M | 2,0 | 0,040 | 0,040 | 0,050 | 0,065 |
| P12 | MM10-10012-R05A30-M03 F40M | 1,6 | 0,028 | 0,028 | 0,034 | 0,046 |
| M1 | MM10-10012-R05A30-M03 F40M | 2,0 | 0,044 | 0,046 | 0,055 | 0,075 |
| M2 | MM10-10012-R05A30-M03 F40M | 2,0 | 0,040 | 0,042 | 0,050 | 0,065 |
| M3 | MM10-10012-R05A30-M03 F40M | 1,6 | 0,032 | 0,034 | 0,040 | 0,055 |
| M4 | MM10-10012-R05A30-M03 F40M | 1,2 | 0,030 | 0,030 | 0,038 | 0,050 |
| M5 | MM10-10012-R05A30-M03 F40M | 1,2 | 0,030 | 0,030 | 0,038 | 0,050 |
| K1 | MM10-10012-R10A30-E03 F30M | 2,0 | 0,048 | 0,048 | 0,060 | 0,080 |
| K2 | MM10-10012-R10A30-E03 F30M | 2,0 | 0,044 | 0,044 | 0,055 | 0,075 |
| K3 | MM10-10012-R10A30-E03 F30M | 2,0 | 0,044 | 0,044 | 0,055 | 0,075 |
| K4 | MM10-10012-R10A30-E03 F30M | 2,0 | 0,044 | 0,044 | 0,055 | 0,075 |
| K5 | MM10-10012-R10A30-D03 F30M | 2,0 | 0,040 | 0,040 | 0,050 | 0,065 |
| K6 | MM10-10012-R10A30-D03 F30M | 2,0 | 0,044 | 0,044 | 0,055 | 0,075 |
| K7 | MM10-10012-R10A30-D03 F30M | 2,0 | 0,040 | 0,040 | 0,050 | 0,065 |
| N1 | MM10-10012-R10A30-E03 F30M | 2,0 | 0,060 | 0,060 | 0,075 | 0,10 |
| N2 | MM10-10012-R10A30-E03 F30M | 2,0 | 0,060 | 0,060 | 0,075 | 0,10 |
| N3 | MM10-10012-R10A30-E03 F30M | 2,0 | 0,060 | 0,060 | 0,075 | 0,10 |
| N11 | MM10-10012-R10A30-E03 F30M | 2,0 | 0,060 | 0,060 | 0,075 | 0,10 |
| S1 | MM10-10012-R10A30-D03 F30M | 1,2 | 0,036 | 0,036 | 0,044 | 0,060 |
| S2 | MM10-10012-R10A30-D03 F30M | 1,2 | 0,036 | 0,036 | 0,044 | 0,060 |
| S3 | MM10-10012-R10A30-D03 F30M | 1,2 | 0,032 | 0,034 | 0,042 | 0,055 |
| S11 | MM10-10012-R05A30-M03 F40M | 1,4 | 0,034 | 0,034 | 0,042 | 0,055 |
| S12 | MM10-10012-R05A30-M03 F40M | 1,4 | 0,034 | 0,034 | 0,042 | 0,055 |
| S13 | MM10-10012-R05A30-M03 F40M | 1,2 | 0,030 | 0,030 | 0,038 | 0,050 |
| H5 | MM10-10012-R10A30-D03 F30M | 1,6 | 0,032 | 0,032 | 0,040 | 0,050 |
| H8 | MM10-10012-R10A30-D03 F30M | 1,4 | 0,024 | 0,026 | 0,032 | 0,042 |
| H11 | MM10-10012-R10A30-D03 F30M | 1,6 | 0,032 | 0,032 | 0,040 | 0,050 |
| H12 | MM10-10012-R10A30-D03 F30M | 1,4 | 0,024 | 0,026 | 0,032 | 0,042 |
| H21 | MM10-10012-R10A30-D03 F30M | 1,4 | 0,024 | 0,026 | 0,032 | 0,042 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MM10 – General Cutting data

| SMG | F30M | | | | F40M | | | | T60M | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| | 100% | 40% | 20% | 10% | 100% | 40% | 20% | 10% | 100% | 40% | 20% | 10% |
| P1 | 265 | 330 | 365 | 405 | 250 | 315 | 345 | 385 | 190 | 240 | 270 | 295 |
| P2 | 260 | 320 | 360 | 390 | 245 | 305 | 340 | 375 | 185 | 235 | 260 | 290 |
| P3 | 225 | 280 | 315 | 340 | 215 | 265 | 295 | 325 | 165 | 205 | 230 | 250 |
| P4 | 200 | 245 | 275 | 305 | 190 | 235 | 260 | 290 | 145 | 180 | 200 | 225 |
| P5 | 190 | 235 | 265 | 290 | 180 | 225 | 250 | 275 | 140 | 175 | 195 | 215 |
| P6 | 215 | 265 | 295 | 325 | 205 | 250 | 280 | 310 | 155 | 195 | 220 | 240 |
| P7 | 200 | 250 | 280 | 310 | 190 | 240 | 265 | 290 | 145 | 185 | 205 | 225 |
| P8 | 190 | 235 | 265 | 285 | 180 | 225 | 250 | 270 | 140 | 175 | 190 | 210 |
| P11 | 195 | 245 | 270 | 300 | 185 | 230 | 260 | 285 | 140 | 180 | 200 | 220 |
| P12 | 120 | 150 | 170 | 185 | 115 | 145 | 160 | 175 | 90 | 115 | 125 | 140 |
| M1 | — | — | — | — | 200 | 245 | 275 | 305 | 150 | 190 | 210 | 235 |
| M2 | — | — | — | — | 165 | 200 | 225 | 250 | 125 | 155 | 175 | 190 |
| M3 | — | — | — | — | 130 | 160 | 175 | 195 | 100 | 125 | 140 | 155 |
| M4 | — | — | — | — | 100 | 120 | 135 | 150 | 75 | 95 | 110 | 115 |
| M5 | — | — | — | — | 80 | 100 | 115 | 125 | 65 | 80 | 90 | 95 |
| K1 | 205 | 255 | 285 | 310 | 195 | 240 | 270 | 300 | 150 | 185 | 205 | 230 |
| K2 | 180 | 225 | 250 | 275 | 170 | 215 | 235 | 260 | 130 | 165 | 185 | 200 |
| K3 | 150 | 190 | 210 | 235 | 145 | 180 | 200 | 220 | 110 | 140 | 155 | 170 |
| K4 | 145 | 180 | 200 | 225 | 140 | 170 | 190 | 210 | 105 | 130 | 150 | 165 |
| K5 | 90 | 110 | 125 | 135 | 85 | 105 | 115 | 125 | 65 | 80 | 90 | 100 |
| K6 | 130 | 160 | 180 | 195 | 120 | 150 | 170 | 185 | 95 | 115 | 130 | 145 |
| K7 | 110 | 140 | 155 | 170 | 105 | 135 | 150 | 165 | 85 | 105 | 115 | 125 |
| N1 | 1550 | 1925 | 2150 | 2350 | 1475 | 1825 | 2025 | 2250 | 1125 | 1400 | 1550 | 1725 |
| N2 | 630 | 780 | 870 | 950 | 600 | 740 | 820 | 910 | 450 | 570 | 630 | 690 |
| N3 | 415 | 520 | 580 | 630 | 395 | 495 | 550 | 610 | 300 | 380 | 420 | 460 |
| N11 | 475 | 590 | 660 | 720 | 455 | 570 | 620 | 690 | 345 | 430 | 480 | 530 |
| S1 | 48 | 60 | 65 | 75 | 46 | 55 | 65 | 70 | 36 | 45 | 50 | 55 |
| S2 | 38 | 48 | 55 | 60 | 37 | 46 | 50 | 55 | 29 | 36 | 40 | 44 |
| S3 | 34 | 42 | 47 | 50 | 32 | 40 | 45 | 49 | 25 | 32 | 35 | 38 |
| S11 | — | — | — | — | 65 | 80 | 90 | 100 | 50 | 65 | 70 | 75 |
| S12 | — | — | — | — | 45 | 55 | 60 | 70 | 35 | 44 | 49 | 55 |
| S13 | — | — | — | — | 26 | 32 | 36 | 39 | 20 | 25 | 28 | 30 |
| H5 | 40 | 50 | 55 | 60 | 39 | 48 | 55 | 60 | 30 | 38 | 42 | 46 |
| H8 | 42 | 50 | 60 | 65 | 40 | 50 | 55 | 60 | 31 | 39 | 44 | 48 |
| H11 | 50 | 65 | 70 | 80 | 49 | 60 | 70 | 75 | 38 | 48 | 55 | 60 |
| H12 | 75 | 95 | 105 | 115 | 70 | 90 | 100 | 110 | 55 | 70 | 80 | 85 |
| H21 | 42 | 50 | 60 | 65 | 40 | 50 | 55 | 60 | 31 | 39 | 44 | 48 |

MM10 Z3 – Copy Insert selection – Roughing

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM10-10012-B90A30-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,060 |
| P2 | MM10-10012-B90A30-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,065 |
| P3 | MM10-10012-B90A30-M03 F40M | 2,0 | 0,050 | 0,050 | 0,055 | 0,060 |
| P4 | MM10-10012-B90A30-M03 F40M | 2,0 | 0,050 | 0,050 | 0,055 | 0,060 |
| P5 | MM10-10012-B90A30-M03 F40M | 2,0 | 0,050 | 0,050 | 0,050 | 0,055 |
| P6 | MM10-10012-B90A30-M03 F40M | 2,0 | 0,050 | 0,050 | 0,050 | 0,055 |
| P7 | MM10-10012-B90A30-M03 F40M | 2,0 | 0,050 | 0,050 | 0,050 | 0,055 |
| P8 | MM10-10012-B90A30-M03 F40M | 2,0 | 0,050 | 0,050 | 0,055 | 0,060 |
| P11 | MM10-10012-B90A30-M03 F40M | 2,0 | 0,050 | 0,050 | 0,050 | 0,055 |
| P12 | MM10-10012-B90A30-M03 F40M | 1,6 | 0,036 | 0,036 | 0,036 | 0,038 |
| M1 | MM10-10012-B90A30-M03 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,065 |
| M2 | MM10-10012-B90A30-M03 F40M | 2,0 | 0,050 | 0,050 | 0,050 | 0,055 |
| M3 | MM10-10012-B90A30-M03 F40M | 1,6 | 0,042 | 0,042 | 0,042 | 0,046 |
| M4 | MM10-10012-B90A30-M03 F40M | 1,2 | 0,038 | 0,038 | 0,038 | 0,040 |
| M5 | MM10-10012-B90A30-M03 F40M | 1,2 | 0,038 | 0,038 | 0,038 | 0,040 |
| K1 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,055 | 0,065 |
| K2 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,050 | 0,050 | 0,050 | 0,055 |
| K3 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,050 | 0,050 | 0,050 | 0,055 |
| K4 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,050 | 0,050 | 0,050 | 0,055 |
| K5 | MM10-10012-B90A30-D03 F30M | 2,0 | 0,044 | 0,044 | 0,046 | 0,050 |
| K6 | MM10-10012-B90A30-D03 F30M | 2,0 | 0,050 | 0,050 | 0,050 | 0,055 |
| K7 | MM10-10012-B90A30-D03 F30M | 2,0 | 0,044 | 0,044 | 0,046 | 0,050 |
| N1 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,070 | 0,070 | 0,075 | 0,080 |
| N2 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,070 | 0,070 | 0,075 | 0,080 |
| N3 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,070 | 0,070 | 0,075 | 0,080 |
| N11 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,070 | 0,070 | 0,075 | 0,080 |
| S1 | MM10-10012-B90A30-D03 F30M | 1,2 | 0,038 | 0,038 | 0,038 | 0,040 |
| S2 | MM10-10012-B90A30-D03 F30M | 1,2 | 0,038 | 0,038 | 0,038 | 0,040 |
| S3 | MM10-10012-B90A30-D03 F30M | 1,2 | 0,036 | 0,036 | 0,036 | 0,038 |
| S11 | MM10-10012-B90A30-M03 F40M | 1,4 | 0,042 | 0,042 | 0,042 | 0,046 |
| S12 | MM10-10012-B90A30-M03 F40M | 1,4 | 0,042 | 0,042 | 0,042 | 0,046 |
| S13 | MM10-10012-B90A30-M03 F40M | 1,2 | 0,038 | 0,038 | 0,038 | 0,040 |
| H5 | MM10-10012-B90A30-D03 F30M | 1,6 | 0,036 | 0,036 | 0,036 | 0,038 |
| H8 | MM10-10012-B90A30-D03 F30M | 1,4 | 0,028 | 0,028 | 0,028 | 0,030 |
| H11 | MM10-10012-B90A30-D03 F30M | 1,6 | 0,036 | 0,036 | 0,036 | 0,038 |
| H12 | MM10-10012-B90A30-D03 F30M | 1,4 | 0,028 | 0,028 | 0,028 | 0,030 |
| H21 | MM10-10012-B90A30-D03 F30M | 1,4 | 0,028 | 0,028 | 0,028 | 0,030 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MM10 Z3 – Copy Insert selection – Semi finishing

| SMG | | a _p | f _z | | | |
|-----|----------------------------|----------------|----------------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,060 | 0,060 | 0,065 | 0,070 |
| P2 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,060 | 0,065 | 0,070 | 0,070 |
| P3 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,060 | 0,065 | 0,070 |
| P4 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,060 | 0,065 | 0,065 |
| P5 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| P6 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| P7 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| P8 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,060 | 0,065 | 0,070 |
| P11 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| P12 | MM10-10012-B90A30-E03 F30M | 1,6 | 0,038 | 0,038 | 0,042 | 0,044 |
| M1 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,060 | 0,065 | 0,070 | 0,070 |
| M2 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| M3 | MM10-10012-B90A30-E03 F30M | 1,6 | 0,044 | 0,046 | 0,048 | 0,050 |
| M4 | MM10-10012-B90A30-E03 F30M | 1,2 | 0,040 | 0,040 | 0,042 | 0,044 |
| M5 | MM10-10012-B90A30-E03 F30M | 1,2 | 0,040 | 0,040 | 0,042 | 0,044 |
| K1 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,060 | 0,065 | 0,070 | 0,070 |
| K2 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| K3 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| K4 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| K5 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,048 | 0,050 | 0,055 | 0,060 |
| K6 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| K7 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,048 | 0,050 | 0,055 | 0,060 |
| N1 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,075 | 0,080 | 0,085 | 0,090 |
| N2 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,075 | 0,080 | 0,085 | 0,090 |
| N3 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,075 | 0,080 | 0,085 | 0,090 |
| N11 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,075 | 0,080 | 0,085 | 0,090 |
| S1 | MM10-10012-B90A30-E03 F30M | 1,2 | 0,040 | 0,040 | 0,042 | 0,044 |
| S2 | MM10-10012-B90A30-E03 F30M | 1,2 | 0,040 | 0,040 | 0,042 | 0,044 |
| S3 | MM10-10012-B90A30-D03 F30M | 1,2 | 0,036 | 0,038 | 0,040 | 0,042 |
| S11 | MM10-10012-B90A30-E03 F30M | 1,4 | 0,044 | 0,046 | 0,048 | 0,050 |
| S12 | MM10-10012-B90A30-E03 F30M | 1,4 | 0,044 | 0,046 | 0,048 | 0,050 |
| S13 | MM10-10012-B90A30-E03 F30M | 1,2 | 0,040 | 0,040 | 0,042 | 0,044 |
| H5 | MM10-10012-B90A30-E03 F30M | 1,6 | 0,038 | 0,038 | 0,042 | 0,044 |
| H8 | MM10-10012-B90A30-E03 F30M | 1,4 | 0,028 | 0,030 | 0,032 | 0,034 |
| H11 | MM10-10012-B90A30-E03 F30M | 1,6 | 0,038 | 0,038 | 0,042 | 0,044 |
| H12 | MM10-10012-B90A30-E03 F30M | 1,4 | 0,028 | 0,030 | 0,032 | 0,034 |
| H21 | MM10-10012-B90A30-E03 F30M | 1,4 | 0,028 | 0,030 | 0,032 | 0,034 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_φ/DC = %

All cutting data are start values

MM10 Z3 – Copy Insert selection – Finishing

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,060 | 0,060 | 0,065 | 0,070 |
| P2 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,060 | 0,065 | 0,070 | 0,070 |
| P3 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,060 | 0,065 | 0,070 |
| P4 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,060 | 0,065 | 0,065 |
| P5 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| P6 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| P7 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| P8 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,060 | 0,065 | 0,070 |
| P11 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| P12 | MM10-10012-B90A30-E03 F30M | 1,6 | 0,038 | 0,038 | 0,042 | 0,044 |
| M1 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,060 | 0,065 | 0,070 | 0,070 |
| M2 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| M3 | MM10-10012-B90A30-E03 F30M | 1,6 | 0,044 | 0,046 | 0,048 | 0,050 |
| M4 | MM10-10012-B90A30-E03 F30M | 1,2 | 0,040 | 0,040 | 0,042 | 0,044 |
| M5 | MM10-10012-B90A30-E03 F30M | 1,2 | 0,040 | 0,040 | 0,042 | 0,044 |
| K1 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,060 | 0,065 | 0,070 | 0,070 |
| K2 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| K3 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| K4 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| K5 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,048 | 0,050 | 0,055 | 0,060 |
| K6 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| K7 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,048 | 0,050 | 0,055 | 0,060 |
| N1 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,075 | 0,080 | 0,085 | 0,090 |
| N2 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,075 | 0,080 | 0,085 | 0,090 |
| N3 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,075 | 0,080 | 0,085 | 0,090 |
| N11 | MM10-10012-B90A30-E03 F30M | 2,0 | 0,075 | 0,080 | 0,085 | 0,090 |
| S1 | MM10-10012-B90A30-E03 F30M | 1,2 | 0,040 | 0,040 | 0,042 | 0,044 |
| S2 | MM10-10012-B90A30-E03 F30M | 1,2 | 0,040 | 0,040 | 0,042 | 0,044 |
| S3 | MM10-10012-B90A30-E03 F30M | 1,2 | 0,036 | 0,038 | 0,040 | 0,042 |
| S11 | MM10-10012-B90A30-E03 F30M | 1,4 | 0,044 | 0,046 | 0,048 | 0,050 |
| S12 | MM10-10012-B90A30-E03 F30M | 1,4 | 0,044 | 0,046 | 0,048 | 0,050 |
| S13 | MM10-10012-B90A30-E03 F30M | 1,2 | 0,040 | 0,040 | 0,042 | 0,044 |
| H5 | MM10-10012-B90A30-E03 F30M | 1,6 | 0,038 | 0,038 | 0,042 | 0,044 |
| H8 | MM10-10012-B90A30-E03 F30M | 1,4 | 0,028 | 0,030 | 0,032 | 0,034 |
| H11 | MM10-10012-B90A30-E03 F30M | 1,6 | 0,038 | 0,038 | 0,042 | 0,044 |
| H12 | MM10-10012-B90A30-E03 F30M | 1,4 | 0,028 | 0,030 | 0,032 | 0,034 |
| H21 | MM10-10012-B90A30-E03 F30M | 1,4 | 0,028 | 0,030 | 0,032 | 0,034 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MM10 Z3 – Copy Cutting data

| SMG | F30M | | | | | F40M | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|
| | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% |
| P1 | 280 | 330 | 355 | 380 | 380 | 270 | 310 | 335 | 365 | 360 |
| P2 | 275 | 320 | 340 | 370 | 370 | 260 | 305 | 325 | 355 | 355 |
| P3 | 240 | 280 | 295 | 320 | 320 | 230 | 265 | 280 | 305 | 305 |
| P4 | 210 | 245 | 265 | 285 | 285 | 200 | 235 | 250 | 270 | 270 |
| P5 | 200 | 235 | 250 | 275 | 270 | 190 | 225 | 240 | 260 | 260 |
| P6 | 225 | 265 | 285 | 305 | 305 | 215 | 250 | 270 | 290 | 290 |
| P7 | 215 | 250 | 265 | 290 | 285 | 205 | 235 | 255 | 275 | 275 |
| P8 | 200 | 235 | 250 | 270 | 270 | 190 | 225 | 235 | 260 | 260 |
| P11 | 205 | 240 | 260 | 280 | 280 | 195 | 230 | 245 | 265 | 265 |
| P12 | 130 | 160 | 160 | 175 | 175 | 120 | 150 | 155 | 165 | 165 |
| M1 | — | — | — | — | — | 210 | 245 | 260 | 285 | 285 |
| M2 | — | — | — | — | — | 175 | 200 | 215 | 235 | 230 |
| M3 | — | — | — | — | — | 135 | 165 | 170 | 185 | 180 |
| M4 | — | — | — | — | — | 95 | 135 | 130 | 140 | 140 |
| M5 | — | — | — | — | — | 75 | 110 | 105 | 115 | 115 |
| K1 | 220 | 255 | 270 | 295 | 295 | 205 | 240 | 255 | 280 | 280 |
| K2 | 190 | 220 | 240 | 260 | 255 | 180 | 210 | 230 | 245 | 245 |
| K3 | 160 | 190 | 200 | 220 | 215 | 155 | 180 | 195 | 210 | 205 |
| K4 | 155 | 180 | 195 | 210 | 205 | 145 | 170 | 185 | 200 | 195 |
| K5 | 95 | 110 | 115 | 125 | 125 | 90 | 105 | 110 | 120 | 120 |
| K6 | 135 | 160 | 170 | 185 | 185 | 130 | 150 | 160 | 175 | 175 |
| K7 | 120 | 140 | 150 | 160 | 160 | 115 | 135 | 140 | 155 | 155 |
| N1 | 1650 | 1925 | 2050 | 2225 | 2200 | 1575 | 1825 | 1950 | 2125 | 2100 |
| N2 | 670 | 780 | 830 | 900 | 890 | 640 | 740 | 790 | 860 | 850 |
| N3 | 445 | 520 | 550 | 600 | 590 | 425 | 495 | 530 | 570 | 560 |
| N11 | 510 | 590 | 630 | 690 | 680 | 485 | 560 | 600 | 650 | 650 |
| S1 | 45 | 65 | 65 | 70 | 70 | 43 | 60 | 60 | 65 | 65 |
| S2 | 37 | 50 | 50 | 55 | 55 | 35 | 50 | 48 | 50 | 50 |
| S3 | 32 | 46 | 44 | 48 | 48 | 30 | 44 | 42 | 46 | 45 |
| S11 | — | — | — | — | — | 65 | 90 | 85 | 90 | 90 |
| S12 | — | — | — | — | — | 45 | 60 | 60 | 65 | 65 |
| S13 | — | — | — | — | — | 24 | 35 | 34 | 37 | 37 |
| H5 | 43 | 55 | 55 | 60 | 55 | 41 | 50 | 50 | 55 | 55 |
| H8 | 41 | 55 | 55 | 60 | 60 | 39 | 55 | 50 | 55 | 55 |
| H11 | 55 | 65 | 70 | 75 | 75 | 50 | 65 | 65 | 70 | 70 |
| H12 | 75 | 100 | 100 | 105 | 105 | 70 | 95 | 95 | 100 | 100 |
| H21 | 41 | 55 | 55 | 60 | 60 | 39 | 55 | 50 | 55 | 55 |

MM10 Z2 – Copy Insert selection – Roughing

| SMG | | a_p | f_z | | | |
|-----|--------------------------|-------|-------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM10-10010-B90S-E04 F30M | 4,0 | 0,060 | 0,065 | 0,070 | 0,085 |
| P2 | MM10-10010-B90S-E04 F30M | 4,0 | 0,065 | 0,065 | 0,075 | 0,090 |
| P3 | MM10-10010-B90S-E04 F30M | 4,0 | 0,060 | 0,060 | 0,070 | 0,085 |
| P4 | MM10-10010-B90-MD04 F30M | 4,0 | 0,060 | 0,060 | 0,070 | 0,080 |
| P5 | MM10-10010-B90-MD04 F30M | 4,0 | 0,060 | 0,060 | 0,065 | 0,080 |
| P6 | MM10-10010-B90-MD04 F30M | 4,0 | 0,055 | 0,055 | 0,065 | 0,080 |
| P7 | MM10-10010-B90-MD04 F30M | 4,0 | 0,055 | 0,055 | 0,065 | 0,080 |
| P8 | MM10-10010-B90-MD04 F30M | 4,0 | 0,060 | 0,060 | 0,070 | 0,085 |
| P11 | MM10-10010-B90-MD04 F30M | 4,0 | 0,055 | 0,055 | 0,065 | 0,080 |
| P12 | MM10-10010-B90-MD04 F30M | 3,0 | 0,042 | 0,042 | 0,046 | 0,050 |
| M1 | MM10-10010-B90S-E04 F30M | 4,0 | 0,065 | 0,065 | 0,075 | 0,090 |
| M2 | MM10-10010-B90S-E04 F30M | 4,0 | 0,060 | 0,060 | 0,065 | 0,080 |
| M3 | MM10-10010-B90S-E04 F30M | 3,0 | 0,048 | 0,048 | 0,055 | 0,060 |
| M4 | MM10-10010-B90-MD04 F30M | 2,5 | 0,044 | 0,044 | 0,048 | 0,055 |
| M5 | MM10-10010-B90-MD04 F30M | 2,5 | 0,044 | 0,044 | 0,048 | 0,055 |
| K1 | MM10-10010-B90S-E04 F30M | 4,0 | 0,065 | 0,065 | 0,075 | 0,090 |
| K2 | MM10-10010-B90S-E04 F30M | 4,0 | 0,060 | 0,060 | 0,065 | 0,080 |
| K3 | MM10-10010-B90S-E04 F30M | 4,0 | 0,060 | 0,060 | 0,065 | 0,080 |
| K4 | MM10-10010-B90S-E04 F30M | 4,0 | 0,060 | 0,060 | 0,065 | 0,080 |
| K5 | MM10-10010-B90-MD04 F30M | 4,0 | 0,050 | 0,050 | 0,060 | 0,070 |
| K6 | MM10-10010-B90-MD04 F30M | 4,0 | 0,060 | 0,060 | 0,065 | 0,080 |
| K7 | MM10-10010-B90-MD04 F30M | 4,0 | 0,050 | 0,050 | 0,060 | 0,070 |
| N1 | MM10-10010-B90S-E04 F30M | 4,0 | 0,080 | 0,080 | 0,095 | 0,11 |
| N2 | MM10-10010-B90S-E04 F30M | 4,0 | 0,080 | 0,080 | 0,095 | 0,11 |
| N3 | MM10-10010-B90S-E04 F30M | 4,0 | 0,080 | 0,080 | 0,095 | 0,11 |
| N11 | MM10-10010-B90S-E04 F30M | 4,0 | 0,080 | 0,080 | 0,095 | 0,11 |
| S1 | MM10-10010-B90S-E04 F30M | 2,5 | 0,044 | 0,044 | 0,048 | 0,055 |
| S2 | MM10-10010-B90S-E04 F30M | 2,5 | 0,044 | 0,044 | 0,048 | 0,055 |
| S3 | MM10-10010-B90S-E04 F30M | 2,5 | 0,042 | 0,042 | 0,044 | 0,050 |
| S11 | MM10-10010-B90S-E04 F30M | 3,0 | 0,048 | 0,048 | 0,055 | 0,060 |
| S12 | MM10-10010-B90S-E04 F30M | 3,0 | 0,048 | 0,048 | 0,055 | 0,060 |
| S13 | MM10-10010-B90S-E04 F30M | 2,5 | 0,044 | 0,044 | 0,048 | 0,055 |
| H5 | MM10-10010-B90-MD04 F30M | 3,0 | 0,042 | 0,042 | 0,046 | 0,050 |
| H8 | MM10-10010-B90-MD04 F30M | 3,0 | 0,032 | 0,032 | 0,034 | 0,040 |
| H11 | MM10-10010-B90-MD04 F30M | 3,0 | 0,042 | 0,042 | 0,046 | 0,050 |
| H12 | MM10-10010-B90-MD04 F30M | 3,0 | 0,032 | 0,032 | 0,034 | 0,040 |
| H21 | MM10-10010-B90-MD04 F30M | 3,0 | 0,032 | 0,032 | 0,034 | 0,040 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MM10 Z2 – Copy Insert selection – Semi finishing

| SMG | | a_p | f_z | | | |
|-----|--------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM10-10010-B90P-M04 F30M | 4,0 | 0,075 | 0,085 | 0,10 | 0,12 |
| P2 | MM10-10010-B90P-M04 F30M | 4,0 | 0,080 | 0,090 | 0,10 | 0,12 |
| P3 | MM10-10010-B90P-M04 F30M | 4,0 | 0,075 | 0,085 | 0,10 | 0,11 |
| P4 | MM10-10010-B90P-M04 F30M | 4,0 | 0,075 | 0,080 | 0,095 | 0,11 |
| P5 | MM10-10010-B90P-M04 F30M | 4,0 | 0,070 | 0,080 | 0,095 | 0,11 |
| P6 | MM10-10010-B90P-M04 F30M | 4,0 | 0,070 | 0,080 | 0,095 | 0,11 |
| P7 | MM10-10010-B90P-M04 F30M | 4,0 | 0,070 | 0,080 | 0,095 | 0,11 |
| P8 | MM10-10010-B90P-M04 F30M | 4,0 | 0,075 | 0,085 | 0,10 | 0,11 |
| P11 | MM10-10010-B90P-M04 F30M | 4,0 | 0,070 | 0,080 | 0,095 | 0,11 |
| P12 | MM10-10010-B90P-M04 F30M | 3,0 | 0,048 | 0,050 | 0,060 | 0,065 |
| M1 | MM10-10010-B90P-M04 F30M | 4,0 | 0,080 | 0,090 | 0,10 | 0,12 |
| M2 | MM10-10010-B90P-M04 F30M | 4,0 | 0,070 | 0,080 | 0,095 | 0,11 |
| M3 | MM10-10010-B90P-M04 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,075 |
| M4 | MM10-10010-B90P-M04 F30M | 2,5 | 0,050 | 0,055 | 0,060 | 0,065 |
| M5 | MM10-10010-B90P-M04 F30M | 2,5 | 0,050 | 0,055 | 0,060 | 0,065 |
| K1 | MM10-10010-B90P-M04 F30M | 4,0 | 0,080 | 0,090 | 0,10 | 0,12 |
| K2 | MM10-10010-B90P-M04 F30M | 4,0 | 0,070 | 0,080 | 0,095 | 0,11 |
| K3 | MM10-10010-B90P-M04 F30M | 4,0 | 0,070 | 0,080 | 0,095 | 0,11 |
| K4 | MM10-10010-B90P-M04 F30M | 4,0 | 0,070 | 0,080 | 0,095 | 0,11 |
| K5 | MM10-10010-B90P-M04 F30M | 4,0 | 0,065 | 0,070 | 0,085 | 0,10 |
| K6 | MM10-10010-B90P-M04 F30M | 4,0 | 0,070 | 0,080 | 0,095 | 0,11 |
| K7 | MM10-10010-B90P-M04 F30M | 4,0 | 0,065 | 0,070 | 0,085 | 0,10 |
| N1 | MM10-10010-B90P-M04 F30M | 4,0 | 0,10 | 0,11 | 0,13 | 0,15 |
| N2 | MM10-10010-B90P-M04 F30M | 4,0 | 0,10 | 0,11 | 0,13 | 0,15 |
| N3 | MM10-10010-B90P-M04 F30M | 4,0 | 0,10 | 0,11 | 0,13 | 0,15 |
| N11 | MM10-10010-B90P-M04 F30M | 4,0 | 0,10 | 0,11 | 0,13 | 0,15 |
| S1 | MM10-10010-B90P-M04 F30M | 2,5 | 0,050 | 0,055 | 0,060 | 0,065 |
| S2 | MM10-10010-B90P-M04 F30M | 2,5 | 0,050 | 0,055 | 0,060 | 0,065 |
| S3 | MM10-10010-B90P-M04 F30M | 2,5 | 0,046 | 0,050 | 0,055 | 0,060 |
| S11 | MM10-10010-B90P-M04 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,075 |
| S12 | MM10-10010-B90P-M04 F30M | 3,0 | 0,055 | 0,060 | 0,070 | 0,075 |
| S13 | MM10-10010-B90P-M04 F30M | 2,5 | 0,050 | 0,055 | 0,060 | 0,065 |
| H5 | MM10-10010-B90P-M04 F30M | 3,0 | 0,048 | 0,050 | 0,060 | 0,065 |
| H8 | MM10-10010-B90P-M04 F30M | 3,0 | 0,036 | 0,040 | 0,044 | 0,050 |
| H11 | MM10-10010-B90P-M04 F30M | 3,0 | 0,048 | 0,050 | 0,060 | 0,065 |
| H12 | MM10-10010-B90P-M04 F30M | 3,0 | 0,036 | 0,040 | 0,044 | 0,050 |
| H21 | MM10-10010-B90P-M04 F30M | 3,0 | 0,036 | 0,040 | 0,044 | 0,050 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

MM10 Z2 – Copy Insert selection – Finishing

| SMG | | a_p | f_z | | | |
|-----|---------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,038 | 0,042 | 0,050 | 0,060 |
| P2 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,040 | 0,044 | 0,050 | 0,060 |
| P3 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,038 | 0,042 | 0,048 | 0,055 |
| P4 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,036 | 0,040 | 0,048 | 0,055 |
| P5 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,036 | 0,040 | 0,046 | 0,055 |
| P6 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,036 | 0,040 | 0,046 | 0,055 |
| P7 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,036 | 0,040 | 0,046 | 0,055 |
| P8 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,038 | 0,042 | 0,048 | 0,055 |
| P11 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,036 | 0,040 | 0,046 | 0,055 |
| P12 | MM10-10010-B90PF-M02 F15M | 3,0 | 0,024 | 0,026 | 0,030 | 0,032 |
| M1 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,040 | 0,044 | 0,050 | 0,060 |
| M2 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,036 | 0,040 | 0,046 | 0,055 |
| M3 | MM10-10010-B90PF-M02 F15M | 3,0 | 0,028 | 0,030 | 0,034 | 0,038 |
| M4 | MM10-10010-B90PF-M02 F15M | 2,5 | 0,024 | 0,026 | 0,030 | 0,032 |
| M5 | MM10-10010-B90PF-M02 F15M | 2,5 | 0,024 | 0,026 | 0,030 | 0,032 |
| K1 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,040 | 0,044 | 0,050 | 0,060 |
| K2 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,036 | 0,040 | 0,046 | 0,055 |
| K3 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,036 | 0,040 | 0,046 | 0,055 |
| K4 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,036 | 0,040 | 0,046 | 0,055 |
| K5 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,032 | 0,036 | 0,042 | 0,050 |
| K6 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,036 | 0,040 | 0,046 | 0,055 |
| K7 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,032 | 0,036 | 0,042 | 0,050 |
| N1 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,050 | 0,055 | 0,065 | 0,075 |
| N2 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,050 | 0,055 | 0,065 | 0,075 |
| N3 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,050 | 0,055 | 0,065 | 0,075 |
| N11 | MM10-10010-B90PF-M02 F15M | 4,0 | 0,050 | 0,055 | 0,065 | 0,075 |
| S1 | MM10-10010-B90PF-M02 F15M | 2,5 | 0,024 | 0,026 | 0,030 | 0,032 |
| S2 | MM10-10010-B90PF-M02 F15M | 2,5 | 0,024 | 0,026 | 0,030 | 0,032 |
| S3 | MM10-10010-B90PF-M02 F15M | 2,5 | 0,024 | 0,024 | 0,028 | 0,030 |
| S11 | MM10-10010-B90PF-M02 F15M | 3,0 | 0,028 | 0,030 | 0,034 | 0,038 |
| S12 | MM10-10010-B90PF-M02 F15M | 3,0 | 0,028 | 0,030 | 0,034 | 0,038 |
| S13 | MM10-10010-B90PF-M02 F15M | 2,5 | 0,024 | 0,026 | 0,030 | 0,032 |
| H5 | MM10-10010-B90PF-M02 F15M | 3,0 | 0,024 | 0,026 | 0,030 | 0,032 |
| H8 | MM10-10010-B90PF-M02 F15M | 3,0 | 0,018 | 0,020 | 0,022 | 0,024 |
| H11 | MM10-10010-B90PF-M02 F15M | 3,0 | 0,024 | 0,026 | 0,030 | 0,032 |
| H12 | MM10-10010-B90PF-M02 F15M | 3,0 | 0,018 | 0,020 | 0,022 | 0,024 |
| H21 | MM10-10010-B90PF-M02 F15M | 3,0 | 0,018 | 0,020 | 0,022 | 0,024 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MM10 Z2 – Copy Cutting data

| SMG | F15M | | | | | F30M | | | | | T60M | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% |
| P1 | 300 | 375 | 405 | 440 | 440 | 250 | 320 | 340 | 370 | 365 | 205 | 260 | 275 | 300 | 295 |
| P2 | 290 | 365 | 395 | 425 | 425 | 240 | 305 | 330 | 355 | 355 | 195 | 250 | 270 | 285 | 285 |
| P3 | 250 | 320 | 340 | 365 | 370 | 210 | 265 | 285 | 310 | 310 | 170 | 215 | 235 | 250 | 250 |
| P4 | 220 | 280 | 300 | 325 | 325 | 185 | 235 | 255 | 270 | 275 | 150 | 190 | 205 | 220 | 220 |
| P5 | 215 | 265 | 285 | 310 | 310 | 175 | 225 | 240 | 265 | 260 | 145 | 185 | 195 | 215 | 210 |
| P6 | 240 | 300 | 325 | 350 | 350 | 200 | 255 | 275 | 295 | 295 | 165 | 205 | 220 | 240 | 235 |
| P7 | 225 | 285 | 305 | 330 | 330 | 190 | 240 | 260 | 280 | 275 | 155 | 195 | 210 | 225 | 225 |
| P8 | 210 | 265 | 285 | 310 | 310 | 175 | 225 | 240 | 260 | 260 | 145 | 180 | 195 | 210 | 210 |
| P11 | 220 | 275 | 295 | 320 | 320 | 185 | 235 | 250 | 270 | 270 | 150 | 190 | 205 | 220 | 215 |
| P12 | 140 | 175 | 180 | 195 | 195 | 120 | 150 | 155 | 170 | 170 | 95 | 125 | 125 | 135 | 135 |
| M1 | 235 | 295 | 315 | 345 | 340 | 195 | 245 | 265 | 285 | 285 | 160 | 200 | 215 | 230 | 230 |
| M2 | 190 | 240 | 260 | 280 | 280 | 160 | 205 | 215 | 235 | 235 | 130 | 165 | 175 | 190 | 190 |
| M3 | 155 | 195 | 200 | 220 | 220 | 135 | 165 | 175 | 185 | 185 | 110 | 135 | 140 | 150 | 150 |
| M4 | 120 | 155 | 155 | 165 | 165 | 105 | 135 | 130 | 145 | 140 | 85 | 110 | 105 | 115 | 115 |
| M5 | 100 | 130 | 130 | 140 | 140 | 85 | 115 | 110 | 120 | 120 | 70 | 90 | 90 | 95 | 95 |
| K1 | 230 | 290 | 310 | 340 | 335 | 190 | 245 | 260 | 280 | 280 | 155 | 195 | 210 | 225 | 225 |
| K2 | 200 | 255 | 275 | 295 | 295 | 170 | 215 | 230 | 250 | 250 | 135 | 175 | 185 | 200 | 200 |
| K3 | 170 | 215 | 230 | 250 | 250 | 140 | 180 | 195 | 210 | 210 | 115 | 150 | 155 | 170 | 170 |
| K4 | 165 | 205 | 220 | 240 | 240 | 135 | 175 | 185 | 200 | 200 | 110 | 140 | 150 | 165 | 160 |
| K5 | 100 | 125 | 130 | 145 | 145 | 85 | 105 | 110 | 120 | 120 | 70 | 85 | 90 | 100 | 100 |
| K6 | 145 | 180 | 195 | 210 | 210 | 120 | 155 | 165 | 180 | 175 | 95 | 125 | 130 | 145 | 145 |
| K7 | 125 | 160 | 170 | 185 | 185 | 105 | 135 | 145 | 155 | 155 | 85 | 110 | 115 | 125 | 125 |
| N1 | 1775 | 2225 | 2400 | 2600 | 2575 | 1450 | 1825 | 1975 | 2150 | 2100 | 1175 | 1475 | 1600 | 1725 | 1700 |
| N2 | 710 | 900 | 970 | 1050 | 1050 | 590 | 740 | 800 | 870 | 850 | 475 | 600 | 650 | 700 | 680 |
| N3 | 475 | 600 | 650 | 700 | 690 | 390 | 495 | 530 | 580 | 560 | 315 | 400 | 435 | 465 | 455 |
| N11 | 540 | 690 | 740 | 800 | 790 | 450 | 570 | 610 | 660 | 640 | 360 | 460 | 495 | 530 | 520 |
| S1 | 55 | 70 | 70 | 75 | 75 | 48 | 65 | 60 | 65 | 65 | 39 | 50 | 50 | 55 | 55 |
| S2 | 45 | 60 | 60 | 60 | 60 | 39 | 50 | 50 | 55 | 55 | 32 | 41 | 40 | 43 | 43 |
| S3 | 39 | 50 | 50 | 55 | 55 | 34 | 44 | 43 | 47 | 46 | 27 | 36 | 35 | 38 | 38 |
| S11 | 80 | 100 | 100 | 110 | 110 | 65 | 90 | 85 | 95 | 95 | 55 | 70 | 70 | 75 | 75 |
| S12 | 55 | 70 | 70 | 75 | 75 | 47 | 60 | 60 | 65 | 65 | 38 | 49 | 49 | 55 | 55 |
| S13 | 31 | 41 | 40 | 43 | 44 | 27 | 36 | 35 | 37 | 37 | 22 | 29 | 28 | 30 | 30 |
| H5 | 46 | 60 | 60 | 65 | 65 | 40 | 50 | 50 | 55 | 55 | 32 | 41 | 42 | 45 | 45 |
| H8 | 47 | 60 | 60 | 65 | 65 | 41 | 55 | 55 | 60 | 60 | 33 | 44 | 43 | 47 | 47 |
| H11 | 60 | 75 | 75 | 85 | 85 | 50 | 65 | 65 | 70 | 70 | 41 | 50 | 55 | 60 | 60 |
| H12 | 85 | 110 | 110 | 120 | 120 | 75 | 95 | 95 | 105 | 105 | 60 | 80 | 80 | 85 | 85 |
| H21 | 47 | 60 | 60 | 65 | 65 | 41 | 55 | 55 | 60 | 60 | 33 | 44 | 43 | 47 | 47 |

MM10 High-Feed Insert selection

| SMG | | a_p | f_z | | | |
|-----|-------------------------|-------|-------|------|------|------|
| | | | 100% | 70% | 30% | 20% |
| P1 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,48 | 0,48 | 0,55 | 0,65 |
| P2 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,50 | 0,50 | 0,55 | 0,65 |
| P3 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,46 | 0,46 | 0,50 | 0,65 |
| P4 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,46 | 0,46 | 0,50 | 0,60 |
| P5 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,44 | 0,44 | 0,50 | 0,60 |
| P6 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,44 | 0,44 | 0,50 | 0,60 |
| P7 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,44 | 0,44 | 0,50 | 0,60 |
| P8 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,46 | 0,46 | 0,50 | 0,65 |
| P11 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,44 | 0,44 | 0,50 | 0,60 |
| P12 | MM10-10.50-HF-MD08 F30M | 0,24 | 0,30 | 0,30 | 0,34 | 0,40 |
| M1 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,50 | 0,50 | 0,55 | 0,65 |
| M2 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,44 | 0,44 | 0,50 | 0,60 |
| M3 | MM10-10.50-HF-MD08 F30M | 0,24 | 0,36 | 0,36 | 0,40 | 0,48 |
| M4 | MM10-10.50-HF-MD08 F30M | 0,18 | 0,32 | 0,32 | 0,34 | 0,40 |
| M5 | MM10-10.50-HF-MD08 F30M | 0,18 | 0,32 | 0,32 | 0,34 | 0,40 |
| K1 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,50 | 0,50 | 0,55 | 0,65 |
| K2 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,44 | 0,44 | 0,50 | 0,60 |
| K3 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,44 | 0,44 | 0,50 | 0,60 |
| K4 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,44 | 0,44 | 0,50 | 0,60 |
| K5 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,40 | 0,40 | 0,44 | 0,55 |
| K6 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,44 | 0,44 | 0,50 | 0,60 |
| K7 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,40 | 0,40 | 0,44 | 0,55 |
| N1 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,65 | 0,65 | 0,70 | 0,90 |
| N2 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,65 | 0,65 | 0,70 | 0,90 |
| N3 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,65 | 0,65 | 0,70 | 0,90 |
| N11 | MM10-10.50-HF-MD08 F30M | 0,30 | 0,65 | 0,65 | 0,70 | 0,90 |
| S1 | MM10-10.50-HF-MD08 F30M | 0,18 | 0,32 | 0,32 | 0,34 | 0,40 |
| S2 | MM10-10.50-HF-MD08 F30M | 0,18 | 0,32 | 0,32 | 0,34 | 0,40 |
| S3 | MM10-10.50-HF-MD08 F30M | 0,18 | 0,30 | 0,30 | 0,32 | 0,38 |
| S11 | MM10-10.50-HF-MD08 F30M | 0,20 | 0,36 | 0,36 | 0,40 | 0,48 |
| S12 | MM10-10.50-HF-MD08 F30M | 0,20 | 0,36 | 0,36 | 0,40 | 0,48 |
| S13 | MM10-10.50-HF-MD08 F30M | 0,18 | 0,32 | 0,32 | 0,34 | 0,40 |
| H5 | MM10-10.50-HF-MD08 F15M | 0,24 | 0,30 | 0,30 | 0,34 | 0,40 |
| H8 | MM10-10.50-HF-MD08 F15M | 0,20 | 0,24 | 0,24 | 0,26 | 0,30 |
| H11 | MM10-10.50-HF-MD08 F15M | 0,24 | 0,30 | 0,30 | 0,34 | 0,40 |
| H12 | MM10-10.50-HF-MD08 F15M | 0,20 | 0,24 | 0,24 | 0,26 | 0,30 |
| H21 | MM10-10.50-HF-MD08 F15M | 0,20 | 0,24 | 0,24 | 0,26 | 0,30 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MM10 High-Feed Cutting data

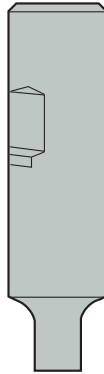
| SMG | F15M | | | | F30M | | | |
|-----|------|-----|-----|-----|------|------|------|------|
| | 100% | 70% | 30% | 20% | 100% | 70% | 30% | 20% |
| P1 | — | — | — | — | 230 | 285 | 335 | 355 |
| P2 | — | — | — | — | 225 | 275 | 325 | 345 |
| P3 | — | — | — | — | 195 | 240 | 285 | 295 |
| P4 | — | — | — | — | 170 | 210 | 250 | 265 |
| P5 | — | — | — | — | 165 | 205 | 240 | 255 |
| P6 | — | — | — | — | 185 | 230 | 270 | 285 |
| P7 | — | — | — | — | 175 | 215 | 255 | 270 |
| P8 | — | — | — | — | 165 | 200 | 240 | 250 |
| P11 | — | — | — | — | 170 | 210 | 250 | 260 |
| P12 | — | — | — | — | 110 | 135 | 155 | 165 |
| M1 | — | — | — | — | 180 | 220 | 265 | 280 |
| M2 | — | — | — | — | 150 | 185 | 215 | 230 |
| M3 | — | — | — | — | 120 | 145 | 170 | 180 |
| M4 | — | — | — | — | 95 | 110 | 135 | 140 |
| M5 | — | — | — | — | 80 | 95 | 110 | 120 |
| K1 | 190 | 230 | 280 | 295 | 175 | 215 | 260 | 275 |
| K2 | 170 | 205 | 245 | 260 | 160 | 195 | 230 | 240 |
| K3 | 145 | 175 | 210 | 220 | 135 | 165 | 195 | 205 |
| K4 | 135 | 165 | 200 | 210 | 125 | 155 | 185 | 195 |
| K5 | 85 | 100 | 120 | 125 | 75 | 95 | 115 | 120 |
| K6 | 120 | 145 | 175 | 185 | 110 | 135 | 160 | 170 |
| K7 | 105 | 130 | 155 | 165 | 100 | 120 | 145 | 150 |
| N1 | — | — | — | — | 1325 | 1600 | 1950 | 2025 |
| N2 | — | — | — | — | 530 | 650 | 780 | 820 |
| N3 | — | — | — | — | 355 | 435 | 520 | 540 |
| N11 | — | — | — | — | 405 | 495 | 600 | 620 |
| S1 | — | — | — | — | 45 | 50 | 60 | 65 |
| S2 | — | — | — | — | 36 | 42 | 50 | 55 |
| S3 | — | — | — | — | 31 | 37 | 44 | 46 |
| S11 | — | — | — | — | 60 | 75 | 85 | 90 |
| S12 | — | — | — | — | 43 | 50 | 60 | 65 |
| S13 | — | — | — | — | 25 | 29 | 35 | 37 |
| H5 | 40 | 48 | 55 | 60 | 37 | 44 | 50 | 55 |
| H8 | 42 | 50 | 60 | 60 | 39 | 46 | 55 | 60 |
| H11 | 50 | 60 | 70 | 75 | 47 | 55 | 65 | 70 |
| H12 | 75 | 90 | 105 | 110 | 70 | 85 | 100 | 105 |
| H21 | 42 | 50 | 60 | 60 | 39 | 46 | 55 | 60 |

Design 1



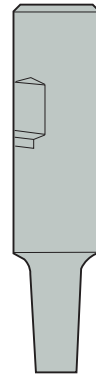
Keyway shank

Design 2



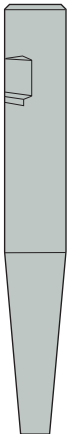
Cylindrical/Weldon back end and 90° front

Design 3



Cylindrical/Weldon back end tapered front 87°/89°

Design 4

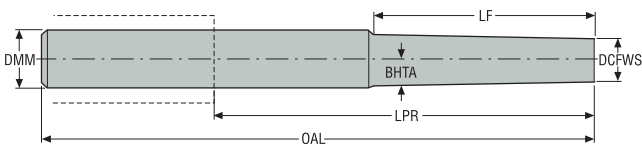


Cylindrical/Weldon back end tapered front 80°/85°/87°

Design 5



Cylindrical back end double tapered front end 89°/85°



MM12

| Design | Designation | Connecting size | Dimensions in mm | | | | | | KG | Spare part no. |
|--------|---------------------|-----------------|------------------|------|-------|------|-------|-------|-----|----------------|
| | | | DCSFWS | DMM | BHTA° | LF | OAL | LPR | | |
| 1 | MM12-16065.0-0000 | MM12 | 11,4 | 16,0 | 60,0 | 0,0 | 65,0 | 17,0 | 0,1 | 1 |
| 2 | MM12-12055.0-0008 | MM12 | 11,5 | 12,0 | 0,0 | 8,5 | 55,0 | 10,0 | 0,1 | 2 |
| 2 | MM12-12070.0-0008DS | MM12 | 11,5 | 12,0 | 0,0 | 8,5 | 70,0 | 25,0 | 0,1 | 3 |
| 2 | MM12-20080.3-0012 | MM12 | 11,4 | 20,0 | 0,0 | 12,0 | 80,0 | 30,0 | 0,2 | 4 |
| 2 | MM12-16095.0-0024DS | MM12 | 11,4 | 16,0 | 0,0 | 24,0 | 95,0 | 47,0 | 0,3 | 3 |
| 2 | MM12-16115.0-0048DS | MM12 | 11,4 | 16,0 | 0,0 | 48,0 | 115,0 | 67,0 | 0,3 | 3 |
| 3 | MM12-20095.3-3027 | MM12 | 11,4 | 20,0 | 3,0 | 27,0 | 95,0 | 45,0 | 0,2 | 4 |
| 4 | MM12-16090.0-3044DS | MM12 | 11,4 | 16,0 | 3,0 | 43,9 | 90,0 | 42,0 | 0,3 | 3 |
| 4 | MM12-20150.3-5049 | MM12 | 11,4 | 20,0 | 5,0 | 49,1 | 150,0 | 100,0 | 0,3 | 5 |
| 4 | MM12-32250.0-10058 | MM12 | 11,4 | 32,0 | 10,0 | 58,4 | 250,0 | 190,0 | 1,3 | 5 |
| 3 | MM12-16170.0-1040 | MM12 | 11,4 | 16,0 | 1,0 | 40,0 | 170,0 | 122,0 | 0,2 | 5 |
| 3 | MM12-16120.0-1045DS | MM12 | 11,4 | 16,0 | 1,0 | 45,0 | 120,0 | 72,0 | 0,3 | 3 |
| 3 | MM12-16170.0-1060 | MM12 | 11,4 | 16,0 | 1,0 | 60,0 | 170,0 | 122,0 | 0,2 | 5 |
| 3 | MM12-16170.0-1060DS | MM12 | 11,4 | 16,0 | 1,0 | 60,0 | 170,0 | 122,0 | 0,5 | 3 |
| 3 | MM12-16170.0-1080 | MM12 | 11,4 | 16,0 | 1,0 | 80,0 | 170,0 | 122,0 | 0,2 | 5 |
| 3 | MM12-16170.0-1080DS | MM12 | 11,4 | 16,0 | 1,0 | 80,0 | 170,0 | 122,0 | 0,5 | 3 |
| 5 | MM12-20250.0-1060DS | MM12 | 11,4 | 20,0 | 1,0 | 60,0 | 250,0 | 200,0 | 1,0 | 3 |

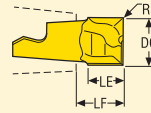
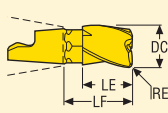
Spare Parts

| Spare part no. | Tension screw | Sleeve |
|----------------|---------------|----------|
| | | – |
| 1 | MM12-0637 | MM-06032 |
| 2 | MM12-0637 | MM-06020 |
| 3 | MM12-061037 | – |
| 4 | MM12-0637 | MM-06048 |
| 5 | MM12-0637 | MM-06116 |
| | | |

Please check availability in current price and stock-list
Allen key H05-4 for sleeve to be ordered separately.

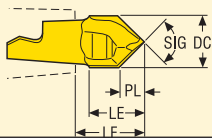
For wrench types, see insert pages

Slot milling/square shoulder milling



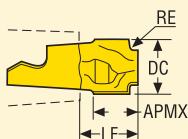
| Insert type | Designation | Dimensions in mm | | | | ZNP | Wrench | Coated | | | |
|----------------|-----------------------|------------------|------|-------|-------|-----|--------|--------|------|------|------|
| | | LE | DC | RE | LF | | | Grades | | | |
| | | | | | | | | T60M | F15M | F30M | F40M |
| 3-flute | MM12-12015-A30-E04 | 15,5 | 12,0 | 0,0 | 19,9 | 3 | MM0416 | | | ■ | |
| 3-flute | MM12-12015-R05A30-M04 | 15,5 | 12,0 | 0,5 | 19,9 | 3 | MM0416 | | | | ■ |
| 3-flute | MM12-12015-R10A30-E04 | 15,5 | 12,0 | 1,0 | 19,9 | 3 | MM0416 | | | ■ | |
| 3-flute | MM12-12015-R10A30-M04 | 15,5 | 12,0 | 1,0 | 19,9 | 3 | MM0416 | | | | ■ |
| 3-flute | MM12-12015-R15A30-D04 | 15,5 | 12,0 | 1,5 | 19,9 | 3 | MM0416 | | | ■ | |
| 3-flute | MM12-12015-R20A30-M04 | 15,5 | 12,0 | 2,0 | 19,9 | 3 | MM0416 | | | | ■ |
| 3-flute | MM12-12015-R30A30-E04 | 15,5 | 12,0 | 3,0 | 19,9 | 3 | MM0416 | | | ■ | |
| 3-flute | MM12-12015-R30A30-M04 | 15,5 | 12,0 | 3,0 | 19,9 | 3 | MM0416 | | | | ■ |
| 3-flute | MM12-12015-R40A30-M04 | 15,5 | 12,0 | 4,0 | 19,9 | 3 | MM0416 | | | | ■ |
| 3-flute | MM12-12715-A30-E04 | 15,5 | 12,7 | 0,0 | 19,9 | 3 | MM0416 | | | ■ | |
| 3-flute | MM12-12715-R08A30-D04 | 15,5 | 12,7 | 0,8 | 19,9 | 3 | MM0416 | | | ■ | |
| 3-flute | MM12-12715-R08A30-M04 | 15,5 | 12,7 | 0,8 | 19,9 | 3 | MM0416 | | | | ■ |
| 3-flute | MM12-12715-R16A30-M04 | 15,5 | 12,7 | 1,6 | 19,9 | 3 | MM0416 | | | | ■ |
| 2-flute | MM12-12008-M04 | 8,25 | 12,0 | 0,0 | 10,2 | 2 | MM0612 | ■ | | | |
| 2-flute | MM12-12008-R08-MD05 | 8,23 | 12,0 | 0,8 | 10,18 | 2 | MM0612 | ■ | | ■ | |
| 2-flute | MM12-12008-R08A8-E04 | 8,1 | 12,0 | 0,8 | 10,15 | 2 | MM0612 | ■ | | ■ | |
| 2-flute | MM12-12008-R08P-M04 | 8,09 | 12,0 | 0,8 | 10,05 | 2 | MM0612 | | | ■ | |
| 2-flute | MM12-12008-R20-MD05 | 8,2 | 12,0 | 2,0 | 10,16 | 2 | MM0612 | ■ | | ■ | |
| 2-flute | MM12-12008-R30-MD05 | 8,19 | 12,0 | 3,0 | 10,14 | 2 | MM0612 | | | ■ | |
| 2-flute | MM12-14009-M04 | 9,34 | 14,0 | 0,0 | 11,26 | 2 | MM1420 | ■ | | | |
| 2-flute | MM12-14009-R08-MD05 | 9,32 | 14,0 | 0,8 | 11,26 | 2 | MM1420 | ■ | | ■ | |
| 2-flute | MM12-14009-R08A8-E04 | 9,2 | 14,0 | 0,8 | 11,06 | 2 | MM1420 | ■ | | ■ | |
| 2-flute | MM12-12708-M04 | 9,34 | 12,7 | 0,0 | 11,25 | 2 | MM1420 | ■ | | | |
| 2-flute | MM12-12708-R08-MD05 | 9,34 | 12,7 | 0,8 | 11,23 | 2 | MM1420 | ■ | | | |
| 2-flute | MM12-12708-R08P-M04 | 9,31 | 12,7 | 0,8 | 11,23 | 2 | MM1420 | | | ■ | |
| 2-flute | MM12-12708-R32-MD05 | 9,34 | 12,7 | 3,175 | 11,18 | 2 | MM1420 | | | ■ | |
| 2-flute | MM12-12708-R08A8-E04 | 8,1 | 12,7 | 0,8 | 10,14 | 2 | MM1420 | | | ■ | |
| Keyway 3-flute | MM12-11715-R03A30-M04 | 15,5 | 11,7 | 0,3 | 19,9 | 3 | MM0416 | | | | ■ |
| Keyway 2-flute | MM12-11708T-R03-D05 | 8,25 | 11,7 | 0,3 | 10,18 | 2 | MM0612 | ■ | | | |
| Keyway 2-flute | MM12-13709T-R03-D05 | 9,33 | 13,7 | 0,3 | 11,25 | 2 | MM1420 | ■ | | | |

Centre drilling



| Insert type | Designation | Dimensions in mm | | | | SIG° | ZNP | Wrench | Coated | | | | |
|-------------|--------------------|------------------|-------|-------|------|------|-----|--------|--------|------|------|------|--|
| | | DC | LE | LF | PL | | | | Grades | | | | |
| | | | | | | | | | T60M | F15M | F30M | F40M | |
| 90° | MM12-12006-C90-M04 | 12,0 | 12,65 | 14,64 | 5,65 | 90,0 | 2 | MM0612 | ■ | | | | |
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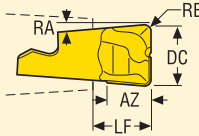
Concave radius



| Insert type | Designation | Dimensions in mm | | | | ZNP | Wrench | Coated | | | | |
|-------------|----------------------|------------------|------|-----|-------|-----|--------|--------|------|------|------|--|
| | | LE | DC | RE | LF | | | Grades | | | | |
| | | | | | | | | T60M | F15M | F30M | F40M | |
| 2-flute | MM12-12010-CR10-MD05 | 10,57 | 12,0 | 1,0 | 12,14 | 2 | MM0612 | ■ | | | | |
| 2-flute | MM12-12010-CR20-MD05 | 10,64 | 12,0 | 2,0 | 12,25 | 2 | MM0612 | ■ | | | | |
| 2-flute | MM12-12010-CR30-MD05 | 10,63 | 12,0 | 3,0 | 12,2 | 2 | MM0612 | ■ | | | | |
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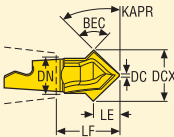
For Torque keys and torque values, see page 631

Plunge milling



| Insert type | Designation | Dimensions in mm | | | | | RA° | ZNP | Wrench | Coated | | | |
|-------------|------------------------|------------------|-----|------|--------|------|--------|-----|--------|--------|------|--|--|
| | | DC | AZ | LF | Grades | | | | | | | | |
| | | | | | T60M | F15M | | | | F30M | F40M | | |
| 2-flute | MM12-12008-R10-PL-MD05 | 12,0 | 8,5 | 10,2 | 5,0 | 2 | MM0612 | | | ■ | | | |
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Double chamfering



| Insert type | Designation | Dimensions in mm | | | | | BEC° | KAPR° | ZNP | Wrench | Coated | | | |
|-------------|-----------------------|------------------|------|-----|------|------|------|-------|-----|--------|--------|------|------|------|
| | | DC | DCX | LE | LF | DN | | | | | Grades | | | |
| | | | | | | | | | | | T60M | F15M | F30M | F40M |
| 30° | MM12-16016-D3020P-M02 | 1,0 | 16,0 | 4,3 | 15,2 | 11,5 | 60,0 | 30,0 | 2 | MM1420 | | ■ | | |
| 45° | MM12-16016-D4520P-M02 | 1,0 | 16,0 | 7,5 | 17,2 | 11,5 | 90,0 | 45,0 | 2 | MM1420 | | ■ | | |
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For Torque keys and torque values, see page 631

MM12 – General Insert selection

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM12-12015-R05A30-M04 F40M | 2,5 | 0,055 | 0,060 | 0,070 | 0,095 |
| P2 | MM12-12015-R05A30-M04 F40M | 2,5 | 0,060 | 0,060 | 0,075 | 0,10 |
| P3 | MM12-12015-R05A30-M04 F40M | 2,5 | 0,055 | 0,055 | 0,070 | 0,095 |
| P4 | MM12-12015-R05A30-M04 F40M | 2,5 | 0,055 | 0,055 | 0,070 | 0,090 |
| P5 | MM12-12015-R05A30-M04 F40M | 2,5 | 0,055 | 0,055 | 0,065 | 0,090 |
| P6 | MM12-12015-R05A30-M04 F40M | 2,5 | 0,050 | 0,055 | 0,065 | 0,090 |
| P7 | MM12-12015-R05A30-M04 F40M | 2,5 | 0,050 | 0,055 | 0,065 | 0,090 |
| P8 | MM12-12015-R05A30-M04 F40M | 2,5 | 0,055 | 0,055 | 0,070 | 0,095 |
| P11 | MM12-12015-R05A30-M04 F40M | 2,5 | 0,050 | 0,055 | 0,065 | 0,090 |
| P12 | MM12-12015-R05A30-M04 F40M | 2,0 | 0,036 | 0,038 | 0,046 | 0,060 |
| M1 | MM12-12015-R05A30-M04 F40M | 2,5 | 0,060 | 0,060 | 0,075 | 0,10 |
| M2 | MM12-12015-R05A30-M04 F40M | 2,5 | 0,055 | 0,055 | 0,065 | 0,090 |
| M3 | MM12-12015-R05A30-M04 F40M | 2,0 | 0,042 | 0,044 | 0,055 | 0,070 |
| M4 | MM12-12015-R05A30-M04 F40M | 1,6 | 0,038 | 0,038 | 0,048 | 0,065 |
| M5 | MM12-12015-R05A30-M04 F40M | 1,6 | 0,038 | 0,038 | 0,048 | 0,065 |
| K1 | MM12-12015-R10A30-E04 F30M | 2,5 | 0,060 | 0,065 | 0,075 | 0,10 |
| K2 | MM12-12015-R10A30-E04 F30M | 2,5 | 0,055 | 0,055 | 0,070 | 0,095 |
| K3 | MM12-12015-R10A30-E04 F30M | 2,5 | 0,055 | 0,055 | 0,070 | 0,095 |
| K4 | MM12-12015-R10A30-E04 F30M | 2,5 | 0,055 | 0,055 | 0,070 | 0,095 |
| K5 | MM12-12015-R15A30-D04 F30M | 2,5 | 0,055 | 0,055 | 0,070 | 0,090 |
| K6 | MM12-12015-R15A30-D04 F30M | 2,5 | 0,060 | 0,060 | 0,075 | 0,10 |
| K7 | MM12-12015-R15A30-D04 F30M | 2,5 | 0,055 | 0,055 | 0,070 | 0,090 |
| N1 | MM12-12015-R10A30-E04 F30M | 2,5 | 0,080 | 0,080 | 0,10 | 0,13 |
| N2 | MM12-12015-R10A30-E04 F30M | 2,5 | 0,080 | 0,080 | 0,10 | 0,13 |
| N3 | MM12-12015-R10A30-E04 F30M | 2,5 | 0,080 | 0,080 | 0,10 | 0,13 |
| N11 | MM12-12015-R10A30-E04 F30M | 2,5 | 0,080 | 0,080 | 0,10 | 0,13 |
| S1 | MM12-12015-R15A30-D04 F30M | 1,6 | 0,050 | 0,050 | 0,060 | 0,080 |
| S2 | MM12-12015-R15A30-D04 F30M | 1,6 | 0,050 | 0,050 | 0,060 | 0,080 |
| S3 | MM12-12015-R15A30-D04 F30M | 1,6 | 0,046 | 0,048 | 0,055 | 0,075 |
| S11 | MM12-12015-R05A30-M04 F40M | 1,8 | 0,044 | 0,044 | 0,055 | 0,070 |
| S12 | MM12-12015-R05A30-M04 F40M | 1,8 | 0,044 | 0,044 | 0,055 | 0,070 |
| S13 | MM12-12015-R05A30-M04 F40M | 1,6 | 0,038 | 0,038 | 0,048 | 0,065 |
| H5 | MM12-12015-R15A30-D04 F30M | 2,0 | 0,044 | 0,046 | 0,055 | 0,075 |
| H8 | MM12-12015-R15A30-D04 F30M | 1,8 | 0,036 | 0,036 | 0,044 | 0,060 |
| H11 | MM12-12015-R15A30-D04 F30M | 2,0 | 0,044 | 0,046 | 0,055 | 0,075 |
| H12 | MM12-12015-R15A30-D04 F30M | 1,8 | 0,036 | 0,036 | 0,044 | 0,060 |
| H21 | MM12-12015-R15A30-D04 F30M | 1,8 | 0,036 | 0,036 | 0,044 | 0,060 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MMI2 – General Cutting data

| SMG | F15M | | | | F30M | | | | F40M | | | | T60M | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 100% | 40% | 20% | 10% | 100% | 40% | 20% | 10% | 100% | 40% | 20% | 10% | 100% | 40% | 20% | 10% |
| P1 | 400 | 690 | 730 | 730 | 250 | 315 | 350 | 385 | 240 | 295 | 330 | 365 | 195 | 235 | 240 | 265 |
| P2 | 390 | 670 | 710 | 710 | 245 | 305 | 340 | 375 | 230 | 285 | 325 | 355 | 185 | 225 | 235 | 255 |
| P3 | 335 | 580 | 620 | 610 | 210 | 265 | 295 | 325 | 200 | 250 | 280 | 310 | 160 | 200 | 205 | 225 |
| P4 | 295 | 510 | 540 | 540 | 190 | 235 | 260 | 285 | 175 | 220 | 250 | 270 | 145 | 175 | 180 | 195 |
| P5 | 285 | 485 | 520 | 520 | 180 | 225 | 250 | 275 | 170 | 210 | 235 | 260 | 140 | 170 | 170 | 190 |
| P6 | 320 | 550 | 580 | 580 | 205 | 250 | 280 | 310 | 195 | 235 | 265 | 295 | 155 | 190 | 195 | 210 |
| P7 | 300 | 520 | 550 | 550 | 190 | 240 | 265 | 295 | 185 | 225 | 250 | 275 | 145 | 180 | 185 | 200 |
| P8 | 285 | 485 | 520 | 520 | 175 | 220 | 245 | 275 | 170 | 210 | 235 | 260 | 135 | 165 | 170 | 190 |
| P11 | 295 | 500 | 530 | 530 | 185 | 230 | 260 | 285 | 180 | 215 | 245 | 270 | 140 | 175 | 180 | 195 |
| P12 | 180 | 285 | 310 | 320 | 115 | 145 | 165 | 180 | 110 | 140 | 155 | 170 | 95 | 115 | 120 | 120 |
| M1 | 315 | 540 | 580 | 570 | 200 | 245 | 275 | 300 | 185 | 230 | 260 | 285 | 150 | 185 | 190 | 205 |
| M2 | 255 | 440 | 465 | 465 | 160 | 200 | 225 | 245 | 150 | 190 | 215 | 235 | 125 | 150 | 155 | 170 |
| M3 | 200 | 320 | 350 | 360 | 130 | 160 | 175 | 195 | 125 | 150 | 170 | 185 | 100 | 125 | 130 | 135 |
| M4 | 150 | 215 | 260 | 270 | 100 | 120 | 140 | 150 | 95 | 115 | 130 | 145 | 80 | 95 | 105 | 105 |
| M5 | 125 | 180 | 215 | 225 | 80 | 100 | 115 | 125 | 80 | 100 | 110 | 120 | 70 | 80 | 90 | 85 |
| K1 | 305 | 530 | 570 | 560 | 195 | 240 | 270 | 295 | 180 | 225 | 255 | 280 | 145 | 180 | 185 | 205 |
| K2 | 270 | 465 | 490 | 490 | 170 | 215 | 240 | 260 | 160 | 200 | 225 | 250 | 130 | 160 | 165 | 180 |
| K3 | 230 | 390 | 415 | 415 | 145 | 180 | 200 | 220 | 135 | 170 | 190 | 210 | 110 | 135 | 140 | 150 |
| K4 | 220 | 375 | 395 | 400 | 140 | 170 | 190 | 210 | 130 | 160 | 180 | 200 | 105 | 130 | 130 | 145 |
| K5 | 130 | 225 | 240 | 240 | 85 | 105 | 115 | 125 | 80 | 100 | 110 | 120 | 65 | 80 | 80 | 85 |
| K6 | 195 | 330 | 350 | 350 | 120 | 150 | 170 | 185 | 115 | 145 | 160 | 175 | 95 | 115 | 115 | 125 |
| K7 | 170 | 285 | 305 | 305 | 105 | 135 | 150 | 165 | 100 | 125 | 140 | 155 | 80 | 100 | 105 | 110 |
| N1 | 2350 | 4075 | 4375 | 4375 | 1450 | 1800 | 2025 | 2225 | 1375 | 1725 | 1925 | 2125 | 1100 | 1350 | 1400 | 1525 |
| N2 | 950 | 1650 | 1775 | 1775 | 580 | 730 | 820 | 900 | 550 | 690 | 770 | 850 | 450 | 550 | 560 | 620 |
| N3 | 630 | 1100 | 1175 | 1175 | 390 | 485 | 550 | 600 | 370 | 460 | 520 | 570 | 300 | 365 | 375 | 410 |
| N11 | 720 | 1250 | 1350 | 1350 | 445 | 550 | 620 | 690 | 420 | 530 | 590 | 650 | 340 | 420 | 430 | 470 |
| S1 | 70 | 100 | 120 | 125 | 46 | 55 | 65 | 70 | 44 | 55 | 60 | 65 | 38 | 44 | 50 | 48 |
| S2 | 55 | 80 | 100 | 100 | 37 | 46 | 50 | 55 | 35 | 44 | 49 | 55 | 31 | 36 | 40 | 39 |
| S3 | 48 | 70 | 85 | 90 | 32 | 40 | 45 | 50 | 31 | 39 | 43 | 47 | 27 | 31 | 35 | 34 |
| S11 | 100 | 155 | 175 | 180 | 65 | 80 | 90 | 100 | 60 | 75 | 85 | 95 | 55 | 65 | 70 | 70 |
| S12 | 70 | 105 | 120 | 125 | 45 | 55 | 60 | 70 | 43 | 55 | 60 | 65 | 37 | 44 | 48 | 47 |
| S13 | 39 | 55 | 70 | 70 | 26 | 32 | 36 | 40 | 25 | 31 | 34 | 38 | 21 | 25 | 28 | 27 |
| H5 | 60 | 95 | 105 | 105 | 39 | 48 | 55 | 60 | 37 | 46 | 50 | 55 | 31 | 38 | 40 | 41 |
| H8 | 60 | 90 | 105 | 105 | 41 | 50 | 55 | 60 | 39 | 48 | 55 | 60 | 33 | 39 | 43 | 42 |
| H11 | 75 | 120 | 130 | 135 | 49 | 60 | 70 | 75 | 47 | 60 | 65 | 70 | 39 | 48 | 50 | 50 |
| H12 | 110 | 165 | 185 | 190 | 75 | 90 | 100 | 110 | 70 | 85 | 95 | 105 | 60 | 70 | 75 | 75 |
| H21 | 60 | 90 | 105 | 105 | 41 | 50 | 55 | 60 | 39 | 48 | 55 | 60 | 33 | 39 | 43 | 42 |

MM12 Z3 – Copy Insert selection – Roughing

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM12-12015-B90A30-M04 F40M | 2,5 | 0,070 | 0,070 | 0,075 | 0,080 |
| P2 | MM12-12015-B90A30-M04 F40M | 2,5 | 0,070 | 0,070 | 0,075 | 0,085 |
| P3 | MM12-12015-B90A30-M04 F40M | 2,5 | 0,070 | 0,070 | 0,070 | 0,080 |
| P4 | MM12-12015-B90A30-M04 F40M | 2,5 | 0,065 | 0,065 | 0,070 | 0,075 |
| P5 | MM12-12015-B90A30-M04 F40M | 2,5 | 0,065 | 0,065 | 0,070 | 0,075 |
| P6 | MM12-12015-B90A30-M04 F40M | 2,5 | 0,065 | 0,065 | 0,070 | 0,075 |
| P7 | MM12-12015-B90A30-M04 F40M | 2,5 | 0,065 | 0,065 | 0,070 | 0,075 |
| P8 | MM12-12015-B90A30-M04 F40M | 2,5 | 0,070 | 0,070 | 0,070 | 0,080 |
| P11 | MM12-12015-B90A30-M04 F40M | 2,5 | 0,065 | 0,065 | 0,070 | 0,075 |
| P12 | MM12-12015-B90A30-M04 F40M | 2,0 | 0,046 | 0,046 | 0,048 | 0,050 |
| M1 | MM12-12015-B90A30-M04 F40M | 2,5 | 0,070 | 0,070 | 0,075 | 0,085 |
| M2 | MM12-12015-B90A30-M04 F40M | 2,5 | 0,065 | 0,065 | 0,070 | 0,075 |
| M3 | MM12-12015-B90A30-M04 F40M | 2,0 | 0,055 | 0,055 | 0,055 | 0,060 |
| M4 | MM12-12015-B90A30-M04 F40M | 1,6 | 0,050 | 0,050 | 0,050 | 0,055 |
| M5 | MM12-12015-B90A30-M04 F40M | 1,6 | 0,050 | 0,050 | 0,050 | 0,055 |
| K1 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,070 | 0,075 | 0,085 |
| K2 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,065 | 0,065 | 0,070 | 0,075 |
| K3 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,065 | 0,065 | 0,070 | 0,075 |
| K4 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,065 | 0,065 | 0,070 | 0,075 |
| K5 | MM12-12015-B90A30-D04 F30M | 2,5 | 0,060 | 0,060 | 0,060 | 0,070 |
| K6 | MM12-12015-B90A30-D04 F30M | 2,5 | 0,065 | 0,065 | 0,070 | 0,075 |
| K7 | MM12-12015-B90A30-D04 F30M | 2,5 | 0,060 | 0,060 | 0,060 | 0,070 |
| N1 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,090 | 0,090 | 0,095 | 0,11 |
| N2 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,090 | 0,090 | 0,095 | 0,11 |
| N3 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,090 | 0,090 | 0,095 | 0,11 |
| N11 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,090 | 0,090 | 0,095 | 0,11 |
| S1 | MM12-12015-B90A30-D04 F30M | 1,6 | 0,050 | 0,050 | 0,050 | 0,055 |
| S2 | MM12-12015-B90A30-D04 F30M | 1,6 | 0,050 | 0,050 | 0,050 | 0,055 |
| S3 | MM12-12015-B90A30-D04 F30M | 1,6 | 0,046 | 0,046 | 0,046 | 0,050 |
| S11 | MM12-12015-B90A30-M04 F40M | 1,8 | 0,055 | 0,055 | 0,055 | 0,060 |
| S12 | MM12-12015-B90A30-M04 F40M | 1,8 | 0,055 | 0,055 | 0,055 | 0,060 |
| S13 | MM12-12015-B90A30-M04 F40M | 1,6 | 0,050 | 0,050 | 0,050 | 0,055 |
| H5 | MM12-12015-B90A30-D04 F30M | 2,0 | 0,046 | 0,046 | 0,048 | 0,050 |
| H8 | MM12-12015-B90A30-D04 F30M | 1,8 | 0,036 | 0,036 | 0,038 | 0,040 |
| H11 | MM12-12015-B90A30-D04 F30M | 2,0 | 0,046 | 0,046 | 0,048 | 0,050 |
| H12 | MM12-12015-B90A30-D04 F30M | 1,8 | 0,036 | 0,036 | 0,038 | 0,040 |
| H21 | MM12-12015-B90A30-D04 F30M | 1,8 | 0,036 | 0,036 | 0,038 | 0,040 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MM12 Z3 – Copy Insert selection – Semi finishing

| SMG | | a _p | f _z | | | |
|-----|----------------------------|----------------|----------------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,075 | 0,080 | 0,090 | 0,095 |
| P2 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,080 | 0,085 | 0,090 | 0,095 |
| P3 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,075 | 0,080 | 0,085 | 0,090 |
| P4 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,075 | 0,075 | 0,085 | 0,090 |
| P5 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| P6 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| P7 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| P8 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,075 | 0,080 | 0,085 | 0,090 |
| P11 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| P12 | MM12-12015-B90A30-E04 F30M | 2,0 | 0,050 | 0,050 | 0,055 | 0,060 |
| M1 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,080 | 0,085 | 0,090 | 0,095 |
| M2 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| M3 | MM12-12015-B90A30-E04 F30M | 2,0 | 0,060 | 0,060 | 0,065 | 0,070 |
| M4 | MM12-12015-B90A30-E04 F30M | 1,6 | 0,050 | 0,055 | 0,055 | 0,060 |
| M5 | MM12-12015-B90A30-E04 F30M | 1,6 | 0,050 | 0,055 | 0,055 | 0,060 |
| K1 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,080 | 0,085 | 0,090 | 0,095 |
| K2 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| K3 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| K4 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| K5 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,065 | 0,070 | 0,075 | 0,080 |
| K6 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| K7 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,065 | 0,070 | 0,075 | 0,080 |
| N1 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,10 | 0,11 | 0,12 | 0,12 |
| N2 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,10 | 0,11 | 0,12 | 0,12 |
| N3 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,10 | 0,11 | 0,12 | 0,12 |
| N11 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,10 | 0,11 | 0,12 | 0,12 |
| S1 | MM12-12015-B90A30-E04 F30M | 1,6 | 0,050 | 0,055 | 0,055 | 0,060 |
| S2 | MM12-12015-B90A30-E04 F30M | 1,6 | 0,050 | 0,055 | 0,055 | 0,060 |
| S3 | MM12-12015-B90A30-D04 F30M | 1,6 | 0,048 | 0,050 | 0,055 | 0,055 |
| S11 | MM12-12015-B90A30-E04 F30M | 1,8 | 0,060 | 0,060 | 0,065 | 0,070 |
| S12 | MM12-12015-B90A30-E04 F30M | 1,8 | 0,060 | 0,060 | 0,065 | 0,070 |
| S13 | MM12-12015-B90A30-E04 F30M | 1,6 | 0,050 | 0,055 | 0,055 | 0,060 |
| H5 | MM12-12015-B90A30-E04 F30M | 2,0 | 0,050 | 0,050 | 0,055 | 0,060 |
| H8 | MM12-12015-B90A30-E04 F30M | 1,8 | 0,038 | 0,040 | 0,042 | 0,044 |
| H11 | MM12-12015-B90A30-E04 F30M | 2,0 | 0,050 | 0,050 | 0,055 | 0,060 |
| H12 | MM12-12015-B90A30-E04 F30M | 1,8 | 0,038 | 0,040 | 0,042 | 0,044 |
| H21 | MM12-12015-B90A30-E04 F30M | 1,8 | 0,038 | 0,040 | 0,042 | 0,044 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_φ/DC = %

All cutting data are start values

MM12 Z3 – Copy Insert selection – Finishing

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,075 | 0,080 | 0,090 | 0,095 |
| P2 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,080 | 0,085 | 0,090 | 0,095 |
| P3 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,075 | 0,080 | 0,085 | 0,090 |
| P4 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,075 | 0,075 | 0,085 | 0,090 |
| P5 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| P6 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| P7 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| P8 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,075 | 0,080 | 0,085 | 0,090 |
| P11 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| P12 | MM12-12015-B90A30-E04 F30M | 2,0 | 0,050 | 0,050 | 0,055 | 0,060 |
| M1 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,080 | 0,085 | 0,090 | 0,095 |
| M2 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| M3 | MM12-12015-B90A30-E04 F30M | 2,0 | 0,060 | 0,060 | 0,065 | 0,070 |
| M4 | MM12-12015-B90A30-E04 F30M | 1,6 | 0,050 | 0,055 | 0,055 | 0,060 |
| M5 | MM12-12015-B90A30-E04 F30M | 1,6 | 0,050 | 0,055 | 0,055 | 0,060 |
| K1 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,080 | 0,085 | 0,090 | 0,095 |
| K2 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| K3 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| K4 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| K5 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,065 | 0,070 | 0,075 | 0,080 |
| K6 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,070 | 0,075 | 0,080 | 0,085 |
| K7 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,065 | 0,070 | 0,075 | 0,080 |
| N1 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,10 | 0,11 | 0,12 | 0,12 |
| N2 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,10 | 0,11 | 0,12 | 0,12 |
| N3 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,10 | 0,11 | 0,12 | 0,12 |
| N11 | MM12-12015-B90A30-E04 F30M | 2,5 | 0,10 | 0,11 | 0,12 | 0,12 |
| S1 | MM12-12015-B90A30-E04 F30M | 1,6 | 0,050 | 0,055 | 0,055 | 0,060 |
| S2 | MM12-12015-B90A30-E04 F30M | 1,6 | 0,050 | 0,055 | 0,055 | 0,060 |
| S3 | MM12-12015-B90A30-E04 F30M | 1,6 | 0,048 | 0,050 | 0,055 | 0,055 |
| S11 | MM12-12015-B90A30-E04 F30M | 1,8 | 0,060 | 0,060 | 0,065 | 0,070 |
| S12 | MM12-12015-B90A30-E04 F30M | 1,8 | 0,060 | 0,060 | 0,065 | 0,070 |
| S13 | MM12-12015-B90A30-E04 F30M | 1,6 | 0,050 | 0,055 | 0,055 | 0,060 |
| H5 | MM12-12015-B90A30-E04 F30M | 2,0 | 0,050 | 0,050 | 0,055 | 0,060 |
| H8 | MM12-12015-B90A30-E04 F30M | 1,8 | 0,038 | 0,040 | 0,042 | 0,044 |
| H11 | MM12-12015-B90A30-E04 F30M | 2,0 | 0,050 | 0,050 | 0,055 | 0,060 |
| H12 | MM12-12015-B90A30-E04 F30M | 1,8 | 0,038 | 0,040 | 0,042 | 0,044 |
| H21 | MM12-12015-B90A30-E04 F30M | 1,8 | 0,038 | 0,040 | 0,042 | 0,044 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MM12 Z3 – Copy Cutting data

| SMG | F30M | | | | | F40M | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|
| | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% |
| P1 | 270 | 320 | 335 | 365 | 360 | 260 | 305 | 320 | 345 | 340 |
| P2 | 260 | 310 | 325 | 355 | 350 | 250 | 295 | 310 | 340 | 335 |
| P3 | 230 | 270 | 285 | 305 | 305 | 215 | 255 | 270 | 290 | 290 |
| P4 | 200 | 240 | 250 | 270 | 270 | 190 | 230 | 240 | 260 | 255 |
| P5 | 195 | 230 | 240 | 260 | 255 | 185 | 220 | 225 | 250 | 245 |
| P6 | 220 | 255 | 270 | 290 | 290 | 205 | 245 | 255 | 280 | 280 |
| P7 | 205 | 240 | 255 | 275 | 275 | 195 | 230 | 245 | 260 | 260 |
| P8 | 190 | 225 | 240 | 255 | 255 | 185 | 215 | 225 | 245 | 245 |
| P11 | 200 | 235 | 250 | 270 | 265 | 190 | 225 | 235 | 255 | 255 |
| P12 | 125 | 150 | 155 | 170 | 165 | 120 | 145 | 145 | 160 | 160 |
| M1 | — | — | — | — | — | 200 | 235 | 250 | 270 | 270 |
| M2 | — | — | — | — | — | 165 | 195 | 205 | 225 | 220 |
| M3 | — | — | — | — | — | 130 | 160 | 160 | 175 | 175 |
| M4 | — | — | — | — | — | 90 | 130 | 125 | 135 | 135 |
| M5 | — | — | — | — | — | 75 | 105 | 105 | 110 | 110 |
| K1 | 210 | 245 | 260 | 280 | 275 | 200 | 235 | 245 | 265 | 265 |
| K2 | 185 | 215 | 225 | 245 | 245 | 175 | 205 | 215 | 235 | 235 |
| K3 | 155 | 185 | 190 | 210 | 205 | 150 | 175 | 180 | 200 | 195 |
| K4 | 150 | 175 | 185 | 200 | 195 | 140 | 165 | 175 | 190 | 190 |
| K5 | 90 | 105 | 110 | 120 | 120 | 85 | 100 | 105 | 115 | 115 |
| K6 | 130 | 155 | 160 | 175 | 175 | 125 | 145 | 155 | 165 | 165 |
| K7 | 115 | 135 | 140 | 155 | 155 | 110 | 130 | 135 | 145 | 145 |
| N1 | 1575 | 1850 | 1950 | 2125 | 2100 | 1500 | 1775 | 1875 | 2000 | 2000 |
| N2 | 640 | 750 | 790 | 850 | 850 | 610 | 710 | 750 | 810 | 810 |
| N3 | 425 | 500 | 530 | 570 | 560 | 405 | 475 | 500 | 540 | 540 |
| N11 | 485 | 570 | 600 | 650 | 640 | 460 | 540 | 570 | 620 | 610 |
| S1 | 45 | 65 | 60 | 65 | 65 | 43 | 60 | 60 | 65 | 60 |
| S2 | 36 | 50 | 49 | 55 | 55 | 34 | 48 | 47 | 50 | 50 |
| S3 | 31 | 44 | 43 | 46 | 46 | 30 | 42 | 41 | 44 | 44 |
| S11 | — | — | — | — | — | 65 | 85 | 80 | 90 | 90 |
| S12 | — | — | — | — | — | 45 | 55 | 55 | 60 | 60 |
| S13 | — | — | — | — | — | 24 | 34 | 33 | 35 | 35 |
| H5 | 41 | 50 | 50 | 55 | 55 | 39 | 48 | 49 | 55 | 55 |
| H8 | 42 | 55 | 55 | 55 | 55 | 40 | 50 | 50 | 55 | 55 |
| H11 | 50 | 65 | 65 | 70 | 70 | 50 | 60 | 60 | 70 | 65 |
| H12 | 75 | 95 | 95 | 105 | 105 | 70 | 90 | 90 | 100 | 100 |
| H21 | 42 | 55 | 55 | 55 | 55 | 40 | 50 | 50 | 55 | 55 |

MM12 Z2 – Copy Insert selection – Roughing

| SMG | | a_p | f_z | | | |
|-----|--------------------------|-------|-------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM12-12012-B90S-E05 F30M | 5,0 | 0,075 | 0,080 | 0,090 | 0,11 |
| P2 | MM12-12012-B90S-E05 F30M | 5,0 | 0,080 | 0,080 | 0,090 | 0,11 |
| P3 | MM12-12012-B90S-E05 F30M | 5,0 | 0,075 | 0,075 | 0,085 | 0,10 |
| P4 | MM12-12012-B90-MD05 F30M | 5,0 | 0,075 | 0,075 | 0,085 | 0,10 |
| P5 | MM12-12012-B90-MD05 F30M | 5,0 | 0,070 | 0,070 | 0,085 | 0,10 |
| P6 | MM12-12012-B90-MD05 F30M | 5,0 | 0,070 | 0,070 | 0,080 | 0,10 |
| P7 | MM12-12012-B90-MD05 F30M | 5,0 | 0,070 | 0,070 | 0,080 | 0,10 |
| P8 | MM12-12012-B90-MD05 F30M | 5,0 | 0,075 | 0,075 | 0,085 | 0,10 |
| P11 | MM12-12012-B90-MD05 F30M | 5,0 | 0,070 | 0,070 | 0,080 | 0,10 |
| P12 | MM12-12012-B90-MD05 F30M | 4,0 | 0,050 | 0,050 | 0,055 | 0,065 |
| M1 | MM12-12012-B90S-E05 F30M | 5,0 | 0,080 | 0,080 | 0,090 | 0,11 |
| M2 | MM12-12012-B90S-E05 F30M | 5,0 | 0,070 | 0,070 | 0,085 | 0,10 |
| M3 | MM12-12012-B90S-E05 F30M | 4,0 | 0,060 | 0,060 | 0,065 | 0,080 |
| M4 | MM12-12012-B90-MD05 F30M | 3,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| M5 | MM12-12012-B90-MD05 F30M | 3,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| K1 | MM12-12012-B90S-E05 F30M | 5,0 | 0,080 | 0,080 | 0,090 | 0,11 |
| K2 | MM12-12012-B90S-E05 F30M | 5,0 | 0,070 | 0,070 | 0,085 | 0,10 |
| K3 | MM12-12012-B90S-E05 F30M | 5,0 | 0,070 | 0,070 | 0,085 | 0,10 |
| K4 | MM12-12012-B90S-E05 F30M | 5,0 | 0,070 | 0,070 | 0,085 | 0,10 |
| K5 | MM12-12012-B90-MD05 F30M | 5,0 | 0,065 | 0,065 | 0,075 | 0,090 |
| K6 | MM12-12012-B90-MD05 F30M | 5,0 | 0,070 | 0,070 | 0,085 | 0,10 |
| K7 | MM12-12012-B90-MD05 F30M | 5,0 | 0,065 | 0,065 | 0,075 | 0,090 |
| N1 | MM12-12012-B90S-E05 F30M | 5,0 | 0,10 | 0,10 | 0,12 | 0,14 |
| N2 | MM12-12012-B90S-E05 F30M | 5,0 | 0,10 | 0,10 | 0,12 | 0,14 |
| N3 | MM12-12012-B90S-E05 F30M | 5,0 | 0,10 | 0,10 | 0,12 | 0,14 |
| N11 | MM12-12012-B90S-E05 F30M | 5,0 | 0,10 | 0,10 | 0,12 | 0,14 |
| S1 | MM12-12012-B90-MD05 F30M | 3,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| S2 | MM12-12012-B90-MD05 F30M | 3,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| S3 | MM12-12012-B90-MD05 F30M | 3,0 | 0,050 | 0,050 | 0,055 | 0,060 |
| S11 | MM12-12012-B90-MD05 F30M | 3,5 | 0,060 | 0,060 | 0,065 | 0,075 |
| S12 | MM12-12012-B90-MD05 F30M | 3,5 | 0,060 | 0,060 | 0,065 | 0,075 |
| S13 | MM12-12012-B90-MD05 F30M | 3,0 | 0,055 | 0,055 | 0,060 | 0,065 |
| H5 | MM12-12012-B90-MD05 F30M | 4,0 | 0,050 | 0,050 | 0,055 | 0,065 |
| H8 | MM12-12012-B90-MD05 F30M | 3,5 | 0,040 | 0,040 | 0,044 | 0,050 |
| H11 | MM12-12012-B90-MD05 F30M | 4,0 | 0,050 | 0,050 | 0,055 | 0,065 |
| H12 | MM12-12012-B90-MD05 F30M | 3,5 | 0,040 | 0,040 | 0,044 | 0,050 |
| H21 | MM12-12012-B90-MD05 F30M | 3,5 | 0,040 | 0,040 | 0,044 | 0,050 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MM12 Z2 – Copy Insert selection – Semi finishing

| SMG | | a_p | f_z | | | |
|-----|--------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM12-12012-B90P-M05 F30M | 5,0 | 0,095 | 0,11 | 0,13 | 0,15 |
| P2 | MM12-12012-B90P-M05 F30M | 5,0 | 0,10 | 0,11 | 0,13 | 0,16 |
| P3 | MM12-12012-B90P-M05 F30M | 5,0 | 0,095 | 0,10 | 0,12 | 0,15 |
| P4 | MM12-12012-B90P-M05 F30M | 5,0 | 0,090 | 0,10 | 0,12 | 0,14 |
| P5 | MM12-12012-B90P-M05 F30M | 5,0 | 0,090 | 0,10 | 0,12 | 0,14 |
| P6 | MM12-12012-B90P-M05 F30M | 5,0 | 0,090 | 0,10 | 0,12 | 0,14 |
| P7 | MM12-12012-B90P-M05 F30M | 5,0 | 0,090 | 0,10 | 0,12 | 0,14 |
| P8 | MM12-12012-B90P-M05 F30M | 5,0 | 0,095 | 0,10 | 0,12 | 0,15 |
| P11 | MM12-12012-B90P-M05 F30M | 5,0 | 0,090 | 0,10 | 0,12 | 0,14 |
| P12 | MM12-12012-B90P-M05 F30M | 4,0 | 0,060 | 0,065 | 0,075 | 0,085 |
| M1 | MM12-12012-B90P-M05 F30M | 5,0 | 0,10 | 0,11 | 0,13 | 0,16 |
| M2 | MM12-12012-B90P-M05 F30M | 5,0 | 0,090 | 0,10 | 0,12 | 0,14 |
| M3 | MM12-12012-B90P-M05 F30M | 4,0 | 0,070 | 0,080 | 0,090 | 0,10 |
| M4 | MM12-12012-B90P-M05 F30M | 3,0 | 0,060 | 0,065 | 0,075 | 0,080 |
| M5 | MM12-12012-B90P-M05 F30M | 3,0 | 0,060 | 0,065 | 0,075 | 0,080 |
| K1 | MM12-12012-B90P-M05 F30M | 5,0 | 0,10 | 0,11 | 0,13 | 0,16 |
| K2 | MM12-12012-B90P-M05 F30M | 5,0 | 0,090 | 0,10 | 0,12 | 0,14 |
| K3 | MM12-12012-B90P-M05 F30M | 5,0 | 0,090 | 0,10 | 0,12 | 0,14 |
| K4 | MM12-12012-B90P-M05 F30M | 5,0 | 0,090 | 0,10 | 0,12 | 0,14 |
| K5 | MM12-12012-B90P-M05 F30M | 5,0 | 0,080 | 0,090 | 0,11 | 0,13 |
| K6 | MM12-12012-B90P-M05 F30M | 5,0 | 0,090 | 0,10 | 0,12 | 0,14 |
| K7 | MM12-12012-B90P-M05 F30M | 5,0 | 0,080 | 0,090 | 0,11 | 0,13 |
| N1 | MM12-12012-B90P-M05 F30M | 5,0 | 0,13 | 0,14 | 0,17 | 0,20 |
| N2 | MM12-12012-B90P-M05 F30M | 5,0 | 0,13 | 0,14 | 0,17 | 0,20 |
| N3 | MM12-12012-B90P-M05 F30M | 5,0 | 0,13 | 0,14 | 0,17 | 0,20 |
| N11 | MM12-12012-B90P-M05 F30M | 5,0 | 0,13 | 0,14 | 0,17 | 0,20 |
| S1 | MM12-12012-B90P-M05 F30M | 3,0 | 0,060 | 0,065 | 0,075 | 0,080 |
| S2 | MM12-12012-B90P-M05 F30M | 3,0 | 0,060 | 0,065 | 0,075 | 0,080 |
| S3 | MM12-12012-B90P-M05 F30M | 3,0 | 0,060 | 0,060 | 0,070 | 0,075 |
| S11 | MM12-12012-B90P-M05 F30M | 3,5 | 0,070 | 0,075 | 0,085 | 0,095 |
| S12 | MM12-12012-B90P-M05 F30M | 3,5 | 0,070 | 0,075 | 0,085 | 0,095 |
| S13 | MM12-12012-B90P-M05 F30M | 3,0 | 0,060 | 0,065 | 0,075 | 0,080 |
| H5 | MM12-12012-B90P-M05 F30M | 4,0 | 0,060 | 0,065 | 0,075 | 0,085 |
| H8 | MM12-12012-B90P-M05 F30M | 3,5 | 0,046 | 0,050 | 0,055 | 0,060 |
| H11 | MM12-12012-B90P-M05 F30M | 4,0 | 0,060 | 0,065 | 0,075 | 0,085 |
| H12 | MM12-12012-B90P-M05 F30M | 3,5 | 0,046 | 0,050 | 0,055 | 0,060 |
| H21 | MM12-12012-B90P-M05 F30M | 3,5 | 0,046 | 0,050 | 0,055 | 0,060 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

MM12 Z2 – Copy Insert selection – Finishing

| SMG | | a_p | f_z | | | |
|-----|---------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,038 | 0,044 | 0,050 | 0,060 |
| P2 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,040 | 0,044 | 0,050 | 0,060 |
| P3 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,038 | 0,042 | 0,050 | 0,060 |
| P4 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,036 | 0,040 | 0,048 | 0,055 |
| P5 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,036 | 0,040 | 0,048 | 0,055 |
| P6 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,036 | 0,040 | 0,048 | 0,055 |
| P7 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,036 | 0,040 | 0,048 | 0,055 |
| P8 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,038 | 0,042 | 0,050 | 0,060 |
| P11 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,036 | 0,040 | 0,048 | 0,055 |
| P12 | MM12-12012-B90PF-M02 F15M | 4,0 | 0,024 | 0,026 | 0,030 | 0,034 |
| M1 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,040 | 0,044 | 0,050 | 0,060 |
| M2 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,036 | 0,040 | 0,048 | 0,055 |
| M3 | MM12-12012-B90PF-M02 F15M | 4,0 | 0,028 | 0,030 | 0,036 | 0,040 |
| M4 | MM12-12012-B90PF-M02 F15M | 3,0 | 0,024 | 0,026 | 0,030 | 0,032 |
| M5 | MM12-12012-B90PF-M02 F15M | 3,0 | 0,024 | 0,026 | 0,030 | 0,032 |
| K1 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,040 | 0,044 | 0,050 | 0,060 |
| K2 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,036 | 0,040 | 0,048 | 0,055 |
| K3 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,036 | 0,040 | 0,048 | 0,055 |
| K4 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,036 | 0,040 | 0,048 | 0,055 |
| K5 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,032 | 0,036 | 0,042 | 0,050 |
| K6 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,036 | 0,040 | 0,048 | 0,055 |
| K7 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,032 | 0,036 | 0,042 | 0,050 |
| N1 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,050 | 0,055 | 0,065 | 0,080 |
| N2 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,050 | 0,055 | 0,065 | 0,080 |
| N3 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,050 | 0,055 | 0,065 | 0,080 |
| N11 | MM12-12012-B90PF-M02 F15M | 5,0 | 0,050 | 0,055 | 0,065 | 0,080 |
| S1 | MM12-12012-B90PF-M02 F15M | 3,0 | 0,024 | 0,026 | 0,030 | 0,032 |
| S2 | MM12-12012-B90PF-M02 F15M | 3,0 | 0,024 | 0,026 | 0,030 | 0,032 |
| S3 | MM12-12012-B90PF-M02 F15M | 3,0 | 0,024 | 0,024 | 0,028 | 0,030 |
| S11 | MM12-12012-B90PF-M02 F15M | 3,5 | 0,028 | 0,030 | 0,034 | 0,038 |
| S12 | MM12-12012-B90PF-M02 F15M | 3,5 | 0,028 | 0,030 | 0,034 | 0,038 |
| S13 | MM12-12012-B90PF-M02 F15M | 3,0 | 0,024 | 0,026 | 0,030 | 0,032 |
| H5 | MM12-12012-B90PF-M02 F15M | 4,0 | 0,024 | 0,026 | 0,030 | 0,034 |
| H8 | MM12-12012-B90PF-M02 F15M | 3,5 | 0,018 | 0,020 | 0,022 | 0,024 |
| H11 | MM12-12012-B90PF-M02 F15M | 4,0 | 0,024 | 0,026 | 0,030 | 0,034 |
| H12 | MM12-12012-B90PF-M02 F15M | 3,5 | 0,018 | 0,020 | 0,022 | 0,024 |
| H21 | MM12-12012-B90PF-M02 F15M | 3,5 | 0,018 | 0,020 | 0,022 | 0,024 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MM12 Z2 – Copy Cutting data

| SMG | F15M | | | | | F30M | | | | | T60M | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% |
| P1 | 300 | 370 | 405 | 440 | 440 | 240 | 300 | 325 | 350 | 345 | 195 | 240 | 265 | 285 | 280 |
| P2 | 290 | 360 | 395 | 425 | 425 | 230 | 290 | 315 | 340 | 340 | 185 | 235 | 255 | 275 | 275 |
| P3 | 250 | 315 | 340 | 365 | 370 | 200 | 255 | 275 | 295 | 295 | 160 | 205 | 225 | 240 | 240 |
| P4 | 220 | 275 | 300 | 325 | 325 | 175 | 225 | 245 | 260 | 260 | 145 | 180 | 195 | 210 | 210 |
| P5 | 210 | 265 | 285 | 310 | 310 | 170 | 215 | 235 | 255 | 250 | 140 | 170 | 190 | 205 | 200 |
| P6 | 235 | 295 | 320 | 350 | 350 | 190 | 240 | 260 | 285 | 285 | 155 | 195 | 210 | 230 | 230 |
| P7 | 225 | 280 | 305 | 330 | 330 | 180 | 230 | 245 | 270 | 265 | 145 | 185 | 200 | 215 | 215 |
| P8 | 210 | 265 | 285 | 310 | 310 | 170 | 215 | 235 | 250 | 250 | 135 | 170 | 190 | 200 | 200 |
| P11 | 220 | 270 | 295 | 320 | 320 | 175 | 220 | 240 | 260 | 260 | 140 | 180 | 195 | 210 | 210 |
| P12 | 140 | 175 | 180 | 195 | 195 | 115 | 145 | 150 | 165 | 160 | 95 | 120 | 120 | 135 | 130 |
| M1 | 230 | 290 | 315 | 345 | 340 | 185 | 235 | 255 | 275 | 270 | 150 | 190 | 205 | 225 | 220 |
| M2 | 190 | 235 | 260 | 280 | 280 | 155 | 190 | 210 | 225 | 225 | 125 | 155 | 170 | 185 | 180 |
| M3 | 155 | 195 | 200 | 220 | 220 | 125 | 160 | 165 | 180 | 180 | 100 | 130 | 135 | 145 | 145 |
| M4 | 120 | 155 | 155 | 165 | 165 | 100 | 130 | 130 | 135 | 140 | 80 | 105 | 105 | 110 | 110 |
| M5 | 100 | 130 | 130 | 140 | 140 | 85 | 110 | 105 | 115 | 115 | 70 | 90 | 85 | 95 | 95 |
| K1 | 230 | 285 | 310 | 340 | 335 | 180 | 230 | 250 | 270 | 270 | 145 | 185 | 205 | 220 | 215 |
| K2 | 200 | 250 | 270 | 295 | 295 | 160 | 200 | 220 | 240 | 235 | 130 | 165 | 180 | 195 | 190 |
| K3 | 170 | 210 | 230 | 250 | 250 | 135 | 170 | 185 | 205 | 200 | 110 | 140 | 150 | 165 | 160 |
| K4 | 160 | 200 | 220 | 240 | 240 | 130 | 165 | 180 | 195 | 190 | 105 | 130 | 145 | 155 | 155 |
| K5 | 95 | 120 | 130 | 145 | 145 | 80 | 100 | 110 | 115 | 115 | 65 | 80 | 85 | 95 | 95 |
| K6 | 145 | 180 | 195 | 210 | 210 | 115 | 145 | 155 | 170 | 170 | 95 | 115 | 125 | 140 | 135 |
| K7 | 125 | 155 | 170 | 185 | 185 | 100 | 125 | 140 | 150 | 150 | 80 | 105 | 110 | 120 | 120 |
| N1 | 1750 | 2200 | 2400 | 2575 | 2575 | 1375 | 1725 | 1900 | 2025 | 2000 | 1100 | 1400 | 1525 | 1650 | 1625 |
| N2 | 710 | 890 | 970 | 1050 | 1025 | 550 | 690 | 760 | 820 | 810 | 450 | 560 | 620 | 660 | 660 |
| N3 | 470 | 590 | 640 | 700 | 690 | 370 | 465 | 510 | 550 | 540 | 300 | 375 | 410 | 440 | 440 |
| N11 | 540 | 680 | 740 | 800 | 790 | 425 | 530 | 580 | 620 | 620 | 340 | 430 | 470 | 500 | 500 |
| S1 | 55 | 75 | 70 | 75 | 75 | 47 | 60 | 60 | 65 | 65 | 38 | 50 | 48 | 50 | 50 |
| S2 | 45 | 60 | 60 | 60 | 60 | 38 | 49 | 48 | 50 | 50 | 31 | 40 | 39 | 42 | 42 |
| S3 | 39 | 50 | 50 | 55 | 55 | 33 | 43 | 42 | 45 | 45 | 27 | 35 | 34 | 37 | 36 |
| S11 | 80 | 100 | 100 | 110 | 110 | 65 | 85 | 85 | 90 | 90 | 55 | 70 | 70 | 75 | 75 |
| S12 | 55 | 70 | 70 | 75 | 75 | 45 | 60 | 60 | 65 | 60 | 37 | 48 | 47 | 50 | 50 |
| S13 | 31 | 41 | 40 | 43 | 43 | 26 | 34 | 34 | 36 | 36 | 21 | 28 | 27 | 29 | 29 |
| H5 | 46 | 60 | 60 | 65 | 65 | 38 | 49 | 50 | 55 | 55 | 31 | 40 | 41 | 44 | 44 |
| H8 | 47 | 60 | 60 | 65 | 65 | 40 | 55 | 50 | 55 | 55 | 33 | 43 | 42 | 46 | 45 |
| H11 | 60 | 75 | 75 | 85 | 85 | 49 | 60 | 65 | 70 | 70 | 39 | 50 | 50 | 55 | 55 |
| H12 | 85 | 110 | 110 | 120 | 120 | 70 | 95 | 95 | 100 | 100 | 60 | 75 | 75 | 80 | 80 |
| H21 | 47 | 60 | 60 | 65 | 65 | 40 | 55 | 50 | 55 | 55 | 33 | 43 | 42 | 46 | 45 |

MM12 High-Feed Insert selection

| SMG | | a_p | f_z | | | |
|-----|-------------------------|-------|-------|------|------|------|
| | | | 100% | 70% | 30% | 20% |
| P1 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,55 | 0,55 | 0,65 | 0,75 |
| P2 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,55 | 0,55 | 0,65 | 0,75 |
| P3 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,55 | 0,55 | 0,60 | 0,75 |
| P4 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,55 | 0,55 | 0,60 | 0,70 |
| P5 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,50 | 0,50 | 0,60 | 0,70 |
| P6 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,50 | 0,50 | 0,60 | 0,70 |
| P7 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,50 | 0,50 | 0,60 | 0,70 |
| P8 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,55 | 0,55 | 0,60 | 0,75 |
| P11 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,50 | 0,50 | 0,60 | 0,70 |
| P12 | MM12-12.60-HF-MD10 F30M | 0,28 | 0,36 | 0,36 | 0,40 | 0,46 |
| M1 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,55 | 0,55 | 0,65 | 0,75 |
| M2 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,50 | 0,50 | 0,60 | 0,70 |
| M3 | MM12-12.60-HF-MD10 F30M | 0,28 | 0,42 | 0,42 | 0,46 | 0,55 |
| M4 | MM12-12.60-HF-MD10 F30M | 0,20 | 0,36 | 0,36 | 0,40 | 0,48 |
| M5 | MM12-12.60-HF-MD10 F30M | 0,20 | 0,36 | 0,36 | 0,40 | 0,48 |
| K1 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,55 | 0,55 | 0,65 | 0,75 |
| K2 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,50 | 0,50 | 0,60 | 0,70 |
| K3 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,50 | 0,50 | 0,60 | 0,70 |
| K4 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,50 | 0,50 | 0,60 | 0,70 |
| K5 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,48 | 0,48 | 0,50 | 0,60 |
| K6 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,50 | 0,50 | 0,60 | 0,70 |
| K7 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,48 | 0,48 | 0,50 | 0,60 |
| N1 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,75 | 0,75 | 0,80 | 1,0 |
| N2 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,75 | 0,75 | 0,80 | 1,0 |
| N3 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,75 | 0,75 | 0,80 | 1,0 |
| N11 | MM12-12.60-HF-MD10 F30M | 0,36 | 0,75 | 0,75 | 0,80 | 1,0 |
| S1 | MM12-12.60-HF-MD10 F30M | 0,20 | 0,36 | 0,36 | 0,40 | 0,48 |
| S2 | MM12-12.60-HF-MD10 F30M | 0,20 | 0,36 | 0,36 | 0,40 | 0,48 |
| S3 | MM12-12.60-HF-MD10 F30M | 0,20 | 0,34 | 0,34 | 0,38 | 0,44 |
| S11 | MM12-12.60-HF-MD10 F30M | 0,24 | 0,42 | 0,42 | 0,46 | 0,55 |
| S12 | MM12-12.60-HF-MD10 F30M | 0,24 | 0,42 | 0,42 | 0,46 | 0,55 |
| S13 | MM12-12.60-HF-MD10 F30M | 0,20 | 0,36 | 0,36 | 0,40 | 0,48 |
| H5 | MM12-12.60-HF-MD10 F15M | 0,28 | 0,36 | 0,36 | 0,40 | 0,46 |
| H8 | MM12-12.60-HF-MD10 F15M | 0,24 | 0,28 | 0,28 | 0,30 | 0,34 |
| H11 | MM12-12.60-HF-MD10 F15M | 0,28 | 0,36 | 0,36 | 0,40 | 0,46 |
| H12 | MM12-12.60-HF-MD10 F15M | 0,24 | 0,28 | 0,28 | 0,30 | 0,34 |
| H21 | MM12-12.60-HF-MD10 F15M | 0,24 | 0,28 | 0,28 | 0,30 | 0,34 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MM12 High-Feed Cutting data

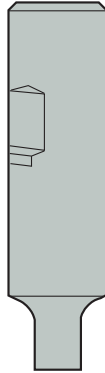
| SMG | F15M | | | | F30M | | | |
|-----|------|-----|-----|-----|------|------|------|------|
| | 100% | 70% | 30% | 20% | 100% | 70% | 30% | 20% |
| P1 | — | — | — | — | 225 | 275 | 325 | 350 |
| P2 | — | — | — | — | 220 | 270 | 320 | 340 |
| P3 | — | — | — | — | 190 | 230 | 280 | 290 |
| P4 | — | — | — | — | 165 | 205 | 245 | 260 |
| P5 | — | — | — | — | 165 | 200 | 235 | 250 |
| P6 | — | — | — | — | 185 | 225 | 265 | 280 |
| P7 | — | — | — | — | 170 | 210 | 250 | 265 |
| P8 | — | — | — | — | 160 | 195 | 235 | 245 |
| P11 | — | — | — | — | 170 | 205 | 240 | 255 |
| P12 | — | — | — | — | 110 | 130 | 155 | 165 |
| M1 | — | — | — | — | 175 | 215 | 255 | 275 |
| M2 | — | — | — | — | 145 | 180 | 210 | 225 |
| M3 | — | — | — | — | 120 | 140 | 170 | 180 |
| M4 | — | — | — | — | 95 | 110 | 130 | 140 |
| M5 | — | — | — | — | 80 | 90 | 110 | 115 |
| K1 | 190 | 230 | 270 | 290 | 175 | 215 | 250 | 270 |
| K2 | 165 | 205 | 240 | 255 | 155 | 190 | 220 | 235 |
| K3 | 140 | 170 | 200 | 215 | 130 | 160 | 190 | 200 |
| K4 | 135 | 165 | 195 | 205 | 125 | 155 | 180 | 190 |
| K5 | 80 | 100 | 120 | 125 | 75 | 90 | 110 | 115 |
| K6 | 120 | 145 | 170 | 180 | 110 | 135 | 160 | 170 |
| K7 | 105 | 125 | 155 | 160 | 95 | 120 | 140 | 150 |
| N1 | — | — | — | — | 1275 | 1575 | 1900 | 2000 |
| N2 | — | — | — | — | 520 | 630 | 770 | 800 |
| N3 | — | — | — | — | 345 | 425 | 510 | 540 |
| N11 | — | — | — | — | 395 | 485 | 590 | 610 |
| S1 | — | — | — | — | 44 | 50 | 60 | 65 |
| S2 | — | — | — | — | 36 | 41 | 49 | 50 |
| S3 | — | — | — | — | 31 | 36 | 43 | 45 |
| S11 | — | — | — | — | 60 | 70 | 85 | 90 |
| S12 | — | — | — | — | 42 | 50 | 60 | 65 |
| S13 | — | — | — | — | 25 | 29 | 34 | 36 |
| H5 | 39 | 46 | 55 | 60 | 36 | 43 | 50 | 55 |
| H8 | 41 | 49 | 60 | 60 | 38 | 45 | 55 | 55 |
| H11 | 49 | 60 | 70 | 75 | 46 | 55 | 65 | 70 |
| H12 | 75 | 90 | 105 | 110 | 70 | 80 | 95 | 105 |
| H21 | 41 | 49 | 60 | 60 | 38 | 45 | 55 | 55 |

Design 1



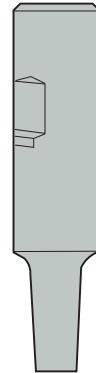
Keyway shank

Design 2



Cylindrical/Weldon back end and 90° front

Design 3



Cylindrical/Weldon back end tapered front 87°/89°

Design 4

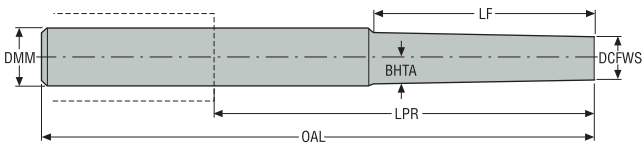


Cylindrical/Weldon back end tapered front 80°/85°/87°


Design 5



Cylindrical back end double tapered front end 89°/85°



MM16

| Design | Designation | Connecting size | Dimensions in mm | | | | | |  | Spare part no. |
|--------|---------------------|-----------------|------------------|------|-------|------|-------|-------|---|----------------|
| | | | DCSFWS | DMM | BHTA° | LF | OAL | LPR | | |
| 1 | MM16-20070.0-0000 | MM16 | 15,2 | 20,0 | 60,0 | 0,0 | 70,0 | 20,0 | 0,2 | 1 |
| 2 | MM16-16070.0-0011M | MM16 | 15,2 | 16,0 | 0,0 | 11,3 | 70,0 | 22,0 | 0,1 | 1 |
| 2 | MM16-20080.0-0011DS | MM16 | 15,2 | 20,0 | 0,0 | 11,3 | 80,0 | 30,0 | 0,4 | 2 |
| 2 | MM16-25100.3-0019 | MM16 | 15,2 | 25,0 | 0,0 | 19,0 | 100,0 | 94,0 | 0,3 | 3 |
| 2 | MM16-20150.0-0038DS | MM16 | 15,2 | 20,0 | 0,0 | 38,0 | 150,0 | 100,0 | 0,6 | 2 |
| 2 | MM16-20160.0-0076DS | MM16 | 15,2 | 20,0 | 0,0 | 76,0 | 160,0 | 110,0 | 0,6 | 2 |
| 2 | MM16-16150.0-0080DS | MM16 | 15,2 | 16,0 | 0,0 | 80,0 | 150,0 | 102,0 | 0,4 | 2 |
| 4 | MM16-20115.3-3045 | MM16 | 15,2 | 20,0 | 3,0 | 45,8 | 115,0 | 65,0 | 0,2 | 3 |
| 3 | MM16-25115.3-3035 | MM16 | 15,2 | 25,0 | 3,0 | 35,0 | 115,0 | 59,0 | 0,3 | 3 |
| 4 | MM16-25170.3-5056 | MM16 | 15,2 | 25,0 | 5,0 | 56,0 | 170,0 | 114,0 | 0,6 | 4 |
| 4 | MM16-32250.0-10047 | MM16 | 15,2 | 32,0 | 10,0 | 47,6 | 250,0 | 190,0 | 1,3 | 4 |
| 3 | MM16-20130.0-1045DS | MM16 | 15,2 | 20,0 | 1,0 | 45,0 | 130,0 | 80,0 | 0,5 | 2 |
| 3 | MM16-20190.0-1055M | MM16 | 15,2 | 20,0 | 1,0 | 55,0 | 190,0 | 140,0 | 0,4 | 5 |
| 3 | MM16-25170.0-1060 | MM16 | 19,0 | 25,0 | 1,0 | 60,0 | 170,0 | 114,0 | 0,5 | 5 |
| 3 | MM16-20190.0-1075M | MM16 | 15,2 | 20,0 | 1,0 | 75,0 | 190,0 | 140,0 | 0,4 | 5 |
| 3 | MM16-20190.0-1075DS | MM16 | 15,2 | 20,0 | 1,0 | 75,0 | 190,0 | 140,0 | 0,8 | 2 |
| 3 | MM16-20190.0-1095M | MM16 | 15,2 | 20,0 | 1,0 | 95,0 | 190,0 | 140,0 | 0,4 | 6 |
| 3 | MM16-20190.0-1095DS | MM16 | 15,2 | 20,0 | 1,0 | 95,0 | 190,0 | 140,0 | 0,8 | 2 |
| 5 | MM16-25250.0-1075DS | MM16 | 15,2 | 25,0 | 1,0 | 75,0 | 250,0 | 194,0 | 1,6 | 2 |
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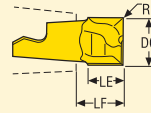
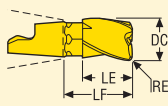
Spare Parts

| Spare part no. | Tension screw | Sleeve |
|----------------|---------------|----------|
| | | - |
| 1 | MM16-1045 | MM-10030 |
| 2 | MM16-1045 | - |
| 3 | MM16-1045 | MM-10062 |
| 4 | MM16-1045 | MM-10132 |
| 5 | MM16-1093 | MM-10062 |
| 6 | MM16-10113 | MM-10062 |
| | | |
| | | |

Please check availability in current price and stock-list
Allen key H05-4 for sleeve to be ordered separately.

For wrench types, see insert pages

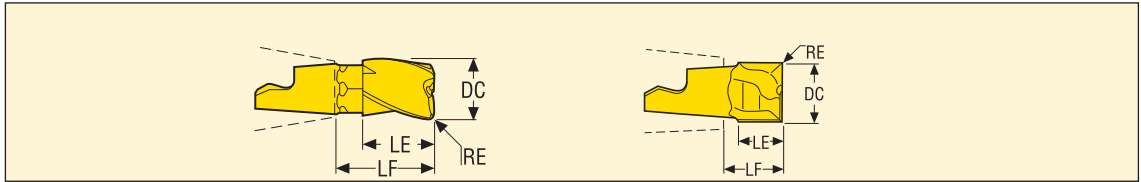
Slot milling/square shoulder milling



| Insert type | Designation | Dimensions in mm | | | | ZNP | Wrench | Coated | | | |
|-------------|-----------------------|------------------|--------|-----|-------|-----|--------|--------|------|------|------|
| | | LE | DC | RE | LF | | | Grades | | | |
| | | | | | | | | T60M | F15M | F30M | F40M |
| 3-flute | MM16-16019-A30-E06 | 19,25 | 16,0 | 0,0 | 24,5 | 3 | MM0416 | | | ■ | |
| 3-flute | MM16-16019-R05A30-M06 | 19,25 | 16,0 | 0,5 | 24,5 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-16019-R10A30-E06 | 19,25 | 16,0 | 1,0 | 24,5 | 3 | MM0416 | | | ■ | |
| 3-flute | MM16-16019-R10A30-M06 | 19,25 | 16,0 | 1,0 | 24,5 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-16019-R20A30-D06 | 19,25 | 16,0 | 2,0 | 24,5 | 3 | MM0416 | | | ■ | |
| 3-flute | MM16-16019-R20A30-M06 | 19,25 | 16,0 | 2,0 | 24,5 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-16019-R30A30-E06 | 19,25 | 16,0 | 3,0 | 24,5 | 3 | MM0416 | | | ■ | |
| 3-flute | MM16-16019-R30A30-M06 | 19,25 | 16,0 | 3,0 | 24,5 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-16019-R40A30-M06 | 19,25 | 16,0 | 4,0 | 24,5 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-16019-R50A30-M06 | 19,25 | 16,0 | 5,0 | 24,5 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-16019-R60A30-M06 | 19,25 | 16,0 | 6,0 | 24,5 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-20015-A30-E06 | 15,0 | 20,0 | 0,0 | 20,15 | 3 | MM0416 | | | ■ | |
| 3-flute | MM16-20015-R05A30-M06 | 15,0 | 20,0 | 0,5 | 20,15 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-20015-R10A30-E06 | 15,0 | 20,0 | 1,0 | 20,15 | 3 | MM0416 | | | ■ | |
| 3-flute | MM16-20015-R10A30-M06 | 15,0 | 20,0 | 1,0 | 20,15 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-20015-R20A30-D06 | 15,0 | 20,0 | 2,0 | 20,15 | 3 | MM0416 | | | ■ | |
| 3-flute | MM16-20015-R30A30-M06 | 15,0 | 20,0 | 3,0 | 20,15 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-20015-R50A30-M06 | 15,0 | 20,0 | 5,0 | 20,15 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-15919-A30-E06 | 19,25 | 15,875 | 0,0 | 24,5 | 3 | MM0416 | | | ■ | |
| 3-flute | MM16-15919-R08A30-M06 | 19,25 | 15,875 | 0,8 | 24,5 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-15919-R16A30-D06 | 19,25 | 15,875 | 1,6 | 24,5 | 3 | MM0416 | | | ■ | |
| 3-flute | MM16-15919-R32A30-M06 | 19,25 | 15,875 | 3,2 | 24,5 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-19115-R08A30-M06 | 15,0 | 19,05 | 0,8 | 20,15 | 3 | MM0416 | | | | ■ |
| 3-flute | MM16-19115-R64A30-M06 | 15,0 | 19,05 | 6,4 | 20,15 | 3 | MM0416 | | | | ■ |
| 2-flute | MM16-16011-M06 | 11,0 | 16,0 | 0,0 | 13,6 | 2 | MM1420 | ■ | | | |
| 2-flute | MM16-16011-R08A8-E06 | 10,5 | 16,0 | 0,8 | 13,62 | 2 | MM1420 | ■ | | ■ | |
| 2-flute | MM16-16011-R08-MD07 | 11,0 | 16,0 | 0,8 | 13,58 | 2 | MM1420 | ■ | | ■ | |
| 2-flute | MM16-16011-R08P-M05 | 10,79 | 16,0 | 0,8 | 13,41 | 2 | MM1420 | | | ■ | |
| 2-flute | MM16-16011-R20-MD07 | 10,95 | 16,0 | 2,0 | 13,55 | 2 | MM1420 | | | ■ | |
| 2-flute | MM16-16011-R30-MD07 | 10,93 | 16,0 | 3,0 | 13,54 | 2 | MM1420 | ■ | | ■ | |
| 2-flute | MM16-16011-R40-MD07 | 10,91 | 16,0 | 4,0 | 13,52 | 2 | MM1420 | ■ | | | |
| 2-flute | MM16-16011-R50-MD07 | 10,89 | 16,0 | 5,0 | 13,5 | 2 | MM1420 | ■ | | | |
| 2-flute | MM16-15911-M06 | 11,0 | 15,875 | 0,0 | 13,6 | 2 | MM1420 | ■ | | | |
| 2-flute | MM16-20013-R08A8-E06 | 12,7 | 20,0 | 0,8 | 15,42 | 2 | MM1420 | ■ | | ■ | |
| 2-flute | MM16-19013-R08A8-E06 | 12,7 | 19,05 | 0,8 | 15,39 | 2 | MM1420 | | | ■ | |

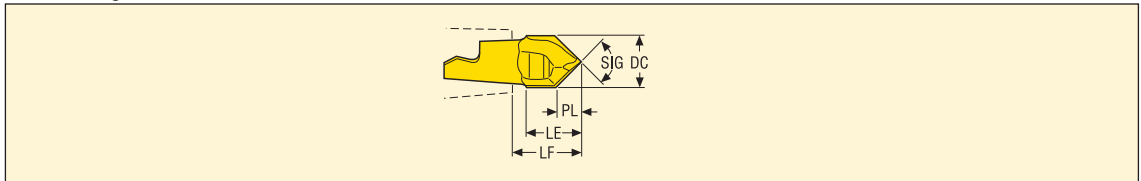
For Torque keys and torque values, see page 631

Slot milling



| Insert type | Designation | Dimensions in mm | | | | ZNP | Wrench | Coated | | | | |
|-------------|-----------------------|------------------|------|-----|-------|-----|--------|--------|------|------|------|--|
| | | LE | DC | RE | LF | | | Grades | | | | |
| | | | | | | | | T60M | F15M | F30M | F40M | |
| 3-flute | MM16-15719-R03A30-M06 | 19,25 | 15,7 | 0,3 | 24,5 | 3 | MM0416 | | | | ■ | |
| 2-flute | MM16-15711T-R03-D07 | 11,0 | 15,7 | 0,3 | 13,6 | 2 | MM1420 | ■ | | | | |
| 3-flute | MM16-19715-R05A30-M06 | 15,0 | 19,7 | 0,5 | 20,15 | 3 | MM0416 | | | | ■ | |
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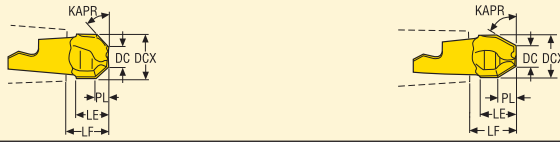
Centre drilling



| Insert type | Designation | Dimensions in mm | | | | SIG° | ZNP | Wrench | Coated | | | | |
|-------------|---------------------|------------------|-------|------|------|-------|-----|--------|--------|------|------|------|--|
| | | DC | LE | LF | PL | | | | Grades | | | | |
| | | | | | | | | | T60M | F15M | F30M | F40M | |
| 90° | MM16-16008-C90-M06 | 16,0 | 16,7 | 19,2 | 7,53 | 90,0 | 2 | MM1420 | ■ | | | | |
| 120° | MM16-16011-C120-M06 | 16,0 | 16,64 | 18,9 | 4,3 | 120,0 | 2 | MM1420 | ■ | | | | |
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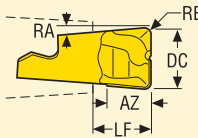
For Torque keys and torque values, see page 631

Chamfering



| Insert type | Designation | Dimensions in mm | | | | | | | ZNP | Wrench | Coated | | | |
|-------------|---------------------|------------------|------|------|-------|-----|-------|--------|--------|--------|--------|------|------|--|
| | | DC | DCX | LE | LF | PL | KAPR° | Grades | | | | | | |
| | | | | | | | | T60M | | | F15M | F30M | F40M | |
| 45° | MM16-16011-4540-E06 | 7,69 | 16,0 | 10,9 | 13,25 | 4,1 | 45,0 | 2 | MM1420 | ■ | | | | |
| 60° | MM16-16012-6060-E06 | 8,38 | 16,0 | 12,9 | 15,3 | 6,7 | 60,0 | 2 | MM1420 | ■ | | | | |
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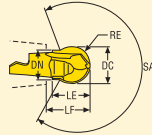
Plunge milling



| Insert type | Designation | Dimensions in mm | | | | ZNP | Wrench | Coated | | | | |
|-------------|------------------------|------------------|------|------|-----|-----|--------|--------|------|------|------|--|
| | | DC | AZ | LF | RA° | | | Grades | | | | |
| | | | | | | | | T60M | F15M | F30M | F40M | |
| 2-flute | MM16-16011-R10-PL-MD07 | 16,0 | 11,3 | 11,3 | 5,0 | 2 | MM1420 | | | ■ | | |
| 2-flute | MM16-16011-R20-PL-MD07 | 16,0 | 11,3 | 11,3 | 5,0 | 2 | MM1420 | | | ■ | | |
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For Torque keys and torque values, see page 631

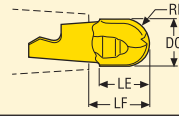
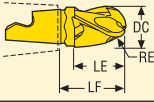
Precision inserts for semi-finishing in all materials



| Insert type | Designation | Dimensions in mm | | | | | SA° | ZNP | Wrench | Coated | | | |
|-------------|------------------------------|------------------|------|------|-------|------|-------|-----|--------|--------|------|------|------|
| | | DC | RE | LE | LF | DN | | | | Grades | | | |
| | | | | | | | | | | T60M | F15M | F30M | F40M |
| 2-flute | MM16-20020-B120PF-M04 | 20,0 | 10,0 | 20,0 | 21,94 | 15,9 | 254,0 | 2 | MM1420 | | ■ | | |
| 2-flute | MM16-20020-B120P-M07 | 20,0 | 10,0 | 20,0 | 21,94 | 15,9 | 254,0 | 2 | MM1420 | | | ■ | |
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For Torque keys and torque values, see page 631

Copy milling



| Insert type | Designation | Dimensions in mm | | | | ZNP | Wrench | Coated | | | | |
|-------------|-----------------------|------------------|--------|-------|-------|-----|--------|--------|------|------|------|--|
| | | LE | DC | RE | LF | | | Grades | | | | |
| | | | | | | | | T60M | F15M | F30M | F40M | |
| 3-flute | MM16-16019-B90A30-E06 | 19,25 | 16,0 | 8,0 | 24,5 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM16-20015-B90A30-E06 | 15,0 | 20,0 | 10,0 | 20,15 | 3 | MM0416 | | | ■ | | |
| 3-flute | MM16-16019-B90A30-M06 | 19,25 | 16,0 | 8,0 | 24,5 | 3 | MM0416 | | | | ■ | |
| 3-flute | MM16-20015-B90A30-M06 | 15,0 | 20,0 | 10,0 | 20,15 | 3 | MM0416 | | | | ■ | |
| 2-flute | MM16-16016-B90-MD07 | 16,2 | 16,0 | 8,0 | 18,4 | 2 | MM1420 | ■ | | ■ | | |
| 2-flute | MM16-20020-B90-MD07 | 20,3 | 20,0 | 10,0 | 22,15 | 2 | MM1420 | ■ | | ■ | | |
| 2-flute | MM16-19020-B90-MD07 | 20,3 | 19,05 | 9,525 | 22,15 | 2 | MM1420 | ■ | | | | |
| 2-flute | MM16-16016-B90S-E07 | 16,38 | 16,0 | 8,0 | 18,83 | 2 | MM1420 | | | ■ | | |
| 2-flute | MM16-20020-B90S-E07 | 20,3 | 20,0 | 10,0 | 22,15 | 2 | MM1420 | | | ■ | | |
| 2-flute | MM16-19020-B90S-E07 | 20,3 | 19,05 | 9,525 | 22,15 | 2 | MM1420 | | | ■ | | |
| 2-flute | MM16-16016-B90P-M07 | 13,8 | 16,0 | 8,0 | 18,4 | 2 | MM1420 | | | ■ | | |
| 2-flute | MM16-20020-B90P-M07 | 17,43 | 20,0 | 10,0 | 22,12 | 2 | MM1420 | | | ■ | | |
| 2-flute | MM16-15916-B90P-M07 | 13,8 | 15,875 | 7,938 | 18,4 | 2 | MM1420 | ■ | | ■ | | |
| 2-flute | MM16-19020-B90P-M07 | 17,43 | 19,05 | 9,525 | 22,12 | 2 | MM1420 | ■ | | | | |
| 2-flute | MM16-16016-B90PF-M03 | 13,8 | 16,0 | 8,0 | 18,4 | 2 | MM1420 | | ■ | | | |

MM16 – General Insert selection

| SMG | | a _p | f _z | | | |
|-----|----------------------------|----------------|----------------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM16-16019-R05A30-M06 F40M | 3,5 | 0,085 | 0,085 | 0,11 | 0,14 |
| P2 | MM16-16019-R05A30-M06 F40M | 3,5 | 0,085 | 0,090 | 0,11 | 0,15 |
| P3 | MM16-16019-R05A30-M06 F40M | 3,5 | 0,080 | 0,085 | 0,10 | 0,14 |
| P4 | MM16-16019-R05A30-M06 F40M | 3,5 | 0,080 | 0,080 | 0,10 | 0,14 |
| P5 | MM16-16019-R05A30-M06 F40M | 3,5 | 0,080 | 0,080 | 0,10 | 0,13 |
| P6 | MM16-16019-R05A30-M06 F40M | 3,5 | 0,080 | 0,080 | 0,10 | 0,13 |
| P7 | MM16-16019-R05A30-M06 F40M | 3,5 | 0,080 | 0,080 | 0,10 | 0,13 |
| P8 | MM16-16019-R05A30-M06 F40M | 3,5 | 0,080 | 0,085 | 0,10 | 0,14 |
| P11 | MM16-16019-R05A30-M06 F40M | 3,5 | 0,080 | 0,080 | 0,10 | 0,13 |
| P12 | MM16-16019-R05A30-M06 F40M | 2,5 | 0,055 | 0,055 | 0,070 | 0,090 |
| M1 | MM16-16019-R05A30-M06 F40M | 3,5 | 0,085 | 0,090 | 0,11 | 0,15 |
| M2 | MM16-16019-R05A30-M06 F40M | 3,5 | 0,080 | 0,080 | 0,10 | 0,13 |
| M3 | MM16-16019-R05A30-M06 F40M | 2,5 | 0,065 | 0,065 | 0,080 | 0,11 |
| M4 | MM16-16019-R05A30-M06 F40M | 2,0 | 0,055 | 0,055 | 0,070 | 0,095 |
| M5 | MM16-16019-R05A30-M06 F40M | 2,0 | 0,055 | 0,055 | 0,070 | 0,095 |
| K1 | MM16-16019-R10A30-E06 F30M | 3,5 | 0,090 | 0,090 | 0,11 | 0,15 |
| K2 | MM16-16019-R10A30-E06 F30M | 3,5 | 0,080 | 0,085 | 0,10 | 0,14 |
| K3 | MM16-16019-R10A30-E06 F30M | 3,5 | 0,080 | 0,085 | 0,10 | 0,14 |
| K4 | MM16-16019-R10A30-E06 F30M | 3,5 | 0,080 | 0,085 | 0,10 | 0,14 |
| K5 | MM16-16019-R20A30-D06 F30M | 3,5 | 0,080 | 0,085 | 0,10 | 0,14 |
| K6 | MM16-16019-R20A30-D06 F30M | 3,5 | 0,090 | 0,090 | 0,11 | 0,15 |
| K7 | MM16-16019-R20A30-D06 F30M | 3,5 | 0,080 | 0,085 | 0,10 | 0,14 |
| N1 | MM16-16019-R10A30-E06 F30M | 3,5 | 0,11 | 0,12 | 0,14 | 0,19 |
| N2 | MM16-16019-R10A30-E06 F30M | 3,5 | 0,11 | 0,12 | 0,14 | 0,19 |
| N3 | MM16-16019-R10A30-E06 F30M | 3,5 | 0,11 | 0,12 | 0,14 | 0,19 |
| N11 | MM16-16019-R10A30-E06 F30M | 3,5 | 0,11 | 0,12 | 0,14 | 0,19 |
| S1 | MM16-16019-R20A30-D06 F30M | 2,0 | 0,075 | 0,080 | 0,095 | 0,13 |
| S2 | MM16-16019-R20A30-D06 F30M | 2,0 | 0,075 | 0,080 | 0,095 | 0,13 |
| S3 | MM16-16019-R20A30-D06 F30M | 2,0 | 0,070 | 0,075 | 0,090 | 0,12 |
| S11 | MM16-16019-R05A30-M06 F40M | 2,5 | 0,065 | 0,065 | 0,080 | 0,11 |
| S12 | MM16-16019-R05A30-M06 F40M | 2,5 | 0,065 | 0,065 | 0,080 | 0,11 |
| S13 | MM16-16019-R05A30-M06 F40M | 2,0 | 0,055 | 0,055 | 0,070 | 0,095 |
| H5 | MM16-16019-R20A30-D06 F30M | 2,5 | 0,070 | 0,070 | 0,085 | 0,11 |
| H8 | MM16-16019-R20A30-D06 F30M | 2,5 | 0,050 | 0,055 | 0,065 | 0,085 |
| H11 | MM16-16019-R20A30-D06 F30M | 2,5 | 0,070 | 0,070 | 0,085 | 0,11 |
| H12 | MM16-16019-R20A30-D06 F30M | 2,5 | 0,050 | 0,055 | 0,065 | 0,085 |
| H21 | MM16-16019-R20A30-D06 F30M | 2,5 | 0,050 | 0,055 | 0,065 | 0,085 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_φ/DC = %

All cutting data are start values

MM16 – General Cutting data

| SMG | F30M | | | | F40M | | | | T60M | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| | 100% | 40% | 20% | 10% | 100% | 40% | 20% | 10% | 100% | 40% | 20% | 10% |
| P1 | 230 | 285 | 315 | 350 | 215 | 270 | 300 | 335 | 200 | 250 | 275 | 310 |
| P2 | 220 | 275 | 310 | 345 | 210 | 260 | 290 | 325 | 195 | 240 | 270 | 295 |
| P3 | 195 | 240 | 270 | 295 | 185 | 225 | 255 | 280 | 170 | 210 | 235 | 260 |
| P4 | 170 | 215 | 240 | 265 | 160 | 205 | 225 | 250 | 150 | 185 | 205 | 225 |
| P5 | 165 | 205 | 230 | 250 | 155 | 195 | 215 | 240 | 140 | 175 | 200 | 220 |
| P6 | 185 | 230 | 260 | 285 | 175 | 215 | 245 | 270 | 160 | 200 | 220 | 245 |
| P7 | 175 | 220 | 245 | 265 | 165 | 205 | 230 | 255 | 150 | 190 | 210 | 235 |
| P8 | 160 | 205 | 230 | 250 | 155 | 190 | 215 | 235 | 140 | 175 | 200 | 215 |
| P11 | 170 | 210 | 235 | 260 | 160 | 200 | 225 | 245 | 145 | 185 | 205 | 225 |
| P12 | 110 | 135 | 150 | 165 | 105 | 130 | 145 | 155 | 95 | 120 | 135 | 145 |
| M1 | 180 | 225 | 250 | 275 | 170 | 210 | 235 | 260 | 155 | 190 | 215 | 240 |
| M2 | 150 | 185 | 205 | 225 | 140 | 175 | 195 | 215 | 125 | 160 | 180 | 200 |
| M3 | 120 | 150 | 165 | 180 | 110 | 140 | 155 | 175 | 105 | 130 | 145 | 155 |
| M4 | 90 | 115 | 130 | 140 | 85 | 110 | 120 | 135 | 80 | 100 | 110 | 120 |
| M5 | 75 | 95 | 105 | 115 | 75 | 90 | 100 | 110 | 65 | 85 | 95 | 100 |
| K1 | 175 | 220 | 245 | 270 | 165 | 205 | 230 | 260 | 150 | 190 | 210 | 235 |
| K2 | 155 | 195 | 215 | 240 | 145 | 185 | 205 | 225 | 135 | 170 | 190 | 210 |
| K3 | 130 | 165 | 185 | 205 | 125 | 155 | 175 | 190 | 115 | 145 | 160 | 175 |
| K4 | 125 | 160 | 175 | 195 | 120 | 150 | 165 | 185 | 110 | 135 | 150 | 170 |
| K5 | 75 | 95 | 105 | 115 | 75 | 90 | 100 | 110 | 65 | 80 | 95 | 100 |
| K6 | 110 | 140 | 155 | 170 | 105 | 130 | 145 | 160 | 95 | 120 | 135 | 150 |
| K7 | 100 | 120 | 135 | 150 | 95 | 115 | 130 | 140 | 85 | 105 | 120 | 130 |
| N1 | 1325 | 1650 | 1825 | 2025 | 1225 | 1550 | 1725 | 1925 | 1125 | 1425 | 1575 | 1750 |
| N2 | 530 | 670 | 730 | 820 | 500 | 630 | 690 | 770 | 455 | 570 | 640 | 700 |
| N3 | 355 | 445 | 490 | 540 | 335 | 420 | 465 | 520 | 305 | 385 | 425 | 470 |
| N11 | 405 | 510 | 560 | 620 | 380 | 475 | 530 | 590 | 345 | 435 | 485 | 540 |
| S1 | 43 | 55 | 60 | 65 | 41 | 50 | 55 | 60 | 38 | 48 | 50 | 55 |
| S2 | 35 | 43 | 48 | 55 | 33 | 41 | 45 | 50 | 30 | 38 | 42 | 46 |
| S3 | 30 | 38 | 42 | 46 | 29 | 36 | 40 | 44 | 27 | 34 | 37 | 40 |
| S11 | 60 | 75 | 85 | 90 | 55 | 70 | 80 | 90 | 50 | 65 | 75 | 80 |
| S12 | 42 | 50 | 60 | 65 | 39 | 49 | 55 | 60 | 36 | 46 | 50 | 55 |
| S13 | 24 | 30 | 34 | 37 | 23 | 28 | 32 | 35 | 21 | 27 | 29 | 32 |
| H5 | 36 | 45 | 50 | 55 | 34 | 43 | 48 | 50 | 31 | 39 | 44 | 48 |
| H8 | 38 | 47 | 55 | 60 | 36 | 45 | 50 | 55 | 33 | 42 | 46 | 50 |
| H11 | 46 | 55 | 65 | 70 | 43 | 55 | 60 | 65 | 40 | 50 | 55 | 60 |
| H12 | 70 | 85 | 95 | 105 | 65 | 80 | 90 | 100 | 60 | 75 | 85 | 90 |
| H21 | 38 | 47 | 55 | 60 | 36 | 45 | 50 | 55 | 33 | 42 | 46 | 50 |

MM16 Z3 – Copy Insert selection – Roughing

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM16-16019-B90A30-M06 F40M | 3,5 | 0,11 | 0,11 | 0,11 | 0,12 |
| P2 | MM16-16019-B90A30-M06 F40M | 3,5 | 0,11 | 0,11 | 0,11 | 0,13 |
| P3 | MM16-16019-B90A30-M06 F40M | 3,5 | 0,10 | 0,10 | 0,11 | 0,12 |
| P4 | MM16-16019-B90A30-M06 F40M | 3,5 | 0,10 | 0,10 | 0,10 | 0,12 |
| P5 | MM16-16019-B90A30-M06 F40M | 3,5 | 0,10 | 0,10 | 0,10 | 0,11 |
| P6 | MM16-16019-B90A30-M06 F40M | 3,5 | 0,095 | 0,095 | 0,10 | 0,11 |
| P7 | MM16-16019-B90A30-M06 F40M | 3,5 | 0,095 | 0,095 | 0,10 | 0,11 |
| P8 | MM16-16019-B90A30-M06 F40M | 3,5 | 0,10 | 0,10 | 0,11 | 0,12 |
| P11 | MM16-16019-B90A30-M06 F40M | 3,5 | 0,095 | 0,095 | 0,10 | 0,11 |
| P12 | MM16-16019-B90A30-M06 F40M | 2,5 | 0,070 | 0,070 | 0,075 | 0,080 |
| M1 | MM16-16019-B90A30-M06 F40M | 3,5 | 0,11 | 0,11 | 0,11 | 0,13 |
| M2 | MM16-16019-B90A30-M06 F40M | 3,5 | 0,10 | 0,10 | 0,10 | 0,11 |
| M3 | MM16-16019-B90A30-M06 F40M | 2,5 | 0,085 | 0,085 | 0,085 | 0,090 |
| M4 | MM16-16019-B90A30-M06 F40M | 2,0 | 0,075 | 0,075 | 0,075 | 0,080 |
| M5 | MM16-16019-B90A30-M06 F40M | 2,0 | 0,075 | 0,075 | 0,075 | 0,080 |
| K1 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,11 | 0,13 |
| K2 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,10 | 0,10 | 0,10 | 0,11 |
| K3 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,10 | 0,10 | 0,10 | 0,11 |
| K4 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,10 | 0,10 | 0,10 | 0,11 |
| K5 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,090 | 0,090 | 0,095 | 0,10 |
| K6 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,10 | 0,10 | 0,10 | 0,11 |
| K7 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,090 | 0,090 | 0,095 | 0,10 |
| N1 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,14 | 0,14 | 0,14 | 0,16 |
| N2 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,14 | 0,14 | 0,14 | 0,16 |
| N3 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,14 | 0,14 | 0,14 | 0,16 |
| N11 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,14 | 0,14 | 0,14 | 0,16 |
| S1 | MM16-16019-B90A30-M06 F40M | 2,0 | 0,075 | 0,075 | 0,075 | 0,080 |
| S2 | MM16-16019-B90A30-M06 F40M | 2,0 | 0,075 | 0,075 | 0,075 | 0,080 |
| S3 | MM16-16019-B90A30-M06 F40M | 2,0 | 0,070 | 0,070 | 0,070 | 0,075 |
| S11 | MM16-16019-B90A30-M06 F40M | 2,5 | 0,085 | 0,085 | 0,085 | 0,090 |
| S12 | MM16-16019-B90A30-M06 F40M | 2,5 | 0,085 | 0,085 | 0,085 | 0,090 |
| S13 | MM16-16019-B90A30-M06 F40M | 2,0 | 0,075 | 0,075 | 0,075 | 0,080 |
| H5 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,070 | 0,070 | 0,075 | 0,080 |
| H8 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,055 | 0,055 | 0,055 | 0,060 |
| H11 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,070 | 0,070 | 0,075 | 0,080 |
| H12 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,055 | 0,055 | 0,055 | 0,060 |
| H21 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,055 | 0,055 | 0,055 | 0,060 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

MM16 Z3 – Copy Insert selection – Semi finishing

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,12 | 0,12 | 0,13 | 0,14 |
| P2 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,12 | 0,13 | 0,14 | 0,15 |
| P3 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,12 | 0,13 | 0,14 |
| P4 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,12 | 0,13 | 0,13 |
| P5 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| P6 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| P7 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| P8 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,12 | 0,13 | 0,14 |
| P11 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| P12 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,075 | 0,080 | 0,085 | 0,085 |
| M1 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,12 | 0,13 | 0,14 | 0,15 |
| M2 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| M3 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,090 | 0,090 | 0,10 | 0,10 |
| M4 | MM16-16019-B90A30-E06 F30M | 2,0 | 0,080 | 0,080 | 0,085 | 0,090 |
| M5 | MM16-16019-B90A30-E06 F30M | 2,0 | 0,080 | 0,080 | 0,085 | 0,090 |
| K1 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,12 | 0,13 | 0,14 | 0,15 |
| K2 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| K3 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| K4 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| K5 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,095 | 0,10 | 0,11 | 0,12 |
| K6 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| K7 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,095 | 0,10 | 0,11 | 0,12 |
| N1 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,15 | 0,16 | 0,17 | 0,19 |
| N2 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,15 | 0,16 | 0,17 | 0,19 |
| N3 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,15 | 0,16 | 0,17 | 0,19 |
| N11 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,15 | 0,16 | 0,17 | 0,19 |
| S1 | MM16-16019-B90A30-E06 F30M | 2,0 | 0,080 | 0,080 | 0,085 | 0,090 |
| S2 | MM16-16019-B90A30-E06 F30M | 2,0 | 0,080 | 0,080 | 0,085 | 0,090 |
| S3 | MM16-16019-B90A30-M06 F40M | 2,0 | 0,075 | 0,075 | 0,080 | 0,085 |
| S11 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,090 | 0,090 | 0,10 | 0,10 |
| S12 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,090 | 0,090 | 0,10 | 0,10 |
| S13 | MM16-16019-B90A30-E06 F30M | 2,0 | 0,080 | 0,080 | 0,085 | 0,090 |
| H5 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,075 | 0,080 | 0,085 | 0,085 |
| H8 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,055 | 0,060 | 0,065 | 0,065 |
| H11 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,075 | 0,080 | 0,085 | 0,085 |
| H12 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,055 | 0,060 | 0,065 | 0,065 |
| H21 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,055 | 0,060 | 0,065 | 0,065 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MM16 Z3 – Copy Insert selection – Finishing

| SMG | | a_p | f_z | | | |
|-----|----------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,12 | 0,12 | 0,13 | 0,14 |
| P2 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,12 | 0,13 | 0,14 | 0,15 |
| P3 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,12 | 0,13 | 0,14 |
| P4 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,12 | 0,13 | 0,13 |
| P5 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| P6 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| P7 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| P8 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,12 | 0,13 | 0,14 |
| P11 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| P12 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,075 | 0,080 | 0,085 | 0,085 |
| M1 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,12 | 0,13 | 0,14 | 0,15 |
| M2 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| M3 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,090 | 0,090 | 0,10 | 0,10 |
| M4 | MM16-16019-B90A30-E06 F30M | 2,0 | 0,080 | 0,080 | 0,085 | 0,090 |
| M5 | MM16-16019-B90A30-E06 F30M | 2,0 | 0,080 | 0,080 | 0,085 | 0,090 |
| K1 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,12 | 0,13 | 0,14 | 0,15 |
| K2 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| K3 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| K4 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| K5 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,095 | 0,10 | 0,11 | 0,12 |
| K6 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,11 | 0,11 | 0,12 | 0,13 |
| K7 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,095 | 0,10 | 0,11 | 0,12 |
| N1 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,15 | 0,16 | 0,17 | 0,19 |
| N2 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,15 | 0,16 | 0,17 | 0,19 |
| N3 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,15 | 0,16 | 0,17 | 0,19 |
| N11 | MM16-16019-B90A30-E06 F30M | 3,5 | 0,15 | 0,16 | 0,17 | 0,19 |
| S1 | MM16-16019-B90A30-E06 F30M | 2,0 | 0,080 | 0,080 | 0,085 | 0,090 |
| S2 | MM16-16019-B90A30-E06 F30M | 2,0 | 0,080 | 0,080 | 0,085 | 0,090 |
| S3 | MM16-16019-B90A30-E06 F30M | 2,0 | 0,075 | 0,075 | 0,080 | 0,085 |
| S11 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,090 | 0,090 | 0,10 | 0,10 |
| S12 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,090 | 0,090 | 0,10 | 0,10 |
| S13 | MM16-16019-B90A30-E06 F30M | 2,0 | 0,080 | 0,080 | 0,085 | 0,090 |
| H5 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,075 | 0,080 | 0,085 | 0,085 |
| H8 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,055 | 0,060 | 0,065 | 0,065 |
| H11 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,075 | 0,080 | 0,085 | 0,085 |
| H12 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,055 | 0,060 | 0,065 | 0,065 |
| H21 | MM16-16019-B90A30-E06 F30M | 2,5 | 0,055 | 0,060 | 0,065 | 0,065 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

MM16 Z3 – Copy Cutting data

| SMG | F30M | | | | | F40M | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|
| | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% |
| P1 | 245 | 295 | 310 | 335 | 335 | 235 | 280 | 295 | 320 | 320 |
| P2 | 240 | 285 | 300 | 325 | 320 | 230 | 270 | 285 | 310 | 305 |
| P3 | 210 | 250 | 260 | 285 | 280 | 200 | 240 | 250 | 270 | 265 |
| P4 | 185 | 220 | 235 | 250 | 250 | 175 | 210 | 225 | 240 | 240 |
| P5 | 175 | 210 | 225 | 240 | 240 | 170 | 200 | 215 | 230 | 230 |
| P6 | 200 | 235 | 250 | 270 | 270 | 190 | 225 | 240 | 260 | 255 |
| P7 | 190 | 225 | 235 | 255 | 255 | 180 | 210 | 225 | 245 | 240 |
| P8 | 175 | 210 | 220 | 240 | 235 | 170 | 200 | 210 | 230 | 225 |
| P11 | 185 | 215 | 230 | 250 | 245 | 175 | 205 | 220 | 235 | 235 |
| P12 | 115 | 145 | 145 | 160 | 155 | 110 | 140 | 140 | 150 | 150 |
| M1 | 195 | 230 | 240 | 265 | 260 | 185 | 220 | 230 | 250 | 245 |
| M2 | 160 | 190 | 200 | 220 | 215 | 150 | 180 | 190 | 205 | 205 |
| M3 | 130 | 160 | 160 | 170 | 170 | 120 | 150 | 150 | 165 | 165 |
| M4 | 90 | 130 | 125 | 130 | 135 | 85 | 120 | 115 | 125 | 125 |
| M5 | 75 | 105 | 100 | 110 | 110 | 70 | 100 | 100 | 105 | 105 |
| K1 | 190 | 225 | 235 | 260 | 255 | 180 | 215 | 225 | 245 | 245 |
| K2 | 170 | 200 | 210 | 230 | 225 | 160 | 190 | 200 | 220 | 215 |
| K3 | 140 | 170 | 180 | 195 | 190 | 135 | 160 | 170 | 185 | 185 |
| K4 | 135 | 160 | 170 | 185 | 185 | 130 | 155 | 165 | 175 | 175 |
| K5 | 85 | 100 | 105 | 110 | 110 | 80 | 95 | 100 | 105 | 105 |
| K6 | 120 | 140 | 150 | 165 | 160 | 115 | 135 | 145 | 155 | 155 |
| K7 | 105 | 125 | 130 | 145 | 145 | 100 | 120 | 125 | 135 | 135 |
| N1 | 1425 | 1700 | 1775 | 1925 | 1900 | 1350 | 1625 | 1700 | 1850 | 1800 |
| N2 | 580 | 690 | 720 | 780 | 770 | 550 | 650 | 680 | 740 | 730 |
| N3 | 385 | 455 | 480 | 520 | 510 | 365 | 435 | 455 | 495 | 485 |
| N11 | 440 | 520 | 550 | 600 | 580 | 420 | 495 | 520 | 570 | 560 |
| S1 | 42 | 60 | 55 | 60 | 60 | 40 | 55 | 55 | 60 | 60 |
| S2 | 34 | 48 | 46 | 50 | 50 | 33 | 46 | 44 | 47 | 48 |
| S3 | 30 | 42 | 40 | 43 | 43 | 28 | 40 | 38 | 41 | 41 |
| S11 | 65 | 85 | 80 | 85 | 85 | 60 | 80 | 75 | 85 | 80 |
| S12 | 45 | 55 | 55 | 60 | 60 | 43 | 55 | 55 | 55 | 55 |
| S13 | 24 | 34 | 32 | 35 | 35 | 23 | 32 | 31 | 33 | 33 |
| H5 | 39 | 49 | 48 | 55 | 50 | 37 | 46 | 46 | 50 | 50 |
| H8 | 40 | 50 | 50 | 55 | 55 | 38 | 49 | 48 | 50 | 50 |
| H11 | 50 | 60 | 60 | 65 | 65 | 47 | 60 | 60 | 65 | 65 |
| H12 | 70 | 95 | 90 | 100 | 100 | 70 | 90 | 85 | 95 | 95 |
| H21 | 40 | 50 | 50 | 55 | 55 | 38 | 49 | 48 | 50 | 50 |

MM16 Z2 – Copy Insert selection – Roughing

| SMG | | a _p | f _z | | | |
|-----|--------------------------|----------------|----------------|-------|-------|-------|
| | | | 100% | 40% | 20% | 10% |
| P1 | MM16-16016-B90S-E07 F30M | 6,0 | 0,11 | 0,11 | 0,13 | 0,15 |
| P2 | MM16-16016-B90S-E07 F30M | 6,0 | 0,11 | 0,11 | 0,13 | 0,15 |
| P3 | MM16-16016-B90S-E07 F30M | 6,0 | 0,11 | 0,11 | 0,12 | 0,14 |
| P4 | MM16-16016-B90-MD07 F30M | 6,0 | 0,10 | 0,10 | 0,12 | 0,14 |
| P5 | MM16-16016-B90-MD07 F30M | 6,0 | 0,10 | 0,10 | 0,12 | 0,14 |
| P6 | MM16-16016-B90-MD07 F30M | 6,0 | 0,10 | 0,10 | 0,11 | 0,14 |
| P7 | MM16-16016-B90-MD07 F30M | 6,0 | 0,10 | 0,10 | 0,11 | 0,14 |
| P8 | MM16-16016-B90-MD07 F30M | 6,0 | 0,11 | 0,11 | 0,12 | 0,14 |
| P11 | MM16-16016-B90-MD07 F30M | 6,0 | 0,10 | 0,10 | 0,11 | 0,14 |
| P12 | MM16-16016-B90-MD07 F30M | 5,0 | 0,070 | 0,070 | 0,080 | 0,090 |
| M1 | MM16-16016-B90S-E07 F30M | 6,0 | 0,11 | 0,11 | 0,13 | 0,15 |
| M2 | MM16-16016-B90S-E07 F30M | 6,0 | 0,10 | 0,10 | 0,12 | 0,14 |
| M3 | MM16-16016-B90S-E07 F30M | 5,0 | 0,085 | 0,085 | 0,095 | 0,11 |
| M4 | MM16-16016-B90-MD07 F30M | 4,0 | 0,080 | 0,080 | 0,085 | 0,095 |
| M5 | MM16-16016-B90-MD07 F30M | 4,0 | 0,080 | 0,080 | 0,085 | 0,095 |
| K1 | MM16-16016-B90S-E07 F30M | 6,0 | 0,11 | 0,11 | 0,13 | 0,15 |
| K2 | MM16-16016-B90S-E07 F30M | 6,0 | 0,10 | 0,10 | 0,12 | 0,14 |
| K3 | MM16-16016-B90S-E07 F30M | 6,0 | 0,10 | 0,10 | 0,12 | 0,14 |
| K4 | MM16-16016-B90S-E07 F30M | 6,0 | 0,10 | 0,10 | 0,12 | 0,14 |
| K5 | MM16-16016-B90-MD07 F30M | 6,0 | 0,090 | 0,090 | 0,10 | 0,12 |
| K6 | MM16-16016-B90-MD07 F30M | 6,0 | 0,10 | 0,10 | 0,12 | 0,14 |
| K7 | MM16-16016-B90-MD07 F30M | 6,0 | 0,090 | 0,090 | 0,10 | 0,12 |
| N1 | MM16-16016-B90S-E07 F30M | 6,0 | 0,14 | 0,14 | 0,16 | 0,19 |
| N2 | MM16-16016-B90S-E07 F30M | 6,0 | 0,14 | 0,14 | 0,16 | 0,19 |
| N3 | MM16-16016-B90S-E07 F30M | 6,0 | 0,14 | 0,14 | 0,16 | 0,19 |
| N11 | MM16-16016-B90S-E07 F30M | 6,0 | 0,14 | 0,14 | 0,16 | 0,19 |
| S1 | MM16-16016-B90-MD07 F30M | 4,0 | 0,080 | 0,080 | 0,085 | 0,095 |
| S2 | MM16-16016-B90-MD07 F30M | 4,0 | 0,080 | 0,080 | 0,085 | 0,095 |
| S3 | MM16-16016-B90-MD07 F30M | 4,0 | 0,070 | 0,070 | 0,075 | 0,085 |
| S11 | MM16-16016-B90-MD07 F30M | 4,5 | 0,085 | 0,085 | 0,095 | 0,11 |
| S12 | MM16-16016-B90-MD07 F30M | 4,5 | 0,085 | 0,085 | 0,095 | 0,11 |
| S13 | MM16-16016-B90-MD07 F30M | 4,0 | 0,080 | 0,080 | 0,085 | 0,095 |
| H5 | MM16-16016-B90-MD07 F30M | 5,0 | 0,070 | 0,070 | 0,080 | 0,090 |
| H8 | MM16-16016-B90-MD07 F30M | 4,5 | 0,055 | 0,055 | 0,060 | 0,070 |
| H11 | MM16-16016-B90-MD07 F30M | 5,0 | 0,070 | 0,070 | 0,080 | 0,090 |
| H12 | MM16-16016-B90-MD07 F30M | 4,5 | 0,055 | 0,055 | 0,060 | 0,070 |
| H21 | MM16-16016-B90-MD07 F30M | 4,5 | 0,055 | 0,055 | 0,060 | 0,070 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_φ/DC = %

All cutting data are start values

MM16 Z2 – Copy Insert selection – Semi finishing

| SMG | | a _p | f _z | | | |
|-----|--------------------------|----------------|----------------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM16-16016-B90P-M07 F30M | 6,0 | 0,13 | 0,15 | 0,17 | 0,20 |
| P2 | MM16-16016-B90P-M07 F30M | 6,0 | 0,14 | 0,15 | 0,18 | 0,20 |
| P3 | MM16-16016-B90P-M07 F30M | 6,0 | 0,13 | 0,14 | 0,17 | 0,19 |
| P4 | MM16-16016-B90P-M07 F30M | 6,0 | 0,13 | 0,14 | 0,16 | 0,19 |
| P5 | MM16-16016-B90P-M07 F30M | 6,0 | 0,12 | 0,14 | 0,16 | 0,18 |
| P6 | MM16-16016-B90P-M07 F30M | 6,0 | 0,12 | 0,14 | 0,16 | 0,18 |
| P7 | MM16-16016-B90P-M07 F30M | 6,0 | 0,12 | 0,14 | 0,16 | 0,18 |
| P8 | MM16-16016-B90P-M07 F30M | 6,0 | 0,13 | 0,14 | 0,17 | 0,19 |
| P11 | MM16-16016-B90P-M07 F30M | 6,0 | 0,12 | 0,14 | 0,16 | 0,18 |
| P12 | MM16-16016-B90P-M07 F30M | 5,0 | 0,085 | 0,090 | 0,10 | 0,11 |
| M1 | MM16-16016-B90P-M07 F30M | 6,0 | 0,14 | 0,15 | 0,18 | 0,20 |
| M2 | MM16-16016-B90P-M07 F30M | 6,0 | 0,12 | 0,14 | 0,16 | 0,18 |
| M3 | MM16-16016-B90P-M07 F30M | 5,0 | 0,10 | 0,11 | 0,12 | 0,14 |
| M4 | MM16-16016-B90P-M07 F30M | 4,0 | 0,085 | 0,095 | 0,10 | 0,11 |
| M5 | MM16-16016-B90P-M07 F30M | 4,0 | 0,085 | 0,095 | 0,10 | 0,11 |
| K1 | MM16-16016-B90P-M07 F30M | 6,0 | 0,14 | 0,15 | 0,18 | 0,20 |
| K2 | MM16-16016-B90P-M07 F30M | 6,0 | 0,12 | 0,14 | 0,16 | 0,18 |
| K3 | MM16-16016-B90P-M07 F30M | 6,0 | 0,12 | 0,14 | 0,16 | 0,18 |
| K4 | MM16-16016-B90P-M07 F30M | 6,0 | 0,12 | 0,14 | 0,16 | 0,18 |
| K5 | MM16-16016-B90P-M07 F30M | 6,0 | 0,11 | 0,12 | 0,14 | 0,17 |
| K6 | MM16-16016-B90P-M07 F30M | 6,0 | 0,12 | 0,14 | 0,16 | 0,18 |
| K7 | MM16-16016-B90P-M07 F30M | 6,0 | 0,11 | 0,12 | 0,14 | 0,17 |
| N1 | MM16-16016-B90P-M07 F30M | 6,0 | 0,17 | 0,19 | 0,22 | 0,26 |
| N2 | MM16-16016-B90P-M07 F30M | 6,0 | 0,17 | 0,19 | 0,22 | 0,26 |
| N3 | MM16-16016-B90P-M07 F30M | 6,0 | 0,17 | 0,19 | 0,22 | 0,26 |
| N11 | MM16-16016-B90P-M07 F30M | 6,0 | 0,17 | 0,19 | 0,22 | 0,26 |
| S1 | MM16-16016-B90P-M07 F30M | 4,0 | 0,085 | 0,095 | 0,10 | 0,11 |
| S2 | MM16-16016-B90P-M07 F30M | 4,0 | 0,085 | 0,095 | 0,10 | 0,11 |
| S3 | MM16-16016-B90P-M07 F30M | 4,0 | 0,080 | 0,085 | 0,095 | 0,10 |
| S11 | MM16-16016-B90P-M07 F30M | 4,5 | 0,10 | 0,11 | 0,12 | 0,13 |
| S12 | MM16-16016-B90P-M07 F30M | 4,5 | 0,10 | 0,11 | 0,12 | 0,13 |
| S13 | MM16-16016-B90P-M07 F30M | 4,0 | 0,085 | 0,095 | 0,10 | 0,11 |
| H5 | MM16-16016-B90P-M07 F30M | 5,0 | 0,085 | 0,090 | 0,10 | 0,11 |
| H8 | MM16-16016-B90P-M07 F30M | 4,5 | 0,065 | 0,070 | 0,075 | 0,085 |
| H11 | MM16-16016-B90P-M07 F30M | 5,0 | 0,085 | 0,090 | 0,10 | 0,11 |
| H12 | MM16-16016-B90P-M07 F30M | 4,5 | 0,065 | 0,070 | 0,075 | 0,085 |
| H21 | MM16-16016-B90P-M07 F30M | 4,5 | 0,065 | 0,070 | 0,075 | 0,085 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/DC = %

All cutting data are start values

MM16 Z2 – Copy Insert selection – Finishing

| SMG | | a_p | f_z | | | |
|-----|---------------------------|-------|-------|-------|-------|-------|
| | | | 15% | 10% | 5% | 2% |
| P1 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,060 | 0,065 | 0,075 | 0,085 |
| P2 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,060 | 0,065 | 0,075 | 0,085 |
| P3 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P4 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P5 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P6 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P7 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P8 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P11 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| P12 | MM16-16016-B90PF-M03 F15M | 5,0 | 0,036 | 0,040 | 0,044 | 0,048 |
| M1 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,060 | 0,065 | 0,075 | 0,085 |
| M2 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| M3 | MM16-16016-B90PF-M03 F15M | 5,0 | 0,042 | 0,046 | 0,050 | 0,060 |
| M4 | MM16-16016-B90PF-M03 F15M | 4,0 | 0,038 | 0,040 | 0,044 | 0,048 |
| M5 | MM16-16016-B90PF-M03 F15M | 4,0 | 0,038 | 0,040 | 0,044 | 0,048 |
| K1 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,060 | 0,065 | 0,075 | 0,085 |
| K2 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| K3 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| K4 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| K5 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,048 | 0,055 | 0,060 | 0,070 |
| K6 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,055 | 0,060 | 0,070 | 0,080 |
| K7 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,048 | 0,055 | 0,060 | 0,070 |
| N1 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,075 | 0,085 | 0,095 | 0,11 |
| N2 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,075 | 0,085 | 0,095 | 0,11 |
| N3 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,075 | 0,085 | 0,095 | 0,11 |
| N11 | MM16-16016-B90PF-M03 F15M | 6,0 | 0,075 | 0,085 | 0,095 | 0,11 |
| S1 | MM16-16016-B90PF-M03 F15M | 4,0 | 0,038 | 0,040 | 0,044 | 0,048 |
| S2 | MM16-16016-B90PF-M03 F15M | 4,0 | 0,038 | 0,040 | 0,044 | 0,048 |
| S3 | MM16-16016-B90PF-M03 F15M | 4,0 | 0,034 | 0,038 | 0,040 | 0,044 |
| S11 | MM16-16016-B90PF-M03 F15M | 4,5 | 0,042 | 0,046 | 0,050 | 0,055 |
| S12 | MM16-16016-B90PF-M03 F15M | 4,5 | 0,042 | 0,046 | 0,050 | 0,055 |
| S13 | MM16-16016-B90PF-M03 F15M | 4,0 | 0,038 | 0,040 | 0,044 | 0,048 |
| H5 | MM16-16016-B90PF-M03 F15M | 5,0 | 0,036 | 0,040 | 0,044 | 0,048 |
| H8 | MM16-16016-B90PF-M03 F15M | 4,5 | 0,028 | 0,030 | 0,034 | 0,036 |
| H11 | MM16-16016-B90PF-M03 F15M | 5,0 | 0,036 | 0,040 | 0,044 | 0,048 |
| H12 | MM16-16016-B90PF-M03 F15M | 4,5 | 0,028 | 0,030 | 0,034 | 0,036 |
| H21 | MM16-16016-B90PF-M03 F15M | 4,5 | 0,028 | 0,030 | 0,034 | 0,036 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_g/DC = %

All cutting data are start values

MM16 Z2 – Copy Cutting data

| SMG | F15M | | | | | F30M | | | | | T60M | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% | 100% | 20% | 10% | 5% | 2% |
| P1 | 285 | 355 | 385 | 415 | 415 | 225 | 280 | 300 | 325 | 325 | 185 | 225 | 245 | 265 | 265 |
| P2 | 275 | 345 | 375 | 405 | 400 | 220 | 270 | 295 | 315 | 315 | 180 | 220 | 240 | 255 | 255 |
| P3 | 240 | 300 | 320 | 350 | 350 | 190 | 240 | 255 | 280 | 275 | 155 | 195 | 210 | 225 | 225 |
| P4 | 215 | 265 | 285 | 310 | 305 | 170 | 210 | 225 | 245 | 245 | 140 | 170 | 185 | 200 | 195 |
| P5 | 205 | 255 | 275 | 295 | 295 | 165 | 200 | 220 | 235 | 230 | 130 | 160 | 175 | 190 | 190 |
| P6 | 230 | 285 | 305 | 330 | 335 | 180 | 230 | 245 | 265 | 265 | 150 | 185 | 200 | 215 | 215 |
| P7 | 215 | 270 | 290 | 315 | 315 | 170 | 215 | 230 | 250 | 250 | 140 | 175 | 190 | 200 | 200 |
| P8 | 200 | 255 | 270 | 295 | 295 | 160 | 200 | 215 | 235 | 230 | 130 | 160 | 175 | 190 | 190 |
| P11 | 210 | 260 | 280 | 305 | 305 | 165 | 210 | 225 | 240 | 240 | 135 | 170 | 180 | 195 | 195 |
| P12 | 135 | 170 | 175 | 190 | 190 | 110 | 140 | 145 | 155 | 155 | 90 | 110 | 115 | 125 | 125 |
| M1 | 225 | 280 | 300 | 325 | 325 | 175 | 220 | 235 | 255 | 250 | 145 | 180 | 190 | 205 | 205 |
| M2 | 185 | 225 | 245 | 265 | 265 | 145 | 180 | 195 | 210 | 210 | 120 | 145 | 160 | 170 | 170 |
| M3 | 150 | 185 | 190 | 210 | 210 | 120 | 150 | 155 | 170 | 170 | 95 | 125 | 125 | 135 | 135 |
| M4 | 115 | 150 | 145 | 160 | 160 | 95 | 125 | 120 | 130 | 130 | 75 | 100 | 95 | 105 | 105 |
| M5 | 95 | 125 | 120 | 130 | 135 | 80 | 105 | 100 | 110 | 110 | 65 | 85 | 80 | 90 | 85 |
| K1 | 220 | 275 | 295 | 320 | 320 | 175 | 215 | 235 | 250 | 250 | 140 | 175 | 190 | 205 | 200 |
| K2 | 195 | 240 | 260 | 280 | 280 | 155 | 190 | 210 | 220 | 220 | 125 | 155 | 170 | 180 | 180 |
| K3 | 165 | 205 | 220 | 240 | 240 | 130 | 160 | 175 | 190 | 185 | 105 | 130 | 140 | 150 | 150 |
| K4 | 155 | 195 | 210 | 225 | 225 | 125 | 155 | 170 | 180 | 180 | 100 | 125 | 135 | 145 | 145 |
| K5 | 95 | 115 | 125 | 135 | 135 | 75 | 95 | 100 | 110 | 110 | 60 | 75 | 80 | 90 | 90 |
| K6 | 135 | 170 | 185 | 200 | 200 | 110 | 135 | 150 | 160 | 155 | 90 | 110 | 120 | 130 | 125 |
| K7 | 120 | 150 | 160 | 175 | 175 | 95 | 120 | 130 | 140 | 140 | 80 | 100 | 105 | 115 | 115 |
| N1 | 1675 | 2075 | 2250 | 2425 | 2425 | 1300 | 1625 | 1725 | 1875 | 1850 | 1050 | 1325 | 1400 | 1525 | 1500 |
| N2 | 680 | 840 | 910 | 980 | 980 | 530 | 660 | 700 | 760 | 750 | 425 | 530 | 570 | 620 | 610 |
| N3 | 450 | 560 | 610 | 650 | 650 | 350 | 435 | 465 | 510 | 500 | 285 | 355 | 380 | 410 | 405 |
| N11 | 520 | 640 | 690 | 740 | 750 | 400 | 500 | 530 | 580 | 570 | 325 | 405 | 430 | 470 | 465 |
| S1 | 55 | 70 | 70 | 75 | 75 | 44 | 60 | 55 | 60 | 60 | 36 | 48 | 45 | 49 | 49 |
| S2 | 43 | 55 | 55 | 60 | 60 | 35 | 47 | 45 | 49 | 49 | 29 | 38 | 36 | 40 | 39 |
| S3 | 38 | 50 | 48 | 50 | 50 | 31 | 41 | 39 | 43 | 43 | 25 | 33 | 32 | 35 | 35 |
| S11 | 75 | 100 | 95 | 105 | 105 | 60 | 80 | 80 | 85 | 85 | 50 | 65 | 65 | 70 | 70 |
| S12 | 50 | 70 | 65 | 75 | 75 | 43 | 55 | 55 | 60 | 60 | 35 | 45 | 44 | 48 | 48 |
| S13 | 30 | 40 | 39 | 42 | 42 | 25 | 33 | 31 | 34 | 34 | 20 | 27 | 25 | 28 | 28 |
| H5 | 44 | 55 | 60 | 65 | 65 | 36 | 46 | 48 | 50 | 50 | 30 | 37 | 39 | 41 | 41 |
| H8 | 46 | 60 | 60 | 65 | 65 | 39 | 50 | 50 | 55 | 55 | 31 | 41 | 40 | 44 | 43 |
| H11 | 55 | 70 | 75 | 80 | 80 | 46 | 60 | 60 | 65 | 65 | 38 | 47 | 49 | 55 | 50 |
| H12 | 85 | 110 | 105 | 115 | 115 | 70 | 90 | 90 | 95 | 95 | 55 | 75 | 70 | 80 | 80 |
| H21 | 46 | 60 | 60 | 65 | 65 | 39 | 50 | 50 | 55 | 55 | 31 | 41 | 40 | 44 | 43 |

Torque wrench and Max RPM information

Recommended RPM for all Seco cutters are shown on each catalogue page.
 Normally there is no need for balancing tools for RPM up to 10 000.
 However in some cases balancing is necessary, for instance when using heavy tools and tool holders in small machines

Over 10 000 RPM:
 We recommend balancing of tool and tool holders at least separately.
Over 20 000 RPM:
 Both tool and tool holders must be balanced at least separately.
Over 30 000 RPM:
 Tool and tool holders must be balanced as a unit.
 The max RPM in the tables should never be exceeded.

Torque wrench with fixed torque values to ensure the correct tightening force when mounting the Minimaster insert into its holder.
 Dynamometric keys are calibrated according to ISO 6789.

Code key: MM02-4006
 MM02 = 2-flute (MM03 = 3-flute)
 40 = Torque value 4 Nm
 06 = Insert size



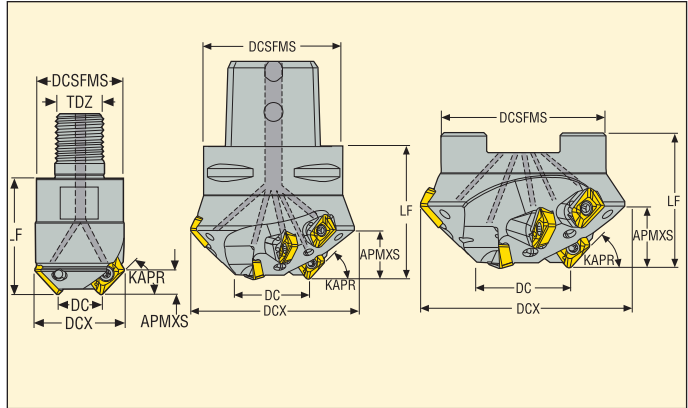
The exception is the Minimaster programme where the values are given in the table below.

| Torque wrench (including key end) | Replaceable key end | For insert | Torque value |
|-----------------------------------|---------------------|------------------|--------------|
| | | | |
| MM02-4006 | MM02-06 | 2-flute MM06 | 4 Nm |
| MM02-8008 | MM02-08 | 2-flute MM08 | 8 Nm |
| MM02-1201012 | MM02-1012 | 2-flute MM10-M12 | 12 Nm |
| MM02-16014 | MM02-14 | 2-flute MM12-M14 | 16 Nm |
| MM02-1601620 | MM02-1620 | 2-flute MM20 | 16 Nm |
| MM03-4006 | MM03-06 | 3-flute MM06 | 4 Nm |
| MM03-8008 | MM03-08 | 3-flute MM08 | 8 Nm |
| MM03-1201012 | MM03-1012 | 3-flute MM10-M12 | 12 Nm |
| MM03-16016 | MM03-16 | 3-flute MM16 | 16 Nm |

| Cutter | D _c min | Torque values (Nm) | Max RPM |
|----------------------|--------------------|--------------------|---------|
| MM06-Steel holder | 6 | 4 | 80000 |
| -Steel holder | 8 | 4 | 80000 |
| -90°/89° D/DM holder | 6 | 4 | 80000 |
| -90°/89° D/DM holder | 8 | 4 | 80000 |
| MM08-Steel holder | 8 | 8 | 80000 |
| -Steel holder | 10 | 8 | 80000 |
| -90°/89° D/DM holder | 8 | 8 | 80000 |
| -90°/89° D/DM holder | 10 | 8 | 76300 |
| MM10-Steel holder | 10 | 12 | 80000 |
| -Steel holder | 12 | 12 | 80000 |
| -90°/89° D/DM holder | 10 | 12 | 76300 |
| -90°/89° D/DM holder | 12 | 12 | 63600 |
| MM12-Steel holder | 12 | 12 | 80000 |
| Steel holder | 14 | 16 | 72700 |
| Steel holder | 16 | 16 | 63600 |
| -90°/89° D/DM holder | 12 | 12 | 63600 |
| -90°/89° D/DM holder | 14 | 16 | 54500 |
| -90°/89° D/DM holder | 16 | 16 | 47600 |
| MM16-Steel holder | 16 | 16 | 63600 |
| Steel holder | 20 | 16 | 50800 |
| -90°/89° D/DM holder | 16 | 16 | 47600 |
| -90°/89° D/DM holder | 20 | 16 | 38100 |

R217/220.49-XO12

Chamfer angle 30° / 45° / 60° and 75°



- For insert selection and cutting data recommendations, see page(s) 633-634
- For complete insert programme, see page(s) 684
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | KAPR° | ZEFP | | | | Insert |
|------------------------------|------------------|------------------|------|------|--------|-----|------|------|-------|------|-----|-------|----------|--------|
| | | APMXS | DCX | DC | DCSFMS | TDZ | LF | | | | | | | |
| R217.49-1620.RE-XO12-30.3A | Combimaster | 5,5 | 39,8 | 20,0 | 30,0 | M16 | 40,0 | 30,0 | 3 | 3 | 0,3 | 16400 | XO..1204 | |
| C6-R217.49-032-15-XO12-30.3A | Seco-Capto | 15,0 | 88,8 | 32,0 | 63,0 | – | 60,0 | 30,0 | 3 | 9 | 1,6 | 10900 | XO..1204 | |
| R220.49-0035-15-XO12-30.3A | Arbor | 15,0 | 91,9 | 35,0 | 62,0 | – | 50,0 | 30,0 | 3 | 9 | 1,1 | 10700 | XO..1204 | |
| R217.49-1616.RE-XO12-45.2A | Combimaster | 8,0 | 30,8 | 16,0 | 30,0 | M16 | 40,0 | 45,0 | 2 | 2 | 0,2 | 18600 | XO..1204 | |
| R217.49-1620.RE-XO12-45.3A | Combimaster | 7,0 | 34,8 | 20,0 | 30,0 | M16 | 40,0 | 45,0 | 3 | 3 | 0,3 | 17400 | XO..1204 | |
| C6-R217.49-032-22-XO12-45.3A | Seco-Capto | 22,5 | 76,4 | 32,0 | 63,0 | – | 60,0 | 45,0 | 3 | 9 | 1,4 | 11800 | XO..1204 | |
| R220.49-0035-22-XO12-45.3A | Arbor | 22,5 | 79,4 | 35,0 | 62,0 | – | 50,0 | 45,0 | 3 | 9 | 0,8 | 11600 | XO..1204 | |
| R217.49-1216.RE-XO12-60.2A | Combimaster | 9,0 | 27,0 | 16,0 | 23,0 | M12 | 30,0 | 60,0 | 2 | 2 | 0,1 | 20100 | XO..1204 | |
| R217.49-1620.RE-XO12-60.3A | Combimaster | 9,0 | 30,5 | 20,0 | 30,0 | M16 | 40,0 | 60,0 | 3 | 3 | 0,2 | 18400 | XO..1204 | |
| C6-R217.49-032-28-XO12-60.3A | Seco-Capto | 28,0 | 64,0 | 32,0 | 63,0 | – | 60,0 | 60,0 | 3 | 9 | 1,3 | 12900 | XO..1204 | |
| R220.49-0035-28-XO12-60.3A | Arbor | 28,0 | 67,0 | 35,0 | 62,0 | – | 50,0 | 60,0 | 3 | 9 | 0,6 | 12600 | XO..1204 | |
| R217.49-1220.RE-XO12-75.2A | Combimaster | 11,0 | 25,4 | 20,0 | 23,0 | M12 | 30,0 | 75,0 | 2 | 2 | 0,1 | 20500 | XO..1204 | |
| R220.49-0035-31-XO12-75.3A | Arbor | 31,0 | 51,5 | 35,0 | 47,0 | – | 50,0 | 75,0 | 3 | 9 | 0,4 | 14400 | XO..1204 | |

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Arbor screw | Torque value (Nm) |
|-------------------------|----------------|--------------|------------|-------------|-------------------|
| | | | | | |
| R217.49 dia 20 30/45° | DOUBLE-T | C03509-T10P | H4B-T10P | – | 3,0 |
| C6-R217.49-...30/45/60° | DOUBLE-T | C03509-T10P | H4B-T10P | – | 3,0 |
| R220.49-... 30/45/60° | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S12X35 | 3,0 |
| R217.49 dia 16 45/60° | DOUBLE-T | C03507-T10P | H4B-T10P | – | 3,0 |
| R217.49 dia 20 60/75° | DOUBLE-T | C03507-T10P | H4B-T10P | – | 3,0 |
| R220.49-...75° | DOUBLE-T | C03509-T10P | H4B-T10P | MC6S10X40 | 3,0 |

Please check availability in current price and stock-list

Torque keys, see page 732

R217/220.49-XO12 – Insert selection

| SMG | | f _z | | |
|-----|--------------------------|----------------|-------|------|
| | | 100% | 30% | 10% |
| P1 | XOMX120408TR-ME08 F40M | 0,18 | 0,19 | 0,30 |
| P2 | XOMX120408TR-ME08 F40M | 0,18 | 0,20 | 0,30 |
| P3 | XOMX120408TR-ME08 MP2500 | 0,17 | 0,19 | 0,28 |
| P4 | XOMX120408TR-M12 MP2500 | 0,20 | 0,22 | 0,34 |
| P5 | XOMX120408TR-M12 MP2500 | 0,20 | 0,22 | 0,34 |
| P6 | XOMX120408TR-M12 MP2500 | 0,19 | 0,22 | 0,32 |
| P7 | XOMX120408TR-M12 MP2500 | 0,19 | 0,22 | 0,32 |
| P8 | XOMX120408TR-M12 MP2500 | 0,20 | 0,22 | 0,34 |
| P11 | XOMX120408TR-M12 T350M | 0,19 | 0,22 | 0,32 |
| P12 | XOEX120408R-M07 MP3000 | 0,090 | 0,10 | 0,15 |
| M1 | XOEX120408R-M07 F40M | 0,14 | 0,16 | 0,24 |
| M2 | XOEX120408R-M07 F40M | 0,13 | 0,14 | 0,22 |
| M3 | XOEX120408R-M07 F40M | 0,11 | 0,12 | 0,18 |
| M4 | XOEX120408R-M07 T350M | 0,095 | 0,10 | 0,16 |
| M5 | XOEX120408R-M07 T350M | 0,095 | 0,10 | 0,16 |
| K1 | XOMX120408TR-M12 MK2050 | 0,22 | 0,24 | 0,36 |
| K2 | XOMX120408TR-M12 MK2050 | 0,20 | 0,22 | 0,34 |
| K3 | XOMX120408TR-M12 MK2050 | 0,20 | 0,22 | 0,34 |
| K4 | XOMX120408TR-M12 MK2050 | 0,20 | 0,22 | 0,34 |
| K5 | XOMX120408TR-M12 MK2050 | 0,18 | 0,19 | 0,30 |
| K6 | XOMX120408TR-M12 MK2050 | 0,20 | 0,22 | 0,34 |
| K7 | XOMX120408TR-M12 MK2050 | 0,18 | 0,19 | 0,30 |
| N1 | XOEX120408FR-E06 H15 | 0,16 | 0,18 | 0,28 |
| N2 | XOEX120408FR-E06 H15 | 0,16 | 0,18 | 0,28 |
| N3 | XOEX120408FR-E06 H15 | 0,16 | 0,18 | 0,28 |
| N11 | XOEX120408FR-E06 H15 | 0,16 | 0,18 | 0,28 |
| S1 | XOEX120408R-M07 F40M | 0,095 | 0,10 | 0,16 |
| S2 | XOEX120408R-M07 F40M | 0,095 | 0,10 | 0,16 |
| S3 | XOEX120408R-M07 F40M | 0,090 | 0,095 | 0,15 |
| S11 | XOEX120408R-M07 MS2050 | 0,11 | 0,12 | 0,18 |
| S12 | XOEX120408R-M07 MS2050 | 0,11 | 0,12 | 0,18 |
| S13 | XOEX120408R-M07 MS2050 | 0,095 | 0,10 | 0,16 |
| H5 | XOMX120408TR-MD13 MP1500 | 0,15 | 0,16 | 0,24 |
| H11 | XOMX120408TR-MD13 MP3000 | 0,15 | 0,16 | 0,24 |
| H12 | XOMX120408TR-MD13 MP1500 | 0,11 | 0,12 | 0,19 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_φ/DC = %

All cutting data are start values

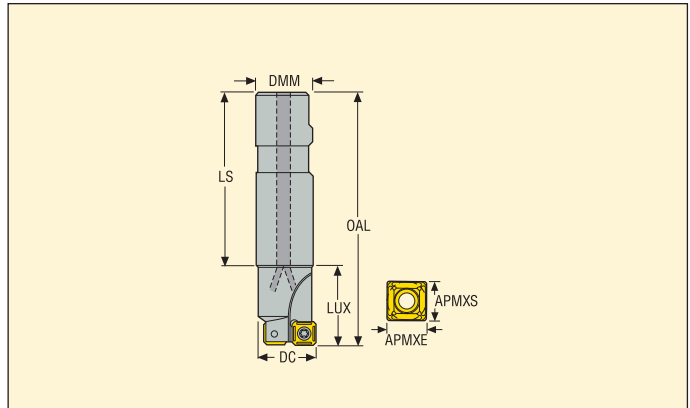
R217/220.49-XO12 - Cutting data $v_c =$ (m/min)

| SMG | MP1500 | | | MP2050 | | | MP2500 | | | MP3000 | | | MM4500 | | | MK1500 | | | MK2050 | | |
|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 185 | 215 | 230 | 190 | 220 | 235 | 175 | 210 | 220 | 170 | 205 | 220 | 145 | 180 | 195 | — | — | — | 175 | 205 | 220 |
| P2 | 180 | 215 | 230 | 185 | 220 | 235 | 170 | 205 | 220 | 170 | 200 | 215 | 145 | 180 | 195 | — | — | — | 170 | 205 | 220 |
| P3 | 170 | 205 | 220 | 180 | 210 | 225 | 165 | 195 | 210 | 160 | 190 | 205 | 135 | 170 | 185 | — | — | — | 160 | 195 | 210 |
| P4 | 165 | 195 | 210 | 170 | 200 | 215 | 155 | 185 | 200 | 150 | 180 | 195 | 125 | 160 | 175 | — | — | — | 150 | 185 | 200 |
| P5 | 160 | 190 | 210 | 165 | 195 | 210 | 150 | 180 | 200 | 145 | 180 | 195 | 125 | 155 | 170 | — | — | — | 150 | 180 | 195 |
| P6 | 170 | 200 | 215 | 175 | 205 | 220 | 160 | 195 | 205 | 155 | 190 | 205 | 130 | 165 | 180 | — | — | — | 160 | 190 | 205 |
| P7 | 165 | 195 | 210 | 170 | 200 | 215 | 155 | 190 | 205 | 150 | 185 | 200 | 130 | 160 | 175 | — | — | — | 155 | 185 | 200 |
| P8 | 160 | 190 | 205 | 165 | 195 | 210 | 150 | 180 | 195 | 145 | 180 | 195 | 120 | 155 | 170 | — | — | — | 150 | 180 | 195 |
| P11 | 160 | 195 | 210 | 170 | 200 | 215 | 155 | 185 | 200 | 150 | 180 | 195 | 125 | 160 | 175 | — | — | — | 150 | 185 | 200 |
| P12 | 130 | 155 | 175 | 135 | 160 | 180 | 120 | 150 | 170 | 115 | 145 | 165 | 90 | 120 | 140 | — | — | — | 120 | 145 | 165 |
| M1 | — | — | — | 160 | 195 | 210 | 150 | 180 | 195 | 145 | 180 | 195 | 135 | 165 | 180 | — | — | — | — | — | — |
| M2 | — | — | — | 150 | 180 | 195 | 135 | 165 | 180 | 130 | 165 | 180 | 120 | 150 | 165 | — | — | — | — | — | — |
| M3 | — | — | — | 130 | 160 | 180 | 115 | 145 | 165 | 115 | 145 | 165 | 105 | 130 | 150 | — | — | — | — | — | — |
| M4 | — | — | — | 110 | 135 | 160 | 95 | 125 | 145 | 95 | 120 | 145 | 80 | 110 | 130 | — | — | — | — | — | — |
| M5 | — | — | — | 95 | 120 | 145 | 85 | 110 | 135 | 80 | 110 | 130 | 70 | 95 | 120 | — | — | — | — | — | — |
| K1 | 165 | 195 | 210 | 170 | 200 | 220 | 155 | 185 | 205 | 150 | 185 | 200 | — | — | — | 180 | 215 | 230 | 175 | 210 | 225 |
| K2 | 155 | 185 | 205 | 160 | 195 | 210 | 145 | 180 | 195 | 140 | 175 | 190 | — | — | — | 170 | 205 | 220 | 170 | 200 | 215 |
| K3 | 145 | 175 | 190 | 150 | 180 | 195 | 135 | 165 | 180 | 130 | 160 | 180 | — | — | — | 160 | 190 | 210 | 155 | 190 | 205 |
| K4 | 140 | 170 | 190 | 145 | 175 | 190 | 130 | 160 | 180 | 125 | 160 | 175 | — | — | — | 155 | 190 | 205 | 150 | 185 | 200 |
| K5 | 105 | 135 | 150 | 110 | 140 | 155 | 95 | 125 | 140 | 90 | 120 | 135 | — | — | — | 120 | 150 | 165 | 115 | 150 | 165 |
| K6 | 130 | 160 | 180 | 135 | 170 | 180 | 120 | 155 | 170 | 115 | 150 | 165 | — | — | — | 145 | 180 | 195 | 145 | 175 | 190 |
| K7 | 120 | 155 | 170 | 130 | 160 | 175 | 110 | 145 | 160 | 110 | 140 | 155 | — | — | — | 140 | 170 | 185 | 135 | 165 | 180 |
| N1 | — | — | — | — | — | — | — | — | — | 300 | 335 | 350 | — | — | — | — | — | — | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | 230 | 265 | 280 | — | — | — | — | — | — | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | 200 | 235 | 250 | — | — | — | — | — | — | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| S1 | — | — | — | 60 | 80 | 105 | — | — | — | 46 | 65 | 90 | 25 | 35 | 49 | — | — | — | — | — | — |
| S2 | — | — | — | 47 | 65 | 90 | — | — | — | 37 | 55 | 70 | 20 | 29 | 39 | — | — | — | — | — | — |
| S3 | — | — | — | 41 | 60 | 80 | — | — | — | 33 | 46 | 60 | 18 | 25 | 34 | — | — | — | — | — | — |
| S11 | — | — | — | 80 | 110 | 130 | — | — | — | 65 | 90 | 115 | 36 | 50 | 70 | — | — | — | — | — | — |
| S12 | — | — | — | 55 | 80 | 105 | — | — | — | 45 | 65 | 85 | 33 | 47 | 65 | — | — | — | — | — | — |
| S13 | — | — | — | 33 | 46 | 65 | — | — | — | 26 | 37 | 50 | 19 | 27 | 36 | — | — | — | — | — | — |
| H5 | 50 | 75 | 95 | 49 | 70 | 90 | 41 | 60 | 80 | 40 | 60 | 75 | — | — | — | — | — | — | — | — | — |
| H8 | 55 | 75 | 100 | 50 | 70 | 95 | 44 | 60 | 80 | 43 | 60 | 80 | — | — | — | — | — | — | — | — | — |
| H11 | 65 | 90 | 110 | 60 | 90 | 110 | 50 | 75 | 95 | 50 | 75 | 95 | — | — | — | — | — | — | — | — | — |
| H12 | 95 | 120 | 140 | 100 | 125 | 145 | 85 | 110 | 135 | 80 | 110 | 130 | — | — | — | — | — | — | — | — | — |

| SMG | MS2050 | | | MS2500 | | | T25M | | | T350M | | | F40M | | | H15 | | | MP1020 | | |
|-----|--------|-----|-----|--------|-----|-----|------|-----|-----|-------|-----|-----|------|-----|-----|------|-----|-----|--------|-----|-----|
| | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% | 100% | 30% | 10% |
| P1 | 175 | 205 | 220 | 195 | 225 | 240 | 160 | 195 | 210 | 165 | 200 | 210 | 155 | 185 | 200 | — | — | — | 180 | 210 | 220 |
| P2 | 175 | 205 | 220 | 195 | 225 | 240 | 160 | 190 | 205 | 160 | 195 | 210 | 150 | 185 | 200 | — | — | — | 180 | 205 | 215 |
| P3 | 160 | 195 | 210 | 180 | 215 | 230 | 150 | 180 | 195 | 155 | 185 | 200 | 140 | 175 | 190 | — | — | — | 175 | 200 | 205 |
| P4 | 155 | 185 | 200 | 175 | 205 | 220 | 140 | 170 | 185 | 145 | 175 | 190 | 135 | 165 | 180 | — | — | — | 165 | 190 | 195 |
| P5 | 150 | 180 | 195 | 170 | 200 | 215 | 135 | 170 | 185 | 140 | 170 | 190 | 130 | 160 | 180 | — | — | — | 160 | 185 | 195 |
| P6 | 160 | 190 | 205 | 180 | 210 | 225 | 145 | 180 | 195 | 150 | 180 | 195 | 140 | 170 | 185 | — | — | — | 170 | 195 | 205 |
| P7 | 155 | 185 | 200 | 175 | 205 | 220 | 140 | 175 | 190 | 145 | 180 | 195 | 135 | 165 | 180 | — | — | — | 165 | 190 | 200 |
| P8 | 150 | 180 | 195 | 170 | 200 | 215 | 135 | 170 | 185 | 140 | 170 | 185 | 130 | 160 | 175 | — | — | — | 160 | 185 | 195 |
| P11 | 155 | 185 | 200 | 175 | 205 | 220 | 140 | 170 | 185 | 145 | 175 | 190 | 135 | 165 | 180 | — | — | — | 165 | 190 | 195 |
| P12 | 120 | 145 | 165 | 140 | 165 | 185 | 105 | 135 | 155 | 110 | 135 | 160 | 100 | 125 | 145 | — | — | — | 140 | 150 | 155 |
| M1 | 155 | 190 | 205 | 170 | 200 | 215 | 140 | 175 | 190 | 140 | 175 | 190 | 135 | 165 | 185 | — | — | — | — | — | — |
| M2 | 145 | 175 | 190 | 155 | 185 | 200 | 130 | 160 | 175 | 130 | 160 | 175 | 120 | 155 | 170 | — | — | — | — | — | — |
| M3 | 125 | 155 | 175 | 135 | 165 | 185 | 110 | 140 | 160 | 110 | 140 | 160 | 105 | 135 | 155 | — | — | — | — | — | — |
| M4 | 105 | 130 | 155 | 115 | 140 | 165 | 90 | 120 | 140 | 90 | 120 | 140 | 85 | 110 | 135 | — | — | — | — | — | — |
| M5 | 90 | 115 | 140 | 100 | 130 | 150 | 80 | 105 | 130 | 80 | 105 | 130 | 70 | 95 | 120 | — | — | — | — | — | — |
| K1 | — | — | — | — | — | — | 140 | 175 | 190 | 145 | 175 | 195 | 135 | 165 | 180 | — | — | — | — | — | — |
| K2 | — | — | — | — | — | — | 130 | 165 | 180 | 135 | 170 | 185 | 125 | 155 | 175 | — | — | — | — | — | — |
| K3 | — | — | — | — | — | — | 120 | 150 | 170 | 125 | 155 | 170 | 115 | 145 | 160 | — | — | — | — | — | — |
| K4 | — | — | — | — | — | — | 115 | 150 | 165 | 120 | 150 | 170 | 110 | 140 | 160 | — | — | — | — | — | — |
| K5 | — | — | — | — | — | — | 80 | 110 | 125 | 85 | 115 | 130 | 75 | 105 | 120 | — | — | — | — | — | — |
| K6 | — | — | — | — | — | — | 105 | 140 | 155 | 110 | 140 | 160 | 100 | 130 | 150 | — | — | — | — | — | — |
| K7 | — | — | — | — | — | — | 100 | 130 | 145 | 100 | 135 | 150 | 90 | 125 | 140 | — | — | — | — | — | — |
| N1 | — | — | — | — | — | — | — | — | — | — | — | — | 285 | 315 | 330 | 300 | 335 | 350 | — | — | — |
| N2 | — | — | — | — | — | — | — | — | — | — | — | — | 215 | 250 | 265 | 235 | 265 | 280 | — | — | — |
| N3 | — | — | — | — | — | — | — | — | — | — | — | — | 185 | 220 | 235 | 205 | 235 | 250 | — | — | — |
| N11 | — | — | — | — | — | — | — | — | — | — | — | — | 195 | 230 | 245 | 215 | 245 | 260 | — | — | — |
| S1 | 50 | 75 | 95 | 65 | 90 | 110 | — | — | — | 44 | 60 | 85 | 40 | 55 | 80 | — | — | — | — | — | — |
| S2 | 42 | 60 | 80 | 50 | 70 | 95 | — | — | — | 35 | 50 | 70 | 32 | 45 | 60 | — | — | — | — | — | — |
| S3 | 36 | 50 | 70 | 44 | 60 | 85 | — | — | — | 31 | 44 | 60 | 28 | 40 | 55 | — | — | — | — | — | — |
| S11 | 70 | 100 | 120 | 85 | 115 | 135 | — | — | — | 60 | 85 | 110 | 55 | 80 | 100 | — | — | — | — | — | — |
| S12 | 50 | 70 | 95 | 60 | 85 | 110 | — | — | — | 42 | 60 | 80 | 39 | 55 | 75 | — | — | — | — | — | — |
| S13 | 29 | 41 | 55 | 35 | 50 | 70 | — | — | — | 25 | 35 | 48 | 22 | 32 | 44 | — | — | — | — | — | — |
| H5 | — | — | — | — | — | — | — | — | — | 39 | 55 | 75 | 34 | 50 | 65 | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — | — | — | — | 42 | 60 | 80 | 36 | 50 | 70 | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — | — | — | — | 50 | 75 | 95 | 43 | 65 | 85 | — | — | — | — | — | — |
| H12 | — | — | — | — | — | — | — | — | — | 75 | 100 | 125 | 65 | 90 | 110 | — | — | — | — | — | — |

R417.19-SPMX

Spot face milling



- For insert selection and cutting data recommendations, see page(s) 636-639
- For complete insert programme, see page(s) 677
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | ZEFP | | | | () = No of inserts | |
|--------------------|------------------|------------------|-------|------|------|-------|------|------|------|---|-----|-------|--------------------|-----------|
| | | APMXE | APMXS | DC | DMM | OAL | LUX | LS | | | | | SPMX* | SPMX |
| R417.19-2018.3-06A | Cyl.-Weldon | 9,0 | 5,0 | 18,0 | 20,0 | 110,0 | 20,0 | 87,0 | 1 | 2 | 0,2 | 39200 | 0602AP/APT(1) | 060204(1) |
| R417.19-2020.3-07A | Cyl.-Weldon | 10,0 | 7,0 | 20,0 | 20,0 | 120,0 | 28,0 | 92,0 | 1 | 2 | 0,3 | 26200 | 0703AP/APT(1) | 070304(1) |
| R417.19-2022.3-07A | Cyl.-Weldon | 11,0 | 7,0 | 22,0 | 20,0 | 120,0 | 70,0 | 92,0 | 1 | 2 | 0,3 | 25000 | 0703AP/APT(1) | 070304(1) |
| R417.19-2524.3-07A | Cyl.-Weldon | 12,0 | 7,0 | 24,0 | 25,0 | 130,0 | 31,0 | 98,0 | 1 | 2 | 0,5 | 24000 | 0703AP/APT(1) | 070304(1) |
| R417.19-2526.3-09A | Cyl.-Weldon | 13,0 | 8,0 | 26,0 | 25,0 | 130,0 | 74,0 | 98,0 | 1 | 2 | 0,4 | 21200 | 0903AP/APT(1) | 090304(1) |
| R417.19-2530.3-09A | Cyl.-Weldon | 15,0 | 8,0 | 30,0 | 25,0 | 130,0 | 74,0 | 90,0 | 1 | 2 | 0,5 | 19800 | 0903AP/APT(1) | 090304(1) |
| R417.19-3232.3-09A | Cyl.-Weldon | 16,0 | 8,0 | 32,0 | 32,0 | 130,0 | 38,0 | 90,0 | 1 | 2 | 0,7 | 19200 | 0903AP/APT(1) | 090304(1) |
| R417.19-3236.3-12A | Cyl.-Weldon | 18,0 | 11,0 | 36,0 | 32,0 | 130,0 | 70,0 | 90,0 | 1 | 2 | 0,7 | 12600 | 12T3AP/APT(1) | 12T308(1) |
| R417.19-3238.3-12A | Cyl.-Weldon | 19,0 | 11,0 | 38,0 | 32,0 | 130,0 | 70,0 | 90,0 | 1 | 2 | 0,7 | 12300 | 12T3AP/APT(1) | 12T308(1) |
| R417.19-3242.3-12A | Cyl.-Weldon | 21,0 | 11,0 | 42,0 | 32,0 | 130,0 | 70,0 | 90,0 | 1 | 2 | 0,8 | 12000 | 12T3AP/APT(1) | 12T308(1) |

Spare Parts

| For cutter | Key (T-handle) | Insert screw | Insert key | Torque value (Nm) |
|-------------|----------------|--------------|------------|-------------------|
| | | | | |
| R417.19-06A | DOUBLE-T | C02205-T07P | H4B-T07P | 0,9 |
| R417.19-07A | DOUBLE-T | C02506-T07P | H4B-T07P | 0,9 |
| R417.19-09A | DOUBLE-T | C03007-T09P | H4B-T09P | 0,9 |
| R417.19-12A | DOUBLE-T | C03510-T15P | H4B-T15P | 0,9 |

Please check availability in current price and stock-list
Torque keys, see page 732

R417.19-SPMX06 – Insert selection

| SMG | | f_z | | |
|-----|--------------------|-------|-------|-------|
| | | 100% | 30% | 10% |
| P1 | SPMX060204-75 F40M | 0,065 | 0,075 | 0,11 |
| P2 | SPMX060204-75 F40M | 0,070 | 0,075 | 0,11 |
| P3 | SPMX060204-75 F40M | 0,065 | 0,070 | 0,11 |
| P4 | SPMX060204-75 F40M | 0,065 | 0,070 | 0,11 |
| P5 | SPMX060204-75 F40M | 0,060 | 0,065 | 0,10 |
| P6 | SPMX060204-75 F40M | 0,060 | 0,065 | 0,10 |
| P7 | SPMX060204-75 F40M | 0,060 | 0,065 | 0,10 |
| P8 | SPMX060204-75 F40M | 0,065 | 0,070 | 0,11 |
| P11 | SPMX060204-75 F40M | 0,060 | 0,065 | 0,10 |
| P12 | SPMX060204-75 F40M | 0,042 | 0,046 | 0,070 |
| M1 | SPMX060204-75 F40M | 0,070 | 0,075 | 0,11 |
| M2 | SPMX060204-75 F40M | 0,060 | 0,065 | 0,10 |
| M3 | SPMX060204-75 F40M | 0,050 | 0,055 | 0,085 |
| M4 | SPMX060204-75 F40M | 0,044 | 0,048 | 0,075 |
| M5 | SPMX060204-75 F40M | 0,044 | 0,048 | 0,075 |
| K1 | SPMX060204-75 F40M | 0,070 | 0,075 | 0,11 |
| K2 | SPMX060204-75 F40M | 0,060 | 0,065 | 0,10 |
| K3 | SPMX060204-75 F40M | 0,060 | 0,065 | 0,10 |
| K4 | SPMX060204-75 F40M | 0,060 | 0,065 | 0,10 |
| K5 | SPMX060204-75 F40M | 0,055 | 0,060 | 0,095 |
| K6 | SPMX060204-75 F40M | 0,060 | 0,065 | 0,10 |
| K7 | SPMX060204-75 F40M | 0,055 | 0,060 | 0,095 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R417.19-SPMX06 – Cutting data v_c (m/min)

| SMG | F40M | | |
|-----|------|-----|-----|
| | 100% | 30% | 10% |
| P1 | 205 | 230 | 250 |
| P2 | 200 | 230 | 245 |
| P3 | 190 | 215 | 230 |
| P4 | 175 | 200 | 220 |
| P5 | 170 | 200 | 215 |
| P6 | 185 | 210 | 225 |
| P7 | 180 | 205 | 220 |
| P8 | 170 | 195 | 215 |
| P11 | 175 | 200 | 220 |
| P12 | 130 | 155 | 170 |
| M1 | 180 | 205 | 225 |
| M2 | 160 | 190 | 205 |
| M3 | 140 | 165 | 180 |
| M4 | 115 | 140 | 155 |
| M5 | 95 | 120 | 135 |
| K1 | 180 | 205 | 220 |
| K2 | 165 | 195 | 210 |
| K3 | 150 | 175 | 195 |
| K4 | 145 | 170 | 190 |
| K5 | 95 | 120 | 140 |
| K6 | 135 | 160 | 175 |
| K7 | 120 | 145 | 165 |

R417.19-SPMX07 – Insert selection

| SMG | | f_z | | |
|-----|--------------------|-------|-------|-------|
| | | 100% | 30% | 10% |
| P1 | SPMX070304-75 F40M | 0,080 | 0,085 | 0,13 |
| P2 | SPMX070304-75 F40M | 0,080 | 0,090 | 0,14 |
| P3 | SPMX070304-75 F40M | 0,075 | 0,085 | 0,13 |
| P4 | SPMX070304-75 F40M | 0,075 | 0,080 | 0,13 |
| P5 | SPMX070304-75 F40M | 0,075 | 0,080 | 0,12 |
| P6 | SPMX070304-75 F40M | 0,070 | 0,080 | 0,12 |
| P7 | SPMX070304-75 F40M | 0,070 | 0,080 | 0,12 |
| P8 | SPMX070304-75 F40M | 0,075 | 0,085 | 0,13 |
| P11 | SPMX070304-75 F40M | 0,070 | 0,080 | 0,12 |
| P12 | SPMX070304-75 F40M | 0,050 | 0,055 | 0,085 |
| M1 | SPMX070304-75 F40M | 0,080 | 0,090 | 0,14 |
| M2 | SPMX070304-75 F40M | 0,075 | 0,080 | 0,12 |
| M3 | SPMX070304-75 F40M | 0,060 | 0,065 | 0,10 |
| M4 | SPMX070304-75 F40M | 0,050 | 0,055 | 0,085 |
| M5 | SPMX070304-75 F40M | 0,050 | 0,055 | 0,085 |
| K1 | SPMX070304-75 F40M | 0,080 | 0,090 | 0,14 |
| K2 | SPMX070304-75 F40M | 0,075 | 0,080 | 0,12 |
| K3 | SPMX070304-75 F40M | 0,075 | 0,080 | 0,12 |
| K4 | SPMX070304-75 F40M | 0,075 | 0,080 | 0,12 |
| K5 | SPMX070304-75 F40M | 0,065 | 0,070 | 0,11 |
| K6 | SPMX070304-75 F40M | 0,075 | 0,080 | 0,12 |
| K7 | SPMX070304-75 F40M | 0,065 | 0,070 | 0,11 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R417.19-SPMX07 – Cutting data v_c = (m/min)

| SMG | F40M | | |
|-----|------|-----|-----|
| | 100% | 30% | 10% |
| P1 | 195 | 225 | 240 |
| P2 | 195 | 220 | 240 |
| P3 | 180 | 205 | 225 |
| P4 | 170 | 195 | 215 |
| P5 | 165 | 190 | 210 |
| P6 | 175 | 205 | 220 |
| P7 | 170 | 195 | 215 |
| P8 | 165 | 190 | 205 |
| P11 | 170 | 195 | 210 |
| P12 | 125 | 150 | 165 |
| M1 | 175 | 200 | 215 |
| M2 | 155 | 180 | 200 |
| M3 | 130 | 160 | 175 |
| M4 | 105 | 135 | 150 |
| M5 | 90 | 115 | 130 |
| K1 | 170 | 200 | 215 |
| K2 | 160 | 185 | 205 |
| K3 | 140 | 170 | 185 |
| K4 | 135 | 165 | 180 |
| K5 | 90 | 115 | 130 |
| K6 | 125 | 150 | 170 |
| K7 | 115 | 140 | 155 |

R417.19-SPMX09 – Insert selection

| SMG | | f_z | | |
|-----|--------------------|-------|-------|------|
| | | 100% | 30% | 10% |
| P1 | SPMX090304-75 F40M | 0,13 | 0,14 | 0,22 |
| P2 | SPMX090304-75 F40M | 0,13 | 0,15 | 0,22 |
| P3 | SPMX090304-75 F40M | 0,13 | 0,14 | 0,22 |
| P4 | SPMX090304-75 F40M | 0,12 | 0,14 | 0,22 |
| P5 | SPMX090304-75 F40M | 0,12 | 0,13 | 0,20 |
| P6 | SPMX090304-75 F40M | 0,12 | 0,13 | 0,20 |
| P7 | SPMX090304-75 F40M | 0,12 | 0,13 | 0,20 |
| P8 | SPMX090304-75 F40M | 0,13 | 0,14 | 0,22 |
| P11 | SPMX090304-75 F40M | 0,12 | 0,13 | 0,20 |
| P12 | SPMX090304-75 F40M | — | — | — |
| M1 | SPMX090304-75 F40M | 0,13 | 0,15 | 0,22 |
| M2 | SPMX090304-75 F40M | 0,12 | 0,13 | 0,20 |
| M3 | SPMX090304-75 F40M | 0,10 | 0,11 | 0,17 |
| M4 | SPMX090304-75 F40M | 0,090 | 0,095 | 0,15 |
| M5 | SPMX090304-75 F40M | 0,090 | 0,095 | 0,15 |
| K1 | SPMX090304-75 F40M | 0,13 | 0,15 | 0,22 |
| K2 | SPMX090304-75 F40M | 0,12 | 0,13 | 0,20 |
| K3 | SPMX090304-75 F40M | 0,12 | 0,13 | 0,20 |
| K4 | SPMX090304-75 F40M | 0,12 | 0,13 | 0,20 |
| K5 | SPMX090304-75 F40M | 0,11 | 0,12 | 0,19 |
| K6 | SPMX090304-75 F40M | 0,12 | 0,13 | 0,20 |
| K7 | SPMX090304-75 F40M | 0,11 | 0,12 | 0,19 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

All cutting data are start values

R417.19-SPMX09 – Cutting data v_c = (m/min)

| SMG | F40M | | |
|-----|------|-----|-----|
| | 100% | 30% | 10% |
| P1 | 185 | 210 | 230 |
| P2 | 180 | 210 | 225 |
| P3 | 165 | 195 | 210 |
| P4 | 155 | 180 | 200 |
| P5 | 150 | 180 | 195 |
| P6 | 165 | 190 | 205 |
| P7 | 160 | 185 | 200 |
| P8 | 150 | 175 | 195 |
| P11 | 155 | 180 | 200 |
| P12 | — | — | — |
| M1 | 160 | 185 | 205 |
| M2 | 140 | 170 | 185 |
| M3 | 120 | 145 | 165 |
| M4 | 95 | 125 | 140 |
| M5 | 80 | 105 | 120 |
| K1 | 160 | 185 | 200 |
| K2 | 145 | 175 | 190 |
| K3 | 130 | 155 | 175 |
| K4 | 125 | 155 | 170 |
| K5 | 80 | 105 | 120 |
| K6 | 115 | 140 | 155 |
| K7 | 100 | 130 | 145 |

R417.19-SPMX12 – Insert selection

| SMG | | f_z | | |
|-----|--------------------|-------|------|------|
| | | 100% | 30% | 10% |
| P1 | SPMX12T308-75 F40M | 0,14 | 0,15 | 0,22 |
| P2 | SPMX12T308-75 F40M | 0,14 | 0,15 | 0,24 |
| P3 | SPMX12T308-75 F40M | 0,13 | 0,14 | 0,22 |
| P4 | SPMX12T308-75 F40M | 0,13 | 0,14 | 0,22 |
| P5 | SPMX12T308-75 F40M | 0,13 | 0,14 | 0,20 |
| P6 | SPMX12T308-75 F40M | 0,12 | 0,14 | 0,20 |
| P7 | SPMX12T308-75 F40M | 0,12 | 0,14 | 0,20 |
| P8 | SPMX12T308-75 F40M | 0,13 | 0,14 | 0,22 |
| P11 | SPMX12T308-75 F40M | 0,12 | 0,14 | 0,20 |
| P12 | SPMX12T308-75 F40M | — | — | — |
| M1 | SPMX12T308-75 F40M | 0,14 | 0,15 | 0,24 |
| M2 | SPMX12T308-75 F40M | 0,13 | 0,14 | 0,20 |
| M3 | SPMX12T308-75 F40M | 0,10 | 0,11 | 0,17 |
| M4 | SPMX12T308-75 F40M | 0,090 | 0,10 | 0,15 |
| M5 | SPMX12T308-75 F40M | 0,090 | 0,10 | 0,15 |
| K1 | SPMX12T308-75 F40M | 0,14 | 0,15 | 0,24 |
| K2 | SPMX12T308-75 F40M | 0,13 | 0,14 | 0,20 |
| K3 | SPMX12T308-75 F40M | 0,13 | 0,14 | 0,20 |
| K4 | SPMX12T308-75 F40M | 0,13 | 0,14 | 0,20 |
| K5 | SPMX12T308-75 F40M | 0,11 | 0,12 | 0,19 |
| K6 | SPMX12T308-75 F40M | 0,13 | 0,14 | 0,20 |
| K7 | SPMX12T308-75 F40M | 0,11 | 0,12 | 0,19 |

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/DC = %

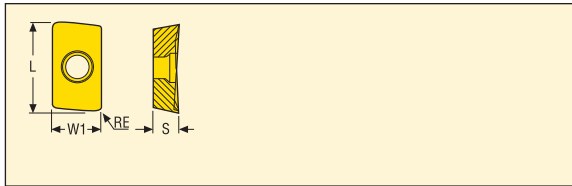
All cutting data are start values

R417.19-SPMX12 – Cutting data v_c = (m/min)

| SMG | F40M | | |
|-----|------|-----|-----|
| | 100% | 30% | 10% |
| P1 | 185 | 210 | 225 |
| P2 | 180 | 205 | 225 |
| P3 | 170 | 195 | 210 |
| P4 | 155 | 180 | 200 |
| P5 | 150 | 180 | 195 |
| P6 | 165 | 190 | 205 |
| P7 | 160 | 185 | 200 |
| P8 | 150 | 175 | 190 |
| P11 | 155 | 180 | 200 |
| M1 | 160 | 185 | 205 |
| M2 | 140 | 170 | 185 |
| M3 | 120 | 145 | 165 |
| M4 | 95 | 125 | 135 |
| M5 | 80 | 105 | 120 |
| K1 | 155 | 185 | 200 |
| K2 | 145 | 175 | 190 |
| K3 | 130 | 155 | 175 |
| K4 | 125 | 150 | 170 |
| K5 | 80 | 100 | 120 |
| K6 | 110 | 140 | 155 |
| K7 | 100 | 125 | 145 |



ABEX26



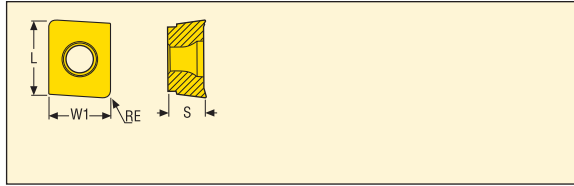
| Size | Dimensions in mm | | |
|--------------|------------------|-------|------|
| | W1 | L | S |
| ABEX26.. | 14,0 | 25,56 | 6,35 |
| ABEX26..ZZFR | 14,0 | 25,61 | 6,35 |



| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | |
|------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|------|----------|----|-----|---------|--------|
| | | | Coated | | | | | | | | | | | | | | | Uncoated | | | Cermets | |
| | | | MP1500 | MP2500 | MP2050 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 |
| ABEX2606ZFFR-M15 | 1,6 | 17,0° | ■ | ■ | | | | | | | ■ | ■ | | | | | | | | | | |
| ABEX2606ZZFR-M15 | 1,6 | 17,0° | | | | | | | | | | | | | | | | ■ | | | | |
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■ Stock standard
Subject to change refer to current price- and stock-list

AC..15



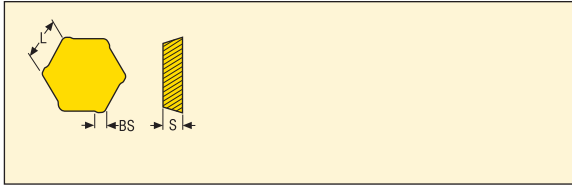
| Size | Dimensions in mm | | |
|---------------|------------------|--------|------|
| | W1 | L | S |
| AC..1506 | 12,7 | 15,0 | 6,35 |
| AC..1506.-M10 | 12,673 | 15,249 | 6,35 |



| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | |
|-------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|------|--------|-----|-----|--------|
| | | | Coated | | | | | | | | | | | | | Uncoated | | | Cermet | | | |
| | | | MP1500 | MP2500 | MP2050 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 |
| ACET150612TR-ME10 | 1,2 | 22,0 ° | | | | | | | ■ | | | | | | | | ■ | | | | | |
| ACET150612R-M10 | 1,2 | 20,0 ° | | | | | | | ■ | | | | | | | | | | | | | |
| ACET150624R-M10 | 2,4 | 20,0 ° | | | | | | | ■ | | | | | | | | | | | | | |
| ACET150631R-M10 | 3,1 | 20,0 ° | | | | | | | ■ | | | | | | | | | | | | | |
| ACET150640R-M10 | 4,0 | 20,0 ° | | | | | | | ■ | | | | | | | | | | | | | |
| ACET150650R-M10 | 5,0 | 20,0 ° | | | | | | | ■ | | | | | | | | | | | | | |
| ACET150660R-M10 | 6,0 | 20,0 ° | | | | | | | ■ | | | | | | | | | | | | | |
| ACET150612TL-M11 | 1,2 | 14,0 ° | | ■ | | | | | | | | | | | | | | ■ | | | | |
| ACET150612TR-M11 | 1,2 | 14,0 ° | ■ | ■ | | | | ■ | ■ | | ■ | ■ | | | ■ | | | ■ | | | | |
| ACET150631TR-M11 | 3,1 | 14,0 ° | | | | | | | | | | | | | | | | ■ | | | | |
| ACET150612TL-M14 | 1,2 | 15,0 ° | | | | | | | | | | | | | | | | ■ | | | | |
| ACET150612TR-M14 | 1,2 | 15,0 ° | | ■ | | | | ■ | ■ | | ■ | ■ | | | | | | ■ | ■ | | | |
| ACET150630TR-M14 | 3,0 | 15,0 ° | | | | | | | | | | ■ | | | | | | | | | | |
| ACET150631TR-M14 | 3,1 | 15,0 ° | | | | | | | | | | | ■ | | | | | | | | | |
| ACET150660TL-M14 | 6,0 | 15,0 ° | | | | | | | | | | | | | | | | | ■ | | | |
| ACET150660TR-M14 | 6,0 | 15,0 ° | | | | | | | | | | | | | | | | | ■ | | | |
| ACET150612TR-MD15 | 1,2 | 15,0 ° | ■ | | | ■ | | | | | | | ■ | ■ | | | | | | | | |
| ACET150630TR-MD15 | 3,0 | 15,0 ° | ■ | | | | | | | | | | | | | | | | | | | |
| ACMT150612TR-M14 | 1,2 | 15,0 ° | | ■ | | | | | | | | | | ■ | | | | | ■ | | | |

■ Stock standard
Subject to change refer to current price- and stock-list

HPMR/N



| Size | Dimensions in mm | |
|------|------------------|------|
| | L | S |
| 12 | 12,5 | 6,35 |
| | | |
| | | |
| | | |

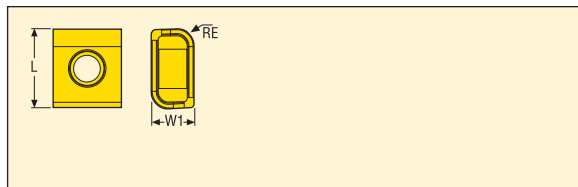
ME15/M17/MD20/D25



| Designation | Cutting rate | BS | Grades | | | | | | | | | | | | | | | | | | | | | |
|-------------------|--------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|------|----------|----|-----|--------|--------|--|--|
| | | | Coated | | | | | | | | | | | | | | | Uncoated | | | Cermet | | | |
| | | | MP1500 | MP2500 | MP2050 | MP3000 | MH1000 | MN4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | | |
| HPMR1206ZETR-ME15 | 26,0 ° | 0,8 | | | | | | | | | | | | | | | ■ | | | | | | | |
| HPMR1206ZETR-M17 | 17,0 ° | 0,8 | ■ | | | | | | | | | | ■ | | | | ■ | | | | | | | |
| HPMN1206ZETR-MD20 | 0,0 ° | 0,8 | | ■ | | | | ■ | ■ | | | | | | | | | | | | | | | |
| HPMN1206ZETL-D25 | 0,0 ° | 0,8 | | ■ | | | | | | | | | | | | | | | | | | | | |
| HPMN1206ZETR-D25 | 0,0 ° | 0,8 | ■ | ■ | | | | | | | | | | | | | | | | | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

LNHQ14/17



| Size | Dimensions in mm | |
|------|------------------|------|
| | W1 | L |
| 14 | 7,5 | 14,0 |
| 17 | 7,5 | 17,0 |
| | | |
| | | |

M11/M13



| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | Uncoated | | | Cermet | | | | | | |
|-------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|-----|-----|--------|--|------|------|------|---|--|
| | | | Coated | | | | | | | | | | | | | HX | H15 | H25 | MP1020 | | | | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | | | | | | F25M | F30M | F40M | | |
| LNHQ140708TN4-M11 | 0,8 | 16,0 ° | | | ■ | | | | | | | | | | | | | | | | | | | | |
| LNHQ140731TN4-M11 | 3,1 | 16,0 ° | | | ■ | | | | | | | | | | | | | | | | | | | | |
| LNHQ140740TN4-M11 | 4,0 | 16,0 ° | | | ■ | | | | | | | | | | | | | | | | | | | | |
| LNHQ140750TN4-M11 | 5,0 | 16,0 ° | | | ■ | | | | | | | | | | | | | | | | | | | | |
| LNHQ140760TN4-M11 | 6,0 | 16,0 ° | | | ■ | | | | | | | | | | | | | | | | | | | | |
| LNHQ170708TN4-M13 | 0,8 | 16,0 ° | | | | | | | | | | | | | | | | | | | | | | ■ | |
| LNHQ170731TN4-M13 | 3,1 | 16,0 ° | | | | | | | | | | | | | | | | | | | | | | ■ | |
| LNHQ170740TN4-M13 | 4,0 | 16,0 ° | | | | | | | | | | | | | | | | | | | | | | ■ | |
| LNHQ170750TN4-M13 | 5,0 | 16,0 ° | | | | | | | | | | | | | | | | | | | | | | ■ | |
| LNHQ170760TN4-M13 | 6,0 | 16,0 ° | | | | | | | | | | | | | | | | | | | | | | ■ | |
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■ Stock standard
Subject to change refer to current price- and stock-list

LNK.06/08



| Size | Dimensions in mm | | |
|--------|------------------|------|-----|
| | LE | INSL | S |
| 06 | 6,0 | 10,0 | 5,0 |
| 08 | 7,5 | 10,0 | 5,0 |
| 080520 | 6,7 | 10,0 | 5,0 |
| 080516 | 7,2 | 10,0 | 5,0 |
| 080524 | 6,7 | 10,0 | 5,0 |



| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | | | |
|--------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|------|---------|-----|-----|--------|--|--|
| | | | Coated | | | | | | | | | | | | | Uncoated | | | Cermets | | | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | | |
| LNKT060504PPN-E05 | 0,4 | 23,0 ° | | | | | | | | | | | | | | | | | | | | | | |
| LNKT060508PPN-E05 | 0,8 | 23,0 ° | | | | | | | | | | | | | | | | | | | ■ | | | |
| LNKT060504PPTN-M06 | 0,4 | 15,0 ° | | | ■ | | | ■ | | | | | | | | | ■ | | | | | | | |
| LNKT060508PPTN-M06 | 0,8 | 15,0 ° | | | ■ | ■ | | ■ | | | | | | ■ | | | ■ | | | | | | | |
| LNKT060516PPTN-M06 | 1,6 | 15,0 ° | | | | | | ■ | ■ | | | | | | | | ■ | | | | | | | |
| LNKT060531PPTN-M06 | 3,1 | 15,0 ° | | | | | | | ■ | ■ | | | | | | | ■ | | | | | | | |
| LNKT060540PPTL-M06 | 4,0 | 15,0 ° | | | | | | | | | | | | | | | ■ | | | | | | | |
| LNKT060540PPTR-M06 | 4,0 | 15,0 ° | | | | | | | | | | | | | | | ■ | | | | | | | |
| LNKT080504PPN-E05 | 0,4 | 23,0 ° | | | | | | | | | | | | | | | | | | | ■ | | | |
| LNKT080508PPN-E05 | 0,8 | 23,0 ° | | | | | | | | | | | | | | | | | | | ■ | | | |
| LNKT080520PPN-E05 | 2,0 | 23,0 ° | | | | | | | | | | | | | | | | | | | ■ | | | |
| LNKT080531PPN-E05 | 3,1 | 23,0 ° | | | | | | | | | | | | | | | | | | | ■ | | | |
| LNKT080504PPTN-M06 | 0,4 | 15,0 ° | | | ■ | | | ■ | | | | | | | | | ■ | | | | | | | |
| LNKT080508PPTN-M06 | 0,8 | 15,0 ° | | | ■ | ■ | | ■ | ■ | ■ | | | | | | | ■ | | | | | | | |
| LNKT080516PPTN-M06 | 1,6 | 15,0 ° | | | | | | ■ | ■ | | | | | | | | ■ | | | | | | | |
| LNKT080520PPTN-M06 | 2,0 | 15,0 ° | | | | | | ■ | ■ | | | | | | | | ■ | | | | | | | |
| LNKT080524PPTN-M06 | 2,4 | 15,0 ° | | | | | | ■ | ■ | | | | | | | | ■ | | | | | | | |
| LNKT080531PPTN-M06 | 3,1 | 15,0 ° | | | | | | ■ | ■ | | | | | | | | ■ | | | | | | | |
| LNKT080540PPTL-M06 | 4,0 | 15,0 ° | | | | | | | | | | | | | | | ■ | | | | | | | |
| LNKT080540PPTR-M06 | 4,0 | 15,0 ° | | | | | | | | | | | | | | | ■ | | | | | | | |
| LNKW060504PPN-MD08 | 0,4 | 0,0 ° | | | | | | | | | | | | | | | | | | | | | | |
| LNKW060508PPN-MD08 | 0,8 | 0,0 ° | | | ■ | | | ■ | ■ | | | | | | | | | | | | | | | |
| LNKW080504PPN-MD08 | 0,4 | 0,0 ° | | | | | | | | | | | | | | | | | | | | | | |
| LNKW080508PPN-MD08 | 0,8 | 0,0 ° | | | ■ | | | ■ | ■ | | | | | | | | | | | | | | | |

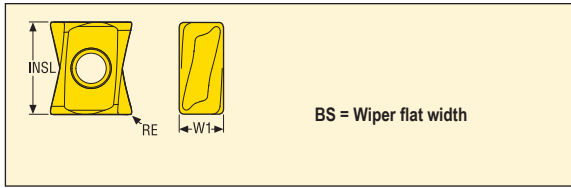
■ Stock standard

Subject to change refer to current price- and stock-list

Note: When using LNK insert with corner radius = 2,4, 3,1 and 4,0 mm

please modify the external profile of the cutter or cassette by adding a corner radius or chamfer = 2,5 mm

LOEX08/12



| Size | Dimensions in mm | |
|------------|------------------|------|
| | W1 | INSL |
| LOEX0804.. | 4,4 | 9,3 |
| LOEX1207.. | 7,5 | 14,2 |



| Designation | RE | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | | | |
|-------------------|-----|--------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|----------|------|------|--------|----|-----|-----|--------|
| | | | | Coated | | | | | | | | | | | | Uncoated | | | Cermet | | | | |
| | | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 |
| LOEX080404TR-M08 | 0,4 | 34,3° | 1,29 | ■ | | ■ | ■ | | | ■ | ■ | | | | | | | | | | | | ■ |
| LOEX080408TR-M08 | 0,8 | 34,0° | 0,9 | ■ | ■ | ■ | ■ | | | ■ | ■ | ■ | | | ■ | | | | | | | | ■ |
| LOEX080412TR-M08 | 1,2 | 34,3° | 0,52 | ■ | | ■ | ■ | | | ■ | ■ | | | | | | | | | | | | ■ |
| LOEX080416TR-M08 | 1,6 | 34,3° | 0,13 | ■ | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | | | | | | | | | | ■ |
| LOEX080404TR-MD08 | 0,4 | 29,0° | 1,29 | | | ■ | | | | | ■ | | | | | | | | | | | | ■ |
| LOEX080408TR-MD08 | 0,8 | 29,5° | 0,92 | ■ | | ■ | | | | ■ | ■ | | | ■ | | | | | | | | | ■ |
| LOEX080412TR-MD08 | 1,2 | 29,5° | 0,52 | | | ■ | | | | ■ | ■ | | | | | | | | | | | | ■ |
| LOEX080416TR-MD08 | 1,6 | 29,5° | 0,13 | | | ■ | | | | ■ | | | | ■ | | | | | | | | | ■ |
| LOEX120708TR-M12 | 0,8 | 35,0° | 2,47 | | ■ | ■ | ■ | | | ■ | ■ | ■ | | | ■ | | | | | | | | ■ |
| LOEX120712TR-M12 | 1,2 | 35,0° | 2,1 | | | | | | | ■ | | | | | ■ | | | | | | | | ■ |
| LOEX120716TR-M12 | 1,6 | 35,0° | 1,74 | | | | | | | | | ■ | | | | | | | | | | | ■ |
| LOEX120720TR-M12 | 2,0 | 35,0° | 1,37 | | | ■ | ■ | | | ■ | | | | | ■ | | | | | | | | ■ |
| LOEX120724TR-M12 | 2,4 | 35,0° | 1,01 | | | ■ | | | | | | ■ | ■ | | | | | | | | | | ■ |
| LOEX120731TR-M12 | 3,1 | 35,0° | 0,37 | | | ■ | ■ | | | ■ | | ■ | ■ | | | | | | | | | | ■ |
| LOEX120708TR-MD13 | 0,8 | 30,0° | 2,47 | ■ | | ■ | | | | ■ | ■ | | | | ■ | | | | | | | | ■ |
| LOEX120712TR-MD13 | 1,2 | 30,0° | 2,1 | ■ | | ■ | | | | ■ | ■ | | | | ■ | | | | | | | | ■ |
| LOEX120716TR-MD13 | 1,6 | 30,0° | 1,74 | ■ | | ■ | | | | ■ | ■ | | | | ■ | | | | | | | | ■ |
| LOEX120708R-M09 | 0,8 | 36,0° | 2,47 | | ■ | ■ | ■ | | | ■ | | ■ | ■ | | | | | | | | | | ■ |
| LOEX120716R-M09 | 1,6 | 36,0° | 1,74 | | | | ■ | | | ■ | ■ | ■ | ■ | | | | | | | | | | ■ |
| LOEX120724R-M09 | 2,4 | 36,0° | 1,01 | | | | ■ | | | ■ | ■ | | | | ■ | | | | | | | | ■ |
| LOEX120731R-M09 | 3,1 | 36,0° | 0,37 | | ■ | | ■ | | | ■ | ■ | ■ | ■ | | | | | | | | | | ■ |
| LOEX120740R-M09 | 4,0 | 36,0° | 0,14 | | | | | | | ■ | | ■ | | | | | | | | | | | ■ |
| LOEX120750R-2-M09 | 5,0 | 36,0° | 1,06 | | | | | | | ■ | | ■ | | | | | | | | | | | ■ |
| LOEX120763R-2-M09 | 6,3 | 36,0° | 0,43 | | | | | | | ■ | | ■ | | | | | | | | | | | ■ |

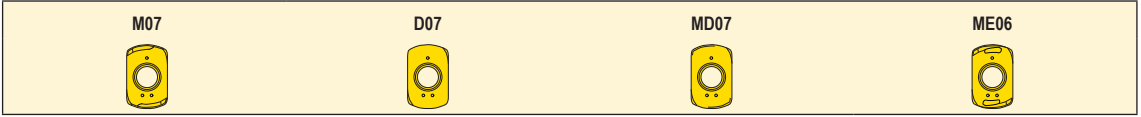
■ Stock standard
 Subject to change refer to current price- and stock-list

Note: LOEX1207xxR-2-M09 have only 2 edges

LOH.06



| Size | Dimensions in mm | | |
|------------------|------------------|------|------|
| | W1 | S | CCER |
| LOHT0603 ME/M/MD | 6,35 | 3,57 | 5,5 |
| LOHW0603 D07 | 6,35 | 3,45 | 5,5 |
| LOHT0603 D07 | 6,35 | 3,45 | 5,5 |



| Designation | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | | | |
|-------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|----|-----|---------|--------|--|--|--|
| | | Coated | | | | | | | | | | | | | | Uncoated | | | Cermets | | | | |
| | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 | | | |
| LOHT060310TR-M07 | 20,0° | | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | | | ■ | | | | | | | |
| LOHT060310TR-MD07 | 7,0° | ■ | | ■ | ■ | | | ■ | | | | | | | | | | | | | | | |
| LOHT060310TR-ME06 | 27,0° | | | | | | ■ | | ■ | ■ | | | ■ | | | ■ | | | | | | | |
| LOHW060310TR-D07 | 0,0° | ■ | | | ■ | ■ | | | | | | | | | | | | | | | | | |
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■ Stock standard
 Subject to change refer to current price- and stock-list

LPH.05/06



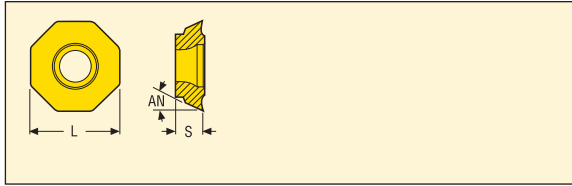
| Size | Dimensions in mm | | |
|------|------------------|------|------|
| | W1 | S | CCER |
| 05T2 | 5,07 | 2,54 | 6,4 |
| 0603 | 6,35 | 3,18 | 8,0 |

| E05/ME04/ME05/M05/M06 | E05/ME04/ME05/M05/M06 | MD05/MD07/D06 |
|-----------------------|-----------------------|---------------|
| | | |

| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | |
|-------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|------|--------|-----|-----|--------|
| | | | Coated | | | | | | | | | | | | | Uncoated | | | Cermet | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 |
| LPHT05T210TR-ME04 | 1,0 | 16,0 ° | | | | | | ■ | | ■ | | | ■ | | | | ■ | | | | | |
| LPHW05T210TR-MD05 | 1,0 | 0,0 ° | | | | | ■ | | | | | | | | | | | | | | | |
| LPKW05T210TR-MD05 | 1,0 | 0,0 ° | | | ■ | ■ | | | | | | | | | | | | | | | | |
| LPHT060310ER-E05 | 1,0 | 16,0 ° | | | | | | ■ | | | | | | | | | ■ | | | | ■ | |
| LPHT060310TR-ME05 | 1,0 | 16,0 ° | | | | ■ | | ■ | | | | | | | | | ■ | | | | | |
| LPHT060310TR-M06 | 1,0 | 11,0 ° | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | | | | ■ | | | | | |
| LPHW060310TR-MD07 | 1,0 | 0,0 ° | | | ■ | | | | | | ■ | | | | | | | | | | | |
| LPHW060310TR-D06 | 1,0 | 0,0 ° | | | | ■ | ■ | | | | | | | | | | | | | | | |
| LPKT05T210TR-M05 | 1,0 | 11,0 ° | ■ | ■ | ■ | | | | | ■ | ■ | | | | | | ■ | | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

OF..05/07



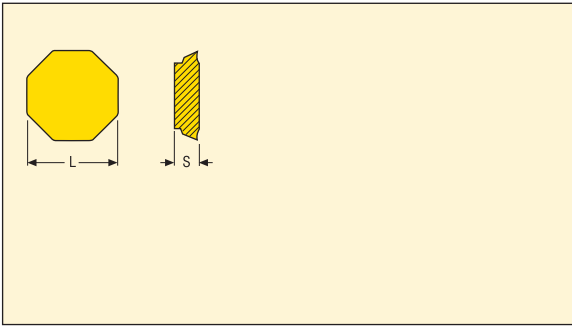
| Size | Dimensions in mm | |
|------------|------------------|------|
| | L | S |
| OFEX05T3.. | 12,7 | 3,77 |
| OF.. 05T3 | 12,7 | 3,77 |
| OFMT05.. | 13,3 | 4,76 |
| OFMT07.. | 17,97 | 4,86 |
| OFET 07 | 17,94 | 4,76 |
| OFET07.. | 17,94 | 4,56 |



| Designation | Cutting rate | Grades | | | | | | | | | | | | | | | | | | | | |
|-------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|------|----|--------|-----|--------|---|
| | | Coated | | | | | | | | | | | | | | Uncoated | | | Cermet | | | |
| | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | |
| OFEX05T305N-E04 | 20,0° | | | | | | | | | | | | | | | | | | | | | |
| OFEX05T305TN-ME07 | 18,0° | | | ■ | | | | | | | | | | | | | | | ■ | | | |
| OFEX05T305N-M05 | 0,0° | | | | | | | | | | | | | | | ■ | | | | | | |
| OFEX05T305TN-M08 | 0,0° | | | ■ | | | | ■ | | | | | | | | | ■ | | | | | ■ |
| OFEX05T305TN-D09 | 0,0° | ■ | | | | | | | | | | | | | | | | | | | | |
| OFMT050405TR-ME12 | 18,0° | | | ■ | | | ■ | | | | | | | | | | | | | | | |
| OFMT050405TR-M14 | 0,0° | | | ■ | | | | ■ | | | | | | | | | | | | | | |
| OFMT070405TN-ME13 | 18,0° | | | ■ | | | | | | | | | | | | | | | | | | |
| OFMT070405TN-M15 | 0,0° | | | ■ | | | | | | | | | | | | | | | | | | |
| OFMT070405TR-ME13 | 18,0° | | | | | | | | | | | | ■ | | | | | | | | | |
| OFMT070405TR-M15 | 0,0° | | | | | | | | | | | | | | | | ■ | | | | | |
| OFEW070405TN-D18 | 0,0° | ■ | | | | | | | | | | | | | | | | | | | | |
| OFET070405TN-M16 | 0,0° | | | | | | | ■ | | | | | | | | | | | | | | |
| OFET070405TN-ME10 | 18,0° | | | | | | | | | | | | | | ■ | | ■ | | | | | |
| OFET070405TN-ME15 | 18,0° | | | | | | | | | | | | | | | | ■ | | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

OFER/OFEN/OFMR07



| Size | Dimensions in mm | |
|------------------|------------------|------|
| | L | S |
| OFER0704.. | 17,94 | 4,56 |
| OFMR0704.. | 18,02 | 4,86 |
| OFEN07.. | 17,96 | 4,76 |
| OFEN07..ZZ...M10 | 18,02 | 4,76 |
| OFEN07..ZZ...M16 | 18,11 | 4,74 |
| | | |
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| | | |
| | | |

E07/M10/D18/M16



ME10/ME13/ME15/M15



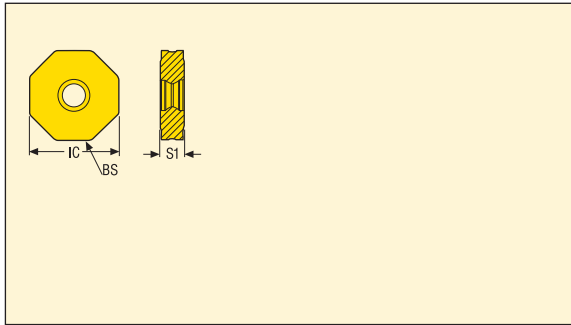
ZZ..M10/M16



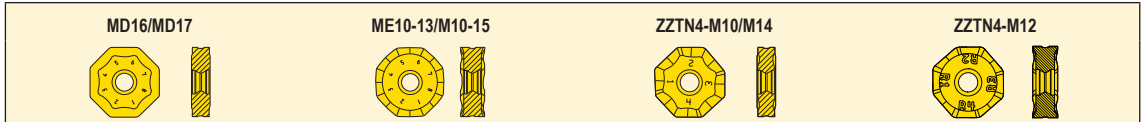
| Designation | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | |
|-------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|----------|------|------|--------|----|-----|-----|--------|
| | | Coated | | | | | | | | | | | | Uncoated | | | Cermet | | | | |
| | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 |
| OFER070405N-E07 | 20,0 ° | | | | | | | | | | | | | ■ | | | | | ■ | | |
| OFER070405TN-ME10 | 18,0 ° | | | ■ | | | | | | ■ | | | | ■ | | | ■ | | | | |
| OFER070405TN-ME15 | 18,0 ° | | | ■ | | | ■ | | | | | ■ | | | | ■ | | | | | |
| OFER070405N-M10 | 0,0 ° | | | | ■ | | | | | | | | | | ■ | | | | | | |
| OFER070405TN-M16 | 0,0 ° | ■ | | ■ | | | ■ | ■ | ■ | | | | ■ | ■ | | ■ | | | | | ■ |
| OFMR070405TR-ME13 | 15,0 ° | | | ■ | | | | | | | | | | | | ■ | | | | | |
| OFMR070405TR-M15 | 6,0 ° | | | ■ | | | | ■ | | | | | ■ | | | ■ | | | | | |
| OFEN070405TN-D18 | 0,0 ° | ■ | | ■ | ■ | | | ■ | ■ | | | | | | ■ | | | | | | |
| OFEN0704ZZR-M10 | 0,0 ° | | | | ■ | | | | | | | | | | ■ | | | | | | |
| OFEN0704ZZTR-M16 | 0,0 ° | | | | | | ■ | | | | | | ■ | | | | | | | | ■ |
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■ Stock standard
Subject to change refer to current price- and stock-list

ON.U05/09



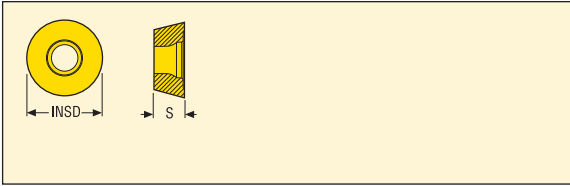
| Size | Dimensions in mm | |
|------------------|------------------|-----|
| | IC | S1 |
| ONMU05..M10/ME10 | 12,0 | 4,0 |
| ONMU05..M11/ME11 | 12,0 | 4,0 |
| ON..05 | 12,0 | 4,0 |
| ONEU05..ZZ | 12,0 | 4,5 |
| ONMU09.. | 22,0 | 5,8 |
| ON..09 | 21,41 | 6,8 |
| ONEU09..ZZ | 21,41 | 5,8 |



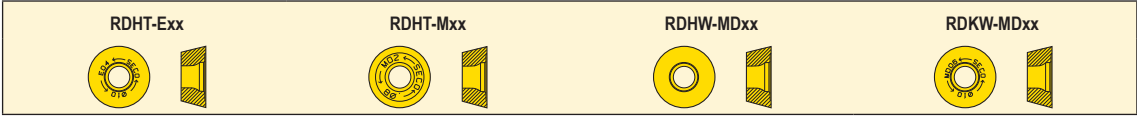
| Designation | Cutting rate | BS | Grades | | | | | | | | | | | | | | | | | | |
|---------------------|--------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|----------|------|------|--------|----|-----|-----|--------|
| | | | Coated | | | | | | | | | | | Uncoated | | | Cermet | | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 |
| ONMU050410ANTN-ME10 | 20,0° | 0,3 | ■ | | ■ | ■ | | | ■ | ■ | | | | | | | ■ | | | | |
| ONMU050410ANTN-ME11 | 20,0° | 1,0 | ■ | | ■ | ■ | | | ■ | ■ | | | | | | | ■ | | | | |
| ONMU050410ANTN-M10 | 20,0° | 0,3 | ■ | ■ | ■ | ■ | | | ■ | ■ | | | | | | | ■ | | | | |
| ONMU050410ANTN-M11 | 20,0° | 1,0 | ■ | ■ | ■ | ■ | | | ■ | ■ | | | | | | | ■ | | | | |
| ONEU050410ZZTN4-M10 | 20,0° | 3,2 | | | ■ | ■ | | | ■ | ■ | | | | | | | ■ | | | | |
| ONMU090520ANTN-ME12 | 20,0° | 0,45 | ■ | | ■ | ■ | | | ■ | ■ | | | | | | | ■ | | | | |
| ONMU090520ANTN-ME13 | 20,0° | 2,11 | ■ | | ■ | ■ | | | ■ | ■ | | | | | | | ■ | | | | |
| ONMU090510ANTN-M12 | 20,0° | 0,0 | | ■ | | | | | ■ | ■ | | | | | | | ■ | | | | |
| ONMU090520ANTN-M12 | 20,0° | 0,45 | ■ | ■ | ■ | | | | ■ | ■ | | | | | | | ■ | | | | |
| ONMU090520ANTN-M13 | 20,0° | 2,11 | ■ | ■ | ■ | ■ | | | ■ | ■ | | | | | | | ■ | | | ■ | |
| ONMU090520ANTN-M14 | 15,0° | 0,45 | ■ | | ■ | ■ | | | ■ | ■ | | | | | | | ■ | | | | |
| ONMU090520ANTN-M15 | 15,0° | 2,11 | ■ | | ■ | ■ | | | ■ | ■ | | | | | | | ■ | | | | |
| ONMU090520ANTN-MD16 | 0,0° | 0,45 | ■ | | ■ | | | | ■ | | | | | | | | ■ | | | | |
| ONMU090520ANTN-MD17 | 0,0° | 2,11 | ■ | | ■ | | | | ■ | | | | | | | | ■ | | | | |
| ONEU090520ZZTN4-M12 | 20,0° | 6,3 | ■ | | ■ | | | | ■ | | | | | | | | ■ | | | | |
| ONEU090520ZZTN4-M14 | 15,0° | 6,3 | ■ | | ■ | ■ | | | ■ | ■ | | | | | | | ■ | | | ■ | |

■ Stock standard
 Subject to change refer to current price- and stock-list

RD..05/06/07/08/10



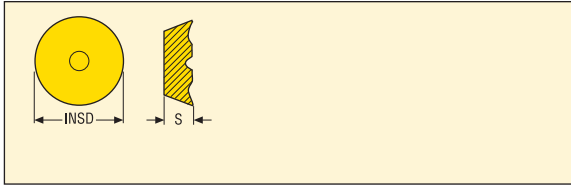
| Size | Dimensions in mm | |
|------------|------------------|------|
| | INSD | S |
| RD..0501.. | 5,0 | 1,51 |
| RD..06T1.. | 6,0 | 2,18 |
| RD..0702.. | 7,0 | 2,38 |
| RD..0803.. | 8,0 | 3,18 |
| RD..10T3.. | 10,0 | 3,97 |



| Designation | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | |
|------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|----|-----|--------|--------|--|
| | | Coated | | | | | | | | | | | | | | Uncoated | | | Cermet | | |
| | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 | |
| RDHT06T1M0-E02 | 18,0 ° | | | | | | | | | | | | | | ■ | | | | ■ | | |
| RDHT0803M0-E03 | 20,0 ° | | | | | | | | | | | | ■ | | ■ | | | | ■ | | |
| RDHT10T3M0-E04 | 20,0 ° | | | | | | | | | | | ■ | | ■ | | | | | ■ | | |
| RDHT10T3M0T-M05 | 16,0 ° | ■ | | ■ | | | | | ■ | ■ | | | ■ | | ■ | | | | | | |
| RDHT10T3M0T-M07 | 11,0 ° | | | ■ | | | | | ■ | | | ■ | | | ■ | | | | | | |
| RDHW0501M0-MD01 | 0,0 ° | | | | ■ | | | | | | | | | | ■ | | | | | | |
| RDHW06T1M0-MD02 | 0,0 ° | | | | ■ | | | ■ | | | | | | | ■ | | | | | | |
| RDHW0702M0-MD03 | 0,0 ° | | | | ■ | | | | | | | | | ■ | | | | | | | |
| RDHW0702M0T-MD04 | 0,0 ° | | | | | | | ■ | | | | | | ■ | | | | | | | |
| RDHW0803M0-MD03 | 0,0 ° | | | | ■ | | | | ■ | | | | | | ■ | | | | | | |
| RDHW10T3M0-MD04 | 0,0 ° | | | | ■ | | | | | | | | | | ■ | | | | | | |
| RDHW10T3M0T-MD06 | 0,0 ° | | | | | ■ | | | | | | | | | ■ | ■ | | | | | |
| RDKW0803M0T-MD05 | 0,0 ° | | | ■ | | | | | ■ | | ■ | | | ■ | ■ | ■ | | | | | |
| RDKW10T3M0T-MD06 | 0,0 ° | ■ | | ■ | | | | | ■ | | ■ | | | ■ | ■ | ■ | | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

REHR16



| Size | Dimensions in mm | |
|----------|------------------|------|
| | INSD | S |
| REHR16.. | 16,0 | 5,56 |
| | | |
| | | |

M14/MD15



| Designation | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | | |
|------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|----|-----|--------|--------|--|--|
| | | Coated | | | | | | | | | | | | | | Uncoated | | | Cermet | | | |
| | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 | | |
| REHR1605M0T-M14 | | | | | | | | | | | | | | | | | | | | | | |
| REHR1605M0T-MD15 | | ■ | | | | | | | | | | | | | | | | | | | | |
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RNMU12



| Size | Dimensions in mm | |
|------------|------------------|-----|
| | INSD | S |
| RNMU1204.. | 12,0 | 4,8 |
| | | |
| | | |

M10



ME10

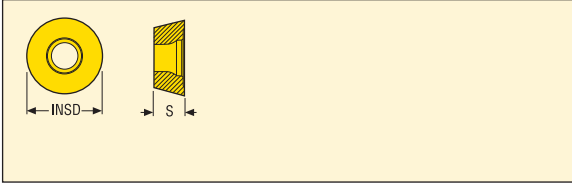


| Designation | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | | |
|-----------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|----|-----|--------|--------|--|--|
| | | Coated | | | | | | | | | | | | | | Uncoated | | | Cermet | | | |
| | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 | | |
| RNMU1204M0-ME10 | 27,0 ° | | ■ | | | | | | | | | | | | | | | | | | | |
| RNMU1204M0T-M10 | 20,0 ° | | ■ | ■ | | | | | | | | | | | | | | | | | | |
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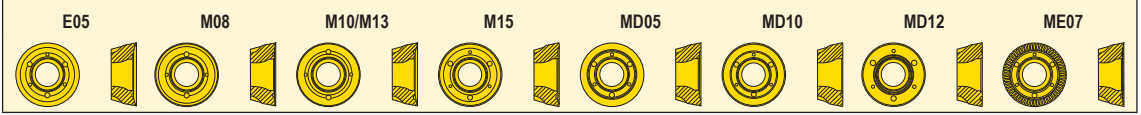
■ Stock standard

Subject to change refer to current price- and stock-list

RP.12



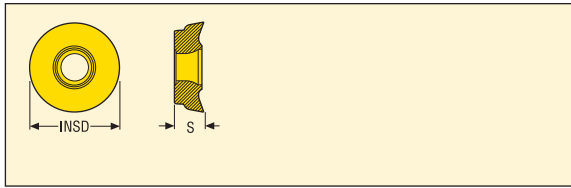
| Size | Dimensions in mm | |
|----------|------------------|------|
| | INSD | S |
| RPxx1204 | 12,0 | 4,76 |
| | | |
| | | |



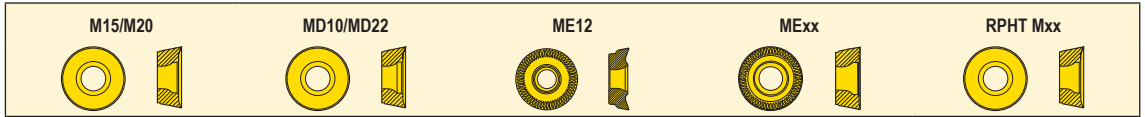
| Designation | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | | | |
|--------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|------|----|---------|-----|--------|--|--|
| | | Coated | | | | | | | | | | | | | | Uncoated | | | Cermets | | | | |
| | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | | |
| RPHT1204M0T-4-M08 | 16,0 ° | | | | | | | | | ■ | | ■ | | | | ■ | | | | | | | |
| RPKT1204M0T-4-M10 | 11,0 ° | | ■ | | | | | | | | | | | | | | | | | | | | |
| RPHT1204M0T-4-M13 | 16,0 ° | | ■ | | | | | | ■ | ■ | | ■ | | | | | | | | | | | |
| RPHT1204M0-6-E05 | 20,0 ° | | | | | | | | | ■ | | | | | | | ■ | | | | | | |
| RPHT1204M0T-6-ME07 | 20,0 ° | | | | | | | | ■ | | | ■ | | | | | ■ | | | | ■ | | |
| RPHT1204M0T-6-M08 | 16,0 ° | | | ■ | | | | ■ | ■ | | ■ | ■ | | | | | ■ | | | | | | |
| RPHT1204M0T-6-M13 | 16,0 ° | | | ■ | | | | | ■ | ■ | | ■ | | | | | ■ | | | | | | |
| RPKT1204M0T-6-M15 | 15,0 ° | ■ | | ■ | | | | | ■ | | ■ | | ■ | | | | ■ | | | | | | |
| RPKW1204M0T-6-MD10 | 0,0 ° | ■ | | ■ | ■ | | | | ■ | | | | | | | | | | | | | | |
| RPHW1204M0T-6-MD12 | 0,0 ° | | | | | ■ | | | | | | | | | | | | | | | | | |
| RPHW1204M0-6-MD05 | 0,0 ° | | | | ■ | ■ | | | ■ | | | | | | | | ■ | | | | | | |

■ Stock standard
Subject to change refer to current price- and stock-list

RP..16/20



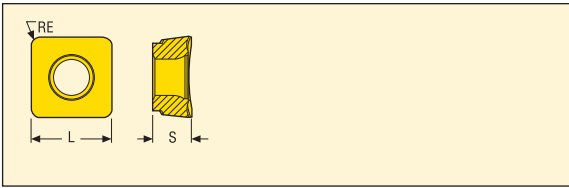
| Size | Dimensions in mm | |
|------------|------------------|------|
| | INSD | S |
| RP..1605.. | 16,0 | 5,56 |
| RP..2006.. | 20,0 | 6,35 |



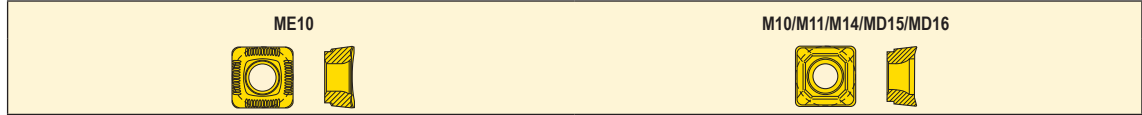
| Designation | Cutting rate | Grades | | | | | | | | | | | | | | | | | | | | | |
|------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|------|----|---------|-----|--------|--|---|
| | | Coated | | | | | | | | | | | | | | Uncoated | | | Cermets | | | | |
| | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | | |
| RPHT1605M0T-ME11 | 21,0° | | | | | | ■ | | | ■ | ■ | | | ■ | | | ■ | | | | | | |
| RPHT1605M0T-M12 | 15,0° | | ■ | ■ | | | ■ | | | ■ | ■ | | | ■ | | | | ■ | | | | | |
| RPHT1605M0T-M18 | 15,0° | ■ | | ■ | | | | | ■ | | ■ | | | ■ | ■ | | | ■ | | | | | |
| RPKT1605M0T-ME11 | 21,0° | | | | | | | | | | | | | | | | | | | | | | ■ |
| RPKW1605M0T-MD20 | 0,0° | ■ | | | | | | | | ■ | | ■ | | | | ■ | ■ | | | | | | |
| RPHW1605M0T-MD08 | 0,0° | | | | | | | | | | | | | | | | ■ | ■ | | | | | |
| RPHT2006M0T-ME12 | 20,0° | | ■ | ■ | | | ■ | | | ■ | ■ | | | ■ | | | | | | | | | ■ |
| RPKT2006M0T-M15 | 15,0° | | | ■ | | | | | | | ■ | | | ■ | | | | | | | | | ■ |
| RPKT2006M0T-M20 | 15,0° | ■ | | ■ | | | | | | ■ | | ■ | | ■ | | ■ | | | | | | | ■ |
| RPKW2006M0-MD10 | 0,0° | | | | | | | | | | | | | | | | ■ | ■ | | | | | |
| RPKW2006M0T-MD22 | 0,0° | ■ | | | | | | | | ■ | | ■ | | | ■ | ■ | | | | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

SC..12



| Size | Dimensions in mm | |
|----------------|------------------|------|
| | L | S |
| SC..1206..-M10 | 12,673 | 6,35 |
| SC..1206 | 12,7 | 6,35 |
| | | |
| | | |



| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | |
|------------------|-----|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|----------|------|------|--------|-----|-----|--------|--|
| | | | Coated | | | | | | | | | | | | Uncoated | | | Cermet | | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 | |
| SCET120612R-M10 | 1,2 | 20,0 ° | | | | | | | | ■ | | | | | | | | | | | | |
| SCET120612T-ME10 | 1,2 | 22,0 ° | | | | | | | ■ | | | | | | | | ■ | | | | | |
| SCET120612T-M11 | 1,2 | 14,0 ° | ■ | | ■ | | | | ■ | ■ | | | ■ | | | ■ | | | | | | |
| SCET120612T-M14 | 1,2 | 15,0 ° | | | ■ | | | | ■ | ■ | | | ■ | | | ■ | ■ | | | | | |
| SCET120612T-MD15 | 1,2 | 15,0 ° | ■ | | | ■ | | | | | | | | ■ | | | | | | | | |
| SCET120630T-M14 | 3,0 | 15,0 ° | | | ■ | ■ | | | | ■ | ■ | ■ | | | | ■ | | | | | | |
| SCET120630T-MD16 | 3,0 | 15,0 ° | ■ | | ■ | | | | | | ■ | | | ■ | | | | | | | | |
| SCET120631T-ME10 | 3,1 | 22,0 ° | | | | | | | | | | | ■ | | | | | | | | | |
| SCET120631T-M11 | 3,1 | 14,0 ° | | | | | | | | | | | ■ | | | | | | | | | |
| SCEX120660T-M14 | 6,0 | 15,0 ° | | | | | | | | | | | | | | ■ | | | | | | |
| SCMT120612T-M14 | 1,2 | 15,0 ° | | | | | | | | | | | | | | ■ | | | | ■ | | |
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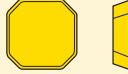
■ Stock standard
 Subject to change refer to current price- and stock-list

SEAN12



| Size | Dimensions in mm | |
|----------|------------------|------|
| | L | S |
| SE..1203 | 12,7 | 3,18 |
| SE..1303 | 13,44 | 3,36 |
| SE..1604 | 16,8 | 4,79 |

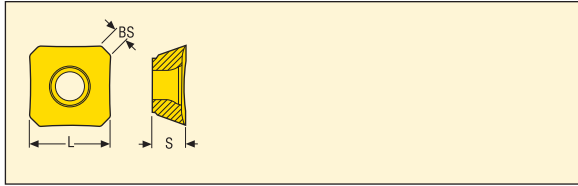
E12/M14/M15/M18/M19MD15



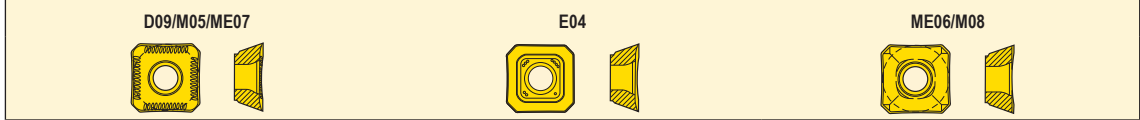
| Designation | Cutting rate | BS | Grades | | | | | | | | | | | | | | | | | | | |
|-------------------|--------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|----------|------|------|--------|----|-----|-----|--------|
| | | | Coated | | | | | | | | | | | | Uncoated | | | Cermet | | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 |
| SEAN1203AFN-E12 | 0,0° | 1,5 | | | | | | | | | | | | ■ | | ■ | | ■ | | | | |
| SEAN1203AFTN-M14 | 0,0° | 1,5 | | | | | | | | | | ■ | ■ | | | | | ■ | | | | ■ |
| SEAN1203AFTN-MD15 | 0,0° | 1,5 | | | | | | | | | | | | | | | | | | | | ■ |
| SEAN1303AFN-E12 | 0,0° | 3,5 | | | | | | | | | | | | | | | | ■ | | | | |
| SEAN1303AFTN-M14 | 0,0° | 3,5 | | | | | | | | | | | ■ | | | | | | | | | |
| SEAN1303AFTN-M15 | 0,0° | 3,5 | | | | | | | ■ | | | | | | | | | | | | | |
| SEAN1303AFTN-MD15 | 0,0° | 3,5 | | | | | | | | | | | | | | | | | | | | ■ |
| SEAN1604AFN-E15 | 0,0° | 3,5 | | | | | | | | | | | | | | | | ■ | | | | |
| SEAN1604AFTN-M18 | 0,0° | 4,1 | | | | | | | | | | | | ■ | | | | | | | | |
| SEAN1604AFTN-M19 | 0,0° | 4,1 | | | | | | | ■ | | | | | | | | | | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

SEE.09



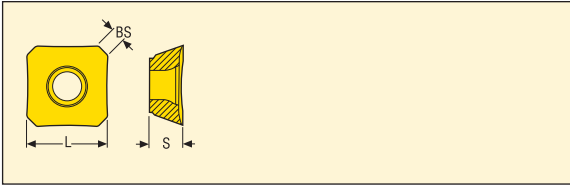
| Size | Dimensions in mm | |
|----------|------------------|------|
| | L | S |
| SE..09T3 | 9.52 | 3.97 |
| | | |
| | | |



| Designation | Cutting rate | BS | Grades | | | | | | | | | | | | | | | | | | | | |
|--------------------|--------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|------|----|--------|-----|--------|--|
| | | | Coated | | | | | | | | | | | | | | Uncoated | | | Cermet | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MN4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | |
| SEEX09T3AFN-E04 | 25,0 ° | 1,5 | | | | | | | | | | | | | | ■ | | | ■ | | | | |
| SEEX09T3AFN-M05 | 0,0 ° | 1,5 | | | | ■ | | | | ■ | | | | | | | | ■ | ■ | | | | |
| SEEX09T3AFTN-M08 | 0,0 ° | 1,5 | | | | | | ■ | ■ | | | ■ | ■ | | | | | ■ | ■ | | | ■ | |
| SEEX09T3AFTN-ME07 | 22,0 ° | 1,5 | | | ■ | | | ■ | | | | | | | | | | | ■ | | | | |
| SEEX09T3AFTN-D09 | 0,0 ° | 1,5 | ■ | | | | | | | | | | | | | | | | | | | | |
| SEMEX09T3AFTN-M08 | 0,0 ° | 1,5 | | | ■ | | | ■ | | | | | | | ■ | | | | ■ | | | | |
| SEMEX09T3AFTN-ME06 | 25,0 ° | 1,5 | | | ■ | | | | | | | | | | ■ | | | | ■ | | | | |

■ Stock standard
Subject to change refer to current price- and stock-list

SEE.12

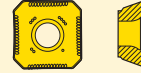


| Size | Dimensions in mm | |
|--------------|------------------|------|
| | L | S |
| SEEX1204.. | 12,7 | 4,76 |
| SSEEX1204.. | 12,7 | 4,76 |
| SEEX1204..ZZ | 12,7 | 4,76 |
| SEMEX1204.. | 12,7 | 4,76 |

E08/MD18MD19



ME11/ME12/M10/M14/M15



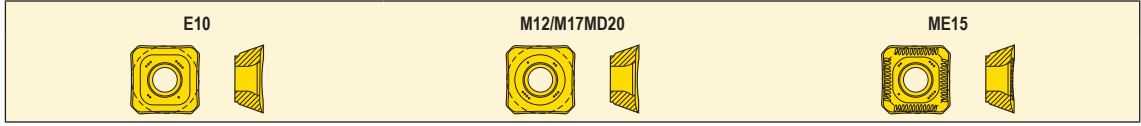
| Designation | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | | | | |
|--------------------|--------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|------|---------|-----|-----|--------|--|
| | | | Coated | | | | | | | | | | | | | Uncoated | | | Cermets | | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | |
| SEEX1204AFN-E08 | 25,0 ° | 1,5 | | | | | | | | | | | | | | | ■ | | | | | | |
| SEEX1204AFTN-ME11 | 18,0 ° | 1,5 | | | ■ | | | ■ | | | | | | | | | ■ | | | | ■ | | |
| SEEX1204AFN-M10 | 7,0 ° | 1,5 | | | ■ | ■ | | ■ | | | ■ | | | | | | ■ | ■ | | | | | |
| SEEX1204AFTN-M14 | 7,0 ° | 1,5 | ■ | | ■ | | | ■ | ■ | ■ | | | | | | | ■ | ■ | | | | ■ | |
| SEEX1204ZZTN-M14 | 0,0 ° | 7,4 | ■ | | ■ | | | ■ | ■ | ■ | | | | | | | ■ | ■ | | | | ■ | |
| SEEX1204AFTN-MD18 | 0,0 ° | 1,5 | ■ | | | ■ | | | ■ | | | | | | | | ■ | ■ | | | | | |
| SEMEX1204AFTN-ME12 | 18,0 ° | 1,5 | | | ■ | | | ■ | | | | | | | | | ■ | | | | | | |
| SEMEX1204AFTN-M15 | 7,0 ° | 1,5 | ■ | | ■ | | | ■ | ■ | ■ | | | | | | | ■ | ■ | | | | | |
| SEMEX1204AFTN-MD19 | 0,0 ° | 1,5 | ■ | | | ■ | | | ■ | | | | | | | | ■ | | | | | | |

■ Stock standard
Subject to change refer to current price- and stock-list

SEE.15



| Size | Dimensions in mm | |
|------------|------------------|------|
| | L | S |
| SEEX15.. | 15,87 | 5,56 |
| SEEX15..ZZ | 15,87 | 5,56 |
| SEM15.. | 15,87 | 5,56 |



| Designation | Cutting rate | BS | Grades | | | | | | | | | | | | | | | | | | |
|------------------|--------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|------|--------|-----|-----|
| | | | Coated | | | | | | | | | | | | | Uncoated | | | Cermet | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MN4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 |
| SEEX1505AFN-E10 | 25,0° | 1,8 | | | | | | | | | | | | | | | | | | | |
| SEEX1505AFN-M12 | 5,0° | 1,8 | | | ■ | | | | | | | | ■ | | | | ■ | | | ■ | |
| SEEX1505AFTN-M17 | 5,0° | 1,8 | ■ | | ■ | | | | | ■ | ■ | | | ■ | | | ■ | | | | |
| SEEX1505ZZTN-M17 | 5,0° | 9,4 | | | ■ | | | | | | | | | ■ | | | | | | | |
| SEM1505AFTN-ME15 | 21,0° | 1,8 | | | | | | | | | | | | ■ | | | ■ | | | | |
| SEM1505AFTN-M18 | 5,0° | 1,8 | ■ | | ■ | | | | | | ■ | ■ | | | | | ■ | | | | |
| SEM1505AFTN-MD20 | 0,0° | 1,8 | ■ | | ■ | ■ | | | | | | | | ■ | | | | | | | |
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■ Stock standard
 Subject to change refer to current price- and stock-list

SE..12/15

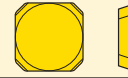


| Size | Dimensions in mm | |
|------------|------------------|------|
| | L | S |
| SEKN1203.. | 12,7 | 3,18 |
| SE..1204 | 15,87 | 4,76 |
| SEEX1203.. | 12,77 | 3,18 |
| SEKN1504.. | 15,87 | 4,76 |

E12/E10/E15/M14/M18/MD16/MD20/MD21/D16



M13/MD14



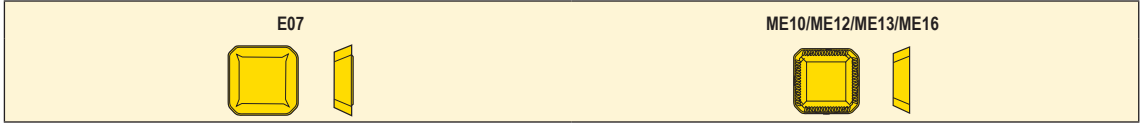
| Designation | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | | | | |
|-------------------|--------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|------|--------|-----|-----|--------|--|
| | | | Coated | | | | | | | | | | | | | Uncoated | | | Cermet | | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | |
| SEKN1203AFTN-E10 | 0,0 ° | 2,3 | | | | | | | | | | | | | | | ■ | | | | | | |
| SEKN1203AFN-E12 | 0,0 ° | 1,6 | | | | | | ■ | | | | | | | | | ■ | ■ | | | | | |
| SEKN1203AFTN-M14 | 0,0 ° | 1,5 | ■ | | ■ | | ■ | ■ | ■ | | | ■ | ■ | | | | ■ | | | | | ■ | |
| SEKN1203AFTN-MD16 | 0,0 ° | 1,5 | | | | | | | | | | | | | | | | | | | | ■ | |
| SEKN1203AFTN-D16 | 0,0 ° | 1,6 | ■ | | | | | | | | | | | | | | | | | | | | |
| SEKN1204AFTN-M18 | 0,0 ° | 1,5 | | | | | | ■ | | | | | ■ | | | | | | | | | | |
| SEEX1203AFTN-M13 | 0,0 ° | 8,0 | | | | | | | | | | | ■ | | | | | | | | | | |
| SEEX1203AFTN-MD14 | 0,0 ° | 8,0 | | | | | ■ | | ■ | | | | | ■ | | | | | | ■ | | | |
| SEKN1504AFN-E15 | 0,0 ° | 1,9 | | | | | | | | | | | | | | | ■ | ■ | | | | | |
| SEKN1504AFTN-M18 | 0,0 ° | 1,5 | | | ■ | | | ■ | ■ | | | ■ | ■ | | | | ■ | | | | | | |
| SEKN1504AFTN-MD20 | 0,0 ° | 1,9 | ■ | | | | | | | | | | | | | | | | | | | | |
| SEKN1504AFTN-MD21 | 0,0 ° | 1,5 | | | | | | | | | | | | | | | | | | | | ■ | |

■ Stock standard
Subject to change refer to current price- and stock-list

SEKR12/15/16

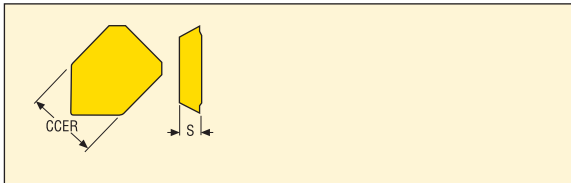


| Size | Dimensions in mm | |
|-------------|------------------|------|
| | L | S |
| SEKR1203.. | 12,7 | 3,18 |
| SSEKR1203.. | 12,7 | 3,18 |
| 12 | 12,7 | 4,76 |
| SEKR1303.. | 13,44 | 3,36 |
| SEKR1504.. | 15,87 | 4,76 |
| SEKR1604.. | 16,8 | 4,79 |

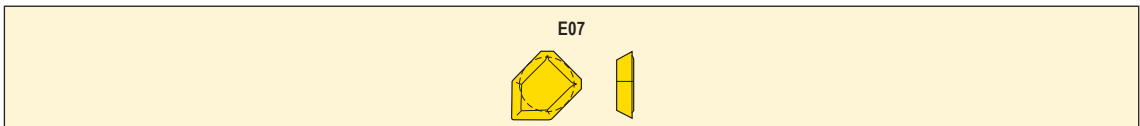


| Designation | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|--------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|------|--------|-----|-----|--------|--|--|--|
| | | | Coated | | | | | | | | | | | | | Uncoated | | | Cermet | | | | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | | | |
| SEKR1203AFN-E07 | 18,0 ° | 1,5 | | | | | | | | | | | | | | | | | | | | | | | |
| SEKR1203AFTN-ME10 | 20,0 ° | 1,5 | | | | | | | | | | | | | | | | | | | | | | | |
| SEKR1203AFTN-ME13 | 24,0 ° | 1,5 | ■ | | ■ | | | | | | | | | | | | | | | | | | | | |
| SEKR1204AFTN-ME16 | 20,0 ° | 1,5 | | | | | | | | | | | | | | | | | | | | | | | |
| SEKR1303AFTN-ME13 | 24,0 ° | 3,5 | | | | | | | | | | | | | | | | | | | | | | | |
| SEKR1504AFTN-ME12 | 20,0 ° | 1,5 | | | | | | | | | | | | | | | | | | | | | | | |
| SEKR1504AFTN-ME16 | 20,0 ° | 1,5 | | | | | | | | | | | | | | | | | | | | | | | |
| SEKR1604AFTN-ME16 | 20,0 ° | 4,1 | | | | | | | | | | | | | | | | | | | | | | | |

SEKR..ZZ



| Size | Dimensions in mm | |
|------------|------------------|-------|
| | L | S |
| SEKR1203ZZ | 12,7 | 3,175 |
| | | |
| | | |

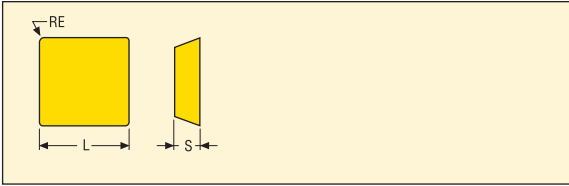


| Designation | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|------|--------|-----|-----|--------|--|--|--|--|
| | | Coated | | | | | | | | | | | | | Uncoated | | | Cermet | | | | | | | |
| | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | | | | |
| SEKR1203ZZN-E07 | 18,0 ° | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
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■ Stock standard

Subject to change refer to current price- and stock-list

SENN



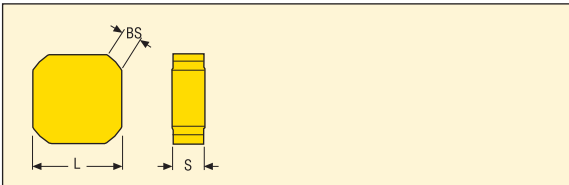
| Size | Dimensions in mm | |
|------------|------------------|-------|
| | L | S |
| SENN1203.. | 12,7 | 3,175 |
| | | |
| | | |

E10/M12



| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | |
|-----------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|----|--------|-----|
| | | | Coated | | | | | | | | | | | | Uncoated | | | Cermet | |
| | | | MP1500 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 |
| SENN120308-E10 | 0,8 | 0,0 ° | | | | | | | | | | | | | | ■ | | | |
| SENN120308T-M12 | 0,8 | 0,0 ° | | | | | | | | | | | | ■ | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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SNH.15



| Size | Dimensions in mm | |
|-----------|------------------|------|
| | L | S |
| SNHF15.. | 15,87 | 4,76 |
| SNHF15.ZZ | 15,87 | 4,76 |
| 15 | 15,87 | 4,76 |

M14



MD15

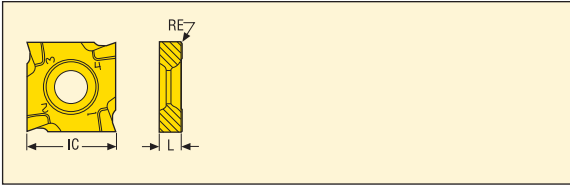


| Designation | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | | |
|---------------------|--------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|----------|------|------|--------|----|-----|-----|
| | | | Coated | | | | | | | | | | | | Uncoated | | | Cermet | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 |
| SNHF150412TN-M14 | 8,0 ° | - | ■ | | | | | ■ | | | | | | | | | | | | | |
| SNHF150412TN-M14-H | 8,0 ° | - | | | | | | ■ | | | | | | | | | | | | | |
| SNHF1504XNN-M14 | 15,0 ° | 1,37 | ■ | | | | | ■ | | | | | | | | | | | | | |
| SNHF1504XNN-M14-H | 15,0 ° | 1,37 | | | | | | ■ | | | | | | | | | | | | | |
| SNHF1504ZZN-M14 | 15,0 ° | 7,0 | | | | | | ■ | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| SNHN150412TN-MD15 | 0,0 ° | - | | | | | | ■ | | | | | | | | | | | | | |
| SNHN150412TN-MD15-H | 0,0 ° | - | | | | | | ■ | | | | | | | | | | | | | |
| SNHN1504XNN-MD15 | 0,0 ° | 1,37 | | | | | | ■ | | | | | | | | | | | | | |
| SNHN1504XNN-MD15-H | 0,0 ° | 1,37 | | | | | | ■ | | | | | | | | | | | | | |

■ Stock standard

Subject to change refer to current price- and stock-list

SNHQ11



| Size | Dimensions in mm | |
|------------|------------------|-----|
| | IC | L |
| SNHQ1102.. | 11,0 | 2,3 |
| SNHQ1103.. | 11,0 | 2,7 |

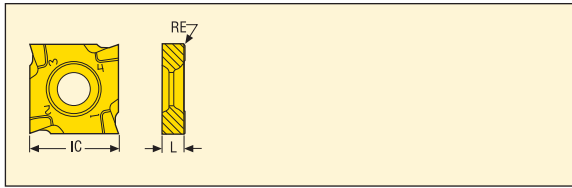
E05/M07



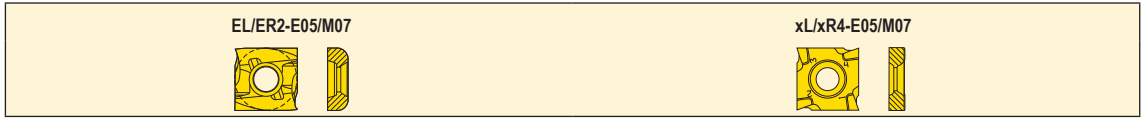
| Designation | RE | Cutting rate | Grades | | | | | | | | | | | | | | | | |
|-------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|----|--------|-----|
| | | | Coated | | | | | | | | | | | | Uncoated | | | Cermet | |
| | | | MP1500 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 |
| SNHQ110202EL4-E05 | 0,2 | 20,0 ° | | | | | | | | | | | | | | | | ■ | |
| SNHQ110202ER4-E05 | 0,2 | 20,0 ° | | | | | | | | | | | | | | | | ■ | |
| SNHQ110202TL4-M07 | 0,2 | 20,0 ° | ■ | | | | | | | | | | | | ■ | | | | |
| SNHQ110202TR4-M07 | 0,2 | 20,0 ° | ■ | | | | | | | | | | | | ■ | | | | |
| SNHQ110204TL4-M07 | 0,4 | 20,0 ° | ■ | | | ■ | | | | | | | | | ■ | | | | |
| SNHQ110204TR4-M07 | 0,4 | 20,0 ° | ■ | | | ■ | | | | | | | | | ■ | | | | |
| SNHQ110208TL4-M07 | 0,8 | 20,0 ° | | | | ■ | | | | | | | | | ■ | | | | |
| SNHQ110208TR4-M07 | 0,8 | 20,0 ° | | | | ■ | | | | | | | | | ■ | | | | |
| SNHQ110212TL4-M07 | 1,2 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ110212TR4-M07 | 1,2 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ110216TL4-M07 | 1,6 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ110216TR4-M07 | 1,6 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ110220TL4-M07 | 2,0 | 20,0 ° | | | | | | | | | | | | | | | | | |
| SNHQ110220TR4-M07 | 2,0 | 20,0 ° | | | | | | | | | | | | | | | | | |
| SNHQ110302EL4-E05 | 0,2 | 20,0 ° | | | | | | | | | | | | | | | | ■ | |
| SNHQ110302ER4-E05 | 0,2 | 20,0 ° | | | | | | | | | | | | | | | | ■ | |
| SNHQ110302TL4-M07 | 0,2 | 20,0 ° | ■ | | | | | | | | | | | | ■ | | | | |
| SNHQ110302TR4-M07 | 0,2 | 20,0 ° | ■ | | | | | | | | | | | | ■ | | | | |
| SNHQ110304TL4-M07 | 0,4 | 20,0 ° | ■ | | | | ■ | | | | | | | | ■ | | | | |
| SNHQ110304TR4-M07 | 0,4 | 20,0 ° | ■ | | | | ■ | | | | | | | | ■ | | | | |
| SNHQ110308TL4-M07 | 0,8 | 20,0 ° | | | | | ■ | | | | | | | | ■ | | | | |
| SNHQ110308TR4-M07 | 0,8 | 20,0 ° | | | | | ■ | | | | | | | | ■ | | | | |
| SNHQ110312TL4-M07 | 1,2 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ110312TR4-M07 | 1,2 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ110316TL4-M07 | 1,6 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ110316TR4-M07 | 1,6 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ110320TL4-M07 | 2,0 | 20,0 ° | | | | | | | | | | | | | | | | | |
| SNHQ110320TR4-M07 | 2,0 | 20,0 ° | | | | | | | | | | | | | | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

SNHQ1203/1204



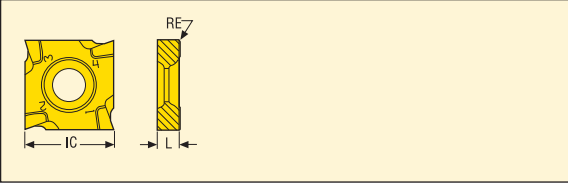
| Size | Dimensions in mm | |
|-------------|------------------|-----|
| | IC | L |
| SNHQ1203.. | 12,7 | 3,2 |
| SNHQ12045.. | 12,7 | 4,0 |
| SNHQ1204.. | 12,7 | 4,0 |







| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | | |
|-------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|----------|------|------|--------|----|-----|-----|--------|
| | | | Coated | | | | | | | | | | Uncoated | | | Cermet | | | | |
| | | | MP1500 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 |
| SNHQ120302EL4-E05 | 0,2 | 20,0° | | | | | | | | | | | | | | | | ■ | | |
| SNHQ120302ER4-E05 | 0,2 | 20,0° | | | | | | | | | | | | | | | | ■ | | |
| SNHQ120302TL4-M07 | 0,2 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120302TR4-M07 | 0,2 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120304TL4-M07 | 0,4 | 20,0° | ■ | | | | ■ | | | | | | | | ■ | | | | | |
| SNHQ120304TR4-M07 | 0,4 | 20,0° | ■ | | | | ■ | | | | | | | | ■ | | | | | |
| SNHQ120308TL4-M07 | 0,8 | 20,0° | ■ | | | | ■ | | | | | | | | ■ | | | | | |
| SNHQ120308TR4-M07 | 0,8 | 20,0° | ■ | | | | ■ | | | | | | | | ■ | | | | | |
| SNHQ120310TL4-M07 | 1,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120310TR4-M07 | 1,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120312TL4-M07 | 1,2 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120312TR4-M07 | 1,2 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120316TL4-M07 | 1,6 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120316TR4-M07 | 1,6 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120320TL4-M07 | 2,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120320TR4-M07 | 2,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120324EL2-M07 | 2,4 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120324ER2-M07 | 2,4 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120330EL2-M07 | 3,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120330ER2-M07 | 3,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120404EL4-E05 | 0,4 | 20,0° | | | | | | | | | | | | | | | | ■ | | |
| SNHQ120404ER4-E05 | 0,4 | 20,0° | | | | | | | | | | | | | | | | ■ | | |
| SNHQ120402TL4-M07 | 0,2 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120402TR4-M07 | 0,2 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120404TL4-M07 | 0,4 | 20,0° | ■ | | | | | ■ | | | | | | | ■ | | | | | |
| SNHQ120404TR4-M07 | 0,4 | 20,0° | ■ | | | | | ■ | | | | | | | ■ | | | | | |
| SNHQ120408TL4-M07 | 0,8 | 20,0° | ■ | | | | | ■ | | | | | | | ■ | | | | | |
| SNHQ120408TR4-M07 | 0,8 | 20,0° | ■ | | | | | ■ | | | | | | | ■ | | | | | |
| SNHQ120412TL4-M07 | 1,2 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120412TR4-M07 | 1,2 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120416TL4-M07 | 1,6 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120416TR4-M07 | 1,6 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120420TL4-M07 | 2,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120420TR4-M07 | 2,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120424EL2-M07 | 2,4 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120424ER2-M07 | 2,4 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120431EL2-M07 | 3,1 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120431ER2-M07 | 3,1 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120435EL2-M07 | 3,5 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120435ER2-M07 | 3,5 | 20,0° | | | | | | | | | | | | | ■ | | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

SNHQ12045



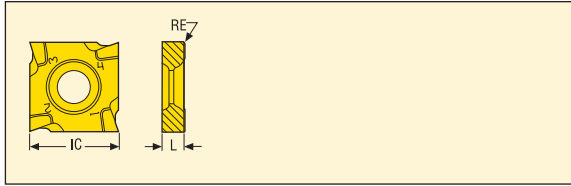
| Size | Dimensions in mm | |
|-------------|------------------|-----|
| | IC | L |
| SNHQ12045.. | 12,7 | 4,5 |
| | | |
| | | |

| EL/ER2-M07 | xL/xR4-E05/M07 |
|---|---|
|   |   |

| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | | |
|--------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|----|---------|-----|--------|
| | | | Coated | | | | | | | | | | | | Uncoated | | | Cermets | | |
| | | | MP1500 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 |
| SNHQ1204504EL4-E05 | 0,4 | 20,0 ° | | | | | | | | | | | | | | | | ■ | | |
| SNHQ1204504ER4-E05 | 0,4 | 20,0 ° | | | | | | | | | | | | | | | | ■ | | |
| SNHQ1204502TL4-M07 | 0,2 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |
| SNHQ1204502TR4-M07 | 0,2 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |
| SNHQ1204504TL4-M07 | 0,4 | 20,0 ° | | ■ | | | ■ | | | | | | | ■ | | | | | | |
| SNHQ1204504TR4-M07 | 0,4 | 20,0 ° | | ■ | | | ■ | | | | | | | ■ | | | | | | |
| SNHQ1204508TL4-M07 | 0,8 | 20,0 ° | | ■ | | | ■ | | | | | | | ■ | | | | | | |
| SNHQ1204508TR4-M07 | 0,8 | 20,0 ° | | ■ | | | ■ | | | | | | | ■ | | | | | | |
| SNHQ1204512TL4-M07 | 1,2 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |
| SNHQ1204512TR4-M07 | 1,2 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |
| SNHQ1204516TL4-M07 | 1,6 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |
| SNHQ1204516TR4-M07 | 1,6 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |
| SNHQ1204520TL4-M07 | 2,0 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |
| SNHQ1204520TR4-M07 | 2,0 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |
| SNHQ1204524EL2-M07 | 2,4 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |
| SNHQ1204524ER2-M07 | 2,4 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |
| SNHQ1204531EL2-M07 | 3,1 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |
| SNHQ1204531ER2-M07 | 3,1 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |
| SNHQ1204540EL2-M07 | 4,0 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |
| SNHQ1204540ER2-M07 | 4,0 | 20,0 ° | | | | | | | | | | | | ■ | | | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

SNHQ1205



| Size | Dimensions in mm | |
|------------|------------------|-----|
| | IC | L |
| SNHQ1205.. | 12,7 | 5,4 |
| | | |
| | | |

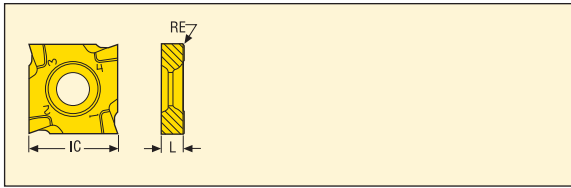
| | | | |
|-------------------|--|-----------------------|--|
| ER/EL2-M07 | | xL/xR4-E05/M07 | |
| | | | |

| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | | |
|-------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|----------|------|------|--------|-----|-----|--------|
| | | | Coated | | | | | | | | | | | Uncoated | | | Cermet | | | |
| | | | MP1500 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 |
| SNHQ120504EL4-E05 | 0,4 | 20,0° | | | | | | | | | | | | | | | | ■ | | |
| SNHQ120504ER4-E05 | 0,4 | 20,0° | | | | | | | | | | | | | | | | ■ | | |
| SNHQ120502TL4-M07 | 0,2 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120502TR4-M07 | 0,2 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120504TL4-M07 | 0,4 | 20,0° | ■ | | | | ■ | | | | | | | | ■ | | | | | |
| SNHQ120504TR4-M07 | 0,4 | 20,0° | ■ | | | | ■ | | | | | | | | ■ | | | | | |
| SNHQ120508TL4-M07 | 0,8 | 20,0° | ■ | | | | ■ | | | | | | | | ■ | | | | | |
| SNHQ120508TR4-M07 | 0,8 | 20,0° | ■ | | | | ■ | | | | | | | | ■ | | | | | |
| SNHQ120510TL4-M07 | 1,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120510TR4-M07 | 1,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120512TL4-M07 | 1,2 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120512TR4-M07 | 1,2 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120516TL4-M07 | 1,6 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120516TR4-M07 | 1,6 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120520TL4-M07 | 2,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120520TR4-M07 | 2,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120524EL2-M07 | 2,4 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120524ER2-M07 | 2,4 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120531EL2-M07 | 3,1 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120531ER2-M07 | 3,1 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120540EL2-M07 | 4,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120540ER2-M07 | 4,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120550EL2-M07 | 5,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |
| SNHQ120550ER2-M07 | 5,0 | 20,0° | | | | | | | | | | | | | ■ | | | | | |

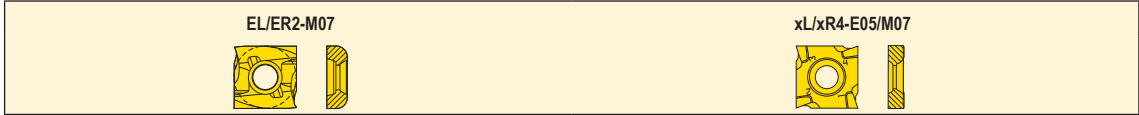
■ Stock standard
 Subject to change refer to current price- and stock-list

Note: When using SNHQ insert with corner radius = 5 mm, please modify the external profile of the cutter by adding a corner radius or chamfer = 4 mm

SNHQ1207



| Size | Dimensions in mm | |
|------------|------------------|-----|
| | IC | L |
| SNHQ1207.. | 12,7 | 7,0 |
| | | |
| | | |

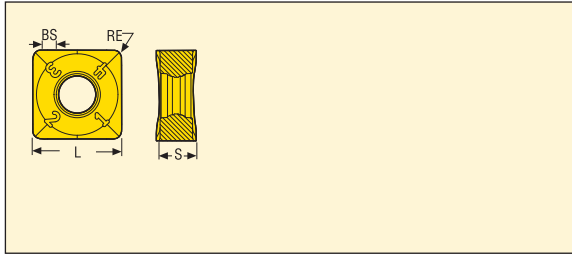


| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | |
|-------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|----|---------|-----|
| | | | Coated | | | | | | | | | | | | Uncoated | | | Cermets | |
| | | | MP1500 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 |
| SNHQ120704EL4-E05 | 0,4 | 20,0 ° | | | | | | | | | | | | | | | | | |
| SNHQ120704ER4-E05 | 0,4 | 20,0 ° | | | | | | | | | | | | | | | | ■ | |
| SNHQ120704TL4-M07 | 0,4 | 20,0 ° | | ■ | | | ■ | | | | | | | | ■ | | | | |
| SNHQ120704TR4-M07 | 0,4 | 20,0 ° | | ■ | | | ■ | | | | | | | | ■ | | | | |
| SNHQ120708TL4-M07 | 0,8 | 20,0 ° | | ■ | | | ■ | | | | | | | | ■ | | | | |
| SNHQ120708TR4-M07 | 0,8 | 20,0 ° | | ■ | | | ■ | | | | | | | | ■ | | | | |
| SNHQ120712TL4-M07 | 1,2 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120712TR4-M07 | 1,2 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120716TL4-M07 | 1,6 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120716TR4-M07 | 1,6 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120720TL4-M07 | 2,0 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120720TR4-M07 | 2,0 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120724EL2-M07 | 2,4 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120724ER2-M07 | 2,4 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120731EL2-M07 | 3,1 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120731ER2-M07 | 3,1 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120740EL2-M07 | 4,0 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120740ER2-M07 | 4,0 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120750EL2-M07 | 5,0 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120750ER2-M07 | 5,0 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120760EL2-M07 | 6,0 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
| SNHQ120760ER2-M07 | 6,0 | 20,0 ° | | | | | | | | | | | | | ■ | | | | |
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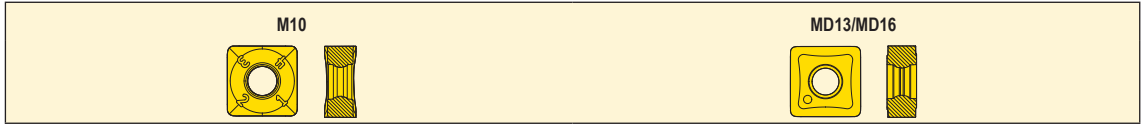
■ Stock standard
 Subject to change refer to current price- and stock-list

Note: When using SNHQ insert with corner radius = 5 and 6 mm, please modify the external profile of the cutter by adding a corner radius or chamfer = 4 mm

SNMU



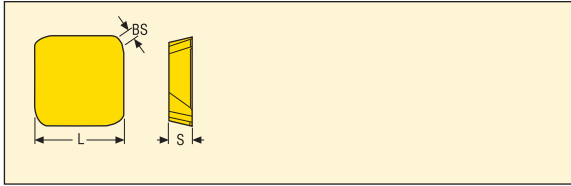
| Size | Dimensions in mm | |
|----------------|------------------|-----|
| | L | S |
| SNMU12...-M10 | 12,0 | 5,3 |
| SNMU12...-M10 | 12,0 | 5,0 |
| SNMU12...-MD13 | 12,0 | 5,0 |
| SNMU16...-M10 | 16,0 | 7,4 |
| SNMU16...-MD16 | 16,0 | 6,6 |



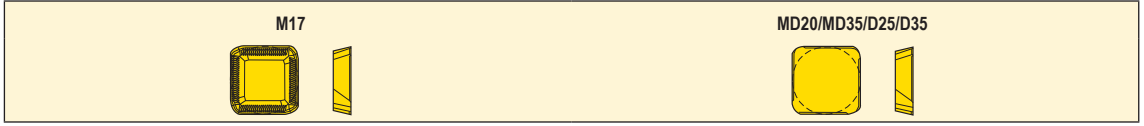
| Designation | RE | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | | |
|-------------------|-----|--------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|----------|------|------|---------|----|-----|-----|
| | | | | Coated | | | | | | | | | | | | Uncoated | | | Cermets | | | |
| | | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 |
| SNMU120408TN-M10 | 0,8 | 20,0 ° | 0,0 | ■ | ■ | | | | | ■ | ■ | | | | | | | | | | | |
| SNMU120410TN-M10 | 1,0 | 20,0 ° | 1,0 | ■ | ■ | | | | | ■ | | | | | | | | | | | | |
| SNMU120408TN-MD13 | 0,8 | 0,0 ° | 0,0 | ■ | ■ | | | | | ■ | ■ | | | | | | | | | | | |
| SNMU120410TN-MD13 | 1,0 | 0,0 ° | 1,0 | ■ | ■ | | | | | ■ | ■ | | | | | | | | | | | |
| SNMU160610TN-M10 | 1,0 | 20,0 ° | 0,0 | ■ | ■ | | | | | ■ | ■ | | | | | | | | | | | |
| SNMU160612TN-M10 | 1,2 | 20,0 ° | 1,2 | ■ | ■ | | | | | ■ | ■ | | | | | | | | | | | |
| SNMU160610TN-MD16 | 1,0 | 0,0 ° | 0,0 | ■ | ■ | | | | | ■ | ■ | | | | | | | | | | | |
| SNMU160612TN-MD16 | 1,2 | 0,0 ° | 1,2 | ■ | ■ | | | | | ■ | ■ | | | | | | | | | | | |

■ Stock standard
Subject to change refer to current price- and stock-list

SPE.

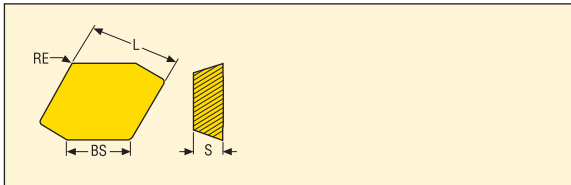


| Size | Dimensions in mm | |
|------------|------------------|-------|
| | L | S |
| SPER1906.. | 19,05 | 6,35 |
| SPEN1906.. | 19,05 | 6,35 |
| SPEN2807.. | 28,575 | 7,938 |

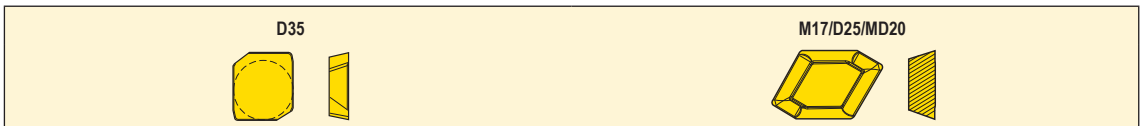


| Designation | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | | | | |
|-------------------|--------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|----------|------|------|--------|----|-----|-----|--------|--|
| | | | Coated | | | | | | | | | | | | Uncoated | | | Cermet | | | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | |
| SPER1906ZETR-M17 | 17,0 ° | 1,8 | | | | | | ■ | | | | | | | | | | | | | | | |
| SPEN1906ZETL-MD20 | 0,0 ° | 1,8 | | | ■ | | | | | | | | | | | | | | | | | | |
| SPEN1906ZETR-MD20 | 0,0 ° | 1,8 | | | ■ | | | | | | | ■ | ■ | | | | | | | | | | |
| SPEN1906ZETR-D25 | 0,0 ° | 1,8 | ■ | | ■ | | | | | | | | | | | | | | | | | | |
| SPEN2807ZETR-D35 | 0,0 ° | 8,5 | ■ | | | | | | | | | | | | | | | | | | | | |

SPE.ZZ



| Size | Dimensions in mm | |
|----------------|------------------|-------|
| | L | S |
| SPER1906..ZZTR | 20,0 | 6,35 |
| SPER1906..ZZTL | 19,05 | 6,444 |
| SPEN1906..ZZTR | 20,0 | 6,35 |
| SPEN2807..ZZTR | 28,575 | 7,94 |

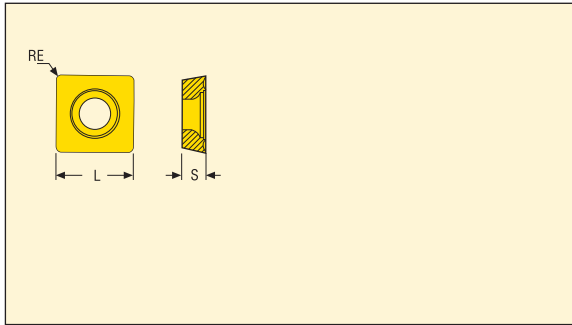


| Designation | RE | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | | | |
|-------------------|----|--------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|----|--------|-----|--------|--|--|
| | | | | Coated | | | | | | | | | | | | Uncoated | | | Cermet | | | | |
| | | | | MP1500 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 | | |
| SPER1906ZZTR-M17 | - | 17,0 ° | 12,0 | | ■ | | | | | | | | | | | | | | | | | | |
| SPER1906ZZTL-M17 | - | 17,0 ° | 12,0 | | ■ | | | | | | | | | | | | | | | | | | |
| SPEN1906ZZTR-D25 | - | 0,0 ° | 12,0 | ■ | ■ | | | | | | | | | | | | | | | | | | |
| SPEN1906ZZTR-MD20 | - | 0,0 ° | 12,0 | | ■ | | | | ■ | | | | | | | | | | | | | | |
| SPEN2807ZZTR-D35 | - | 0,0 ° | 8,5 | ■ | | | | | | | | | | | | | | | | | | | |

■ Stock standard

Subject to change refer to current price- and stock-list

SPMX

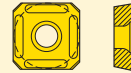


| Size | Dimensions in mm | |
|----------|------------------|------|
| | L | S |
| SPMX06.. | 6,35 | 2,38 |
| SPMX07.. | 7,94 | 3,18 |
| SPMX09.. | 9,525 | 3,18 |
| SPMX12.. | 12,7 | 3,97 |
| | | |
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-75



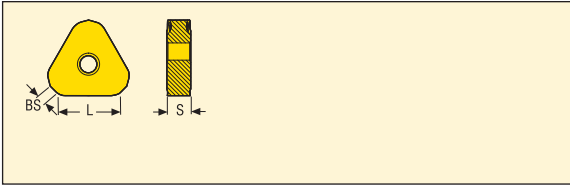
AP-75



| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | | |
|---------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|----------|------|------|---------|-----|-----|--------|
| | | | Coated | | | | | | | | | | | Uncoated | | | Cermets | | | |
| | | | MP1500 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 |
| SPMX0602AP-75 | - | | | | | | | | | | | | | | | | | | | |
| SPMX0703AP-75 | - | | | | | | | | | | | | | | | | | | | |
| SPMX0903AP-75 | - | | | | | | | | | | | | | | | | | | | |
| SPMX12T3AP-75 | - | | | | | | | | | | | | | | | | | | | |
| SPMX060204-75 | 0,4 | 20,0° | | | | | | | | | | | | | | | | | | |
| SPMX070304-75 | 0,4 | 16,0° | | | | | | | | | | | | | | | | | | |
| SPMX090304-75 | 0,4 | 16,0° | | | | | | | | | | | | | | | | | | |
| SPMX12T308-75 | 0,8 | 14,0° | | | | | | | | | | | | | | | | | | |
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■ Stock standard
 Subject to change refer to current price- and stock-list

TNHF



| Size | Dimensions in mm | |
|--------|------------------|-------|
| | L | S |
| TNHF12 | 22,17 | 4,762 |
| | | |
| | | |

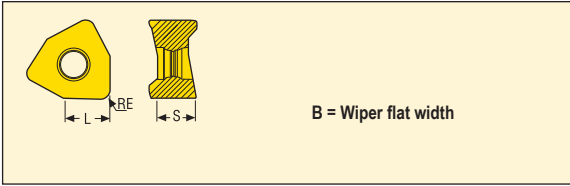
ME08



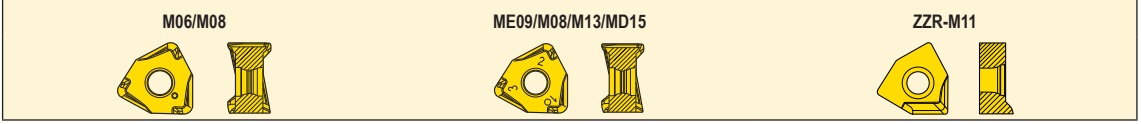
| Designation | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | |
|------------------|--------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|----------|------|------|--------|-----|-----|--------|
| | | | Coated | | | | | | | | | | | Uncoated | | | Cermet | | | |
| | | | MP1500 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 |
| TNHF1204ANN-ME08 | 15,0 ° | 1,4 | | | | | | | | | | | | | | | | | | |
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■ Stock standard
Subject to change refer to current price- and stock-list

XNEX04/08



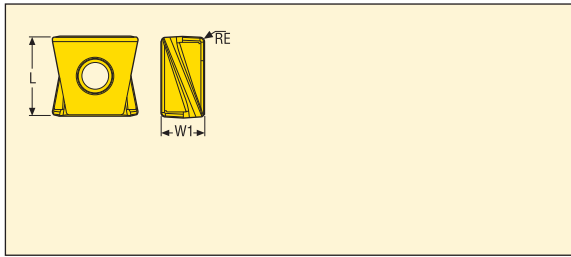
| Size | Dimensions in mm | |
|------------|------------------|------|
| | L | S |
| XNEX04-M08 | 4,0 | 3,29 |
| XNEX04-M06 | 4,0 | 3,31 |
| XNEX08.. | 7,5 | 6,45 |
| XN..08 | 7,5 | 6,45 |
| XNEX08..ZZ | 7,5 | 6,45 |
| XNEX08..TL | 7,5 | 6,45 |



| Designation | RE | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | | | |
|-------------------|-----|--------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|----------|------|------|--------|------|----|-----|-----|--------|
| | | | | Coated | | | | | | | | | | | Uncoated | | | Cermet | | | | | |
| | | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | TZ5M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 |
| XNEX040304TR-M08 | 0,4 | 27,0 ° | 0,8 | ■ | | ■ | ■ | | | | | | | | | | | | | | | | |
| XNEX040308TR-M08 | 0,8 | 27,0 ° | 0,4 | ■ | | ■ | ■ | | | | | | | | | | | | | | | | |
| XNEX040304R-M06 | 0,4 | 32,6 ° | 0,8 | | | ■ | ■ | | | | | | | ■ | | | | | | | | | |
| XNEX040308R-M06 | 0,8 | 32,6 ° | 0,4 | | | ■ | ■ | | | | | | | ■ | | | | | | | | | |
| XNEX080604TR-M13 | 0,4 | 22,0 ° | 1,8 | | | | ■ | ■ | | | | | | | | ■ | | | | | | | |
| XNEX080604TR-ME09 | 0,4 | 27,0 ° | 1,8 | | | | ■ | ■ | | | | | | | | ■ | | | | | | | |
| XNEX080608R-M08 | 0,8 | 24,0 ° | 1,4 | | ■ | | ■ | | | | | | | ■ | | ■ | | | | | | ■ | |
| XNEX080608TR-M13 | 0,8 | 22,0 ° | 1,3 | ■ | | ■ | ■ | | | | | | | ■ | | ■ | | | | | | | |
| XNEX080608TR-MD15 | 0,8 | 17,0 ° | 1,4 | ■ | | ■ | ■ | | | | | | | ■ | | ■ | | | | | | | |
| XNEX080608TR-ME09 | 0,8 | 27,0 ° | 1,4 | ■ | | ■ | ■ | | | | | | | ■ | | ■ | | | | | | | |
| XNEX080612TR-M13 | 1,2 | 22,0 ° | 0,9 | | | ■ | | | | | | | | | | | | ■ | | | | ■ | |
| XNEX080612TR-MD15 | 1,2 | 17,0 ° | 1,0 | ■ | | ■ | | | | | | | | | | | | ■ | | | | | |
| XNEX080612TR-ME09 | 1,2 | 27,0 ° | 1,0 | | | ■ | | | | | | | | | | ■ | | | | | | | |
| XNEX080616TR-M13 | 1,6 | 22,0 ° | 0,5 | ■ | | ■ | ■ | | | | | | | | | ■ | | | | | | | |
| XNEX080616TR-MD15 | 1,6 | 17,0 ° | 0,7 | ■ | | ■ | ■ | | | | | | | | | ■ | | | | | | | |
| XNEX080616TR-ME09 | 1,6 | 27,0 ° | 0,6 | | | ■ | ■ | | | | | | | | | ■ | | | | | | | |
| XNEX080608ZZR-M11 | 0,8 | 19,0 ° | 6,0 | | | | ■ | | | | | | | | | | | ■ | | | | | |
| XNEX080608TL-M13 | 0,8 | 22,0 ° | 1,3 | | | ■ | | | | | | | | ■ | | ■ | | | | | | | |
| XNEX080616TL-M13 | 1,6 | 22,0 ° | 0,5 | | | ■ | | | | | | | | | | ■ | | | | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

XNHQ09/12/14/17



| Size | Dimensions in mm | |
|------|------------------|------|
| | W1 | L |
| 09 | 5,5 | 9,3 |
| 12 | 6,5 | 11,7 |
| 14 | 7,5 | 14,0 |
| 17 | 7,5 | 17,0 |

E07/E09/E10/E12/M08/M10/M11/M13

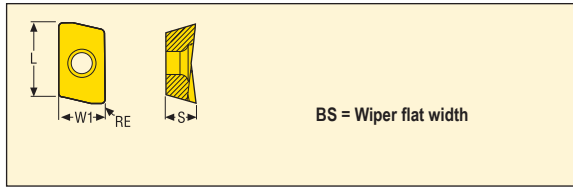


| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|------|--------|-----|-----|--------|--|--|--|--|--|
| | | | Coated | | | | | | | | | | | | | Uncoated | | | Cermet | | | | | | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | | | | | |
| XNHQ090508EN4-E07 | 0,8 | 21,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ090504TN4-M08 | 0,4 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ090508TN4-M08 | 0,8 | 16,0° | | | ■ | | | | ■ | | | | | | | | | | | | | | | | | | |
| XNHQ090512TN4-M08 | 1,2 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ090516TN4-M08 | 1,6 | 16,0° | | | ■ | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ090520TN4-M08 | 2,0 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ090524TN4-M08 | 2,4 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ090531TN4-M08 | 3,1 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ090540TN4-M08 | 4,0 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ120608EN4-E09 | 0,8 | 21,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ120608TN4-M10 | 0,8 | 16,0° | | | ■ | | | | ■ | | | | | | | | | | | | | | | | | | |
| XNHQ120612TN4-M10 | 1,2 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ120616TN4-M10 | 1,6 | 16,0° | | | ■ | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ120620TN4-M10 | 2,0 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ120624TN4-M10 | 2,4 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ120631TN4-M10 | 3,1 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ120640TN4-M10 | 4,0 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ120650TN4-M10 | 5,0 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ140708EN4-E10 | 0,8 | 22,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ140708TN4-M11 | 0,8 | 16,0° | | | ■ | | | | ■ | | | | | | | | | | | | | | | | | | |
| XNHQ140716TN4-M11 | 1,6 | 16,0° | | | ■ | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ140720TN4-M11 | 2,0 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ140724TN4-M11 | 2,4 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ140731TN4-M11 | 3,1 | 16,0° | | | ■ | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ140740TN4-M11 | 4,0 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ140750TN4-M11 | 5,0 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ140760TN4-M11 | 6,0 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ170708EN4-E12 | 0,8 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ170708TN4-M13 | 0,8 | 16,0° | | | ■ | | | | ■ | | | | | | | | | | | | | | | | | | |
| XNHQ170716TN4-M13 | 1,6 | 16,0° | | | ■ | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ170720TN4-M13 | 2,0 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ170724TN4-M13 | 2,4 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ170731TN4-M13 | 3,1 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ170740TN4-M13 | 4,0 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ170750TN4-M13 | 5,0 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |
| XNHQ170760TN4-M13 | 6,0 | 16,0° | | | | | | | | | | | | | | | | | | | | | | | | | |

■ Stock standard

Subject to change refer to current price- and stock-list

XO.X06



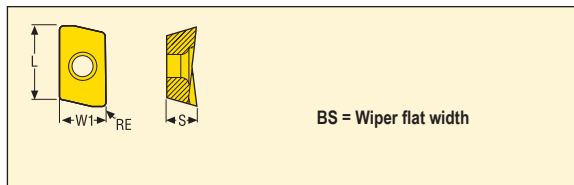
| Size | Dimensions in mm | | |
|----------|------------------|-----|------|
| | W1 | LE | S |
| XOEX06.. | 4,1 | 6,0 | 2,45 |
| XOMX06.. | 4,1 | 5,5 | 2,45 |



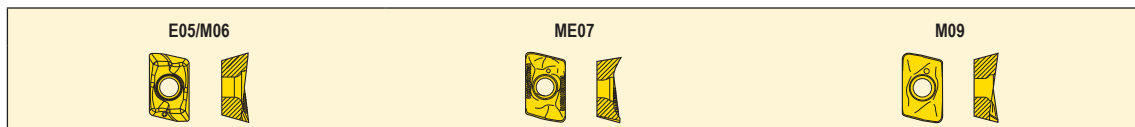
| Designation | RE | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | | | | |
|------------------|-----|--------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|------|--------|-----|-----|--------|--|
| | | | | Coated | | | | | | | | | | | | | Uncoated | | | Cermet | | | | |
| | | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | |
| XOEX060202FR-E03 | 0,2 | 25,0 ° | 1,1 | | | | | | | | | | | | | | | | | | | | | |
| XOEX060204FR-E03 | 0,4 | 25,0 ° | 0,9 | | | | | | | | | | | | | | | | | | | | | |
| XOMX060202R-M05 | 0,2 | 20,0 ° | 1,1 | | | | ■ | | | | | | | | | | | | | | | | | |
| XOMX060204R-M05 | 0,4 | 23,9 ° | 0,91 | | | | ■ | | | ■ | | | | | | | | | | | | | | |
| XOMX060208R-M05 | 0,8 | 20,0 ° | 0,51 | | | | ■ | | | ■ | | | | | ■ | | | | | | | | ■ | |
| XOMX060216R-M05 | 1,6 | 23,0 ° | 0,64 | | | | ■ | | | ■ | | | | | | | | | | | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

XO.X10



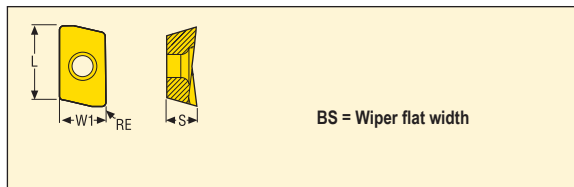
| Size | Dimensions in mm | | |
|----------|------------------|-----|------|
| | W1 | LE | S |
| XOEX10.. | 6,9 | 9,7 | 3,8 |
| XOMX10.. | 6,9 | 9,3 | 3,83 |
| 10T3 | 6,9 | 9,3 | 3,83 |



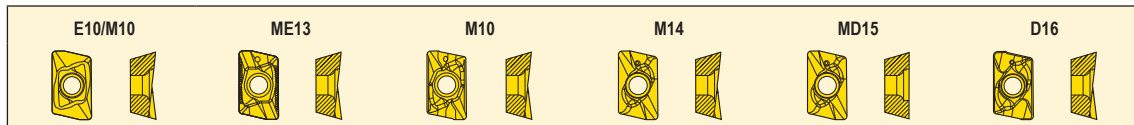
| Designation | RE | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | | |
|-------------------|-----|--------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|----------|------|------|--------|------|----|-----|-----|
| | | | | Coated | | | | | | | | | | | Uncoated | | | Cermet | | | | |
| | | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 |
| XOEX10T304FR-E05 | 0,4 | 22,0° | 1,3 | | | | | | | | | | | | | | | ■ | ■ | | | |
| XOEX10T308FR-E05 | 0,8 | 22,0° | 1,3 | | | | | | | | | | | | | | | ■ | ■ | | | |
| XOEX10T312FR-E05 | 1,2 | 22,0° | 1,3 | | | | | | | | | | | | | | | ■ | ■ | | | |
| XOEX10T316FR-E05 | 1,6 | 22,0° | 1,0 | | | | | | | | | | | | | | | ■ | ■ | | | |
| XOEX10T320FR-E05 | 2,0 | 22,0° | 0,6 | | | | | | | | | | | | | | | ■ | ■ | | | |
| XOEX10T324FR-E05 | 2,4 | 24,6° | 0,34 | | | | | | | | | | | | | | | ■ | ■ | | | |
| XOEX10T331FR-E05 | 3,1 | 24,1° | 0,39 | | | | | | | | | | | | | | | ■ | ■ | | | |
| XOEX10T302R-M06 | 0,2 | 14,5° | 1,3 | | | | | | | | | | | | | | | ■ | | | | |
| XOEX10T304R-M06 | 0,4 | 15,0° | 1,3 | | | | ■ | | | | | ■ | ■ | | ■ | | | ■ | | | | ■ |
| XOEX10T308R-M06 | 0,8 | 15,0° | 1,3 | | | ■ | ■ | | | ■ | | ■ | ■ | | ■ | | | ■ | | | | ■ |
| XOEX10T312R-M06 | 1,2 | 15,0° | 1,3 | | | | | | | ■ | | ■ | ■ | | ■ | | | ■ | | | | |
| XOEX10T316R-M06 | 1,6 | 15,0° | 1,0 | | | | | | | ■ | | ■ | ■ | | ■ | | | ■ | | | | |
| XOEX10T320R-M06 | 2,0 | 15,0° | 0,6 | | | | | | | ■ | | ■ | ■ | | ■ | | | ■ | | | | |
| XOEX10T324R-M06 | 2,4 | 15,0° | 0,2 | | | | | | | ■ | | ■ | ■ | | ■ | | | ■ | | | | |
| XOEX10T331R-M06 | 3,1 | 15,0° | 0,4 | | | ■ | | | | ■ | | ■ | ■ | | ■ | | | ■ | | | | |
| XOMX10T304TR-ME07 | 0,4 | 20,4° | 1,3 | ■ | | ■ | ■ | | | ■ | ■ | | ■ | | ■ | | | ■ | | | | |
| XOMX10T308TR-ME07 | 0,8 | 20,4° | 1,3 | ■ | ■ | ■ | ■ | | | ■ | ■ | | ■ | | ■ | | | ■ | | | | |
| XOMX10T312TR-ME07 | 1,2 | 20,0° | 1,3 | | | ■ | ■ | | | ■ | | | ■ | | ■ | | | ■ | | | | |
| XOMX10T316TR-ME07 | 1,6 | 20,0° | 1,0 | | | ■ | ■ | | | ■ | | | ■ | | ■ | | | ■ | | | | |
| XOMX10T320TR-ME07 | 2,0 | 20,0° | 0,6 | | | | ■ | | | ■ | | | ■ | | ■ | | | ■ | | | | |
| XOMX10T324TR-ME07 | 2,4 | 20,0° | 0,2 | | | | ■ | | | ■ | | | ■ | | ■ | | | ■ | | | | |
| XOMX10T331TR-ME07 | 3,1 | 20,0° | 0,4 | | | ■ | ■ | | | ■ | | | ■ | | ■ | | | ■ | | | | |
| XOMX10T304TR-M09 | 0,4 | 11,0° | 1,3 | ■ | | ■ | ■ | | | ■ | ■ | | ■ | | ■ | | | ■ | | | | ■ |
| XOMX10T308TR-M09 | 0,8 | 11,0° | 1,3 | ■ | | ■ | ■ | | | ■ | ■ | | ■ | | ■ | | | ■ | | | | ■ |
| XOMX10T312TR-M09 | 1,2 | 10,0° | 1,3 | | | | | | | ■ | | | ■ | | ■ | | | ■ | | | | |
| XOMX10T316TR-M09 | 1,6 | 10,0° | 1,0 | | | | | | | ■ | | | ■ | | ■ | | | ■ | | | | |
| XOMX10T320TR-M09 | 2,0 | 10,0° | 0,6 | | | | | | | ■ | | | ■ | | ■ | | | ■ | | | | |
| XOMX10T324TR-M09 | 2,4 | 10,0° | 0,2 | | | | | | | ■ | | | ■ | | ■ | | | ■ | | | | |
| XOMX10T331TR-M09 | 3,1 | 10,0° | 0,4 | | | | | | | ■ | | | ■ | | ■ | | | ■ | | | | |

■ Stock standard
Subject to change refer to current price- and stock-list

XO.X18



| Size | Dimensions in mm | | |
|------------|------------------|------|------|
| | W1 | LE | S |
| XOEX18.. | 11,2 | 16,5 | 6,35 |
| XOEX18..ZZ | 11,2 | 16,5 | 6,4 |
| XOMX18.. | 11,2 | 16,5 | 6,42 |
| 18 | 11,2 | 16,5 | 6,37 |
| XOMX18.. | 11,2 | 16,5 | 6,37 |



| Designation | RE | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | | |
|-------------------|-----|--------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|----------|------|------|--------|----|-----|-----|
| | | | | Coated | | | | | | | | | | | | Uncoated | | | Cermet | | | |
| | | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 |
| XOEX180604FR-E10 | 0,4 | 25,0° | 2,4 | | | | | | | | | | | | | | | ■ | | | ■ | |
| XOEX180608FR-E10 | 0,8 | 25,0° | 2,4 | | | | | | | | | | | | | | | ■ | | | ■ | |
| XOEX180616FR-E10 | 1,6 | 25,0° | 2,3 | | | | | | | | | | | | | | | | | | ■ | |
| XOEX180620FR-E10 | 2,0 | 25,0° | 2,2 | | | | | | | | | | | | | | | | | | ■ | |
| XOEX180631FR-E10 | 3,1 | 25,0° | 2,2 | | | | | | | | | | | | | | | | | | ■ | |
| XOEX180608ZZR-M10 | 0,8 | 12,0° | 9,0 | | | | | | | | | | | | | | | ■ | | | | |
| XOEX180616ZZR-M10 | 1,6 | 12,0° | 9,0 | | | | | | | | | | | | | | | ■ | | | | |
| XOMX180604TR-ME13 | 0,4 | 20,0° | 2,4 | | | ■ | | | | | | | | | | | | | | ■ | | |
| XOMX180608TR-ME13 | 0,8 | 20,0° | 2,4 | | | ■ | | ■ | ■ | | | | ■ | | | | | | | ■ | | |
| XOMX180616TR-ME13 | 1,6 | 20,0° | 2,3 | | | ■ | | | ■ | | | | | | | | | | | ■ | | |
| XOMX180620TR-ME13 | 2,0 | 20,0° | 2,2 | | | ■ | | | | | | | | | | | | | | ■ | | |
| XOMX180631TR-ME13 | 3,1 | 20,0° | 2,2 | | | ■ | | | | | | | | | | | | | | ■ | | |
| XOMX180640TR-ME13 | 4,0 | 20,0° | 0,8 | | | ■ | | | | | | | | | | | | | | | | |
| XOMX180604R-M10 | 0,4 | 17,0° | 2,4 | | | | | | | ■ | | | | | | | | | | ■ | | |
| XOMX180608R-M10 | 0,8 | 17,0° | 2,4 | | | ■ | | | ■ | ■ | | | ■ | | | | | | ■ | | | ■ |
| XOMX180616R-M10 | 1,6 | 17,0° | 2,3 | | | | | | ■ | ■ | | | ■ | | | | | | ■ | | | |
| XOMX180620R-M10 | 2,0 | 17,0° | 2,2 | | | | | | ■ | ■ | | | ■ | | | | | | ■ | | | |
| XOMX180624R-M10 | 2,4 | 17,0° | 2,2 | | | | | | ■ | ■ | | | ■ | | | | | | ■ | | | |
| XOMX180631R-M10 | 3,1 | 17,0° | 2,2 | | | | | | ■ | ■ | | | ■ | | | | | | ■ | | | |
| XOMX180640R-M10 | 4,0 | 17,0° | 0,8 | | | | | | ■ | ■ | | | ■ | | | | | | ■ | | | |
| XOMX180650R-M10 | 5,0 | 17,0° | 0,3 | | | | | | ■ | ■ | | | ■ | | | | | | ■ | | | |
| XOMX180663R-M10 | 6,3 | 17,0° | 0,3 | | | | | | ■ | ■ | | | ■ | | | | | | ■ | | | |
| XOMX180608TR-M14 | 0,8 | 15,5° | 2,38 | ■ | | ■ | ■ | | | ■ | ■ | | | | ■ | | | | ■ | | | |
| XOMX180612TR-M14 | 1,2 | 10,0° | 2,4 | ■ | | ■ | ■ | | | ■ | ■ | | | | ■ | | | | ■ | | | |
| XOMX180616TR-M14 | 1,6 | 10,0° | 2,3 | | | ■ | ■ | | | ■ | ■ | | | | ■ | | | | ■ | | | |
| XOMX180620TR-M14 | 2,0 | 10,0° | 2,2 | | | ■ | ■ | | | ■ | ■ | | | | ■ | | | | ■ | | | |
| XOMX180624TR-M14 | 2,4 | 10,0° | 2,2 | | | ■ | ■ | | | ■ | ■ | | | | ■ | | | | ■ | | | |
| XOMX180631TR-M14 | 3,1 | 10,0° | 2,2 | | | ■ | ■ | | | ■ | ■ | | | | ■ | | | | ■ | | | |
| XOMX180608TR-MD15 | 0,8 | 12,0° | 2,4 | ■ | | ■ | ■ | | | ■ | ■ | | | | ■ | | | | ■ | | | |
| XOMX180616TR-MD15 | 1,2 | 12,0° | 2,3 | | | ■ | ■ | | | ■ | ■ | | | | ■ | | | | ■ | | | |
| XOMX180612TR-MD15 | 1,2 | 12,0° | 2,4 | ■ | | ■ | ■ | | | ■ | ■ | | | | ■ | | | | ■ | | | |
| XOMX180608TR-D16 | 0,8 | 5,0° | 2,4 | ■ | | ■ | | | ■ | | | | | ■ | | | | | ■ | | | |
| XOMX180631TR-D16 | 3,1 | 6,0° | 2,2 | ■ | | ■ | | | ■ | | | | | ■ | | | | | ■ | | | |

■ Stock standard

Subject to change refer to current price- and stock-list

XPKX



| Size | Dimensions in mm | | |
|----------|------------------|------|------|
| | W1 | LE | S |
| XPKX12.. | 10,0 | 12,1 | 3,97 |
| | | | |
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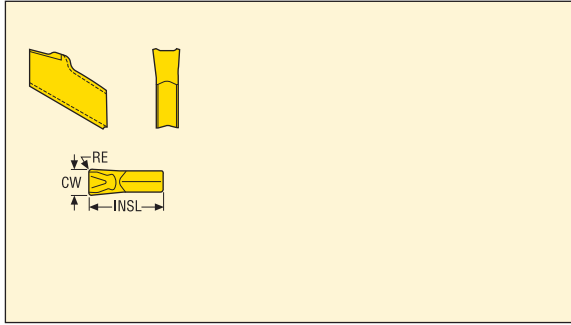
E08



| Designation | RE | Cutting rate | Grades | | | | | | | | | | | | | | | | | | | | |
|--------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|--------|----|-----|-----|--------|--|
| | | | Coated | | | | | | | | | | | | | Uncoated | | Cermet | | | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 | |
| XPKX12T304PDER-E08 | 0,4 | 23,1 ° | | | | | | | | | | | | | | | | | | | ■ | | |
| XPKX12T308PDER-E08 | 0,8 | 23,0 ° | | | | | | | | | | | | | | | | | | | ■ | | |
| XPKX12T320PDER-E08 | 2,0 | 25,0 ° | | | | | | | | | | | | | | | | | | | ■ | | |
| XPKX12T324PDER-E08 | 2,4 | 25,0 ° | | | | | | | | | | | | | | | | | | | ■ | | |
| XPKX12T331PDER-E08 | 3,1 | 25,0 ° | | | | | | | | | | | | | | | | | | | ■ | | |
| XPKX12T340PDER-E08 | 4,0 | 25,0 ° | | | | | | | | | | | | | | | | | | | ■ | | |
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■ Stock standard
 Subject to change refer to current price- and stock-list

150.10



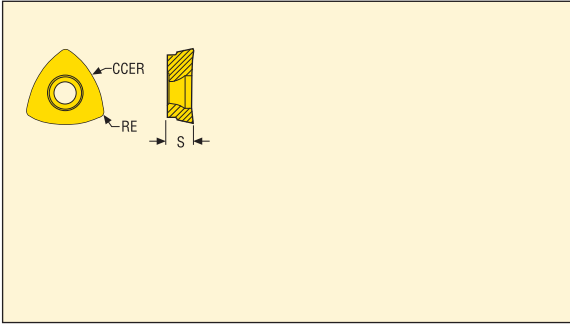
| Dimensions in mm | | |
|------------------|------|------|
| INSL | CW | RE |
| 9,0 | 2,5 | 0,17 |
| 9,0 | 3,1 | 0,19 |
| 9,0 | 2,25 | 0,15 |
| 9,0 | 4,1 | 0,23 |
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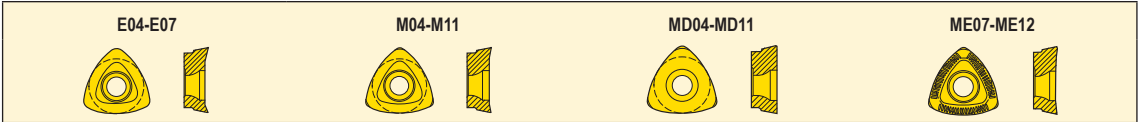
| Designation | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|------|-------|-------|-------|-------|----|-----|-----|
| | | Coated | | | | | | | | | | | | | | Uncoated | | | | | | | | |
| | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F25M | F40M | CP600 | CP500 | TGP45 | TGP35 | HX | H15 | H25 |
| 150.10-2.5N-12 | 24 ° | | | | | | | | | | | ■ | ■ | | | | | ■ | ■ | ■ | ■ | | | |
| 150.10-3N-12 | 24 ° | ■ | | | | | | | | | | ■ | ■ | | | | | ■ | ■ | ■ | ■ | | | |
| 150.10-2.25N-14 | 15 ° | | | | | | | | | | | ■ | ■ | | | | | ■ | ■ | ■ | | | ■ | |
| 150.10-2.5N-14 | 15 ° | | | | | | | | | | | ■ | ■ | | | | | ■ | ■ | ■ | | | ■ | |
| 150.10-3N-14 | 15 ° | | | | | | | | | | | ■ | ■ | | | | | ■ | ■ | ■ | ■ | | ■ | |
| 150.10-2.25N-16 | 20 ° | | | | | | | | | | | ■ | ■ | | | | | ■ | ■ | ■ | | | ■ | |
| 150.10-2.5N-16 | 20 ° | | | | | | | | | | | ■ | ■ | | | | | ■ | ■ | ■ | | | ■ | |
| 150.10-3N-16 | 20 ° | ■ | | | | | | | | | | ■ | ■ | | | | | ■ | ■ | ■ | ■ | | ■ | |
| 150.10-4N-12 | 24 ° | | | | | | | | | | | ■ | ■ | | | | | ■ | ■ | ■ | ■ | | ■ | |
| 150.10-4N-14 | 15 ° | | | | | | | | | | | ■ | ■ | | | | | ■ | ■ | ■ | ■ | | ■ | |
| 150.10-4N-16 | 20 ° | | | | | | | | | | | ■ | ■ | | | | | ■ | ■ | ■ | ■ | | ■ | |
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■ Stock standard
Subject to change refer to current price- and stock-list

218.19



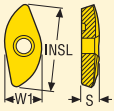
| Size | Dimensions in mm | |
|--------------|------------------|------|
| | CCER | S |
| 218.19-080.. | 8,0 | 2,38 |
| 218.19-100.. | 10,0 | 2,78 |
| 218.19-125.. | 12,5 | 3,97 |
| 218.19-150.. | 15,0 | 4,76 |
| 218.19-160.. | 16,0 | 4,76 |
| 218.19-200.. | 20,0 | 5,5 |
| 218.19-250.. | 25,0 | 6,35 |



| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | | |
|---------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|----|-----|---------|
| | | | Coated | | | | | | | | | | | | | | Uncoated | | | Cermets |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 |
| 218.19-100-E06 | 0,8 | 20,0 ° | | | | | | | | | | | | | | | | | ■ | |
| 218.19-125-T3-E06 | 0,8 | 20,0 ° | | | | | | | | | | | | | | | | | ■ | |
| 218.19-160-04-E07 | 1,2 | 20,0 ° | | | | | | | | | | | | | | | | | ■ | |
| 218.19-125T-T3-ME07 | 0,8 | 20,0 ° | | | | | | | | | | | | | | ■ | | | | |
| 218.19-160T-04-ME08 | 1,2 | 20,0 ° | | | | | | | | | | | | | | ■ | | | | |
| 218.19-200T-05-ME10 | 0,6 | 20,0 ° | | | | | | | | | | | | | | ■ | | | | |
| 218.19-250T-06-ME12 | 1,2 | 20,0 ° | | | | | | | | | ■ | | | | | | | | | |
| 218.19-080T-M04 | 0,4 | 7,0 ° | | | ■ | | | | | | | | ■ | | | | | | | |
| 218.19-100T-M06 | 0,8 | 7,0 ° | | | ■ | ■ | | | | | | | ■ | | | | | | | |
| 218.19-125T-T3-M07 | 0,8 | 10,0 ° | | | ■ | ■ | | | | | | | ■ | | | | | | | |
| 218.19-150T-04-M08 | 1,2 | 10,0 ° | | | | | | | | | | | ■ | | | | | | | |
| 218.19-160T-04-M11 | 1,2 | 15,0 ° | ■ | | ■ | ■ | | | | | | | | | | | | | | |
| 218.19-160T-04-M08 | 1,2 | 10,0 ° | | ■ | ■ | ■ | | | | | ■ | ■ | | | | | | | | |
| 218.19-200T-05-M10 | 0,6 | 10,0 ° | | | | | | | | | | | | | | ■ | ■ | | | |
| 218.19-080T-MD04 | 0,4 | 0,0 ° | | | ■ | | | | | | | | | | | | | | | |
| 218.19-100T-MD08 | 0,8 | 0,0 ° | ■ | | ■ | | | | | ■ | | | | | | ■ | ■ | | | |
| 218.19-125T-T3-MD10 | 0,8 | 0,0 ° | ■ | | ■ | | ■ | | | ■ | | | | | | ■ | ■ | ■ | | |
| 218.19-125T-T3-MD08 | 0,8 | 0,0 ° | | | | ■ | | | | | | | | | | | | | | |
| 218.19-160T-04-MD11 | 1,2 | 0,0 ° | ■ | | ■ | | ■ | | | ■ | | | | | | ■ | ■ | ■ | | |
| 218.19-160T-04-MD09 | 1,2 | 0,0 ° | | | | ■ | | | | | | | | | | | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

218.20



| Size | Dimensions in mm | | |
|----------------|------------------|-------|-------|
| | W1 | INSL | S |
| 218.20-0.250.. | 5,46 | 12,42 | 2,52 |
| 218.20-060.. | 5,16 | 11,73 | 2,37 |
| 218.20-080.. | 6,88 | 15,64 | 3,21 |
| 218.20-100.. | 8,59 | 19,55 | 4,05 |
| 218.20-125.. | 10,74 | 24,48 | 5,05 |
| 218.20-150.. | 11,91 | 28,7 | 5,99 |
| 218.20-160.. | 12,7 | 30,61 | 6,4 |
| 218.20-200.. | 15,88 | 38,26 | 8,06 |
| 218.20-250.. | 19,85 | 47,83 | 10,16 |
| 218.20-250 | 19,85 | 47,83 | 10,16 |

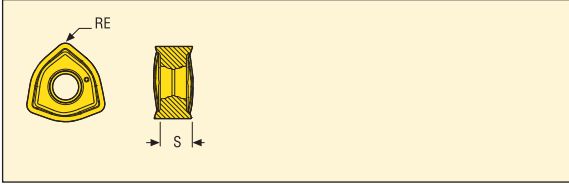
ME/M



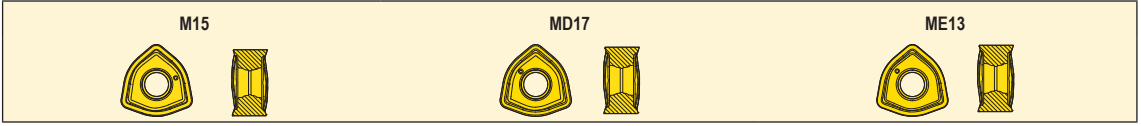
| Designation | Cutting rate | Grades | | | | | | | | | | | | | | | | | | | |
|---------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|----|-----|--------|--------|--|
| | | Coated | | | | | | | | | | | | | | Uncoated | | | Cermet | | |
| | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 | |
| 218.20-0.250ER-ME03 | 11,0 ° | | | | | | | | ■ | | | | | | ■ | | | | | | |
| 218.20-0.250ER-M03 | 7,0 ° | | | | | | | | | | | | | | ■ | | | | | | |
| 218.20-060ER-ME03 | 12,0 ° | | | | | | | | ■ | | | | | | ■ | | | | | | |
| 218.20-080ER-ME04 | 5,0 ° | | | | | | | | ■ | | | ■ | | | ■ | | | | | | |
| 218.20-080ER-M04 | 1,0 ° | | | | | | ■ | | | | | | | ■ | ■ | | | | | | |
| 218.20-100ER-ME05 | 3,0 ° | | | | | | ■ | | ■ | | | | | | ■ | | | | | | |
| 218.20-100ER-M05 | 2,0 ° | | | | | | ■ | | | | | | | ■ | ■ | | | | | | |
| 218.20-125ER-ME07 | 11,0 ° | | | | | | ■ | | ■ | | | | | | ■ | | | | | | |
| 218.20-125ER-M07 | 1,0 ° | | | | | | ■ | | | | | | | ■ | ■ | | | | | | |
| 218.20-150ER-ME07 | 6,0 ° | | | | | | | | ■ | | | | | | ■ | | | | | | |
| 218.20-150ER-M08 | -2,0 ° | | | | | | ■ | | | | | | | | ■ | | | | | | |
| 218.20-160ER-ME08 | 6,0 ° | | | | | | ■ | | ■ | | | | | | ■ | | | | | | |
| 218.20-160ER-M08 | -2,0 ° | | | | | | ■ | | | | | | | ■ | ■ | | | | | | |
| 218.20-200ER-ME10 | 6,0 ° | | | | | | ■ | | ■ | | | | | | ■ | | | | | | |
| 218.20-200ER-M10 | -2,0 ° | | | | | | | | | | | | | | ■ | | | | | | |
| 218.20-250ER-ME12 | 6,0 ° | | | | | | ■ | | ■ | | | | | | ■ | | | | | | |
| 218.20-250TR-M14 | -2,0 ° | | | | | | | | | | | | | | ■ | | | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

218.21



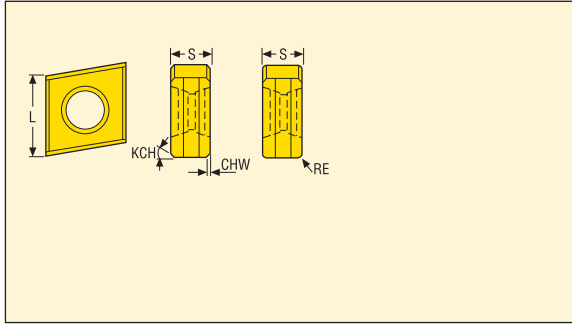
| Size | Dimensions in mm |
|------|------------------|
| | s |
| 230T | 5,95 |
| 230T | 6,02 |
| | |
| | |



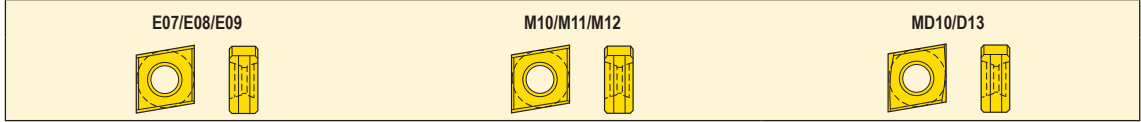
| Designation | RE | Cutting rate | Grades | | | | | | | | | | | | | | | | | | | |
|----------------------|-----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|------|---------|-----|-----|--------|
| | | | Coated | | | | | | | | | | | | | Uncoated | | | Cermets | | | |
| | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 | MP1020 |
| 218.21-230TR-06-ME13 | 1,6 | 21,0° | | | | | | | ■ | ■ | | ■ | | | | | ■ | | | | | |
| 218.21-230TR-06-M15 | 1,6 | 17,0° | ■ | ■ | ■ | | | | ■ | ■ | | ■ | | | | | ■ | | | | | |
| 218.21-230TR-06-MD17 | 1,6 | 7,0° | ■ | | ■ | ■ | | | ■ | ■ | | | | | | | | | | | | |
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■ Stock standard
 Subject to change refer to current price- and stock-list

335.18



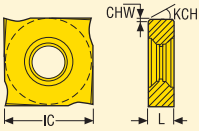
| Size | Dimensions in mm | | |
|-----------------|------------------|-----|-----|
| | L | S | CHW |
| 335.18-1005.. | 10,0 | 5,4 | 0,5 |
| 335.18-1305.. | 12,7 | 5,4 | 0,5 |
| 335.18-1606.. | 16,0 | 6,4 | 0,5 |
| 335.18-100508.. | 10,0 | 5,4 | 0,0 |
| 335.18-130508.. | 12,7 | 5,4 | 0,0 |
| 335.18-160608.. | 16,0 | 6,4 | 0,0 |
| 335.18-1005ZZ.. | 10,0 | 5,4 | 0,5 |



| Designation | RE | Cutting rake | KCH° | Grades | | | | | | | | | | | | | | | | | | |
|--------------------|-----|--------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|------|----|--------|-----|
| | | | | Coated | | | | | | | | | | | | | | Uncoated | | | Cermet | |
| | | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F30M | F40M | HX | H15 | H25 |
| 335.18-1005-E07 | 0,0 | 20,0° | 45,0 | | | | | | | | | | | | | | | ■ | | | | |
| 335.18-1305-E08 | 0,0 | 20,0° | 45,0 | | | | | | | | | | | | | | | ■ | | | | |
| 335.18-1606-E09 | 0,0 | 20,0° | 45,0 | | | | | | | | | | | | | | | ■ | | | | |
| 335.18-1005T-M10 | 0,0 | 10,0° | 45,0 | ■ | ■ | | | | | ■ | ■ | | | | | | ■ | ■ | | | | |
| 335.18-100508-M10 | 0,8 | 10,0° | 0,0 | | | | | | | | ■ | | | | | | | | | | | |
| 335.18-1305T-M11 | 0,0 | 10,0° | 45,0 | ■ | ■ | | | | | ■ | | | | | | ■ | | | | | | |
| 335.18-130508-M11 | 0,8 | 10,0° | 0,0 | | | | | | | | ■ | | | | | | | | | | | |
| 335.18-1606T-M12 | 0,0 | 10,0° | 45,0 | ■ | ■ | | | | | | | | | | | | ■ | | | | | |
| 335.18-160608-M12 | 0,8 | 10,0° | 0,0 | | | | | | | | | | ■ | | | | | | | | | |
| 335.18-1005ZZ-MD10 | 0,0 | 10,0° | 45,0 | | | | | | | | | | | | | | | ■ | | | | |

■ Stock standard
 Subject to change refer to current price- and stock-list

335.19



| Size | Dimensions in mm | |
|----------------|------------------|------|
| | L | IC |
| 335.19-1102.. | 2,3 | 11,0 |
| 335.19-1103.. | 2,7 | 11,0 |
| 335.19-1203.. | 3,2 | 12,7 |
| 335.19-1204.. | 4,0 | 12,7 |
| 335.19-12045.. | 4,5 | 12,7 |
| 335.19-1205.. | 5,4 | 12,7 |
| 335.19-1207.. | 7,0 | 12,7 |

M08



MD09

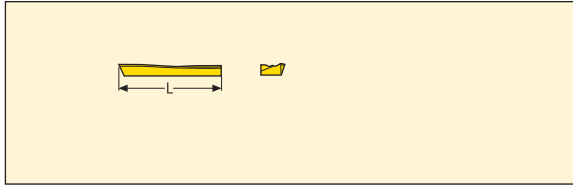


| Designation | Cutting rake | KCH° | CHW | Grades | | | | | | | | | | | | | | | | | | | | | |
|--------------------|-----------------|------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|----------|------|------|---------|----|-----|-----|--------|---|--|--|
| | | | | Coated | | | | | | | | | | | Uncoated | | | Cermets | | | | | | | |
| | | | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 | | | |
| 335.19-1102-M08 | 15,0 ° | 45,0 | 0,1 | | | | | | | | | | | | | | | | | | | ■ | | | |
| 335.19-1103-M08 | 15,0 ° | 45,0 | 0,1 | | | | | | | | | | | | | | | | | | | ■ | | | |
| 335.19-1203-M08 | 15,0 ° | 45,0 | 0,15 | | | | | | | | | | | | | | | | | | | ■ | | | |
| 335.19-1204-M08 | 15,0 ° | 45,0 | 0,15 | | | | | | | | | | | | | | | | | | | ■ | | | |
| 335.19-12045-M08 | 15,0 ° | 45,0 | 0,15 | | | | | | | | | | | | | | | | | | | ■ | | | |
| 335.19-1205-M08 | 15,0 ° | 45,0 | 0,15 | | | | | | | | | | | | | | | | | | | ■ | | | |
| 335.19-1207-M08 | 15,0 ° | 45,0 | 0,15 | | | | | | | | | | | | | | | | | | | ■ | | | |
| 335.19-1102T-MD09 | 15,0 ° | 45,0 | 0,1 | | | | | | | | | | | | ■ | | | | | | | | | | |
| 335.19-1103T-MD09 | 15,0 ° | 45,0 | 0,1 | | | | | | | | | | | | ■ | | | | | | | | | | |
| 335.19-1203T-MD09 | 15,0 ° | 20,0 | 0,1 | | | | | | | | | | | | ■ | | | | | | | | ■ | | |
| 335.19-12045T-MD09 | 15,0 ° | 20,0 | 0,1 | | | | | | | | | | | | ■ | | | | | | | | ■ | | |
| 335.19-1204T-MD09 | 15,0 ° | 20,0 | 0,1 | | | | | | | | | | | | ■ | | | | | | | | ■ | | |
| 335.19-1205T-MD09 | 15,0 ° | 20,0 | 0,1 | | | | ■ | | | | | | | | ■ | | | | | | | | ■ | | |
| 335.19-1207T-MD09 | 15,0 ° | 20,0 | 0,1 | | | | | | | | | | | | ■ | | | | | | | | ■ | | |

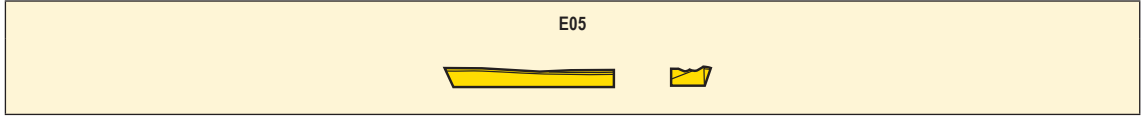
■ Stock standard

Subject to change refer to current price- and stock-list

R235.15



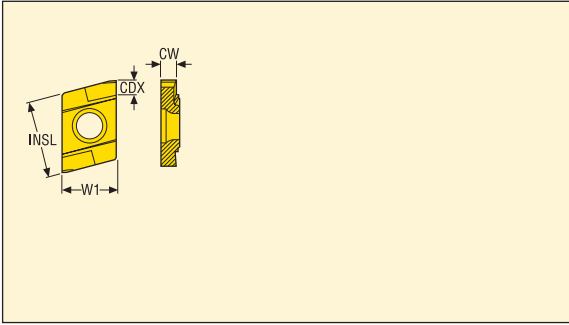
| Size | Dimensions in mm | | | |
|---------------|------------------|---|-----|--------|
| | W1 | L | S | INSL |
| R235.15-032.. | 11,15 | | 5,0 | 42,987 |
| R235.15-050.. | 11,75 | | 5,0 | 54,64 |
| R235.15-080.. | 11,75 | | 5,0 | 54,746 |



| Designation | Cutting rate | Grades | | | | | | | | | | | | | | | | | | | | |
|-----------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|----|-----|--------|--------|--|--|
| | | Coated | | | | | | | | | | | | | | Uncoated | | | Cermet | | | |
| | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F30M | F40M | HX | H15 | H25 | MP1020 | | |
| R235.15-032-E05 | 22,0 ° | | | | | | | | | | | | | | | | | | | | | |
| R235.15-050-E05 | 22,0 ° | | | | | | | | | | | | | | ■ | | | | | | | |
| R235.15-080-E05 | 22,0 ° | | | | | | | | | | | | | | ■ | ■ | | | | | | |
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■ Stock standard
 Subject to change refer to current price- and stock-list

R335.15-13



| Size | Dimensions in mm | | | |
|-------|------------------|------|------|------|
| | W1 | INSL | CDX | CW |
| 13110 | 9,0 | 13,5 | 1,8 | 1,13 |
| 13130 | 9,0 | 13,5 | 2,0 | 1,33 |
| 13160 | 9,0 | 13,5 | 2,6 | 1,63 |
| 13185 | 9,0 | 13,5 | 2,6 | 1,88 |
| 13215 | 9,0 | 13,5 | 3,15 | 2,18 |
| 13265 | 9,0 | 13,5 | 3,15 | 2,68 |
| | | | | |
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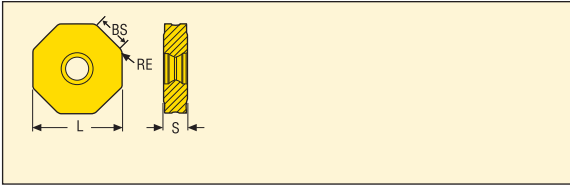


| Designation | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | |
|---------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|----------|----|-----|--------|--------|--|
| | | Coated | | | | | | | | | | | | | | Uncoated | | | Cermet | | |
| | | MP1500 | MP2050 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 | |
| R335.15-13110FG-E08 | 15,0 ° | | | | | | | | | | | | | | ■ | | | | | | |
| R335.15-13130FG-E08 | 15,0 ° | | | | | | | | | | | | | | ■ | | | | | | |
| R335.15-13160FG-E08 | 15,0 ° | | | | | | | | | | | | | | ■ | | | | | | |
| R335.15-13185FG-E08 | 15,0 ° | | | | | | | | | | | | | | ■ | | | | | | |
| R335.15-13215FG-E08 | 15,0 ° | | | | | | | | | | | | | | ■ | | | | | | |
| R335.15-13265FG-E08 | 15,0 ° | | | | | | | | | | | | | | ■ | | | | | | |
| R335.15-13215FG-M10 | 0,0 ° | | | | | | | | | | | | | | ■ | | | | | | |
| R335.15-13265FG-M10 | 0,0 ° | | | | | | | | | | | | | | ■ | | | | | | |
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■ Stock standard
Subject to change refer to current price- and stock-list

Tolerance(mm): a_p: +0/+0.05 - a_r: +0/+0.15

ONEW05

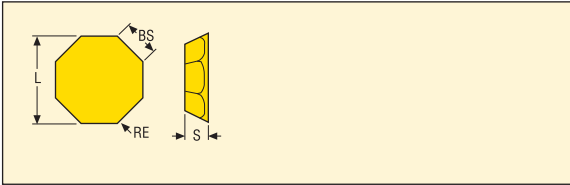


| Size | Dimensions in mm | |
|------------|------------------|-------|
| | L | S |
| ONEW05.. | 12,0 | 4,427 |
| ONEW05..ZZ | 11,9 | 4,427 |
| | | |
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| Designation | Cutting rake | BS | Grades | | | | | | | |
|-------------------------|--------------|------|-------------------------|--------|---------|---------|--------|--------|--|--|
| | | | CBN200 | CBN300 | CBN300P | CBN400C | CBN500 | CBN600 | | |
| | | | ONEW050410ANSN-02020-LF | 0° | 0,3 | ■ | | | | |
| ONEW050410ZZSR4-02020LF | 0° | 3,26 | ■ | | | | | | | |
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OFEN



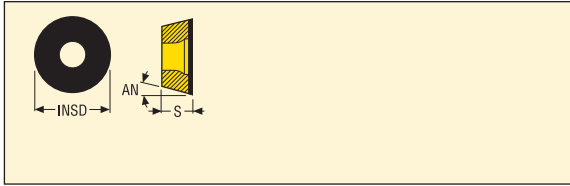
| Size | Dimensions in mm | |
|------|------------------|------|
| | L | S |
| 07 | 17,96 | 4,76 |
| | | |
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| Designation | Cutting rake | BS | Grades | | | | | | | |
|-------------|--------------|----|----------------------|--------|---------|---------|--------|--------|--|--|
| | | | CBN200 | CBN300 | CBN300P | CBN400C | CBN500 | CBN600 | | |
| | | | OFEN070405TN-MD16-LF | 0° | 1,6 | ■ | | | | |
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■ Stock standard
 Subject to change refer to current price- and stock-list

RDHW

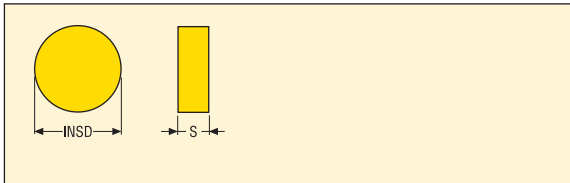


| Size | Dimensions in mm | |
|------|------------------|------|
| | INSD | S |
| 08 | 8,0 | 3,18 |
| 10 | 10,0 | 3,97 |
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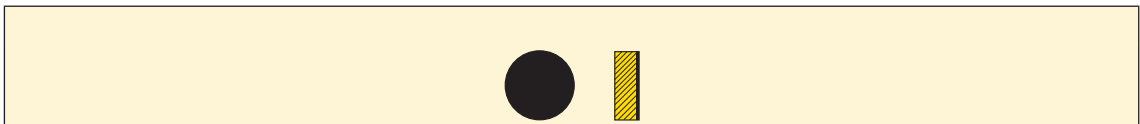


| Designation | Cutting rake | Grades | | | | | | | |
|----------------------|--------------|----------------------|--------|---------|---------|--------|--------|--|--|
| | | CBN200 | CBN300 | CBN300P | CBN400C | CBN500 | CBN600 | | |
| | | RDHW0803M0S-01030-LF | 0° | ■ | | | | | |
| RDHW10T3M0S-01030-LF | 0° | ■ | | | | | | | |
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RN.N-LF06/09



| Size | Dimensions in mm | |
|------|------------------|------|
| | INSD | S |
| 06 | 6,35 | 3,18 |
| 09 | 9,52 | 3,18 |
| 12 | 12,7 | 4,76 |
| | | |

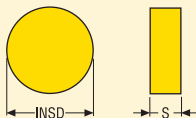


| Designation | Cutting rake | Grades | | | | | | | |
|----------------------|--------------|----------------------|--------|---------|---------|--------|--------|--|--|
| | | CBN200 | CBN300 | CBN300P | CBN400C | CBN500 | CBN600 | | |
| | | RNGN060300S-02020-LF | 0° | ■ | | | | | |
| RNGN060300S-01525-LF | 0° | | | | | | | | |
| RNGN090300S-01525-LF | 0° | | | | | | | | |
| RNGN090300S-02020-LF | 0° | ■ | | | | | | | |
| RNGN120400S-02020-LF | 0° | ■ | | | | | | | |
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■ Stock standard

Subject to change refer to current price- and stock-list

RNGN-LF06/09



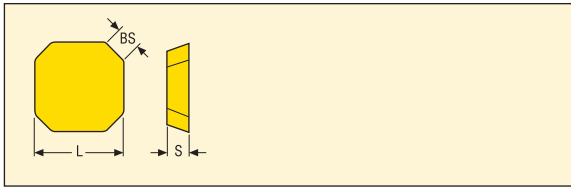
| Size | Dimensions in mm | |
|------|------------------|------|
| | INSD | S |
| 06 | 6,35 | 3,18 |
| 09 | 9,52 | 3,18 |
| | | |
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| Designation | Cutting rake | Grades | | | | | | | | | | | | | |
|--------------------|--------------|--------|--------|---------|---------|--------|--------|--|--|---|---|--|--|--|--|
| | | CBN200 | CBN300 | CBN300P | CBN400C | CBN500 | CBN600 | | | | | | | | |
| RNGN060300S | 0° | ■ | | | | | | | | | | | | | |
| RNGN090300S | 0° | ■ | | | | | | | | | | | | | |
| RNMN060300S | 0° | | ■ | ■ | | | | | | | | | | | |
| RNMN060300S-02020P | 0° | | | | | | | | | ■ | | | | | |
| RNMN090300E | 0° | | ■ | | ■ | | | | | | | | | | |
| RNMN090300S | 0° | | ■ | ■ | | | | | | | | | | | |
| RNMN090300S-02020 | 0° | | | | ■ | | ■ | | | | | | | | |
| RNMN090300S-02020P | 0° | | | | | | | | | | ■ | | | | |
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■ Stock standard
 Subject to change refer to current price- and stock-list

SEE.12

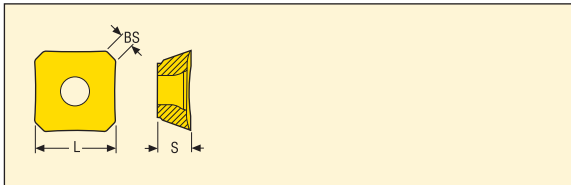


| Size | Dimensions in mm | |
|------|------------------|------|
| | L | S |
| 12 | 12,7 | 3,18 |
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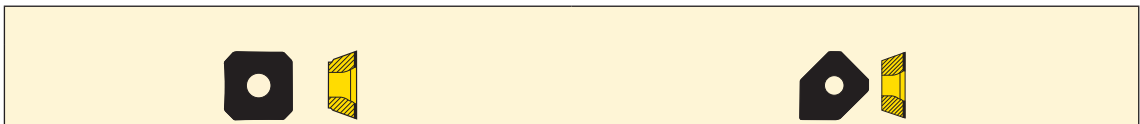


| Designation | RE | Cutting rake | Grades | | | | | | | | |
|----------------------|-----|--------------|--------|--------|---------|---------|--------|--------|--|--|--|
| | | | CBN200 | CBN300 | CBN300P | CBN400C | CBN500 | CBN600 | | | |
| SEEN1203AFTN-D16 | 1,0 | 0 ° | | ■ | | | | | | | |
| SEEX1203AETN-MD13-LF | 1,0 | 0 ° | ■ | | | | | | | | |
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SEEX



| Size | Dimensions in mm | |
|------|------------------|------|
| | L | S |
| 09 | 9,52 | 3,97 |
| 12 | 12,7 | 4,76 |
| 12ZZ | 12,7 | 4,76 |

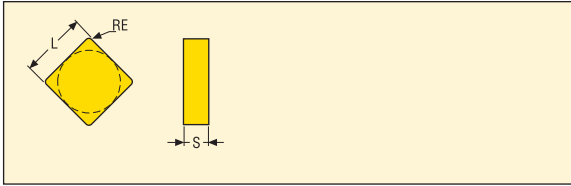


| Designation | RE | Cutting rake | Grades | | | | | | | | |
|---------------------|-----|--------------|--------|--------|---------|---------|--------|--------|--|--|--|
| | | | CBN200 | CBN300 | CBN300P | CBN400C | CBN500 | CBN600 | | | |
| SEEX09T3AFTN-D09-LF | 0,5 | 0 ° | ■ | | | | | | | | |
| SEEX1204AFTN-D16-LF | 1,1 | 0 ° | ■ | | | | | | | | |
| SEEX1204ZZTN-D16-LF | 1,0 | 0 ° | ■ | | | | | | | | |
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■ Stock standard

Subject to change refer to current price- and stock-list

SN..06/09/SNEX12



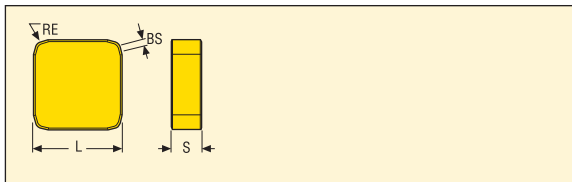
| Size | Dimensions in mm | |
|------|------------------|------|
| | L | S |
| 06 | 6,35 | 3,18 |
| 09 | 9,525 | 3,18 |
| 12ZZ | 12,7 | 3,18 |



| Designation | RE | Cutting rake | Grades | | | | | | | | | |
|--------------------|-------|--------------|--------|--------|---------|---------|--------|--------|---|--|--|--|
| | | | CBN200 | CBN300 | CBN300P | CBN400C | CBN500 | CBN600 | | | | |
| | | | | | | | | | | | | |
| SNMN060308E | 0,794 | 0 ° | | | | ■ | | | | | | |
| SNMN060308S | 0,794 | 0 ° | | ■ | | | | | | | | |
| SNMN090308E | 0,794 | 0 ° | | ■ | | | | | | | | |
| SNMN090308S | 0,794 | 0 ° | | ■ | | | | | | | | |
| SNMN090312E | 1,191 | 0 ° | | ■ | | | | | | | | |
| SNMN090312S | 1,191 | 0 ° | | ■ | ■ | | | | | | | |
| SNMN090312S-02020P | 1,191 | | | | | | | | ■ | | | |
| SNMN090316S | 1,588 | 0 ° | | ■ | | | | | | | | |
| SNGN090308E | 0,8 | 0 ° | ■ | | | | | | | | | |
| SNGN090308S | 0,8 | 0 ° | ■ | | | | | | | | | |
| SNGN090312S | 1,2 | 0 ° | ■ | | | | | | | | | |
| SNGN090316S | 1,6 | 0 ° | ■ | | | | | | | | | |
| SNEX120312ZZ | 1,2 | 0 ° | ■ | | | | | | | | | |
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■ Stock standard
Subject to change refer to current price- and stock-list

SNEN



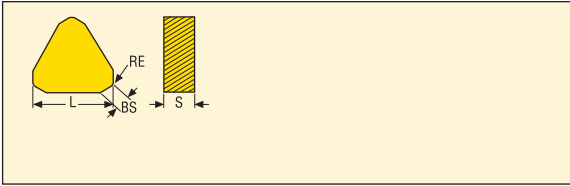
| Size | Dimensions in mm | |
|------|------------------|------|
| | L | S |
| 09 | 9,52 | 3,18 |
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| Designation | RE | Cutting rake | Grades | | | | | | | | | | |
|-----------------|-----|--------------|--------|--------|---------|---------|--------|--------|--|--|--|--|--|
| | | | CBN200 | CBN300 | CBN300P | CBN400C | CBN500 | CBN600 | | | | | |
| SNEN0903ENE-M06 | 0,8 | 0° | ■ | | | | | | | | | | |
| SNEN0903ENS-M08 | 0,8 | 0° | ■ | | | | | | | | | | |
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■ Stock standard
 Subject to change refer to current price- and stock-list

TNGN

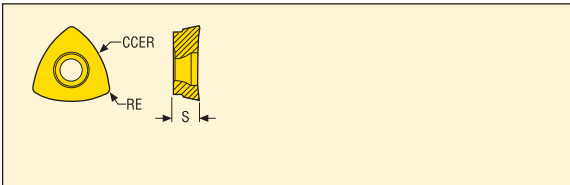


| Size | Dimensions in mm | |
|---------|------------------|------|
| | L | S |
| 11 | 10,999 | 3,18 |
| 16 | 16,498 | 4,76 |
| 16..PRS | 16,498 | 4,76 |

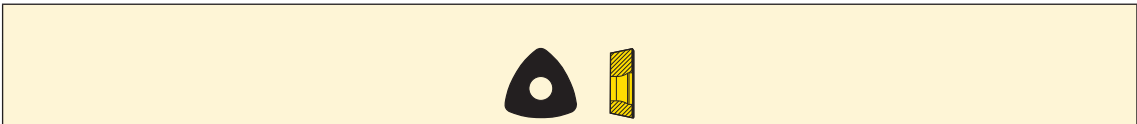


| Designation | RE | Cutting rake | Grades | | | | | | |
|-------------|-----|--------------|-------------|--------|---------|---------|--------|--------|--|
| | | | CBN200 | CBN300 | CBN300P | CBN400C | CBN500 | CBN600 | |
| | | | TNGN1103PNE | 0,8 | 0 ° | ■ | | | |
| TNGN1103PNS | 0,8 | 0 ° | ■ | | | | | | |
| TNGN1103PRS | 1,2 | 0 ° | ■ | | | | | | |
| TNGN1604PNE | 0,8 | 0 ° | ■ | | | | | | |
| TNGN1604PNS | 0,8 | 0 ° | ■ | | | | | | |
| TNGN1604PRS | 1,2 | 0 ° | ■ | | | | | | |

218.19



| Size | Dimensions in mm | |
|------|------------------|------|
| | CCER | S |
| | 10,0 | 2,81 |

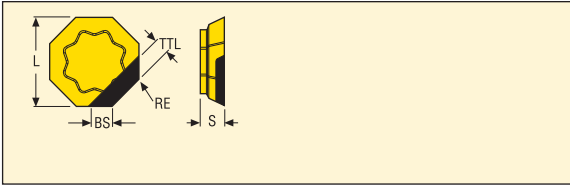


| Designation | RE | Cutting rake | Grades | | | | | | |
|-------------|----|--------------|---------------------|--------|---------|---------|--------|--------|--|
| | | | CBN200 | CBN300 | CBN300P | CBN400C | CBN500 | CBN600 | |
| | | | 218,19-100T-MD08-LF | 0,8 | 0 ° | ■ | | | |

■ Stock standard

Subject to change refer to current price- and stock-list

OFEN



| Size | Dimensions in mm | | | |
|----------|------------------|------|-------|-----|
| | L | S | BS | TTL |
| OFEN07.. | 17,95 | 4,76 | 7,009 | 3,5 |
| | | | | |
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| Designation | Cutting rake | BS | Grades | | | |
|------------------|--------------|-------|--------|-------|-------|--------|
| | | | PCD20 | PCD05 | PCD30 | PCD30M |
| OFEN070405FN-M09 | 0,0 ° | 7,009 | ■ | | | |
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OFEX



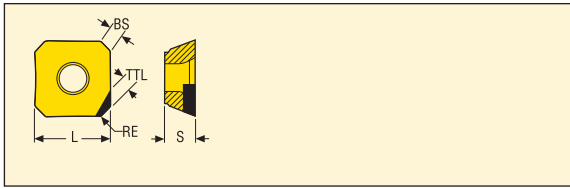
| Size | Dimensions in mm | | |
|----------|------------------|------|-----|
| | L | S | TTL |
| OFEX05.. | 12,79 | 3,97 | 2,5 |
| | | | |
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| Designation | Cutting rake | BS | Grades | | | |
|------------------|--------------|-------|--------|-------|-------|--------|
| | | | PCD20 | PCD05 | PCD30 | PCD30M |
| OFEX05T305FN-M05 | 0,0 ° | 4,893 | ■ | | | |
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■ Stock standard
 Subject to change refer to current price- and stock-list

SEEX

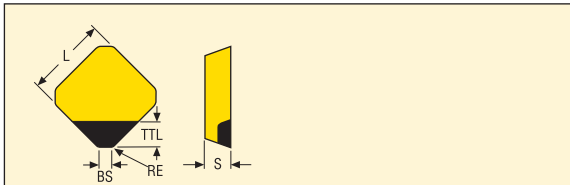


| Size | Dimensions in mm | | | |
|----------|------------------|------|-----|-----|
| | L | S | BS | TTL |
| SEEX09.. | 9,525 | 3,97 | 1,5 | 3,0 |
| | | | | |
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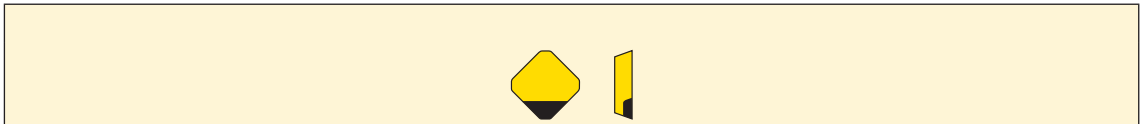


| Designation | RE | Cutting rake | BS | Grades | | | |
|-----------------|-----|--------------|-----|--------|-------|-------|--------|
| | | | | PCD20 | PCD05 | PCD30 | PCD30M |
| SEEX09T3AFFN-L1 | 0,4 | 12,0 ° | 1,5 | ■ | ■ | | |
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SEHN



| Size | Dimensions in mm | | | |
|----------|------------------|------|-----|-----|
| | L | S | BS | TTL |
| SEHN12.. | 12,7 | 3,18 | 1,6 | 4,0 |
| | | | | |
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| Designation | RE | Cutting rake | BS | Grades | | | |
|------------------|-----|--------------|-----|--------|-------|-------|--------|
| | | | | PCD20 | PCD05 | PCD30 | PCD30M |
| SEHN1203AFFN-E08 | 1,0 | 0,0 ° | 1,6 | ■ | | | |
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■ Stock standard
Subject to change refer to current price- and stock-list

XOEX



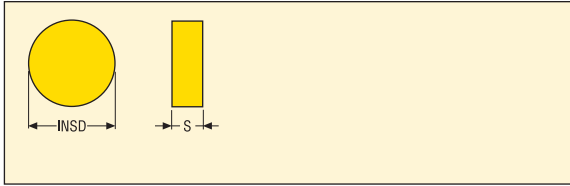
| Size | Dimensions in mm | | | |
|-------|------------------|-------|------|------|
| | W1 | INSL | LE | S |
| 06 | 4,09 | 6,94 | 3,4 | 2,45 |
| 10 | 6,87 | 11,08 | 5,51 | 3,77 |
| 12 | 8,18 | 13,88 | 5,6 | 5,03 |
| 12-L2 | 8,18 | 13,7 | 6,52 | 4,95 |



| Designation | RE | Cutting rake | BS | Grades | | | |
|-----------------|-----|--------------|------|--------|-------|-------|--------|
| | | | | PCD20 | PCD05 | PCD30 | PCD30M |
| XOEX060204FR | 0,4 | 8,0 ° | 1,5 | | ■ | | |
| XOEX10T304F | 0,4 | 15,0 ° | 1,08 | ■ | ■ | | |
| XOEX120404FR | 0,4 | 15,0 ° | 1,54 | ■ | | ■ | |
| XOEX120404FR-L2 | 0,4 | 14,0 ° | 2,39 | | ■ | | |
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■ Stock standard
Subject to change refer to current price- and stock-list

RNGN12 Metric/Inch



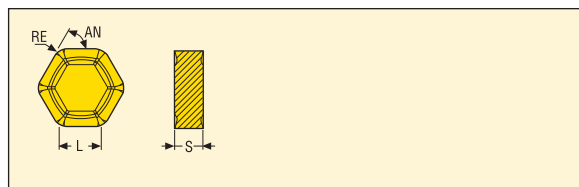
| Size | Dimensions in mm | |
|------------|------------------|------|
| | INSD | S |
| RNGN1204.. | 12,7 | 4,76 |
| RNGN1207.. | 12,7 | 7,94 |
| | | |
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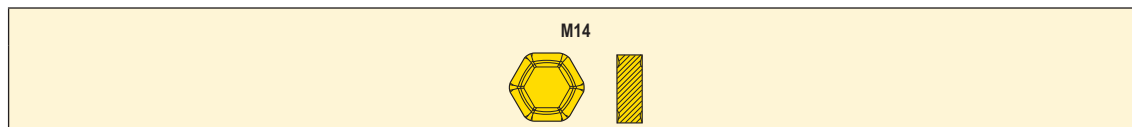
| Designation | Cutting rake | Grades | | | |
|-------------------|--------------|----------|--|--|--|
| | | Uncoated | | | |
| | | CS300 | | | |
| RNGN120400T-01020 | 0,0 ° | ■ | | | |
| RNGN120700T-01020 | 0,0 ° | ■ | | | |
| RPGN120400T-01020 | | ■ | | | |
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■ Stock standard
Subject to change refer to current price- and stock-list

HNEF



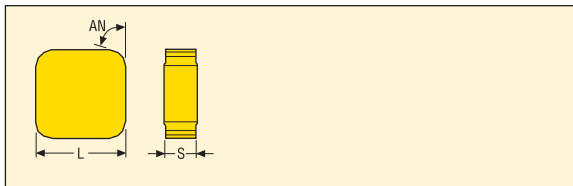
| Size | Dimensions in mm | |
|----------|------------------|-----|
| | L | S |
| HNEF09.. | 9,37 | 5,6 |
| | | |
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| | | |



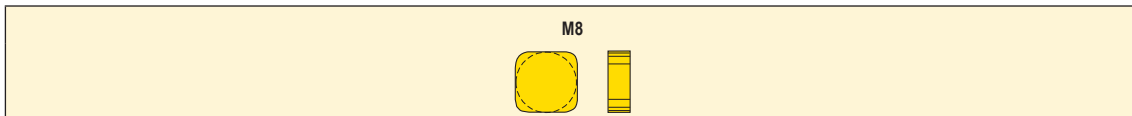
| Designation | RE | Cutting rake | Grades | | | | | | | | | | | | | | | | | | |
|----------------|-----|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|-------|------|---------|------|----|-----|-----|--------|--|
| | | | Coated | | | | | | | | | Uncoated | | | Cermets | | | | | | |
| | | | MP1500 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 | |
| HNEF090531-M14 | 3,1 | | | | | | | ■ | | | | | | | | | | | | | |
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■ Stock standard
 Subject to change refer to current price- and stock-list

SNKN

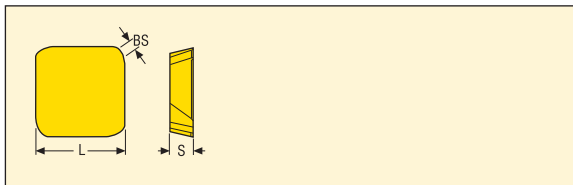


| Size | Dimensions in mm | | |
|----------|------------------|------|-----|
| | L | S | BS |
| SNKN12.. | 12,7 | 4,76 | 1,5 |
| | | | |
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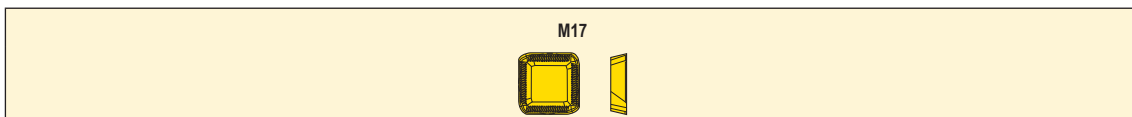


| Designation | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | | |
|----------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|----|--------|-----|--------|--|--|--|
| | | Coated | | | | | | | | | | | | Uncoated | | | Cermet | | | | | |
| | | MP1500 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 | | | |
| SNKN1204EN-M10 | | | | | | ■ | | | | | | | | | | | | | | | | |
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SPER



| Size | Dimensions in mm | | |
|------------|------------------|------|-----|
| | L | S | BS |
| SPER1906.. | 19,05 | 6,35 | 1,8 |
| | | | |
| | | | |

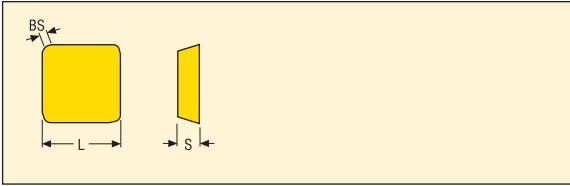


| Designation | Cutting rake | Grades | | | | | | | | | | | | | | | | | | | | |
|------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|----------|------|----|--------|-----|--------|--|--|--|
| | | Coated | | | | | | | | | | | | Uncoated | | | Cermet | | | | | |
| | | MP1500 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 | | | |
| SPER1906ZETR-M17 | 17,0 ° | | | | | ■ | | | | | | | | | | | | | | | | |
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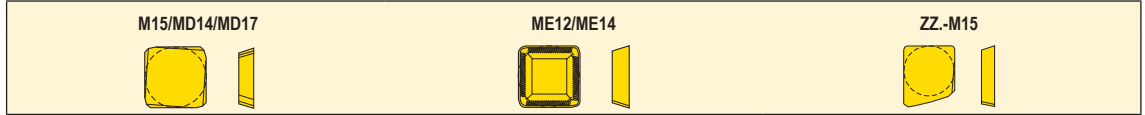
■ Stock standard

Subject to change refer to current price- and stock-list

SPKN/SPKR



| Size | Dimensions in mm | |
|-------------|------------------|------|
| | L | S |
| SPK... 1203 | 12,7 | 3,17 |
| SPK... 1203 | 12,7 | 3,17 |
| SPK... 1504 | 15,87 | 4,76 |



| Designation | Cutting rake | BS | Grades | | | | | | | | | | | | | | | | | | |
|-------------------|--------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|----------|------|------|---------|-----|-----|--------|--|
| | | | Coated | | | | | | | | | | | Uncoated | | | Cermets | | | | |
| | | | MP1500 | MP2500 | MP3000 | MH1000 | MM4500 | MK1500 | MK2050 | MS2050 | MS2500 | T25M | T350M | F15M | F25M | F40M | HX | H15 | H25 | MP1020 | |
| SPKN1203EDTR-MD14 | 0,0 ° | 1,4 | | | | | | | | | ■ | ■ | | | | | | | | | |
| SPKN1203EDTL-MD14 | 0,0 ° | 1,4 | | | | | | | | | ■ | | | | | | | | | | |
| SPKR1203EDTR-ME12 | 20,0 ° | 1,4 | | | | | | | | | | | | ■ | | | | | | | |
| SPKR1504EDTR-ME14 | 20,0 ° | 1,4 | | | | | | | | | | | | | ■ | | | | | | |
| SPKN1504EDR-M15 | 0,0 ° | 1,4 | | | | | | | | | | | | | | ■ | | | | | |
| SPKN1504EDTR-MD17 | 0,0 ° | 1,4 | | | | | | | | | | | | | | | | | | | |
| SPKN1504ZZL-M15 | 0,0 ° | 10,0 | | | | | | | | | | | | | | | | | | | |
| SPKN1504ZZR-M15 | 0,0 ° | 10,0 | | | | | | | | | | | | | | | | | | | |
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■ Stock standard
Subject to change refer to current price- and stock-list

Introduction

Polycrystalline Cubic Boron Nitride (PCBN) is a material which is sintered at extremely high pressure and high temperature into a wear-resistant material with properties close to those of diamond. Due to the hot hardness, oxidation resistance and fracture toughness of the material, inserts made of PCBN have excellent edge strength and long tool life when machining hard ferrous materials and pearlitic grey cast iron.

Secomax™ PCBN inserts are suitable for machining:

- Hardened steel (including hard-facing alloys)
- Pearlitic grey cast iron
- Chilled and white cast iron
- Manganese steel
- Cemented carbide
- Powder Metallurgy (PM) alloys

For more information including a comprehensive guide to understanding and applying PCBN successfully, please ask your sales representative for the Secomax™ PCBN, Technical Guide (available in English).

Selection of insert types

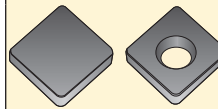
Solid insert



According to the geometry, two sides can be used.

Grades:
CBN200, CBN300, CBN300P, CBN500,
CBN600

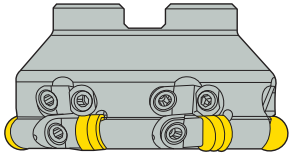
Sintered layer insert -LF



CBN layer sintered on to carbide. One side is usable.

Grades:
CBN200

Face milling cutter type R217/220.70



Cutter especially developed for CBN inserts, 2 insert sizes.
Maximum cutting depth 3 mm DC = 20-63 mm and maximum cutting depth 4,5 mm DC = 63-200 mm (DC = 125-200 mm fitted with wiper insert).

Inserts for finishing RNGN060300E (E = honed)
RNGN/RNMN090300E

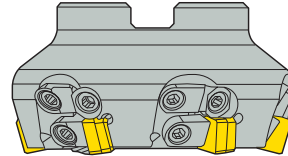
Inserts for roughing RNGN/RNMN060300S
(S = chamfered and honed)
RNGN/RNMN090300S

Wiper insert SNEX120312ZZ

The relation between cutting depth and number of usable cutting edges (per side).

| D.O.C a_p (mm) | RN.. 060300 | RN.. 090300 | D.O.C a_p (mm) | RN.. 060300 | RNMN 090300 |
|---------------------|----------------|----------------|---------------------|----------------|----------------|
| 0,1 | 20 | 24 | 1,2 | 5 | 7 |
| 0,15 | 16 | 20 | 1,5 | 5 | 6 |
| 0,2 | 14 | 17 | 1,8 | 4 | 5 |
| 0,25 | 12 | 15 | 2,0 | 4 | 5 |
| 0,3 | 11 | 14 | 2,5 | 3 | 4 |
| 0,4 | 10 | 12 | 3,0 | 3 | 4 |
| 0,5 | 8 | 10 | 3,5 | – | 4 |
| 0,8 | 7 | 8 | 4,0 | – | 3 |
| 1,0 | 6 | 7 | 4,5 | – | – |

Face milling cutter type 220.74



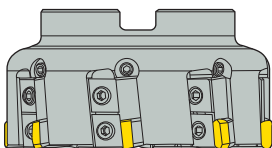
Cutter especially developed for CBN inserts, maximum cutting depth 8,0 mm D = 63-200 mm. (D = 125-200 mm fitted with wiper insert).

Inserts for finishing SNEN0903ENE-M06
(E = honed)
SNMN090308E
SNMN090312E

Inserts for roughing SNEN0903ENS-M08
(S = chamfered and honed)
SNMN090308S
SNMN090312S
SNMN090316S

Wiper insert SNEX120312ZZ

Square shoulder and slot milling cutter type R220.68











Cutter especially developed for CBN inserts. D = 63-160 mm

Insert with corner chamfer for finishing operations TNGN1604PNE

Insert with corner chamfer for roughing operations TNGN1604PNS

Insert with corner radius for roughing operations TNGN1604PRS

Inserts for standard milling cutters

| | | | | |
|--|--|---|---|--|
| <p>For roughing SEEX09T3AFTN-D09-LF SEEX1204AFTN-D16-LF R220.53 Face milling cutter</p>  <p>Wiper insert for high quality surface finish SEEX1204ZZTN-D16-LF</p>  | <p>For roughing OFEN070405-MD16-LF R220.43 Face milling cutter</p>  <p>RDHW0803M0S-01030-LF R217/220.29 Copy milling cutter R335.25/R335.18 Disc milling cutter</p>  | <p>For roughing ONEW05 Octomill R217/220.48 Face milling cutter</p>  <p>218.19-100T-MD08-LF High feed milling cutter</p>  | <p>For roughing SEEN1203AFTN-D16 R220.13 Face milling cutter</p>  | <p>For finishing SEEX1203AETN-MD13-LF R220.30 Face milling cutter</p>  |
|--|--|---|---|--|

Cutting data

- Cutting speed recommendations are in the cutting data table.
- Feed rate recommendations are in the cutting data table.
- Formulae for cutting data calculation are on page 725

PCBN, Roughing a_p 0,5-3,0 mm

| SMG | CBN200 | | CBN300 | | CBN500 | |
|-----|------------|--------------|------------|--------------|------------|--------------|
| | v_c | f_z | v_c | f_z | v_c | f_z |
| K1 | 700 — 1700 | 0,050 — 0,20 | 700 — 1700 | 0,050 — 0,20 | 700 — 1700 | 0,050 — 0,20 |
| H3 | — | — | — | — | — | — |
| H5 | — | — | — | — | — | — |
| H7 | — | — | — | — | — | — |
| H8 | — | — | — | — | — | — |
| H11 | — | — | — | — | — | — |
| H21 | — | — | — | — | 130 — 230 | 0,050 — 0,20 |
| H31 | — | — | — | — | 100 — 270 | 0,050 — 0,20 |
| PM1 | 180 — 400 | 0,050 — 0,20 | — | — | — | — |
| PM2 | 150 — 300 | 0,050 — 0,20 | — | — | — | — |
| PM3 | — | — | — | — | — | — |
| HF1 | 150 — 240 | 0,050 — 0,20 | — | — | 150 — 250 | 0,050 — 0,20 |
| HF2 | 120 — 300 | 0,050 — 0,20 | — | — | 120 — 300 | 0,050 — 0,20 |

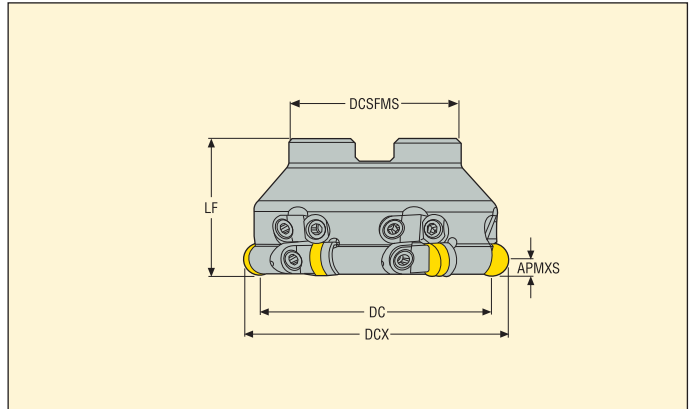
PCBN, Finishing $a_p < 0,5$ mm

| SMG | CBN200 | | CBN300 | | CBN500 | |
|-----|------------|--------------|------------|--------------|------------|--------------|
| | v_c | f_z | v_c | f_z | v_c | f_z |
| K1 | 700 — 1900 | 0,050 — 0,20 | 700 — 1700 | 0,050 — 0,20 | 700 — 1700 | 0,050 — 0,20 |
| H3 | — | — | — | — | — | — |
| H5 | — | — | — | — | — | — |
| H7 | 200 — 300 | 0,050 — 0,20 | — | — | — | — |
| H8 | 170 — 250 | 0,050 — 0,20 | — | — | — | — |
| H11 | — | — | — | — | — | — |
| H21 | — | — | — | — | 130 — 230 | 0,050 — 0,20 |
| H31 | — | — | — | — | 100 — 270 | 0,050 — 0,20 |
| PM1 | 180 — 400 | 0,050 — 0,20 | — | — | — | — |
| PM2 | 150 — 300 | 0,050 — 0,20 | — | — | — | — |
| PM3 | — | — | — | — | — | — |
| HF1 | — | — | — | — | — | — |
| HF2 | — | — | — | — | — | — |

220.70-06/09



- For insert selection and cutting data recommendations, see page(s) 714
- For complete insert programme, see page(s) 698, 700
- For ISO attribute explanation, see page 15



| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|--------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|-------|----------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.70-0050-06-8 | Arbor | 3,0 | 56,35 | 50,0 | 47,0 | 22,0 | 40,0 | 8 | 0,5 | 12700 | RN..06 |
| R220.70-0063-09-6 | Arbor | 4,5 | 72,5 | 63,0 | 47,0 | 22,0 | 40,0 | 6 | 0,7 | 10200 | RN..09 |
| R220.70-0080-09-6 | Arbor | 4,5 | 89,5 | 80,0 | 62,0 | 27,0 | 50,0 | 6 | 1,3 | 9100 | RN..09 |
| R220.70-0100-09-8 | Arbor | 4,5 | 109,5 | 100,0 | 77,0 | 32,0 | 50,0 | 8 | 2,0 | 8100 | RN..09 |
| R220.70-8160-09-10 | Arbor | 4,5 | 169,5 | 160,0 | 90,0 | 40,0 | 63,0 | 10 | 5,6 | 6400 | RN..09/SNEX12* |
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*Wiper insert

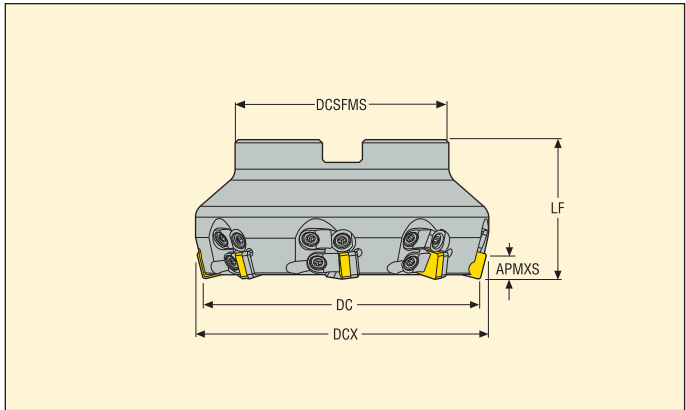
Spare Parts

| For cutter | Wedge screw | Wedge | Shim screw | Setting key | Setting gauge | Key | Insert shim | Gauge screw | Arbor screw |
|-------------------|-------------|-------|------------|-------------|---------------|-----|-------------|-------------|-------------|
| R220.70-06-8 | | | - | - | - | | - | - | |
| R220.70-0063 | | | | | | - | | | |
| R220.70-0080-0100 | | | | | | - | | | - |
| R220.70-8160 | | | | | | - | | | - |
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Please check availability in current price and stock-list
Torque keys, see page 732

Setting wedge AS6011, Insert wedge CW0608S, Anvil screw F94009-T09P and Anvil 268-621 are also included with cutters with dia 8160

220.74-09



- For insert selection and cutting data recommendations, see page(s) 714
- For complete insert programme, see page(s) 700
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | | Insert |
|--------------------|------------------|------------------|-------|-------|--------|------|------|----|-----|-------|----------------|
| | | APMXS | DCX | DC | DCSFMS | DCB | LF | | | | |
| R220.74-0063-09-6 | Arbor | 8,0 | 65,3 | 63,0 | 47,0 | 22,0 | 40,0 | 6 | 0,7 | 10200 | SN..09.. |
| R220.74-0080-09-6 | Arbor | 8,0 | 82,3 | 80,0 | 62,0 | 27,0 | 50,0 | 6 | 1,4 | 9100 | SN..09.. |
| R220.74-0100-09-8 | Arbor | 8,0 | 102,3 | 100,0 | 77,0 | 32,0 | 50,0 | 8 | 2,0 | 8100 | SN..09.. |
| R220.74-8160-09-10 | Arbor | 8,0 | 162,3 | 160,0 | 90,0 | 40,0 | 63,0 | 10 | 6,3 | 6400 | SN..09/SNEX12* |
| R220.74-8200-09-12 | Arbor | 8,0 | 202,3 | 200,0 | 130,0 | 60,0 | 63,0 | 12 | 8,9 | 5700 | SN..09/SNEX12* |
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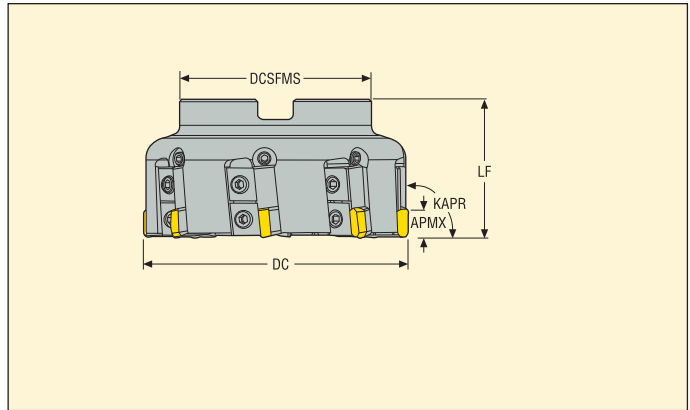
*Wiper insert

Spare Parts

| For cutter | Wedge screw | Wedge | Shim screw | Setting screw | Setting key | Setting gauge | Insert shim | Arbor screw |
|-------------------|--------------|---------|-----------------|---------------|-------------|---------------|-------------|-------------|
| R220.74-0063 | | | | | | | | |
| R220.74-0063 | LD6018T-T15P | CW0608M | 174.10-652-T07P | LD6019-T15P | T15P-4ST | AS6011 | 174.10-620 | 220.17-692 |
| R220.74-0080-0100 | LD6018T-T15P | CW0608M | 174.10-652-T07P | LD6019-T15P | T15P-4ST | AS6011 | 174.10-620 | - |
| R220.74-0125-8160 | LD6018T-T15P | CW0608M | 174.10-652-T07P | LD6019-T15P | T15P-4ST | AS6011 | 174.10-620 | - |
| R220.74-8200 | LD6018T-T15P | CW0608M | 174.10-652-T07P | LD6019-T15P | T15P-4ST | AS6011 | 174.10-620 | - |
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R220.68-T16C

For PCBN inserts



- For insert selection and cutting data recommendations, see page(s) 714
- For complete insert programme, see page(s) 702
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | | | Insert |
|----------------------|------------------|------------------|-------|--------|------|------|----|-----|-------|------------|
| | | APMX | DC | DCSFMS | DCB | LF | | | | |
| R220.68-0063-T16C-4 | Arbor | 14,0 | 63,0 | 47,0 | 22,0 | 63,0 | 4 | 1,1 | 12000 | TNGN1604.. |
| R220.68-0080-T16C-5 | Arbor | 14,0 | 80,0 | 62,0 | 27,0 | 63,0 | 5 | 1,7 | 9600 | TNGN1604.. |
| R220.68-0100-T16C-6 | Arbor | 14,0 | 100,0 | 77,0 | 32,0 | 63,0 | 6 | 2,7 | 7600 | TNGN1604.. |
| R220.68-0125-T16C-8 | Arbor | 14,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 3,4 | 6100 | TNGN1604.. |
| R220.68-8160-T16C-10 | Arbor | 14,0 | 160,0 | 140,0 | 40,0 | 63,0 | 10 | 5,9 | 4800 | TNGN1604.. |
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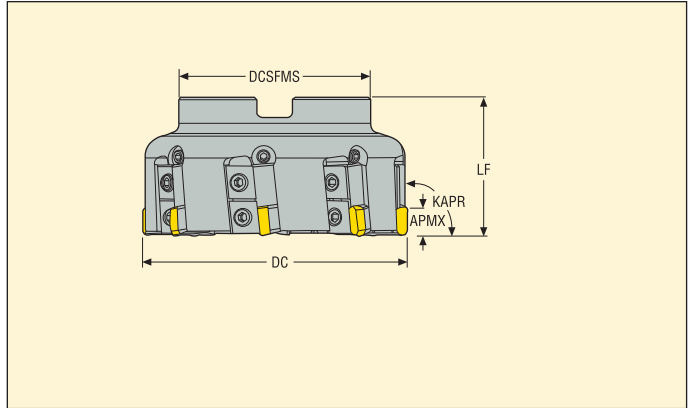
Spare Parts

| For cutter | Wedge screw | Wedge key | Wedge clamp | Setting key | Setting gauge | Insert wedge | Cassette | Arbor screw |
|-------------------|-------------|-----------|-------------|-------------|---------------|----------------|----------|-------------|
| | | | | | | | | |
| R220.68-0063 | LD8020-T25P | T25P-4 | L257.9-120M | T15P-3 | AU1114T-T15P | L257.9-120-T16 | TN16PR | 220.17-696 |
| R220.68-0080 | LD8020-T25P | T25P-4 | L257.9-120M | T15P-3 | AU1114T-T15P | L257.9-120-T16 | TN16PR | MC6S12X40 |
| R220.68-0100 | LD8020-T25P | T25P-4 | L257.9-120M | T15P-3 | AU1114T-T15P | L257.9-120-T16 | TN16PR | 220.17-694 |
| R220.68-0125-8160 | LD8020-T25P | T25P-4 | L257.9-120M | T15P-3 | AU1114T-T15P | L257.9-120-T16 | TN16PR | - |
| | | | | | | | | |
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Please check availability in current price and stock-list
Torque keys, see page 732

R220.68-T11C

For PCBN inserts



- For insert selection and cutting data recommendations, see page(s) 714
- For complete insert programme, see page(s) 702
- For ISO attribute explanation, see page 15

| Designation | Type of mounting | Dimensions in mm | | | | | | KG | | Insert |
|----------------------|------------------|------------------|-------|--------|------|------|----|--------|-------|------------|
| | | APMX | DC | DCSFMS | DCB | LF | | | | |
| R220.68-0063-T11C-4 | Arbor | 3,0 | 63,0 | 47,0 | 22,0 | 63,0 | 4 | 1,1 | 20600 | TN..1103.. |
| R220.68-0080-T11C-5 | Arbor | 3,0 | 80,0 | 62,0 | 27,0 | 63,0 | 5 | 1,7 | 16700 | TN..1103.. |
| R220.68-0125-T11C-8 | Arbor | 3,0 | 125,0 | 90,0 | 40,0 | 63,0 | 8 | 3,4 | 10400 | TN..1103.. |
| R220.68-8160-T11C-10 | Arbor | 3,0 | 160,0 | 90,0 | 40,0 | 63,0 | 10 | 5,6 | 8400 | TN..1103.. |
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Spare Parts

| For cutter | Wedge screw | Wedge key | Wedge clamp | Setting gauge | Key (T-handle) | Insert wedge | Insert key | Cassette | Arbor screw |
|-------------------|-------------|-----------|-------------|---------------|----------------|----------------|------------|----------|-------------|
| | | | | | | | | | |
| R220.68-0063 | LD8020-T25P | H6B-T25P | L257.9-120M | AU1114T-T15P | DOUBLE-T | L257.9-120-T11 | H4B-T15P | TN11PR | 220.17-696 |
| R220.68-0080 | LD8020-T25P | H6B-T25P | L257.9-120M | AU1114T-T15P | DOUBLE-T | L257.9-120-T11 | H4B-T15P | TN11PR | MC6S12X40 |
| R220.68-0125-8160 | LD8020-T25P | H6B-T25PL | L257.9-120M | AU1114T-T15P | DOUBLE-T | L257.9-120-T11 | H4B-T15PL | TN11PR | |
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Please check availability in current price and stock-list

Torque keys, see page 732

Introduction

Secomax ceramics include a range of products developed to meet the manufacturing industries ever increasing demands on productivity and product performance. The inserts are die-pressed and sintered by a HIP process using very fine and pure raw materials with fine microstructure to reach excellent material properties. All surfaces are then ground ensuring a product with superior dimensions and tolerances.

This comes together in a product with outstanding features:

- high thermal shock resistance
- optimised fracture toughness
- excellent wear resistance
- high product quality

Application areas

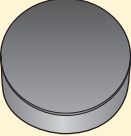
Heat resistant superalloys (HRSA) include a broad range of nickel, iron and cobalt based alloys developed specifically for applications demanding exceptional mechanical and chemical properties at elevated temperatures.

Seco ceramic inserts are intended for rough machining of nickel based heat resistant superalloys. The most common nickel based superalloy is Inconel 718, which is a precipitation hardenable nickel chromium alloy containing significant amounts of iron, niobium and molybdenum along with lesser amounts of aluminium and titanium.

Other common nickel based superalloy names are:

- Hastalloy
- Haynes (Waspaloy)
- MAR
- Nimonic
- Rene
- Udimet

Introduction

| | |
|--|---|
| <p>CS300</p>  | <p>Format: Solid.</p> <p>Composition: Sialon (Si, Al, O, N) ceramic grade.</p> <p>Coating: No coating.</p> |
|--|---|

Edge preparation

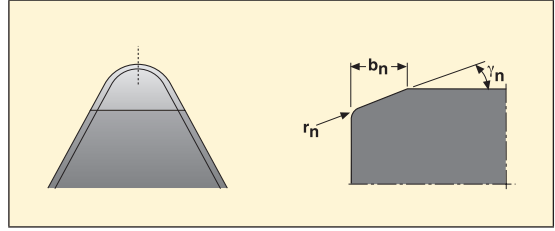
- S = Chamfered and honed
- T = Chamfered, no honing
- E = Honed

Chamfer size and angle

CS100 = 0,10 mm x 20°

CS300 = 0,10 mm x 20°

CW100 = Honed



b_n = Chamfer width
 γ_n = Chamfer angle
 r_n = Hone radius

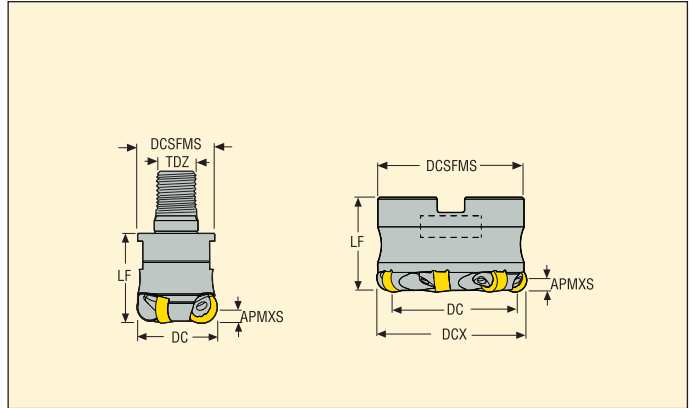
Ceramic, Roughing a_p 0,5 – 3,0 mm

| SMG | CS300 | |
|-----|------------|-------------|
| | v_c | f_z |
| S1 | 600 – 1200 | 0,05 – 0,15 |
| S2 | 600 – 1200 | 0,05 – 0,15 |
| S3 | 600 – 1200 | 0,05 – 0,15 |

R217/220.26



- For insert selection and cutting data recommendations, see page(s) 719,
- For complete insert programme, see page(s) 707



| Designation | Type of mounting | Dimensions in mm | | | | | | | RMPX° | C min | C max | | | | Insert |
|---------------------------|------------------|------------------|-----|-----|--------|-----|-----|----|-------|-------|-------|---|-----|-------|--------|
| | | APMXS | DCX | DC | DCSFMS | DCB | TDZ | LF | | | | | | | |
| R217.26-1632.RE-RN1204.3A | Combimaster | 6 | 32 | 19 | 30 | 27 | M16 | 35 | 0,0 | - | - | 3 | 0,2 | 19100 | RN1204 |
| R217.26-1632.RE-RP1204.3 | Combimaster | 6 | 32 | 19 | 30 | 27 | M16 | 35 | 5,0 | 51 | 63 | 3 | 0,2 | 20800 | RP1204 |
| R217.26-2040.RE-RN1204.4A | Combimaster | 6 | 40 | 27 | 37 | 27 | M20 | 40 | 0,0 | - | - | 4 | 0,4 | 17100 | RN1204 |
| R217.26-2040.RE-RP1204.4A | Combimaster | 6 | 40 | 27 | 37 | 27 | M20 | 40 | 3,2 | 67 | 79 | 4 | 0,4 | 18600 | RP1204 |
| R220.26-0050-RN1204.6A | Arbor | 6 | 50 | 37 | 47 | 22 | - | 45 | - | - | - | 6 | 0,4 | 16700 | RN1204 |
| R220.26-0050-RP1204.6A | Arbor | 6 | 50 | 37 | 47 | 22 | - | 45 | 2,3 | 87 | 99 | 6 | 0,4 | 16700 | RP1204 |
| R220.26-0050-RN1207.5A | Arbor | 6 | 50 | 37 | 47 | 22 | - | 45 | - | - | - | 5 | 0,4 | 11900 | RN1207 |
| R220.26-0063-RN1207.6A | Arbor | 6 | 63 | 50 | 60 | 27 | - | 50 | - | - | - | 6 | 0,8 | 10600 | RN1207 |
| R220.26-0063-RN1207.7A | Arbor | 6 | 63 | 50 | 60 | 27 | - | 50 | - | - | - | 7 | 0,8 | 10600 | RN1207 |
| R220.26-0080-RN1207.7A | Arbor | 6 | 80 | 67 | 77 | 32 | - | 50 | - | - | - | 7 | 1,3 | 9400 | RN1207 |
| R220.26-0080-RN1207.8A | Arbor | 6 | 80 | 67 | 77 | 32 | - | 50 | - | - | - | 8 | 1,3 | 9400 | RN1207 |
| R220.26-0100-RN1207.8A | Arbor | 6 | 100 | 87 | 90 | 40 | - | 63 | - | - | - | 8 | 2,5 | 8400 | RN1207 |
| R220.26-0125-RN1207.9 | Arbor | 6 | 125 | 112 | 90 | 40 | - | 63 | - | - | - | 9 | 3,6 | 7500 | RN1207 |

Spigot size = DCB

Spare Parts

| For cutter | Wedge screw | Wedge key | Wedge clamp | Key (T-handle) | Torque value (Nm) |
|----------------|-------------|-----------|-------------|----------------|-------------------|
| | | | | | |
| R217/220.26-.. | LD5015C | H4B-H2.0 | CW0508 | DOUBLE-T | 2,5 |
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Please check availability in current price and stock-list
Torque keys, see page 672 MN2015 Milling

Introduction

Polycrystalline Diamond (PCD) is produced by sintering together carefully selected particles of diamond under conditions of high temperature and high pressure. PCD cutting tools combine the hardness, abrasion resistance and thermal conductivity of diamond with the toughness of tungsten carbide.

Secomax™ PCD inserts are suitable for machining non-ferrous metals and alloys, e.g.:

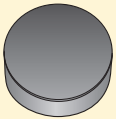
- Aluminium
- Copper
- Brass
- Bronze
- Cemented carbide

It can also be used for other materials, e.g.:

- Composites (MMC, ...)
- Reinforced plastics
- Graphite
- Tungsten carbide
- Ceramics
- Titanium alloys

Selection of insert types

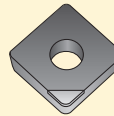
Sintered layer -LF



PCD sintered on carbide.
All cutting edges on one side are usable.

Grades:
PCD20, PCD30M




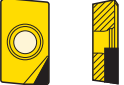



Brazed tip -L1 and L2



PCD brazed on to standard carbide inserts.

Grades:
PCD05, PCD20, PCD30

Inserts for standard milling cutters

| | | | | |
|---|---|---|--|--|
| <p>SEHN12 R220.13 R220.30 Face milling cutter</p>  | <p>SEEX12 R220.53 Face milling cutter</p>  | <p>OFEN07 Face milling cutter R220.43</p>  | <p>XC..13 R220.69 Square shoulder milling cutter</p>  | <p>AP..16 R220.69 Square shoulder milling cutter</p>  |
| | | <p>OFEX05 R220.43 Face milling cutter</p>  | <p>XOEX06/10/12 217/220.69 Square shoulder milling cutters</p>  | |

Cutting data

- Cutting speed recommendations are in the cutting data table.
- Feed rate recommendations are in the cutting data table.
- Formulae for cutting data calculation are on page 725

Note: All PCD milling inserts for these cutters are designed with Wiper flat for surface finish

PCD, Roughing a_p 0,5 - 3,0 mm

| SMG | PCD05 | | PCD20 | | PCD30 | | PCD30M | |
|-----|------------|--------------|------------|--------------|------------|--------------|------------|--------------|
| | v_c | f_z | v_c | f_z | v_c | f_z | v_c | f_z |
| N1 | 600 — 3500 | 0,050 — 0,30 | 600 — 3500 | 0,050 — 0,30 | — | — | — | — |
| N2 | 400 — 2500 | 0,050 — 0,20 | 400 — 2500 | 0,050 — 0,20 | — | — | — | — |
| N3 | 300 — 1000 | 0,050 — 0,10 | — | — | 300 — 1000 | 0,050 — 0,10 | 300 — 1000 | 0,050 — 0,10 |
| N11 | 600 — 1200 | 0,10 — 0,50 | 600 — 1200 | 0,10 — 0,50 | 400 — 1200 | 0,10 — 0,50 | 600 — 1200 | 0,10 — 0,50 |
| TS1 | 100 — 1500 | 0,10 — 0,40 | 100 — 1500 | 0,10 — 0,40 | — | — | — | — |
| TS2 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 |
| TS3 | 100 — 800 | 0,050 — 0,20 | 100 — 800 | 0,050 — 0,20 | 100 — 800 | 0,050 — 0,20 | 100 — 800 | 0,050 — 0,20 |
| TS4 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 |
| TP1 | 100 — 1500 | 0,10 — 0,40 | 100 — 1500 | 0,10 — 0,40 | — | — | — | — |
| TP2 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 |
| TP3 | 100 — 800 | 0,050 — 0,20 | 100 — 800 | 0,050 — 0,20 | 100 — 800 | 0,050 — 0,20 | 100 — 800 | 0,050 — 0,20 |
| TP4 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 |
| GR1 | 100 — 1500 | 0,10 — 0,20 | 100 — 1500 | 0,10 — 0,20 | — | — | — | — |

PCD, Finishing $a_p < 0,5$ mm

| SMG | PCD05 | | PCD20 | | PCD30 | | PCD30M | |
|-----|------------|--------------|------------|--------------|------------|--------------|------------|--------------|
| | v_c | f_z | v_c | f_z | v_c | f_z | v_c | f_z |
| N1 | 600 — 3500 | 0,050 — 0,30 | 600 — 3500 | 0,050 — 0,30 | — | — | — | — |
| N2 | 400 — 2500 | 0,050 — 0,20 | 400 — 2500 | 0,050 — 0,20 | — | — | — | — |
| N3 | 300 — 1000 | 0,050 — 0,10 | — | — | 300 — 1000 | 0,050 — 0,10 | 300 — 1000 | 0,050 — 0,10 |
| N11 | 600 — 1200 | 0,10 — 0,50 | 600 — 1200 | 0,10 — 0,50 | 400 — 1200 | 0,10 — 0,50 | 600 — 1200 | 0,10 — 0,50 |
| TS1 | 100 — 1500 | 0,10 — 0,40 | 100 — 1500 | 0,10 — 0,40 | — | — | — | — |
| TS2 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 |
| TS3 | 100 — 800 | 0,050 — 0,20 | 100 — 800 | 0,050 — 0,20 | 100 — 800 | 0,050 — 0,20 | 100 — 800 | 0,050 — 0,20 |
| TS4 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 |
| TP1 | 100 — 1500 | 0,10 — 0,40 | 100 — 1500 | 0,10 — 0,40 | — | — | — | — |
| TP2 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 |
| TP3 | 100 — 800 | 0,050 — 0,20 | 100 — 800 | 0,050 — 0,20 | 100 — 800 | 0,050 — 0,20 | 100 — 800 | 0,050 — 0,20 |
| TP4 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 | 400 — 800 | 0,10 — 0,20 |
| GR1 | 100 — 1500 | 0,10 — 0,20 | 100 — 1500 | 0,10 — 0,20 | — | — | — | — |

RPM

$$n = \frac{v_c \cdot 1000}{\pi \cdot D_c} \quad (\text{rev/min})$$

Cutting speed

$$v_c = \frac{n \cdot \pi \cdot D_c}{1000} \quad (\text{m/min})$$

Feed speed

$$v_f = n \cdot Z_n \cdot f_z \quad (\text{mm/min})$$

$$v_f = n \cdot Z_c \cdot f_z \quad (\text{mm/min})$$

Feed per revolution

$$f = Z_n \cdot f_z \quad (\text{mm/rev})$$

$$f = Z_c \cdot f_z \quad (\text{mm/rev})$$

Metal removal rate

$$Q = \frac{a_e \cdot a_p \cdot v_f}{1000} \quad (\text{cm}^3/\text{min})$$

Cutting speed and RPM for copying

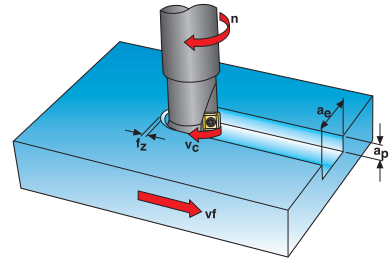
$$v_c = \frac{n \cdot \pi \cdot D_w}{1000} \quad (\text{m/min})$$

$$D_w = 2 \cdot \sqrt{a_p \cdot (D_c - a_p)} \quad (\text{mm})$$

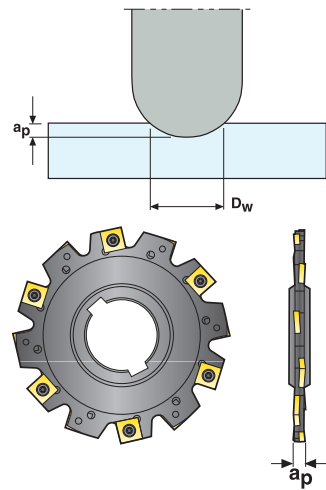
$$n = \frac{v_c \cdot 1000}{\pi \cdot D_w} \quad (\text{RPM})$$

Effective No. of teeth (ZEFP)

The effective No. of teeth (ZEFP) is used to calculate the feed speed (v_f) and the feed per revolution (f). For most of the cutters the effective No. of teeth (ZEFP) is equal to the No. of teeth in the cutter (ZNP), but for some of the cutters ZEFP is less than ZNP.



- a_e = Width of cut mm/radial depth of cut mm
- a_p = Depth of cut mm/axial depth of cut mm
- DC = Cutter diameter mm
- f = Feed per revolution mm/rev
- f_z = Feed per tooth mm/tooth
- ZEFP = Effective No. of teeth for calculation of feed speed or feed per rev (see below)
- n = RPM rev/min
- Q = Material removal rate cm³/min
- v_c = Cutting speed m/min
- v_f = Feed speed mm/min



Example: Disc mill 335.19

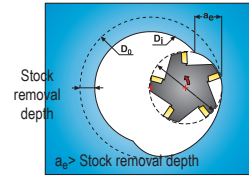
Total No. of teeth (ZNP) = 12 Effective No. of teeth (ZEFP) = 6

Explanation: 6 inserts on one side of the cutter and 6 overlapping inserts on the other side are used to get the full width (a_p), which means ZEFP = 6.

Internal circular interpolation

When using circular interpolation or helical interpolation ramping to increase the diameter of a hole in a workpiece, the stock removal depth is not the same as the width of cut value. The real width of cut must be calculated from the formula below. The width of cut value is then used for calculation of feed/tooth and feed speed.

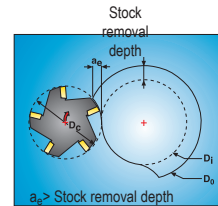
$$a_e = \frac{D_o^2 - D_i^2}{4 (D_o - D_c)}$$



External circular interpolation

When using external circular interpolation or helical interpolation ramping to decrease the diameter of a round workpiece the stock removal depth is not the same as the width of cut value. The real width of cut must be calculated from the formula below.

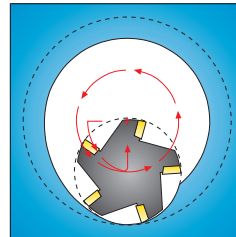
$$a_e = \frac{D_o^2 - D_i^2}{4 (D_i + D_c)}$$



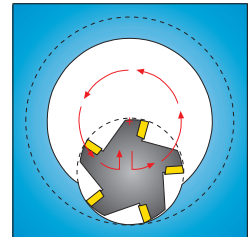
The width of cut is then used for calculation of feed/tooth and feed speed.

Increase the width of cut successively to full value

For circular interpolation operations it is recommended to successively increase the width of cut up to full value. When using radial infeed up to full width of cut, reduce the feed/tooth and feed speed to half.



Successive increase of width of cut – recommended method.



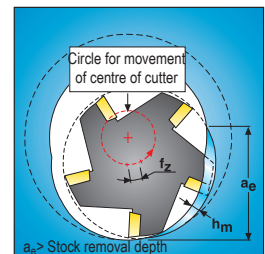
Radial infeed – Reduce feed/tooth.

Feed speed related to the centre of the cutter

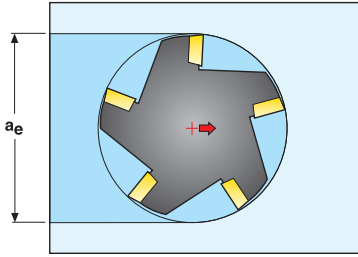
When calculating feed speed and feed/tooth from average chip thickness using circular interpolation or helical interpolation ramping in an operation, the feed speed and feed/tooth are always related to the centre and not to the periphery of the cutter.

$$v_f = \frac{(D_o - D_c) \cdot n \cdot z_c \cdot f_z}{D_o}$$

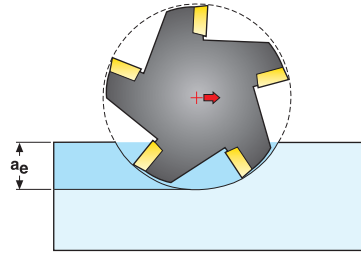
$$v_f = \frac{(D_i + D_c) \cdot n \cdot z_c \cdot f_z}{D_i}$$



Slot milling compared with side milling



Slot milling



Side milling

| Relative engagement of the cutter diameter ($a_e/DC=%$) | Multiply the feed per tooth by the following factor |
|---|---|
| 30% | 1.25 |
| 20% | 1.5 |
| 10% | 2.0 |
| 5% | 3.0 |

Calculation of feed per tooth and cutting speed for side milling operations

When using side milling it is necessary to increase the feed per tooth to keep the chip thickness at the same value. It is also possible to increase the cutting speed and keep the same tool life. Use the tables below.

This table can be used for cutters with cutting edge angle = 90°

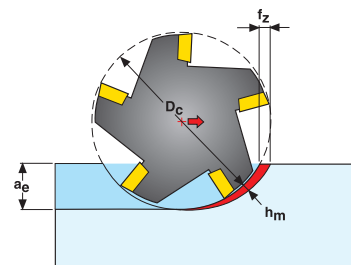
| a_e/DC % | Feed Per Tooth, mm/tooth (f_z) | | | | | | | | | | | | | Speed Factor |
|---|--|------|------|------|------|------|------|------|------|------|------|------|------|--------------|
| | 0,03 | 0,06 | 0,08 | 0,10 | 0,15 | 0,20 | 0,25 | 0,30 | 0,40 | 0,50 | 0,60 | 0,80 | 1,00 | |
| | Average Chip Thickness, mm/tooth (h_m) | | | | | | | | | | | | | |
| Width of cut up to and including $DC/2$ | | | | | | | | | | | | | | |
| 2 (0.02) | | | | | 0,02 | 0,03 | 0,04 | 0,04 | 0,06 | 0,07 | 0,08 | 0,11 | 0,14 | 1.8 |
| 3 (0.03) | | | | 0,02 | 0,03 | 0,03 | 0,04 | 0,05 | 0,07 | 0,09 | 0,10 | 0,14 | 0,17 | 1.7 |
| 5 (0.05) | | | 0,02 | 0,02 | 0,03 | 0,04 | 0,06 | 0,07 | 0,09 | 0,11 | 0,13 | 0,18 | 0,22 | 1.6 |
| 10 (0.10) | | 0,02 | 0,02 | 0,03 | 0,05 | 0,06 | 0,08 | 0,09 | 0,12 | 0,16 | 0,19 | 0,25 | 0,31 | 1.5 |
| 15 (0.15) | 0,011 | 0,02 | 0,03 | 0,04 | 0,06 | 0,08 | 0,09 | 0,11 | 0,15 | 0,19 | 0,23 | 0,30 | | 1.4 |
| 20 (0.20) | 0,013 | 0,03 | 0,03 | 0,04 | 0,06 | 0,09 | 0,11 | 0,13 | 0,17 | 0,22 | 0,26 | | | 1.35 |
| 30 (0.30) | 0,016 | 0,03 | 0,04 | 0,05 | 0,08 | 0,10 | 0,13 | 0,16 | 0,21 | 0,26 | 0,31 | | | 1.3 |
| 40 (0.40) | 0,018 | 0,04 | 0,05 | 0,06 | 0,09 | 0,12 | 0,15 | 0,18 | 0,23 | 0,29 | | | | 1.25 |
| 50 (0.50) | 0,02 | 0,04 | 0,05 | 0,06 | 0,10 | 0,13 | 0,16 | 0,19 | 0,25 | 0,32 | | | | 1.2 |
| Slotting (Width of cut = DC) | | | | | | | | | | | | | | |
| 100 (1.00) | 0,02 | 0,04 | 0,05 | 0,06 | 0,10 | 0,13 | 0,16 | 0,19 | 0,25 | 0,32 | | | | 1.0 |

--- = Feed per tooth correction example: at 20% engagement also increase speed by 1.35

Instead of using the table above for calculating h_m and f_z , the following formula could be used if $a_e/DC < 30%$.

$$h_m = f_z \cdot \sqrt{\frac{a_e}{D_c}}$$

$$f_z = h_m \cdot \sqrt{\frac{D_c}{a_e}}$$



This table can be used for cutters with cutting edge angle = 45°

| a _e /DC % | Feed Per Tooth, mm/tooth (f _z) | | | | | | | | | | | | | Speed Factor |
|---|--|------|------|------|------|------|------|------|------|------|------|------|------|--------------|
| | 0,03 | 0,06 | 0,08 | 0,10 | 0,15 | 0,20 | 0,25 | 0,30 | 0,40 | 0,50 | 0,60 | 0,80 | 1,00 | |
| | Average Chip Thickness, mm/tooth (h _m) | | | | | | | | | | | | | |
| Width of cut up to and including DC/2 | | | | | | | | | | | | | | |
| 2 (0.02) | | | | | 0,01 | 0,02 | 0,02 | 0,03 | 0,04 | 0,05 | 0,06 | 0,08 | 0,10 | 1.8 |
| 3 (0.03) | | | | 0,01 | 0,02 | 0,02 | 0,03 | 0,04 | 0,05 | 0,06 | 0,07 | 0,10 | 0,12 | 1.7 |
| 5 (0.05) | | | 0,01 | 0,02 | 0,02 | 0,03 | 0,04 | 0,05 | 0,06 | 0,08 | 0,09 | 0,13 | 0,16 | 1.6 |
| 10 (0.10) | | 0,01 | 0,02 | 0,02 | 0,03 | 0,04 | 0,05 | 0,07 | 0,09 | 0,11 | 0,13 | 0,18 | 0,22 | 1.5 |
| 15 (0.15) | 0,008 | 0,02 | 0,02 | 0,03 | 0,04 | 0,05 | 0,07 | 0,08 | 0,11 | 0,13 | 0,16 | 0,21 | | 1.4 |
| 20 (0.20) | 0,009 | 0,02 | 0,02 | 0,03 | 0,05 | 0,06 | 0,08 | 0,09 | 0,12 | 0,15 | 0,18 | | | 1.35 |
| 30 (0.30) | 0,011 | 0,02 | 0,03 | 0,04 | 0,05 | 0,07 | 0,09 | 0,11 | 0,15 | 0,18 | 0,22 | | | 1.3 |
| 40 (0.40) | 0,012 | 0,02 | 0,03 | 0,04 | 0,06 | 0,08 | 0,10 | 0,12 | 0,17 | 0,21 | | | | 1.25 |
| 50 (0.50) | 0,01 | 0,03 | 0,04 | 0,05 | 0,07 | 0,09 | 0,11 | 0,14 | 0,18 | 0,23 | | | | 1.2 |
| Face milling full engagement (Width of cut = DC) | | | | | | | | | | | | | | |
| 100 (1.00) | 0,02 | 0,04 | 0,05 | 0,06 | 0,10 | 0,13 | 0,16 | 0,19 | 0,25 | 0,32 | | | | 1.0 |

Calculation of feed per tooth and cutting speed for side milling operations

When using side milling it is necessary to increase the feed per tooth to keep the chip thickness at the same value. It is also possible to increase the cutting speed and keep the same tool life. Use the tables below.

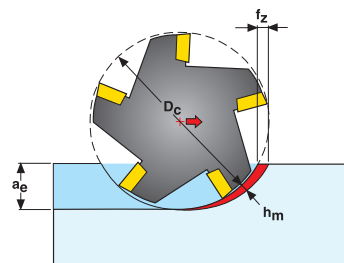
This table can be used for cutters with cutting edge angle = 60°

| a _e /DC % | Feed Per Tooth, mm/tooth (f _z) | | | | | | | | | | | | | Speed Factor |
|---|--|------|------|------|------|------|------|------|------|------|------|------|------|--------------|
| | 0,03 | 0,06 | 0,08 | 0,10 | 0,15 | 0,20 | 0,25 | 0,30 | 0,40 | 0,50 | 0,60 | 0,80 | 1,00 | |
| | Average Chip Thickness, mm/tooth (h _m) | | | | | | | | | | | | | |
| Width of cut up to and including DC/2 | | | | | | | | | | | | | | |
| 2 (0.02) | | | | | 0,02 | 0,02 | 0,03 | 0,04 | 0,05 | 0,06 | 0,07 | 0,10 | 0,12 | 1.8 |
| 3 (0.03) | | | | 0,01 | 0,02 | 0,03 | 0,04 | 0,04 | 0,06 | 0,07 | 0,09 | 0,12 | 0,15 | 1.7 |
| 5 (0.05) | | | 0,02 | 0,02 | 0,03 | 0,04 | 0,05 | 0,06 | 0,08 | 0,10 | 0,12 | 0,15 | 0,19 | 1.6 |
| 10 (0.10) | | 0,02 | 0,02 | 0,03 | 0,04 | 0,05 | 0,07 | 0,08 | 0,11 | 0,13 | 0,16 | 0,22 | 0,27 | 1.5 |
| 15 (0.15) | 0,010 | 0,02 | 0,03 | 0,03 | 0,05 | 0,07 | 0,08 | 0,10 | 0,13 | 0,16 | 0,20 | 0,26 | | 1.4 |
| 20 (0.20) | 0,011 | 0,02 | 0,03 | 0,04 | 0,06 | 0,07 | 0,09 | 0,11 | 0,15 | 0,19 | 0,22 | | | 1.35 |
| 30 (0.30) | 0,013 | 0,03 | 0,04 | 0,04 | 0,07 | 0,08 | 0,11 | 0,13 | 0,18 | 0,22 | 0,27 | | | 1.3 |
| 40 (0.40) | 0,015 | 0,03 | 0,04 | 0,05 | 0,08 | 0,10 | 0,13 | 0,15 | 0,20 | 0,25 | | | | 1.25 |
| 50 (0.50) | 0,02 | 0,03 | 0,04 | 0,06 | 0,08 | 0,11 | 0,14 | 0,17 | 0,22 | 0,28 | | | | 1.2 |
| Face milling full engagement (Width of cut = DC) | | | | | | | | | | | | | | |
| 100 (1.00) | 0,02 | 0,04 | 0,05 | 0,06 | 0,10 | 0,13 | 0,16 | 0,19 | 0,25 | 0,32 | | | | 1.0 |

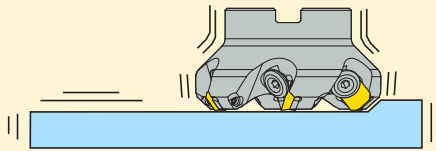
Instead of using the table above for calculating h_m and f_z, the following formula could be used if a_e/DC < 30%.

$$h_m = f_z \cdot \sqrt{\frac{a_e}{D_c}} \cdot \sin \kappa$$

$$f_z = h_m \cdot \sqrt{\frac{D_c}{a_e}} \cdot \frac{1}{\sin \kappa}$$

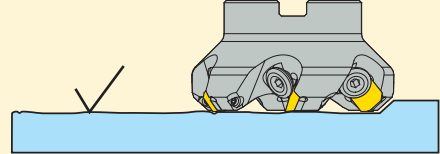


Vibrations



- Improve the stability of cutter and workpiece.
- Change cutter positioning.
- Minimize tool overhang.
- Reduce the cutting speed.
- Increase the feed rate.
- Reduce the depth of cut.
- Select a different insert geometry, see page Insert geometry
- Use Steadyline antivibration bar

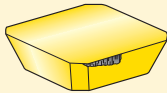
Poor surface finish



- Improve the stability of cutter and workpiece.
- Minimize tool overhang.
- Reduce the feed rate.
- Increase the cutting speed
- Use coolant.
- Use wiper inserts.
- Keep feed/rev value within wiper width
- Use Steadyline antivibration bar

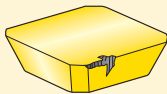
Tool life problems

Rapid flank wear



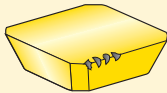
- Reduce the cutting speed.
- Increase the feed rate.
- Climb milling.

Rapid notch wear



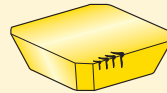
- Reduce the cutting speed.
- Increase the feed rate.
- Increase the depth of cut.
- Climb milling.
- Change cutter positioning

Chipping



- Increase the cutting speed.
- reduce the feed rate.
- Conventional milling.
- Improve chip evacuation.
- Change cutter positioning.
- Minimize tool overhang.
- Improve stability.

Rapid flank wear

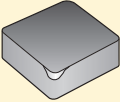
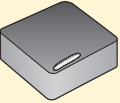
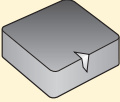
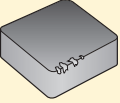
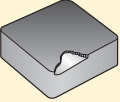
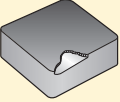
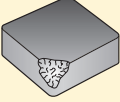
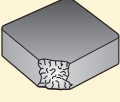


- Reduce the cutting speed.
- Reduce the feed rate.
- No coolant
- Change cutter positioning.

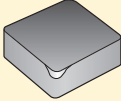

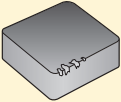
Rapid notch wear



- Increase the cutting speed.
- Increase the feed rate
- No coolant.
- Climb milling.
- Change cutter positioning

| Problem | Cause | Suggested action(s) |
|--|---|---|
| Flank wear  | Not correct edge temperature | <ul style="list-style-type: none"> • Increase cutting speed • Increase feed rate • Increase depth of cut • Check cutting tool centre height • Check the ferrite content |
| Crater wear  | Not correct edge temperature | <ul style="list-style-type: none"> • Decrease cutting speed • Decrease feed rate • Reduce chamfer angle • Use E edge preparation • Use coated insert • Use coolant (only in continuous cut) |
| Notch wear  | Not correct edge temperature Too high cutting forces | <ul style="list-style-type: none"> • Increase cutting speed • Decrease feed rate • Increase insert approach angle (preferably round inserts) • Vary the depth of cut • Use inserts with chamfered cutting edges |
| Edge chipping  | Too high cutting forces | <ul style="list-style-type: none"> • Use inserts with chamfered cutting edges • Increase system rigidity • For interrupted cuts, chamfer the tool entry/exit slots and holes • Vary the cutting speed to eliminate vibrations |
| Edge flaking (continuous cut)  | Too high cutting forces | <ul style="list-style-type: none"> • Increase cutting speed • Reduce feed rate • Use chamfered and honed cutting edges • Check cutting tool center height • Reduce insert approach angle |
| Edge flaking (interrupted cut)  | Too high cutting forces | <ul style="list-style-type: none"> • Do not use coolant • Use chamfered and honed cutting edges • Reduce feed rate • Increase cutting speed • Check cutting tool centre height • Reduce insert approach angle |
| Edge breakage  | Too high cutting forces | <ul style="list-style-type: none"> • Reduce depth of cut • Reduce cutting speed • Increase nose radius • Use chamfered and honed inserts • Check cutting tool center height |
| Insert breakage  | Too high cutting forces | <ul style="list-style-type: none"> • Check insert seating • Check insert shim and insert clamp • Check cutting tool centre height |

Troubleshooting

| Problem | Cause | Suggested action(s) |
|--|--|--|
| Flank wear  | Wrong grade Precense of Fe/Ni/Co | <ul style="list-style-type: none"> • Change to coarser PCD grade • Check material composition • Reduce cutting speed • Use coolant |
| Built-up edge  | Not correct edge temperature Wrong grade | <ul style="list-style-type: none"> • Decrease or increase cutting speed • Choose a sharper insert • Change to a finer grade |
| Edge chipping  | Poor rigidity Wrong grade Incorrect cutting data High run-out | <ul style="list-style-type: none"> • Minimize vibrations • Change to a tougher grade • Change cutting data • Check set-up |
| Poor surface finish | Wrong grade Too high cutting data Incrrect wiper position | <ul style="list-style-type: none"> • Change to a finer PCD grade • Reduce cutting speed and feed rate • Check wiper position |
| Flaking of work-piece | To high depth of cut | <ul style="list-style-type: none"> • Decrease depth of cut • Add entry chamfer on component |

The range of Torque keys with fixed torque values are available in combinations of key grip/torque value for insert locking for most of the Seco milling products. By using a Torque key you always ensure the correct tightening force when mounting the insert.

Torque keys are calibrated according to ISO 6789.

Code key: T00-15P35

T00 = Torque screw driver type for Torx Plus blade

T00T= Torque T-handle type for Torx Plus blade

H00T= Torque T-handle type for hexagonal blade

15P= Torx Plus size

35 = Torque value 3,5 Nm

Please observe that blades are not interchangeable between screw driver type and T-handle type.

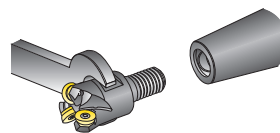
Torx Plus® is a registered trade mark belonging to Camcar-Extron (USA)

| Torque key* | Replaceable blade | Torx Plus size | Torque value |
|-------------|-------------------|----------------|--------------|
| | | | |
| T00-06P05 | T00-06P | T06P | 0,5 Nm |
| T00-07P09 | T00-07P | T07P | 0,9 Nm |
| T00-07P12 | T00-07P | T07P | 1,2 Nm |
| T00-08P12 | T00-08P | T08P | 1,2 Nm |
| T00-09P12 | T00-09P | T09P | 1,2 Nm |
| T00-09P20 | T00-09P | T09P | 2,0 Nm |
| T00-10P20 | T00-10P | T10P | 2,0 Nm |
| T00-10P30 | T00-10P | T10P | 3,0 Nm |
| T00-15P20 | T00-15P | T15P | 2,0 Nm |
| T00-15P30 | T00-15P | T15P | 3,0 Nm |
| T00-15P35 | T00-15P | T15P | 3,5 Nm |
| T00-15P50 | T00-15P | T15P | 5,0 Nm |
| T00-20P50 | T00-20P | T20P | 5,0 Nm |

| Torque key* | Replaceable blade | Torx Plus size | Torque value | Hexagonal size |
|-------------|-------------------|----------------|--------------|----------------|
| | | | | |
| T00T-15P50 | T00T-15P | T15P | 5,0 Nm | – |
| T00T-20P50 | T00T-20P | T20P | 5,0 Nm | – |
| T00T-20P80 | T00T-20P | T20P | 8,0 Nm | – |
| T00T-25P60 | T00T-25P | T25P | 6,0 Nm | – |
| T00T-25P80 | T00T-25P | T25P | 8,0 Nm | – |
| T00T-30P80 | T00T-30P | T30P | 8,0 Nm | – |
| | | | | |
| H00T-3050 | H00T-3.0 | – | 5,0 Nm | 3 mm |
| H00T-4050 | H00T-4.0 | – | 5,0 Nm | 4 mm |
| H00T-4060 | H00T-4.0 | – | 6,0 Nm | 4 mm |
| H00T-5080 | H00T-5.0 | – | 8,0 Nm | 5 mm |
| H00T-60100 | H00T-6.0 | – | 10,0 Nm | 6 mm |

*Including blade

| Combimaster size M | Tightening torque |
|--------------------|-------------------|
| M6 | 10 Nm |
| M8 | 25 Nm |
| M10 | 40 Nm |
| M12 | 60 Nm |
| M16 | 80 Nm |
| M20 | 120 Nm |



SMG – Introduction

The foundation for SMG is a classification of workpiece materials based on their type rather than their relative machinability and consequently it contains workpiece materials like composites. It is comprehensive enough, but still easy to identify to which SMG a particular material belongs.

Each SMG has a specific material standard in a specific condition assigned as reference to allow easy adjustment of cutting data for any actual material compared to any Seco reference material see pages 734 - 737.

As example the reference materials EN C45E for SMG P4 and EN 42 CrMo 4 for both SMG P5 and SMG H5 see further details in the following tables.

In SMG classification of workpiece materials involves a specific material standard in a specific condition assigned as reference for easy and unambiguous adjustment of cutting data for any actual material compared to any Seco reference material. As examples the reference materials EN C45E for SMG P4 and EN 42 CrMo 4 for both SMG P5 and SMG H5 shown below in table 1 where the reference level material property is indicated.

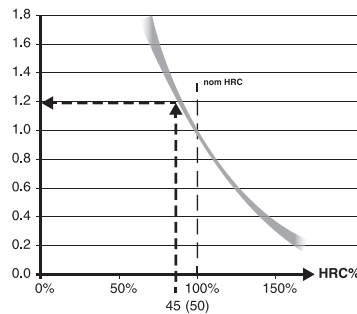
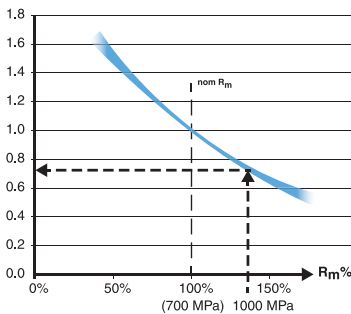
| SMG | Description | Properties | Reference | SMG | Description | Properties | Reference |
|-----|--|-----------------------------|---|-----|----------------------------|---------------|---------------------|
| P4 | Low-alloy general structural steels, 0.25% < C < 0.67%wt Low-alloy Quench & Temper steels | 520 < R _m < 1200 | C 45E R _m = 660 N/mm ² | H5 | Quenched & Tempered steels | 38 < HRC < 56 | 42 CrMo 4 50 HRC |
| P5 | Structural steels, 0.25% < C < 0.67%wt Quench & Temper steels | 550 < R _m < 1200 | 42 CrMo 4 R _m = 700 N/mm ² | | | | |

Focusing specifically on EN 42 CrMo 4 in annealed condition, the ultimate tensile strength R_m may typically vary between R_m = 630 N/mm² and R_m = 780 N/mm², which provide a reference level for SMG P5. In Quenched & Tempered condition, the ultimate tensile strength R_m may typically be between R_m = 900 N/mm² and R_m = 1100 N/mm² thus still belongs to SMG P5. However, if hardened above R_m = 1200 N/mm² it now belongs to SMG H5.

| SMG | EN | W-Nr | AFNOR | BS | UNI | JIS | AISI / ASTM | GOST | Condition | R _{m,nom} | HRC _{nom} |
|-----|-----------|--------|---------|----------|-----------|-------------|-------------|------|---------------------|--------------------|--------------------|
| P5 | 42 CrMo 4 | 1.1201 | 42 CD 4 | 708 M 40 | 42 CrMo 4 | SCM 440 (H) | 4142, 4140 | 38HM | Annealed | 700 | |
| | 42 CrMo 4 | 1.1201 | 42 CD 4 | 708 M 40 | 42 CrMo 4 | SCM 440 (H) | 4142, 4140 | 38HM | Quenched & Tempered | 1000 | |
| H5 | 42 CrMo 4 | 1.1201 | 42 CD 4 | 708 M 40 | 42 CrMo 4 | SCM 440 (H) | 4142, 4140 | 38HM | Quenched & Tempered | | 45 |
| | 42 CrMo 4 | 1.1201 | 42 CD 4 | 708 M 40 | 42 CrMo 4 | SCM 440 (H) | 4142, 4140 | 38HM | Quenched & Tempered | | 50 |

The EN 42CrMo4 quench & tempered steel could be used to illustrate the machinability dependence of materials' condition.

The graphs below indicate how speed recommendations for a nominal material conditions may be adjusted for relative R_m (left diagram valid for ISO-P) and for relative HRC (valid for ISO-H).



To further illustrate how the SMG P5 nominal v_c can be adjusted to a more accurate recommended v_c we need ultimate tensile strength R_m data and in this case we use the EN 42 CrMo 4 quenched & tempered to R_m = 1000 N/mm² according to above table (bold blue arrows).

Assume that we find that the SMG P5 nominal v_c = 280 m/min for a certain product and machining.

Then, actual recommended v_c = 280 m/min × 0,75 = 210 m/min.

Consequently in the SMG H5 the nominal v_c can be adjusted using the hardened EN 42 CrMo 4 at HRC 45 (smaller grey arrows).

Assume that the SMG H5 nominal v_c = 50 m/min for a certain product and machining using a coated cemented carbide tool then, actual recommended v_c = 50 m/min × 1,2 = 60 m/min.

For further workpiece material details please see page(s) 738-745 and suggested cutting data at applicable pages.

For more convenient cutting data handling we recommend applicable tools in My Pages – Suggest on www.secotools.com

Steels, ferritic and martensitic stainless steels

| SMG | Description | Properties | Reference | $k_{c1.1}$ | m_c |
|-----|---|--------------------|--|------------|-------|
| P1 | Free-cutting steels | $360 < R_m < 880$ | 11 SMn30 $R_m = 385 \text{ N/mm}^2$ | 1500 | 0,14 |
| P2 | Low-alloy ferritic steels, $C < 0.25\%wt$ Low-alloy weldable general structural steels | $320 < R_m < 600$ | S235JRG2 $R_m = 420 \text{ N/mm}^2$ | 1600 | 0,23 |
| P3 | Ferritic & ferritic/pearlitic steels, $C < 0.25\%wt$ Weldable general structural steels Case-hardening steels | $430 < R_m < 610$ | 16 MnCr 5 $R_m = 550 \text{ N/mm}^2$ | 1800 | 0,14 |
| P4 | Low-alloy general structural steels, $0.25\% < C < 0.67\%wt$ Low-alloy Quench & Temper steels | $520 < R_m < 1200$ | C 45E $R_m = 660 \text{ N/mm}^2$ | 2000 | 0,15 |
| P5 | Structural steels, $0.25\% < C < 0.67\%wt$ Quench & Temper steels | $550 < R_m < 1200$ | 42 CrMo 4 $R_m = 700 \text{ N/mm}^2$ | 2020 | 0,18 |
| P6 | Low-alloy through-hardening steels, $C > 0.67\%wt$ Low-alloy spring and bearing steels | $520 < R_m < 1200$ | C 100S $R_m = 600 \text{ N/mm}^2$ | 2100 | 0,17 |
| P7 | Through-hardening steels, $C > 0.67\%wt$ Spring and bearing steels | $600 < R_m < 1200$ | 100 Cr 6 $R_m = 650 \text{ N/mm}^2$ | 2160 | 0,17 |
| P8 | Tool steels High Speed Steels (HSS) | $600 < R_m < 1200$ | X 40 CrMoV 5 1 $R_m = 700 \text{ N/mm}^2$ | 2400 | 0,20 |
| P11 | Ferritic & martensitic stainless steels | $415 < R_m < 1200$ | X 20 Cr 13 $R_m = 675 \text{ N/mm}^2$ | 2000 | 0,15 |
| P12 | Maraging and precipitation-hardening stainless steels | $500 < R_m < 1200$ | X 5 CrNiCuNb 16 4 $R_m = 1100 \text{ N/mm}^2$ | 2100 | 0,17 |

Free-cutting, austenitic and duplex stainless steels

| SMG | Description | Properties | Reference | $k_{c1.1}$ | m_c |
|-----|---|------------|--------------------|------------|-------|
| M1 | Free-cutting austenitic stainless steels | | X 10 CrNiS 18 9 | 1700 | 0,14 |
| M2 | Low-alloy austenitic stainless steels | | X 5 CrNi 18 10 | 1920 | 0,18 |
| M3 | Medium-alloy austenitic stainless steels | | X 2 CrNiMo 18 14 3 | 2070 | 0,17 |
| M4 | High-alloy austenitic and duplex stainless steels | | X 2 CrNiMoN 22 5 3 | 2230 | 0,16 |
| M5 | Difficult high-alloy austenitic and duplex stainless steels | | X 2 CrNiMoN 25 7 4 | 2510 | 0,13 |

Cast irons

| SMG | Description | Properties | Reference | $k_{c1.1}$ | m_c |
|-----|---------------------------------|------------|-----------------------|------------|-------|
| K1 | Grey cast irons (GCI) | | EN-GJL-250 | 930 | 0,32 |
| K2 | Compacted graphite irons (CGI) | | EN-GJV-400 | 1000 | 0,35 |
| K3 | Malleable cast irons (MCI) | | EN-GJMB-550-4 | 1050 | 0,37 |
| K4 | Nodular cast irons (SGI) | | EN-GJS-500-7 | 1160 | 0,37 |
| K5 | Austempered ductile irons (ADI) | | EN-GJS-1000-5 | | |
| K6 | Austenitic lamellar cast irons | | EN-GJLA-XNiCuCr15-6-2 | | |
| K7 | Austenitic nodular cast irons | | EN-GJSA-XNiMn23-4 | | |

Non-ferrous metals

| SMG | Description | Properties | Reference | $k_{c1.1}$ | m_c |
|-----|---------------------------------|------------|----------------------|------------|-------|
| N1 | Aluminium alloys, Si < 9% | | AW-7075 | | |
| N2 | Aluminium alloys, 9% < Si < 16% | | AC-44200 Si = 12% | | |
| N3 | Aluminium alloys, Si > 16% | | AlSi17Cu5 | | |
| N11 | Copper alloys | | CW614N | 740 | 0,26 |

Superalloys and titanium

| SMG | Description | Properties | Reference | $k_{c1.1}$ | m_c |
|-----|---|------------|-------------|------------|-------|
| S1 | Iron-based superalloys | | Disalloy | | |
| S2 | Cobalt-based superalloys | | Stellite 21 | | |
| S3 | Nickel-based superalloys | | Inconel 718 | 2530 | 0,21 |
| S11 | Titanium, low alloyed, (α) | | Ti | | |
| S12 | Titanium, medium alloyed, ($\alpha+\beta$) | | TiAl6V4 | 1500 | 0,24 |
| S13 | Titanium, high alloyed, (near β and β) | | Ti10V2Fe3Al | | |

Hard materials

| SMG | Description | Properties | Reference | $k_{c1.1}$ | m_c |
|-----|---|---------------------|--|------------|-------|
| H3 | Case-hardened steels | 58 < HRC < 62 | 16 MnCr 5 60 HRC | 2070 | 0,14 |
| H5 | Quenched & Tempered steels | 38 < HRC < 56 | 42 CrMo 4 50 HRC | 2320 | 0,18 |
| H7 | Quenched & Tempered steels Bearing steels | 56 < HRC < 64 | 100 Cr 6 60 HRC | 2480 | 0,17 |
| H8 | Tool steels High Speed Steels (HSS) | 38 < HRC < 64 | X 40 CrMoV 5 1 50 HRC | 2750 | 0,20 |
| H11 | Martensitic stainless steels | 38 < HRC < 50 | X 20 Cr 13 45 HRC | 2300 | 0,15 |
| H12 | Maraged and precipitation-hardened stainless steels | 1200 < R_m < 1650 | X 5 CrNiCuNb 16 4 $R_m = 1450 \text{ N/mm}^2$ | 2410 | 0,17 |
| H21 | Manganese steels | 23 < HRC < 64 | X 120 Mn 12 50 HRC | | |
| H31 | White cast irons | 50 < HRC < 64 | EN-GJN-HV600(XCr11) 55 HRC | | |

Other difficult materials

| SMG | Description | Properties | Reference | $k_{c1.1}$ | m_c |
|-----|---|------------|--|------------|-------|
| PM1 | Low-alloy PM-materials | | F-0008 Fe-0.7C | | |
| PM2 | Medium-alloy PM-materials | | FLC-4608 Fe2Cu1.8Ni 0.5Mo0.2Mn0.8C | | |
| PM3 | High-alloy PM-materials Exhaust valve seat materials, etc. | | | | |
| HF1 | Hardfacing alloys Welded or plasma-deposited iron-based alloys | | | | |
| HF2 | Hardfacing alloys Welded or plasma-deposited cobalt- and nickel-based alloys | | | | |
| CC1 | Sintered tungsten carbide | | G50 | | |

Plastics and Composites

| SMG | Description | Properties | Reference | $k_{c1.1}$ | m_c |
|-----|--|------------|---|------------|-------|
| TS1 | Thermosetting polymers | | Urea formaldehyde (UF) | | |
| TS2 | Thermosetting carbon-fibre composites | | T300 T700 T800 HTA-S IMA - Epoxy (M21)... | | |
| TS3 | Thermosetting glass-fibre composites | | Epoxy - HX..(42..)E glass (7781...)... | | |
| TS4 | Thermosetting aramide-fibre composites | | Kevlar 49 | | |
| TP1 | Thermoplastic polymers | | Polycarbonate (PC) | | |
| TP2 | Thermoplastic carbon-fibre composites | | PPS/PEEK - T300.. | | |
| TP3 | Thermoplastic glass-fibre composites | | PPS/PEEK - E glass or A glass... | | |
| TP4 | Thermoplastic aramide-fibre composites | | | | |

Graphite

| SMG | Description | Properties | Reference | $k_{c1.1}$ | m_c |
|-----|-------------|------------|-----------|------------|-------|
| GR1 | Graphite | | R 8500 | | |

SMG

| SMG | EN | EN-Nr | W-Nr | DIN | AFNOR | BS | UNI | JIS | SS | UNS |
|----------------|-------------|--------|---------------|----------------|-----------------|------------------|-----------------|------------|------------|--------|
| P1 | 11 SMn 30 | 1.0715 | 1.0715 | 9 SMn 28 | S 250 | 230 M 07 | CF 9 SMn 28 | SUM 22 | 1912 | G12130 |
| | 11 SMnPb 30 | 1.0718 | 1.0718 | 9 SMnPb 28 | S 250 Pb | | CF 9 SMnPb 28 | SUM 22 L | 1914 | G12134 |
| | 10 S 20 | 1.0721 | 1.0721 | 10 S 20 | 10 F 1 | 210 M 15 | CF 10 S 20 | | | |
| | | | 1.0722 | 10 SPb 20 | 10 PbF 2 | | CF 10 SPb 20 | | | |
| | 15 SMn 13 | 1.0725 | 1.0723 | 15 S 20 | | 210 A 15 | | SUM 32 | 1922 | |
| | 35 S20 | 1.0726 | 1.0726 | 35 S 20 | 35 MF 4 | 212 M 36 | | | 1957 | G11400 |
| | 46 S20 | 1.0727 | 1.0727 | 46 S 20 | 45 MF 4 | 212 M 44 | | | 1973 | G11460 |
| | 11 SMn 37 | 1.0736 | 1.0736 | 9 SMn 36 | S 300 | 240 M 07 | CF 9 SMn 36 | | | G12150 |
| | 11 SMn 37 | 1.0736 | 1.0736 | 9 SMn 36 | S 300 | 240 M 07 | CF 9 SMn 36 | | | G12150 |
| | S235JR | 1.0037 | 1.0037 | St 37-2 | E 24-2 | | Fe 360 B | STKM 12 C | 1311 | |
| | S235JRG2 | 1.0038 | 1.0116 | St 37-3 | E 24-3, E 24-4 | 4360-40 C | Fe 360 D FF | | 1312, 1313 | |
| S275J2G3 | 1.0144 | 1.0144 | St 44-3 N | E 28-3, E 28-4 | 4360-43 C | Fe 430 D FF | SM 41 C | 1412, 1414 | | |
| C 10 | 1.0301 | 1.0301 | C 10 | 34 C 10, XC 10 | 045 M 10 | C 10 | S 10 C | | G10100 | |
| | | 1.0401 | C 15 | 37 C 12, XC 18 | 080 M 15 | C 15, C 16 | | 1350 | G10170 | |
| C22 | 1.0402 | 1.0402 | C 22 | C 20 | 050 A 20 | C 20, C 21 | | 1450 | G10200 | |
| S355JR | 1.0570 | 1.0570 | St 52-3 | E 36-3, E 36-4 | 4360-50 C | Fe 510 B | SM 50 YA | 2172, 2132 | | |
| C 15R | 1.1141 | 1.1141 | Ck 15 | XC 15, XC 18 | 080 M 15 | C 15, C 16 | S 15 C, S 15 CK | 1370 | G10170 | |
| | | 1.1158 | Ck 25 | XC 25 | 060 A 25 | C 25 | S 25 C | | G10250 | |
| | | 1.2162 | 21 MnCr 5 | 20 NC 5 | | | SCR 420 H | | | |
| 16 Mo 3 | 1.5415 | 1.5415 | 15 Mo 3 | 15 D 3 | 1501-240 | 16 Mo 3 | | 2912 | | |
| | | 1.5423 | 16 Mo 5 | | 1503-245-420 | 16 Mo 5 | SB 450 M | | G45200 | |
| 14 NiCr 14 | 1.5752 | 1.5752 | 14 NiCr 14 | 12 NC 15 | 655 M 13 | | SNC 815 (H) | | G33106 | |
| | | 1.5919 | 15 CrNi 6 | 16 NC 6 | S 107 | 16 CrNi 4 | | | | |
| 18 NiCrMo 7 6 | 1.6587 | 1.6587 | 18 CrNiMo 7 6 | 18 NCD 6 | 820 A 16 | 18 NiCrMo 7 | | | | |
| 16 MnCr 5 | 1.7131 | 1.7131 | 16 MnCr 5 | 16 MC 5 | 527 M 17 | 16 MnCr 5 | SCR 415 | 2511 | G51170 | |
| 16 MnCrS 5 | 1.7139 | 1.7139 | 16 MnCrS 5 | | | | | | | |
| 20 MnCr 5 | 1.7147 | 1.7147 | 20 MnCr 5 | 20 MC 5 | | 20 MnCr 5 | SMnC 420 (H) | | G51200 | |
| 20 MnCrS 5 | 1.7149 | 1.7149 | 20 MnCrS 5 | 20 MnCrS 5 | | | SMnC 21 H | | | |
| 13 CrMo 4 5 | 1.7335 | 1.7335 | 13 CrMo 4 4 | 15 CD 3.5 | 1501-620 Gr. 27 | 14 CrMo 4 5 | | 2216 | | |
| | | 1.7337 | 16 CrMo 4 4 | 15 CD 4.5 | 1501-620 Gr. 27 | 14 CrMo 4 5 | | 2216 | | |
| 10 CrMo 9 10 | 1.7380 | 1.7380 | 10 CrMo 9 10 | 10 CD 9,10 | 1501-622 Gr. 31 | 12 CrMo 9 10 | | 2218 | J21890 | |
| C 35 | | 1.0501 | C 35 | 55 C 35 | 060 A 35 | C 35 | | 1550 | G10350 | |
| E 335 | 1.0503 | 1.0503 | C 45 | 65 C 45 | 80 M 46 | C 45 | S 45 C | 1650 | G10430 | |
| C 40 | | 1.0511 | C 40 | 60 C 40 | 080 M 40 | C 40 | S 40 C | | | |
| E 360 | 1.0070 | 1.0535 | St 70-2 | A 70-2 | | Fe 690 | | 1655 | | |
| C 60 | 1.0601 | 1.0601 | C 60 | CC 55 | 080 A 62 | C 60 | | | G10600 | |
| | | 1.1157 | 40 Mn 4 | 35 M 5 | 150 M 36 | | | | G10390 | |
| G 28 Mn6 | 1.1165 | 1.1165 | 30 Mn 5 | | 120 M 36 | | SMn 1 H, SCMn 2 | | G13300 | |
| C 35E | 1.1181 | 1.1181 | Ck 35 | XC 38 H1 | 080 M 36 | C 35 | S 35 C | 1572 | G10340 | |
| C 45E | 1.1191 | 1.1191 | Ck 45 | XC 42 | 080 M 46 | C 45 | S 45 C | 1672 | G10420 | |
| C 60E | 1.1221 | 1.1221 | Ck 60 | XC 60 | 080 A 62 | C 60 | S 58 C | 1665, 1678 | G10640 | |
| | | 1.1740 | C 60 W | Y3 55 | | | SK 7 | | | |
| 55 SiCr7 | 1.7100 | 1.0904 | 55 Si 7 | 55 S 7 | 250 A 53 | 55 Si 8 | | 2085, 2090 | | |
| | | 1.2330 | 35 CrMo 4 | 34 CD 4 | 708 A 37 | 35 CrMo 4 | | 2234 | T51620 | |
| | | 1.2542 | 45 WCrV 7 | | BS 1 | 45 WCrV 8 KU | | 2710 | T41901 | |
| | 1.2714 | 1.2714 | 56 NiCrMoV 7 | | BH 224-5 | 56 NiCrMoV7-KU | SKT 4 | | T61206 | |
| | | 1.5121 | 46 MnSi 4 | | | | | | | |
| | | 1.5710 | 36 NiCr 6 | 35 NC 6 | 640 A 35 | | SNC 236 | | | |
| | | 1.5736 | 36 NiCr 10 | 35 NC 11 | | 35 NiCr 9 | SNC 631 (H) | | | |
| 36 CrNiMo 4 | | 1.6511 | 36 CrNiMo 4 | 40 NCD 3 | 816 M 40 | 38 NiCrMo 4 (KB) | | | G98400 | |
| 34 CrNiMo 6 | 1.6582 | 1.6582 | 34 CrNiMo 6 | 35 NCD 6 | 817 M 40 | 35 NiCrMo 6 (KW) | SNCM 447 | 2541 | G43400 | |
| 34 Cr 4 | 1.7033 | 1.7033 | 34 Cr 4 | 32 C 4 | 530 A 32 | 34 Cr 4 (KB) | SCR 430 (H) | | G51320 | |
| 41 Cr 4 | 1.7035 | 1.7035 | 41 Cr 4 | 42 C 4 | 530 M 40 | 41 Cr 4 | SCR 440 (H) | | G51400 | |
| 25 CrMo 4 | 1.7218 | 1.7218 | 25 CrMo 4 | 25 CD 4 S | 708 M 25 | 25 CrMo 4 (KB) | SCM 425 | 2225 | G41300 | |
| 42 CrMo 4 | 1.7225 | 1.7225 | 42 CrMo 4 | 42 CD 4 | 708 M 40 | 42 CrMo 4 | SCM 440 (H) | 2244 | G41400 | |
| 42 CrMo 4 | 1.7225 | 1.7225 | 42 CrMo 4 | 42 CD 4 | 708 M 40 | 42 CrMo 4 | SCM 440 (H) | 2244 | G41400 | |
| | | 1.7361 | 32 CrMo 12 | 30 CD 12 | 722 M 24 | 32 CrMo 12 | | 2240 | | |
| 50 CrV 4 | 1.8159 | 1.8159 | 50 CrV 4 | 50 CV 4 | 735 A 50 | 51 CrV 4 | SUP 10 | 2230 | H61500 | |
| 41 CrAlMo 7 10 | 1.8509 | 1.8509 | 41 CrAlMo 7 | 40 CAD 6.12 | 905 M 39 | 41 CrAlMo 7 | SACM 645 | 2940 | K24065 | |
| C 67S | 1.1231 | 1.1231 | Ck 67 | XC 68 | 060 A 67 | C 70 | | 1770 | G10700 | |
| C 100S | 1.1274 | 1.1274 | Ck 101 | | 060 A 96 | | SUP 4 | 1870 | G10950 | |
| C 105U | 1.1545 | 1.1545 | C 105 W1 | Y1 105 | | C 100 KU | | 1880 | | |
| | | 1.1645 | C 105 W2 | Y1 105 | | C 100 KU | SK 3 | | | |
| | | 1.1663 | C 125 W | Y2 120 | | C 120 KU | SK 2 | | | |

SMG

| U.N.E./I.H.A. | AISI / ASTM | GOST | ČSN | Misc. Brands | Condition | Structure |
|---------------|---------------------|----------|--------|--------------|---------------------|-----------|
| | 1213 | | | | Annealed | |
| | 12 L 13 | | | | Annealed | |
| | 1108 | | | | Annealed | |
| | 11 L 08 | | | | Annealed | |
| | | | | | Annealed | |
| | 1140 | 40 | | | Annealed | |
| | 1146 | | | | Annealed | |
| | 1215 | | | | Annealed | |
| | 12 L 14 | | | | Annealed | |
| | | 16D | | | Annealed | |
| | A573 Grade 58 | 18kp | 11 378 | | Annealed | |
| | A573 Grade 70 | S114kP | 11 448 | | Annealed | |
| | 1010 | 10 | | | Annealed | |
| F.1110 | 1015 | 15 | | | Annealed | |
| | 1020, 1023 | 20 | 12 024 | | Annealed | |
| | | 17G1S | 11 523 | | Annealed | |
| F.1511 | 1015 | 15 | | | Annealed | |
| F.1120 | 1025 | 25 | | | Annealed | |
| | | | | | Annealed | |
| | A204 Grade A | | 15 020 | | Annealed | |
| | 4520 | | | | Annealed | |
| | 3310, 9314 | 20X2H4A | 16 420 | | Annealed | |
| | 4320 | | 16 220 | | Annealed | |
| | | | | | Annealed | |
| F.1516 | 5115 | 12KHN2 | 14 220 | | Annealed | |
| | | 18HG | | | Annealed | |
| | 5120 | 20KH | 14 221 | | Annealed | |
| | 5120 H | 20KH | | | Annealed | |
| | A182-F11, A182-F12 | 12KHM | 15 121 | | Annealed | |
| | A387 Grade 12 Cl. 2 | | | | Annealed | |
| F.155 | A182-F22 | 12KH8 | 15 313 | | Annealed | |
| F.1130 | 1035 | 35 | 12 040 | | Annealed | |
| F.5110 | 1045 | 45 | 12 050 | | Annealed | |
| | 1040 | 40 | 12 041 | | Annealed | |
| F.1150 | 1055 | 55 | | | Annealed | |
| | 1060 | 60 | 12 061 | | Annealed | |
| | 1039 | 40G | | | Annealed | |
| | 1330 | 30G2 | | | Annealed | |
| F.1135 | 1035 | 35 | | | Annealed | |
| F.1140 | 1045 | 45 | 12 050 | | Annealed | |
| F.1150 | 1064 | 60 | | | Annealed | |
| | 1060 | 60 | | | Annealed | |
| F.144 | 9255 | 55S2 | | | Annealed | |
| F.1250 | 4135 | 35KHM | | | Annealed | |
| F.5241 | S1 | 5KHV2S | | | Annealed | |
| | L6 | 5KHNV | | | Annealed | |
| | 5045 | | | | Annealed | |
| | 3135 | | | | Quenched & Tempered | |
| | 3435 | | | | Annealed | |
| | 9840 | | | | Quenched & Tempered | |
| F.1280 | 4340 | 38H2N2MA | 16 343 | | Annealed | |
| | 5132 | 35KH | | | Quenched & Tempered | |
| | 5140 | 40H | 14 140 | | Quenched & Tempered | |
| F.1251 | 4130 | 20KHM | 15 130 | | Quenched & Tempered | |
| F.1252 | 4142, 4140 | 38HM | 15 142 | | Annealed | |
| F.1252 | 4142, 4140 | 38HM | 15 142 | | Quenched & Tempered | |
| | | | | | Quenched & Tempered | |
| F.143 | 6150 | 50KHFA | 15 260 | | Quenched & Tempered | |
| F.1740 | A355 Cl. A | | | | Annealed | |
| F.5103 | 1070 | 70 | | | Annealed | |
| F.5117 | 1095 | | | | Annealed | |
| F.5118 | W1 | U10A | | | Annealed | |
| | | U10 | | | Annealed | |
| | W1 | U13 | | | Annealed | |

SMG

| SMG | EN | EN-Nr | W.-Nr | DIN | AFNOR | BS | UNI | JIS | SS | UNS |
|--------------------|-----------------------|--------|--------------------|-------------------------|------------------------|--------------------|---------------------|--------------------|--------|--------|
| P7 | 107 CrV 3 | 1.2210 | 1.2210 | 115 CrV 3 | 100 C 3 | | 107 CrV 3 KU | | | T61202 |
| | | | 1.2510 | 100 MnCrW 4 | 90 MNCV 5 | BO 1 | 95 MnWCr 5 KU | SKS 3 | 2140 | T31501 |
| | 90 MnCrV 8 | 1.2842 | 1.2842 | 90 MnCrV 8 | 90 MV 8 | BO 2 | 90 MnVCr 8 KU | | | T31502 |
| 100 Cr 6 | 1.3505 | 1.3505 | 100 Cr 6 | 100 C 6 | 534 A 99 | 100 Cr 6 | SUJ 2 | 2258 | G51986 | |
| P8 | X 210 Cr 12 | 1.2080 | 1.2080 | X 210 Cr 12 | Z 200 C 12 | BD 3 | X 210 Cr 13 KU | SKD 1 | | T30403 |
| | | | 1.2343 | X 38 CrMoV 5 1 | Z 38 CDV 5 | BH 11 | X 37 CrMoV 5 1 KU | SKD 6 | | T20811 |
| | X 40 CrMoV 5 1 | 1.2344 | 1.2344 | X 40 CrMoV 5 1 | Z 40 CDV 5 | BH 13 | X 40 CrMo 5 1 1 KU | SKD 61 | 2242 | T20813 |
| | X 100 CrMoV 5 | 1.2363 | 1.2363 | X 100 CrMoV 5 1 | Z 100 CDV 5 | BA 2 | X 100 CrMoV 5 1 KU | SKD 12 | 2260 | T30102 |
| | | | 1.2365 | X 32 CrMoV 3 3 | 32 DCV 28 | BH 10 | 30 CrMoV 12 27 KU | SKD 7 | | T20810 |
| | | | 1.2436 | X 210 CrW 12 | | | X 215 CrW 12 1 KU | SKD 2 | 2312 | |
| | | | 1.2601 | X 165 CrMoV 12 | | | X 165 CrMoW 12 KU | | 2310 | |
| | | | 1.2713 | 55 NiCrMoV 6 | 55 NCDV 7 | | | SKT 4 | | T61206 |
| | HS 6-5-2-5 | 1.3243 | 1.3243 | S 6-5-2-5 | Z 85 WDCKV 06-05-04-02 | | HS 6-5-2-5 | SKH 55 | 2723 | |
| | HS 2-10-1-8 | 1.3247 | 1.3247 | S 2-10-1-8 | Z 110 DKCW 09-08-04 | BM 42 | HS 2-9-1-8 | SKH 51 | | T11342 |
| HS 18-1-2-5 | 1.3255 | 1.3255 | S 18-1-2-5 | Z 80 WKCVCV 18-05-04-01 | BT 4 | HS 18-1-1-5 | SKH 3 | | T12004 | |
| HS 6-5-2 | 1.3343 | 1.3343 | S 6-5-2 | Z 85 WDCV 06-05-04-02 | BM 2 | HS 6-5-2 | SKH 9, SKH 51 | 2722 | T11302 | |
| HS 2-9-2 | 1.3348 | 1.3348 | S 2-9-2 | Z 100 DCWV 09-04-02-02 | | HS 2-9-2 | SKH 58 | 2782 | T11307 | |
| HS 18-0-1 | 1.3355 | 1.3355 | S 18-0-1 | Z 80 WCW 18-04-01 | BT 1 | HS 18-0-1 | SKH 2 | | T12001 | |
| P11 | X 6 Cr 13 | 1.4000 | 1.4000 | X 6 Cr 13 | Z 6 C 12 | 403 S 17 | X 6 Cr 13 | SUS 403 | 2301 | S41008 |
| | X 12 Cr 13 | 1.4006 | 1.4006 | X 10 Cr 13 | Z 10 C 13 | 410 S 21 | X 12 Cr 13 | SUS 410 | 2302 | S41000 |
| | X 6 Cr 17 | 1.4016 | 1.4016 | X 6 Cr 17 | Z 8 C 17 | 430 S 15 | X 8 Cr 17 | SUS 430 | 2320 | S43000 |
| | X 20 Cr 13 | 1.4021 | 1.4021 | X 20 Cr 13 | Z 20 C 13 | 420 S 37 | X 20 Cr 13 | SUS 420 J 1 | 2303 | S42000 |
| | X 39 Cr 13 | 1.4031 | 1.4031 | X 40 Cr 13 | Z 40 C 14 | 420 S 45 | X 40 Cr 14 | SUS 420 | 2304 | S40280 |
| | X 70 CrMo 15 | 1.4109 | 1.4109 | X 65 CrMo 14 | Z 70 D 14 | | | SUS 440 A | | S44002 |
| | X 90 CrMoV 18 | 1.4112 | 1.4112 | X 90 CrMoV 18 | Z 2 CND 18 05 | 409 S 19 | X CrTi 12 | SUS 440 B | 2327 | S44003 |
| | X 105 CrMo 17 | 1.4125 | 1.4125 | X 105 CrMo 17 | Z 100 CD 17 | | X 105 CrMo 17 | SUS 440 C | | S44004 |
| | X 3 CrNiMo 13 3 | 1.4313 | 1.4313 | X 5 CrNi 13 4 | Z 5 CN 13.4 | 425 C 11 | X 6 CrNi 13 04 | SCS 5 | 2385 | S41500 |
| | X 18 CrN 28 | 1.4749 | 1.4749 | X 18 CrN 28 | Z 18 C 25 | | | | 2322 | S44600 |
| P12 | X 6 NiCrTiMoV 25 15 | 1.4534 | 1.4534 | X 3 CrNiMoAl 13 8 2 | | | | | | S13800 |
| | X 4 CrNiCuNb 16 4 | 1.4540 | 1.4540 | X 4 CrNiCuNb 16 4 | | | | | | S15500 |
| | | 1.4540 | 1.4540 | X 4 CrNiCuNb 16 4 | Z 4 CNUNb 16.4 M | | | | | S15500 |
| | X 4 CrNiCuNb 16 4 | 1.4540 | 1.4540 | X 4 CrNiCuNb 16 4 | | | | | | S15500 |
| | X 5 CrNiCuNb 16 4 | 1.4542 | 1.4542 | X 5 CrNiCuNb 16 4 | | | | SUS 630 | | S17400 |
| | X 5 CrNiCuNb 17 4 | 1.4548 | 1.4542 | X 5 CrNiCuNb 17 4 | Z 6 CNU 17.4 | | | SCS 24, SUS 630 | | S17400 |
| | X 7 CrNiAl 17 7 | 1.4564 | 1.4564 | X 7 CrNiAl 17 7 | Z 9 CAN 17.7 | 301 S 81 | X 7 CrNiAl 17 7 | SUS 631 | 2388 | S17700 |
| | X 2 NiCoMoTi 18 12 4 | 1.6356 | 1.6356 | X 2 NiCoMoTi 18 12 4 | | | | | | K93160 |
| | X 2 NiCoMoTi 18 9 5 | 1.6358 | 1.6358 | X 2 NiCoMoTi 18 9 5 | Z 2 NKD 19-09 | | | | | K93120 |
| | X 2 NiCoMo 18 9 5 | 1.6358 | 1.6358 | X 2 NiCoMoTi 18 9 5 | Z 2 NKD 19-09 | | | | | K93120 |
| X 2 NiCoMo 18 8 5 | 1.6359 | 1.6359 | X 2 NiCoMo 18 8 5 | | | S 162 | | | K92890 | |
| X 2 NiCoMo 18 8 5 | 1.6359 | 1.6359 | X 2 NiCoMo 18 8 5 | | | S 162 | | | K92890 | |
| M1 | X 10 CrNiS 18 9 | 1.4305 | 1.4305 | X 10 CrNiS 18 9 | Z 10 CNF 18.09 | 303 S 31 | X 10 CrNi 18 09 | SUS 303 | 2346 | S30300 |
| | X 2 CrNi 19 11 | 1.4306 | 1.4306 | X 2 CrNi 19 11 | Z 2 CN 18.10 | 304 S 12 | X 3 Cr Ni 18 11 | SUS 304 L | 2352 | S30403 |
| | X 5 CrNi 18 10 | 1.4301 | 1.4301 | X 5 CrNi 18 10 | Z 6 CN 18.09 | 304 S 31 | X 5 CrNi 18 11 | SUS 304 | 2333 | S30400 |
| M2 | X 5 CrNiMo 17 12 2 | 1.4401 | 1.4401 | X 5 CrNiMo 17 12 2 | Z 3 CND 17.11.1 | 316 S 31 | X 5 CrNiMo 17 12 | SUS 316 | 2347 | S31600 |
| | X 6 CrNiNb 18 10 | 1.4550 | 1.4550 | X 6 CrNiNb 18 10 | Z 6 CNNb 18.10 | 347 S 31 | X 6 CrNiNb 18 11 | SUS 347 | 2338 | S34700 |
| | X 9 CrNi 18 8 | 1.4310 | 1.4310 | X 12 CrNi 17 7 | Z 12 CN 17.07 | 301 S 21 | X 12 CrNi 17 07 | SUS 301 | (2331) | S30100 |
| | X 12 CrNi 18 8 | 1.4300 | 1.4300 | X 12 CrNi 18 8 | Z 12 CN 18 | 302 S 25 | | SUS 302 | 2331 | S30200 |
| M3 | X 2 CrNiMo 18 14 3 | 1.4435 | 1.4435 | X 2 CrNiMo 18 14 3 | Z 2 CND 17.13 | 316 S 12 | X 2 CrNiMo 17 13 2 | SCS 16, SUS 316 L | 2353 | S31603 |
| | X 2 CrNiMoN 17 13 3 | 1.4429 | 1.4429 | X 2 CrNiMoN 17 13 3 | Z 2 CND 17.13 Az | 316 S 62 | X 2 CrNiMoN 17 13 3 | SUS 316 LN | 2375 | S31653 |
| | X 2 CrNiN 18 10 | 1.4311 | 1.4311 | X 2 CrNiN 19 11 | Z 2 CN 18. 10 Az | 304 S 62 | X 2 CrNiN 18 11 | SUS 304 LN | 2371 | S30453 |
| | X 3 CrNiMo 18 12 3 | 1.4466 | 1.4466 | X 5 CrNi 18 15 | | 317 S 16 | X 5 CrNi 18 15 | SUS 317 | 2366 | S31700 |
| | X 9 CrNiSiNCo 21 11 2 | 1.4835 | 1.4893 | X 9 CrNiSiNCo 21 11 2 | | 310 S 31 | | | 2368 | S30815 |
| M4 | X 12 CrNi 25 21 | 1.4335 | 1.4335 | X 12 CrNi 25 21 | Z 12 CN 25.20 | 310 S 24 | X 6 CrNi 26 20 | SUH 310, SUS 310 S | 2361 | S31008 |
| | X 2 CrNiMo 22 5 3 | 1.4462 | 1.4462 | X 2 CrNiMoN 22 5 | Z 2 CND 22.05 Az | 332 S 15 | X 2 CrNiMo 22 5 | | 2377 | S31803 |
| | X 2 CrNiMoSi 19 5 | 1.4424 | 1.4417 | X 2 CrNiMoSi 19 5 | Z 2 CND 18.05.03 | | | | 2376 | S31500 |
| | X 2 NiCrMoCu 25 20 5 | 1.4539 | 1.4539 | X 2 NiCrMoCu 25 20 5 | Z 2 NCDU 25 20 | 904 S 13 | | | 2562 | N08904 |
| | X 3 CrNiMo 27 5 2 | 1.4460 | 1.4460 | X 4 CrNiMo 27 5 2 | Z 3 CND 25.7 Az | | X 3 CrNiMo 27 5 2 | SUS 329 J 1 | 2324 | S32900 |
| M5 | X 5 CrNiCuNb 16 4 | 1.4980 | 1.4943 | X 4 NiCrTi 25 15 | Z 6 NCTDV 25.15 | HR 51 | | SUH 660 | 2570 | S66286 |
| | X 1 CrNiMoN 20 18 7 | 1.4547 | 1.4529 | X 1 CrNiMoN 20 18 7 | Z 1 CNDU 20.18.05 Az | | X 1 CrNiMoN 20 18 7 | | 2778 | S31254 |
| | X 1 CrNiMo 25 22 8 | 1.4652 | 1.4652 | X 2 CrNiMo 25 22 7 | | | | | | S32654 |
| | X 10 NiCrAlTi 32 20 | 1.4876 | 1.4876 | X 10 NiCrAlTi 32 20 | Z 10 NC 32.21 | | | NCF 800 | | N08800 |
| X 2 CrNiMoN 25 7 4 | 1.4410 | 1.4410 | X 2 CrNiMoN 25 7 4 | Z 3 CND 25.07 Az | | X 2 CrNiMoN 25 7 4 | | 2328 | S32750 | |

SMG

| U.N.E./ I.H.A. | AISI / ASTM | GOST | ČSN | Misc. Brands | Condition | Structure |
|----------------|-------------|----------------|--------|---------------------------|-------------------|---------------------|
| F.520L | L2 | 11KHF | | | Annealed | |
| F.5220 | O1 | 9KHVG | | | Annealed | |
| | O2 | 9G2F | | | Annealed | |
| F.5230 | 52100 | SHKH15 | 14 109 | | Annealed | |
| F.5212 | D3 | KH12 | | | Annealed | |
| | H11 | 4KH5MFS | | | Annealed | |
| F.5318 | H13 | 4KH5MF1S | | | Annealed | |
| F.5227 | A2 | 9KH5VF | | | Annealed | |
| | H10 | 3KH3M3F | | | Annealed | |
| F.5213 | | KH12 | | | Annealed | |
| | | KH12MF | | | Annealed | |
| F.520.S | L6 | 5KHNM | | | Annealed | |
| F.5613 | M35 | R6M5K5 | | | Annealed | |
| | M42 | R2AM9K5 | | | Annealed | |
| | T4 | R18K5F2 | | | Annealed | |
| F.5603 | M2 | R6M5 | | | Annealed | |
| | M7 | | | | Annealed | |
| | T1 | R18 | | | Annealed | |
| | 403 | 08KH13 | | | Annealed | Ferritic |
| F.3401 | 410, CA-15 | 12KH13, 08KH13 | | | Annealed | Martensitic |
| F.3113 | 430 | 12KH17 | | | Annealed | Ferritic |
| F.5261 | 420 | 20KH13 | 17 022 | | Annealed | Martensitic |
| F.3404 | 420 | 40KH13 | | | Annealed | Martensitic |
| | 440 A | | | | Annealed | Martensitic |
| | 440 B | 95KH18 | | | Annealed | Martensitic |
| | 440 C | 95KH18 | | | Annealed | Martensitic |
| | A182 F6NM | | | F6NM | Annealed | Martensitic |
| | 446 | 15KH28 | | | Annealed | Ferritic |
| | XM-13 | | | PH 13-8 Mo | Solution annealed | Austenitic |
| | XM-12 | | | 15-5 PH | H1150 | Martensitic |
| | XM-12 | | | 15-5 PH | Solution annealed | Martensitic |
| | XM-12 | | | 15-5 PH | H1025 | Martensitic |
| | SAE 630 | | | 17-4 PH | H1150 | Martensitic |
| | 630 | | | 17-4 PH | Solution annealed | Martensitic |
| | 631 | 09KH17N7YU1 | | 17-7 PH | Solution annealed | Austenitic/Ferritic |
| | AMS 6515 | | | Marage 350 | Solution annealed | Martensitic |
| | AMS 6521 | | | Marage 300 | Solution annealed | Martensitic |
| | AMS 6514 | | | Marage 300, Vascomax C300 | Solution annealed | Martensitic |
| | AMS 6512 | | | Marage 250 | Solution annealed | Martensitic |
| | AMS 6512 | | | Marage 250, Vascomax C250 | Solution annealed | Martensitic |
| F.3508 | 303 | 12KH19N9 | | | Annealed | Austenitic |
| F.3504 | 304 L | 03KH18N11 | | | Annealed | Austenitic |
| F.3504 | 304 | 08KH18N10 | 17 240 | | Annealed | Austenitic |
| F.3534 | 316 | 08KH17H13M2T | 17 346 | | Annealed | Austenitic |
| F.3524 | 347 | 08KH18N12B | | | Annealed | Austenitic |
| F.3517 | 301 | 07KH16N6 | | | Annealed | Austenitic |
| | 302 | 12KH18N9 | | | Annealed | Austenitic |
| F.3533 | (316 L) | 03KH17N14M3 | 17 349 | | Annealed | Austenitic |
| | 316 LN | 03KH16N15M3 | | | Annealed | Austenitic |
| F.3541 | 304 LN | 03KH18N11 | | | Annealed | Austenitic |
| | 317 | 08KH17H15M3T | | | Annealed | Austenitic |
| | | | | 253 MA | Annealed | Austenitic |
| | 310 S | 12KH25N20 | | | Annealed | Austenitic |
| | 329 LN | | | SAF 2205 | Annealed | Duplex |
| | | | | 3RE60 | Annealed | Duplex |
| | 904L | | | | Annealed | Super austenitic |
| | 329 | | | | Annealed | Duplex |
| | 660 | | | A286 | Solution annealed | Austenitic |
| | | | | 254 SMO | Annealed | Super austenitic |
| | | | | 654 SMO | Annealed | Super austenitic |
| | | | | Alloy 800 | Annealed | Austenitic |
| | F 53 | | | SAF 2507 | Annealed | Super duplex |

SMG

| SMG | EN | EN-Nr | W-Nr | DIN | AFNOR | BS | UNI | JIS | SS | UNS |
|----------|------------------------|--------------|--------------|-------------------|------------------|--------------|-----------|-------------|------------|-------------|
| K1 | EN-GJL-150 | 0.6150 | 0.6150 | GG-15 | F1 15 D | Grade 150 | G15 | FC 150 | 01 15-00 | F11601 |
| | EN-GJL-200 | 0.6200 | 0.6200 | GG-20 | F1 20 D | Grade 220 | G20 | FC 200 | 01 20-00 | F12101 |
| | EN-GJL-250 | 0.6250 | 0.6250 | GG-25 | F1 25 D | Grade 260 | G25 | FC 250 | 01 25-00 | F12401 |
| | EN-GJL-350 | 0.6350 | 0.6350 | GG-35 | F1 35 D | Grade 350 | G35 | FC 350 | 01 35-00 | F13502 |
| | EN-GJL-215 | | | GG-220 HB | | | | | 02 19 | |
| K2 | EN-GJV-300 | | | GJV-300 | | | | | | |
| | EN-GJV-350 | | | GJV-350 | | | | | | |
| | EN-GJV-400 | | | GJV-400 | | | | | | |
| | EN-GJV-450 | | | GJV-450 | | | | | | |
| | EN-GJV-500 | | | GJV-500 | | | | | | |
| K3 | EN-GJMB-550-4 | 0.8155 | | GTS-55-04 | P 540/5 | P 540/5 | P 55-04 | PCMP55-04 | 08 54-00 | F24130 |
| K4 | EN-GJS-350-22 | 0.7033 | 0.7033 | GGG-35.3 | FGS 370-17 | Grade 350/22 | | FCD 350-22L | 07 17-15 | |
| | EN-GJS-400-15 | 0.7040 | 0.7040 | GGG-40 | FGS 400-12 | Grade 420/12 | GS 400-12 | FCD 400-18L | 07 17-02 | F32800 |
| | EN-GJS-400-18 | 0.7043 | 0.7043 | GGG-40.3 | FGS 370-17 | Grade 370/17 | GSO 42/17 | | 07 17-12 | F32800 |
| | EN-GJS-500-7 | 0.7050 | 0.7050 | GGG-50 | FGS 500-7 | Grade 500/7 | GS 500-7 | FCD 500-7 | 07 27-02 | F33800 |
| | EN-GJS-600-3 | 0.7060 | 0.7060 | GGG-60 | FGS 600-3 | Grade 600/3 | GS 600-3 | FCD 600-3 | 07 32-03 | F34100 |
| | EN-GJS-700-2 | 0.7070 | 0.7070 | GGG-70 | FGS 700-2 | Grade 700/2 | GS 700-2 | FCD 700-2 | 07 37-01 | F34800 |
| K5 | EN-GJS-1000-5 | | | GJS-1000-5 | | | | | | ADI grade 5 |
| | EN-GJS-1200-2 | | | GJS-1200-2 | | | | | | ADI grade 2 |
| | EN-GJS-1400-1 | | | GJS-1400-1 | | | | | | ADI grade 3 |
| | EN-GJS-800-8 | | | GJS-800-8 | | | | | | ADI grade 4 |
| K6 | EN-GJLA-XNiCr 20-2 | 0.6660 | 0.6660 | GGL-NiCr 20 2 | FGL Ni20 Cr2 | Grade F2 | | | 05 23-00 | F41002 |
| | EN-GJLA-XNiCr 30-3 | 0.6676 | 0.6676 | GGL-NiCr 30 3 | FGL Ni30 Cr3 | Grade F3 | | | | F41004 |
| | EN-GJLA-XNiCuCr 15-6-2 | 0.6655 | 0.6655 | GGL-NiCuCr 15 6 2 | FGL Ni15 Cu6 Cr2 | Grade F1 | | | | F41000 |
| K7 | EN-GJSA-XNiMn 13-7 | 0.7652 | 0.7652 | GGG-NiMn 13 7 | FGS Ni13 Mn7 | Grade S6 | | | 07 72-00 | |
| | EN-GJSA-XNiCr 20-2 | 0.7660 | 0.7660 | GGG-NiCr 20 2 | FGS Ni20 Cr2 | Grade S2 | | | | F43000 |
| | EN-GJSA-XNiMn 23-4 | 0.7673 | 0.7673 | GGG-NiMn 23 4 | FGS Ni23 Mn4 | Grade S2M | | | | F43010 |
| | EN-GJSA-XNiCr 30-3 | 0.7676 | 0.7676 | GGG-NiCr 30 3 | FGS Ni30 Cr3 | Grade S3 | | | | F43003 |
| | EN-GJSA-XNi 35 | 0.7683 | 0.7683 | GGG-Ni 35 | FGS Ni35 | | | | | F43006 |
| N1 | AW-1050A | Al99.5 | 3.0255 | Al99.5 | A-5/1050A | 1B | | (A1050) | 4007 | AA1050A |
| | AW-2011 | AlCuBiPb | 3.1655 | AlCuBiPb | A-U5PbBi/2011 | FC1 | | A2011 | 4355 | AA2011 |
| | AW-2014 | AlCuSiMn | 3.1255 | AlCuSiMn | A-U4SG/2014 | H15 | | | 4338 | AA2014 |
| | AW-5005 | AlMg1 | 3.3315 | AlMg1 | A-G0.6 | N41 | | | 4106 | AA5005 |
| | AW-6060 | AlMgSi0.5 | 3.3206 | AlMgSi0.5 | A-GS/6060 | (H9) | | | 4103 | AA6060 |
| | AW-6063 | AlMgSi0.7 | 3.3210 | AlMgSi0.7 | A-GSUC/6061 | (H10) | | (A6063) | 4104, 4107 | AA6005 |
| | AW-3103 | AlMn1 | 3.0515 | AlMn1 | | N3 | | | 4054 | AA3103 |
| | AW-3003 | AlMn1Cu | 3.0517 | AlMn1Cu | A-M1/3003 | | | A3003 | | AA3003 |
| | AW-7020 | AlZn4.5Mg1 | 3.4335 | AlZn4.5Mg1 | A-Z5G/7020 | H17 | | | 4425 | AA7020 |
| | AW-7075 | | 3.4365 | AlZnMgCu1.5 | A-Z5GU/7075 | 2L95/2L96 | | A7075 | | AA7075 |
| | AC-42000 | | 3.2341 | G-AlSi5Mg | A-S7G | LM25 | 3599 | AC 4C | 4244 | |
| | AC-46200 | AlSi8Cu3(Si) | 3.2161 | G-AlSi8Cu3 | | | | | 4251 | A13800 |
| | MG-P-63 | MgAl6Zn | 3.5612 | G-MgAl6Zn | G-A6-Z1 | MAG-E-121 | | | | M11600 |
| | MG-P-61 | MgAl8Zn | 3.5812 | G-MgAl8Zn | (G-A7-Z1) | | | | | |
| | MN65120 | MgSe3Zn2Zr1 | 3.5103 | G-MgSe3Zn2Zr1 | ZRE1 | MAG6-TE | | | | M12330 |
| | N2 | AC-43400 | AlSi10Mg(Fe) | 3.2381 | G-AlSi10Mg | A-S10G | LM9 | | | 4253 |
| AC-44200 | | AlSi12 | 3.2382 | GD-AlSi12 | | | | | | |
| N3 | AW-6082 | AlMgSi1 | 3.2315 | AlMgSi1 | A-SGM0.7/6082 | H30 | | | 4212 | AA6082 |
| | | AlSi17Cu5 | | | | | | ADC14 | | |
| N11 | CC331G | | 2.0940.01 | CuAl10Fe | CuAl10Fe | AB1 | | | 5710 | C95200 |
| | CC333G | | 2.0975.01 | CuAl10Ni | CuAl10Ni5Fe5 | AB2 | | | 5716 | C95500 |
| | | CuNi10Fe1Mn | 2.0872 | CuNi10Fe1Mn | CuNi10Fe1Mn | CN102 | | | 5667 | C70600 |
| | | | | CuNi10Zn45 | | | | | | |
| | | CW408J | 2.0790 | CuNi18Zn19Pb | CuNi18Zn19Pb1 | | | | | C76300 |
| | CW352H | | 2.1176 | CuPb10Sn | CuSn10Pb10 | LB2 | | | 5640 | C93700 |
| | CC480K | | 2.1050.01 | CuSn10 | CuSn10 | CT1 | | | 5443 | C90700 |
| | | | 2.1087 | CuSn10Zn | | | | | 5458 | C90500 |
| | CW452K | CuSn6 | 2.1020 | CuSn6 | CuSn6 | PB103 | | C5191 | 5428 | C51900 |
| | CW502L | CuZn15 | 2.0240 | CuZn15 | CuZn15 | CZ102 | | C2300 | 5112 | C23000 |
| | CW706R | CuZn28Sn1 | 2.0470 | CuZn28Sn1 | CuZn28Sn1 | | | | 5220 | C44300 |
| | CW508L | CuZn37 | 2.0321 | CuZn37 | CuZn37 | CZ108 | | | 5150 | C27200 |
| | CW717R | CuZn38Sn1 | 2.0530 | CuZn38Sn1 | | | | | | C46400 |
| | CW614N | CuZn39Pb3 | 2.0401 | CuZn39Pb3 | CuZn39Pb3 | CZ121 | | | 5170 | C38500 |
| CW612N | CuZn40Pb2 | 2.0402 | CuZn40Pb2 | CuZn39Pb2 | CZ120 | | | 5168 | C37800 | |
| CW622N | CuZn44Pb2 | 2.0410 | CuZn44Pb2 | | CZ104 | | | 5272 | C68700 | |

SMG

| SMG | EN | EN-Nr | W-Nr | DIN | AFNOR | BS | UNI | JIS | SS | UNS |
|----------------------|---------------------|--------|----------------------|---------------------|---------------------------|-----------------|---------------------|-------------|------------|------------------|
| S1 | | | | | | | | | | |
| S2 | | | | | | | | | | |
| S3 | NiMo30 | | 2.4810 | | | | | | | N10002 |
| | NiMo16Cr15W | | 2.4819 | | | | | | | N10276 |
| | NiCr19Fe19Nb5Mo3 | | 2.4668 | | | | | | | N07718 |
| | NiCr20TiAl | | 2.4631 | | | | | | | N07080 |
| | NiCr19Co18Mo4Ti3Al3 | | | | | | | | | N07500 |
| | NiCr20Co13Mo4Ti3Al | | 2.4654 | | | | | | | N07001 |
| S11 | | | 3.7024 | | | | | | | R54620 |
| S12 | TiAl6V4 | | 3.7164 | | | | | | | R56320 R56400 |
| S13 | | | | TiV10Fe2Al3 | | | | | | |
| H3 | 16 MnCr 5 | 1.7131 | 1.7131 | 16 MnCr 5 | 16 MC 5 | 527 M 17 | 16 MnCr 5 | SCR 415 | 2511 | G51170 |
| | C 67S | 1.1231 | 1.1231 | Ck 67 | XC 68 | 060 A 67 | C 70 | | 1770 | G10700 |
| H5 | C 75S | 1.1248 | 1.1248 | Ck 75 | XC 75 | 060 A 78 | C 75 | | 1774, 1778 | G10780 |
| | C 100S | 1.1274 | 1.1274 | Ck 101 | | 060 A 96 | | SUP 4 | 1870 | G10950 |
| | C 105U | 1.1545 | C 105 W1 | C 105 W1 | Y1 105 | | C 100 KU | | 1880 | |
| | 55 Cr 3 | 1.7176 | 1.7176 | 55 Cr 3 | 55 WC 20 | | 55 WCrV 8 KU | | | |
| | 42 CrMo 4 | 1.7225 | 1.7225 | 42 CrMo 4 | 42 CD 4 | 708 M 40 | 42 CrMo 4 | SCM 440 (H) | 2244 | G41400 |
| H7 | 107 CrV 3 | 1.2210 | 1.2210 | 115 CrV 3 | 100 C 3 | | 107 CrV 3 KU | | | T61202 |
| | | | 1.2510 | 100 MnCrW 4 | 90 MWCV 5 | BO 1 | 95 MnWCr 5 KU | SKS 3 | 2140 | T31501 |
| | 90 MnCrV 8 | 1.2842 | 1.2842 | 90 MnCrV 8 | 90 MV 8 | BO 2 | 90 MnVCr 8 KU | | | T31502 |
| H8 | 100 Cr 6 | 1.3505 | 1.3505 | 100 Cr 6 | 100 C 6 | 534 A 99 | 100 Cr 6 | SUJ 2 | 2258 | G51986 |
| | X 40 CrMoV 5 1 | 1.2344 | 1.2344 | X 40 CrMoV 5 1 | Z 40 CDV 5 | BH 13 | X 40 CrMo 5 1 1 KU | SKD 61 | 2242 | T20813 |
| | X 100 CrMoV 5 | 1.2363 | 1.2363 | X 100 CrMoV 5 1 | Z 100 CDV 5 | BA 2 | X 100 CrMoV 5 1 KU | SKD 12 | 2260 | T30102 |
| | X 155 CrVMo 12 1 | | 1.2379 | X 155 CrVMo 12 1 | Z 160 CDV 12 | BD 2 | X 155 CrVMo 12 1 KU | SKD 11 | | T30402 |
| | | | 1.2436 | X 210 CrW 12 | | | X 215 CrW 12 1 KU | SKD 2 | | 2312 |
| | | | 1.2601 | X 165 CrMoV 12 | | | X 165 CrMoW 12 KU | | | 2310 |
| | | | 1.2713 | 55 NiCrMoV 6 | 55 NCDV 7 | | | SKT 4 | | T61206 |
| | HS 6-5-2-5 | 1.3243 | 1.3243 | S 6-5-2-5 | Z 85 WDKCV 06-05-05-04-02 | | HS 6-5-2-5 | SKH 55 | 2723 | |
| HS 2-10-1-8 | 1.3247 | 1.3247 | S 2-10-1-8 | Z 110 DKCWV 09-08- | BM 42 | HS 2-9-1-8 | SKH 51 | | T11342 | |
| HS 18-0-1 | 1.3355 | 1.3355 | S 18-0-1 | Z 80 WCV 18-04-01 | BT 1 | HS 18-0-1 | SKH 2 | | T12001 | |
| H11 | X 20 Cr 13 | 1.4021 | 1.4021 | X 20 Cr 13 | Z 20 C 13 | 420 S 37 | X 20 Cr 13 | SUS 420 J 1 | 2303 | S42000 |
| | X 70 CrMo 15 | 1.4109 | 1.4109 | X 65 CrMo 14 | Z 70 D 14 | | | SUS 440 A | | S44002 |
| | X 90 CrMoV 18 | 1.4112 | 1.4112 | X 90 CrMoV 18 | Z 2 CND 18 05 | 409 S 19 | X CrTi 12 | SUS 440 B | 2327 | S44003 |
| | X 105 CrMo 17 | 1.4125 | 1.4125 | X 105 CrMo 17 | Z 100 CD 17 | | X 105 CrMo 17 | SUS 440 C | | S44004 |
| H12 | X 4 CrNiCuNb 16 4 | 1.4540 | 1.4540 | X 4 CrNiCuNb 16 4 | | | | | | S15500 |
| | X 5 CrNiCuNb 16 4 | 1.4542 | 1.4542 | X 5 CrNiCuNb 16 4 | | | | SUS 630 | | S17400 |
| | X 5 CrNiCuNb 16 4 | 1.4542 | 1.4542 | X 5 CrNiCuNb 16 4 | | | | SUS 630 | | S17400 |
| | X 7 CrNiAl 17 7 | 1.4568 | 1.4568 | X 7 CrNiAl 17 7 | Z 9 CAN 17.7 | 301 S 81 | X 7 CrNiAl 17 7 | SUS 631 | 2388 | S17700 |
| | X 8 CrNiMoAl 15 7 5 | 1.4574 | 1.4574 | X 8 CrNiMoAl 15 7 5 | | | | | | S15700 |
| | X 6 NiCrTiMoV 25 15 | 1.4980 | 1.4943 | X 4 NiCrTi 25 15 | Z 6 NCTDV 25.15 | HR 51 | | SUH 660 | 2570 | S66286 |
| | X 2 NiCoMo 18 8 5 | 1.6359 | 1.6359 | X 2 NiCoMo 18 8 5 | | S 162 | | | | K92890 |
| | X 2 NiCoMoTi 18 9 5 | 1.6358 | 1.6358 | X 2 NiCoMoTi 18 9 5 | Z 2 NKD 19-09 | | | | | K93120 |
| | X 2 NiCoMoTi 18 9 5 | 1.6358 | 1.6358 | X 2 NiCoMoTi 18 9 5 | Z 2 NKD 19-09 | | | | | K93120 |
| X 2 NiCoMoTi 18 12 4 | 1.6356 | 1.6356 | X 2 NiCoMoTi 18 12 4 | | | | | | K93160 | |
| H21 | X 120 Mn 12 | 1.3401 | 1.3401 | X 120 Mn 12 | Z 120 M 12 | BW 10 | | SC MnH 1 | 2183 | |
| H31 | EN-GJN-HV520 | 0.9620 | 0.9620 | G-X330 NiCr 4 2 | FB Ni4 Cr2 BC | Grade 2 A | | | 05 12-00 | F45001 |
| | EN-GJN-HV550 | 0.9625 | 0.9625 | G-X260 NiCr 4 2 | FB Ni4 Cr2 HC | Grade 2 B | | | 05 13-00 | F45000 |
| | EN-GJN-HV600(XCr11) | 0.9630 | 0.9630 | G-X300 CrNiSi 9 5 2 | FB Cr9 Ni5 | Grade 2 C, D, E | | | 04 57-00 | F45003 |

SMG

| U.N.E./I.H.A. | AISI / ASTM | GOST | ČSN | Misc. Brands | Condition | Structure |
|---------------|-------------------|-------------|--------|---------------------|------------------------|-----------------------|
| | | | | Discalloy | Precipitation hardened | |
| | | | | Haynes 25 | | |
| | | | | Stellite 21 | | |
| | | | | Hastelloy C | | |
| | | KHN65MV | | Hastelloy C-276 | | |
| | | | | IN 100 | | |
| | | | | Inconel 718 | | |
| | | | | Inconel X-750 | Solution annealed | |
| | | | | Nimonic 80A | | |
| | | | | René 41 | | |
| | | | | Udimet 500 | | |
| | | | | Waspalloy | | |
| | | | | Ti | Commercially pure | Ti (α) |
| | AMS 4919 | | | Ti 6-2-4-2 | Annealed | Ti (α) |
| | AMS 4943 | | | Ti 3Al-2.5V (grd 9) | Annealed | Ti ($\alpha+\beta$) |
| | AMS 4920, Grade 5 | VT6 | | Ti 6Al-4V | Annealed | Ti ($\alpha+\beta$) |
| | AMS 4986 | | | Ti 10V-2Fe-3Al | Annealed | Ti (β) |
| F.1516 | 5115 | 12KHN2 | 14 220 | | Case hardened | |
| F.5103 | 1070 | 70 | | | Quenched & Tempered | |
| F.5107 | 1078, 1080 | 75 | | | Quenched & Tempered | |
| F.5117 | 1095 | | | | Quenched & Tempered | |
| F.5118 | W1 | U10A | | | Quenched & Tempered | |
| | S1 | 5KHV2SF | | | Quenched & Tempered | |
| | 5155 | | | | Quenched & Tempered | |
| F.1252 | 4142, 4140 | 38HM | 15 142 | | Quenched & Tempered | |
| F.520L | L2 | 11KHF | | | Quenched & Tempered | |
| F.5220 | O1 | 9KHVG | | | Quenched & Tempered | |
| | O2 | 9G2F | | | Quenched & Tempered | |
| F.5230 | 52100 | SHKH15 | 14 109 | | Quenched & Tempered | |
| F.5318 | H13 | 4KH5MF1S | | | Quenched & Tempered | |
| F.5227 | A2 | 9KH5VF | | | Quenched & Tempered | |
| F.5211 | D2 | KH12MF | | | Quenched & Tempered | |
| F.5213 | | KH12 | | | Quenched & Tempered | |
| | | KH12MF | | | Quenched & Tempered | |
| F.520.S | L6 | 5KHNM | | | Quenched & Tempered | |
| F.5613 | M35 | R6M5K5 | | | Quenched & Tempered | |
| | M42 | R2AM9K5 | | | Quenched & Tempered | |
| | T1 | R18 | | | Quenched & Tempered | |
| F.5261 | 420 | 20KH13 | 17 022 | | Quenched & Tempered | Martensitic |
| | 440 A | | | | Quenched & Tempered | Martensitic |
| | 440 B | 95KH18 | | | Quenched & Tempered | Martensitic |
| | 440 C | 95KH18 | | | Quenched & Tempered | Martensitic |
| | XM-12 | | | 15-5 PH | H900 | Martensitic |
| | SAE 630 | | | 17-4 PH | H1025 | Martensitic |
| | SAE 630 | | | 17-4 PH | H900 | Martensitic |
| | AMS 5528 | 09KH17N7YU1 | | 17-7 PH | TH1050 | Martensitic |
| | 632 | | | PH 15-7 Mo | TH1050 | Martensitic |
| | 660 | | | A286 | Precipitation hardened | Austenitic |
| | AMS 6512 | | | Marage 250 | Precipitation hardened | Martensitic |
| | AMS 6521 | | | Marage 300 | Precipitation hardened | Martensitic |
| | AMS 6521 | | | Marage 300 | Precipitation hardened | Martensitic |
| | AMS 6515 | | | Marage 350 | Precipitation hardened | Martensitic |
| | A128 Grade A | | | Hadfield | | |
| | A532 IB (NiCr-LC) | | | Ni-Hard 2 | | White cast iron |
| | A532 IA (NiCr-HC) | | | Ni-Hard 1 | | White cast iron |
| | A532 ID (Ni-HiCr) | | | Ni-Hard 4 | | White cast iron |

Cemented carbide inserts and insert carriers

Cemented carbide inserts and cemented carbide insert carriers from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.

These products meet all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.

Products do not contain mercury, lead, hexavalent chromium, cadmium, CFC, HCFC, flame retardants or solvents in concentrations that exceed specifications in the regulations.

Regrinding:

Wet or dry grinding can produce potentially hazardous dusts or mists that can irritate skin, eyes, nose, throat and result in lung damage or disease. To avoid injury use proper safety precautions and protective equipment.

Disposal:

Seco Tools will buy back used inserts and solid carbide tools for recycling. Inserts and solid carbide tools should be separated from other metal waste (steel, aluminium, copper etc).

All packing material is fully recyclable.

CBN and PCD inserts

Inserts from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.

This product meets all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.

Products do not contain mercury, lead, hexavalent chromium, cadmium, CFC, HCFC, flame retardants or solvents in concentrations that exceed specifications in the regulations.

Regrinding:

Wet or dry grinding can produce potentially hazardous dusts or mists that can irritate skin, eyes, nose, throat and result in lung damage or disease. To avoid injury use proper safety precautions and protective equipment.

Disposal:

Seco Tools will buy back used CBN- or PCD-tipped inserts for recycling. Inserts should be separated from other metal waste (steel, aluminium, copper etc). Solid CBN-inserts may be discarded as landfill waste.

All packing material is fully recyclable.

Black oxide insert carriers

Insert carriers from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.

This product meets all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.

Products do not contain mercury, lead, hexavalent chromium, cadmium, CFC, HCFC, flame retardants or solvents in concentrations that exceed specifications in the regulations.

Disposal:

Used insert carriers may be sent for recycling together with ordinary steel waste (swarf and discarded steel scrap) for recycling.

All packing material is fully recyclable.

Cermet inserts

Inserts from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.

This product meets all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.

Cermet grade C15M inserts do contain nickel and will leach nickel when in contact with the skin. Amount of leaching is higher than specified in norm SS-EN 1811 Reference test method for release of nickel from products intended to come into direct and prolonged contact with the skin. These norms are intended for products that are in direct and prolonged contact with the skin and are therefore not directly applicable for cermet inserts. Persons with known allergic reactions to nickel are advised to wear protective gloves when handling cermet inserts.

Regrinding:

Wet or dry grinding can produce potentially hazardous dusts or mists that can irritate skin, eyes, nose, throat and result in lung damage or disease. To avoid injury use proper safety precautions and protective equipment.

Disposal:

Used inserts may be recycled. Inserts should be separated from other metal waste (steel, aluminium, copper, etc) including cemented carbide inserts.

All packing material is fully recyclable.

Nickel coated insert carriers

Insert carriers from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.

This product meets all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.

Products do not contain mercury, lead, hexavalent chromium, cadmium, CFC, HCFC, flame retardants or solvents in concentrations that exceed specifications in the regulations.

Insert carriers do contain nickel and will leach nickel when in contact with the skin. Amount of leaching is not higher than norm SS-EN 1811 Reference test method for release of nickel from products intended to come into direct and prolonged contact with the skin.

These norms are intended for products that are in direct and prolonged contact with the skin and are therefore not directly applicable for insert carriers. Persons with known allergic reactions to nickel are advised to wear protective gloves when handling nickel coated insert carriers.

Disposal:

Used tools maybe sent for recycling together with ordinary steel waste (swarf and discarded steel scrap) for recycling.

All packing material is fully recyclable.

Intentionally added alloying elements

| Grade | Cemented carbide | | | | | | | | | | | | Coating | | | | | | |
|---------|------------------|----|----|----|----|----|----|----|---|---|----|----|---------|---|---|---|----|----|---|
| | W | Ti | Ta | Nb | Co | Cr | Ni | Mo | C | N | Ru | Ti | Al | C | N | O | Si | Nb | |
| CP20 | ■ | | | | ■ | | | | ■ | | | | | | ■ | | | | |
| CP200 | ■ | | | | ■ | ■ | | | ■ | | | | | | ■ | | | | |
| CP300 | ■ | ■ | ■ | ■ | ■ | | | | ■ | | | | ■ | ■ | | | | | |
| CP500 | ■ | | | | ■ | ■ | | | ■ | | | | ■ | ■ | | | | | |
| CP600 | ■ | | | | ■ | ■ | | | ■ | | | | ■ | ■ | | | | | |
| C15M | ■ | ■ | ■ | ■ | ■ | | | ■ | ■ | ■ | | | | | | | | | |
| CF | ■ | | ■ | | ■ | | | ■ | ■ | ■ | | | | | | | | | |
| CM | ■ | | ■ | | ■ | | | ■ | ■ | ■ | | | | | | | | | |
| DP2000 | ■ | | ■ | ■ | ■ | | | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| DP3000 | ■ | ■ | ■ | ■ | ■ | | | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| DS2050 | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | ■ |
| DS4050 | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | ■ |
| F15M | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| F25M | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| F30M | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| F40M | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| HX | ■ | | ■ | | ■ | | | | ■ | ■ | | | | | | | | | |
| H02 | ■ | | ■ | | ■ | | | | ■ | ■ | | | | | | | | | |
| H15 | ■ | | | | ■ | | | | ■ | ■ | | | | | | | | | |
| H25 | ■ | | | | ■ | | | | ■ | ■ | | | | | | | | | |
| KX | ■ | | | | ■ | | | | ■ | ■ | | | | | | | | | |
| MH1000 | ■ | | | | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | | | | |
| MK1500 | ■ | | ■ | | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| MK2050 | ■ | | ■ | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | ■ |
| MM4500 | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| MP1020 | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| MP1500 | ■ | | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| MP2050 | ■ | | | | ■ | | | | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | | | ■ |
| MP2500 | ■ | | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | ■ |
| MP3000 | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| MS2500 | ■ | | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| MS2050 | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | ■ |
| RX1500 | ■ | | ■ | | ■ | | ■ | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| RX2000 | ■ | | ■ | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| RM2020 | ■ | | | | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| RM2090 | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | ■ |
| RN2010 | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| RS2090 | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | ■ |
| T350M | ■ | | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| T25M | ■ | | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| TGH1050 | ■ | | | | ■ | | ■ | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | ■ |
| TGK1500 | ■ | | ■ | | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| TGP25 | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| TGP35 | ■ | | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| TGP45 | ■ | | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| TH1000 | ■ | | | | ■ | | ■ | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | ■ |
| TH1500 | ■ | | | | ■ | | ■ | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| TK0501 | ■ | | | | ■ | | ■ | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| TK1501 | ■ | | ■ | | ■ | | ■ | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| TM2000 | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | | |
| TM4000 | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | | |
| TP0501 | ■ | ■ | ■ | ■ | ■ | | ■ | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| TP1020 | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| TP1030 | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | ■ |
| TP1500 | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| TP1501 | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| TP200 | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| TP2500 | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| TP2501 | ■ | ■ | ■ | ■ | ■ | | ■ | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| TP3501 | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | |
| TP40 | ■ | | ■ | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| TS2000 | ■ | | | | ■ | | ■ | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| TS2050 | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | ■ |
| TS2500 | ■ | | ■ | | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| T250D | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| T400D | ■ | | | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| T100R | ■ | | ■ | | ■ | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| T60M | ■ | ■ | | ■ | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | |
| 883 | ■ | | ■ | | ■ | | | | ■ | ■ | | | | | | | | | |
| 890 | ■ | | | | ■ | ■ | | | ■ | ■ | | | | | | | | | |

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