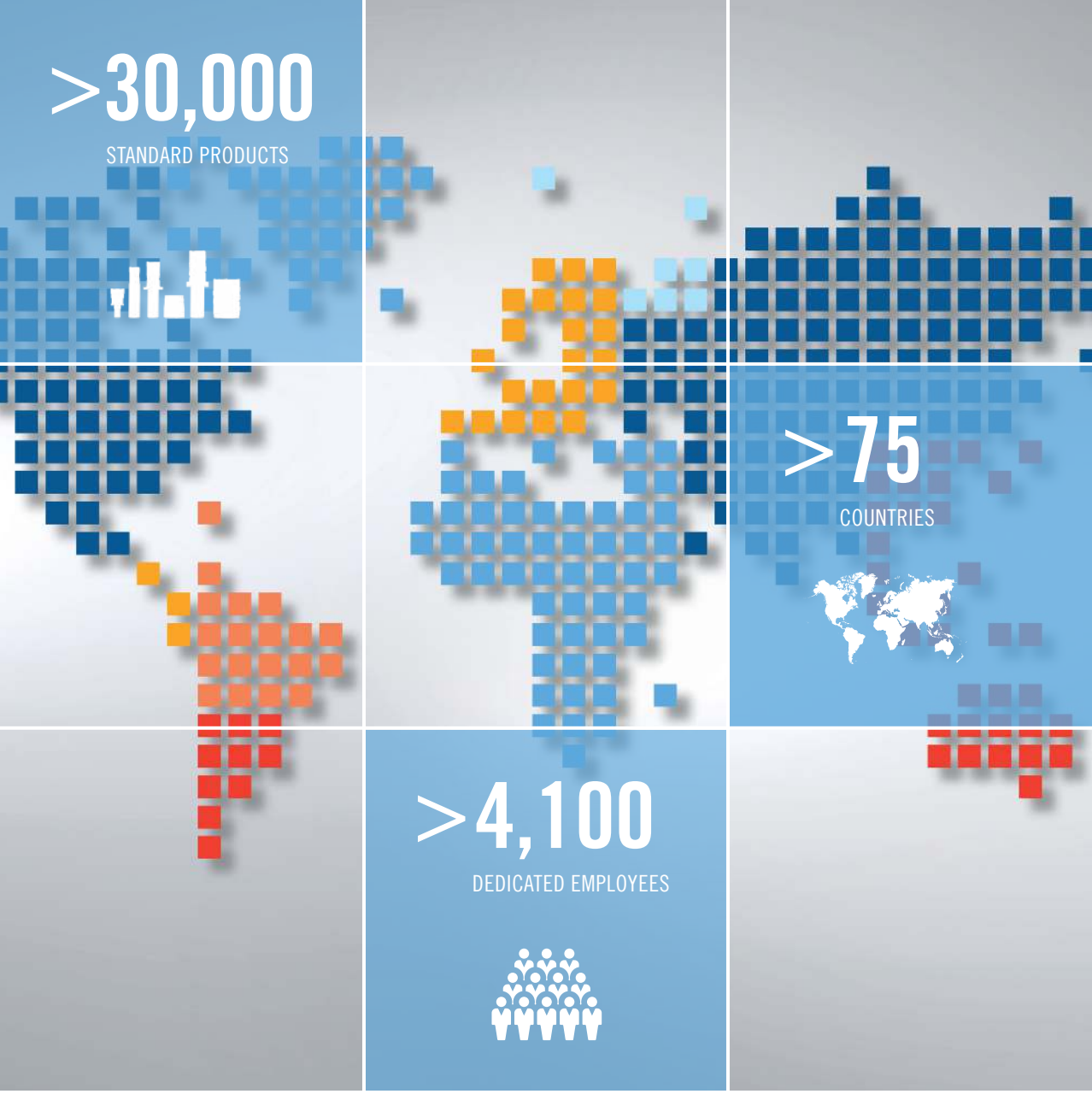
CATALOG & TECHNICAL GUIDE 2020.1



MILLING

SECO



Headquartered in Fagersta, Sweden and present in more than 75 countries, Seco Tools is a leading global provider of metal cutting solutions for milling, stationary tools, holemaking and tooling systems.

For more than 80 years, the company has provided the technologies, processes and support that manufacturers depend on for maximum productivity and profitability. For more information on how Seco's innovative products and expert services bring success to manufacturers across all industry segments, please visit www.secotools.com.

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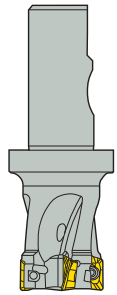
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Code keys tools

Milling cutters

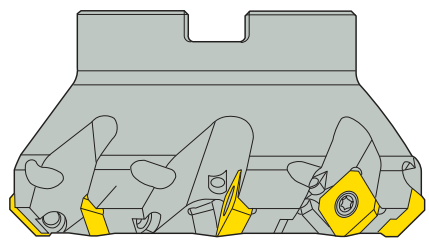
In milling Seco uses product specific designation systems, there is no ISO system available for cutters. See example below.



Code key cutters general

R	217	.	69	-	25	32	.	3S	-	12	-	4	AN

- R: Right hand rotation; Cx = For Seco-Capto
- 217: 217 = With shank; 220 = For arbor
- 69: Cutter system
- 25: Shank diameter
- 32: Cutter diameter
- 3S: Shank type; 0 = Cylindrical; 3 = Weldon; 3S = Seco Weldon; RE = Combimaster
- 12: Insert size
- 4: Effective No. of teeth (ZEFP)
- AN: 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

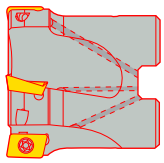


R	220	.	53	-	0100	-	12	-	7	A

- R: R = Right hand rotation; L = Left hand rotation; Cx = For Seco-Capto
- 220: 217 = With shank; 220 = For arbor
- 53: Cutter system
- 0100: Mounting type & Cutter diameter; 0xxx = shell mill mounting; 8xxx = Flange mounting; 9xxx = CAP mounting
- 12: Insert size
- 7: Effective No. of teeth (ZEFP)
- A: A = With through 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; C = Cassettes; S = Insert locking with screw; M = Modified

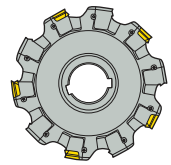
Mounting type

Type – Arbor (Shell end)



Ex.: R220.69-0050-12-5AN

Type – Arbor hole



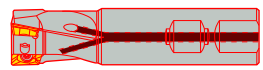
Ex.: 335.25-160.15.40-7N

Type 0 – Cylindrical



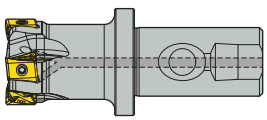
Ex.: R217.69-1616.**0**-10-2A

Type 3 – Weldon
Tool chucks acc. to ISO 5414 DIN 1835



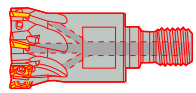
Ex.: R217.69-2525.**3**-12-3AN

Type 3S – Seco/Weldon®
Tool chucks acc. to ISO 5414 DIN 1835



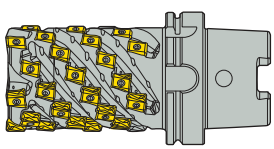
Ex.: R217.69-2532.**3S**-12-4AN

Type RE – Combimaster



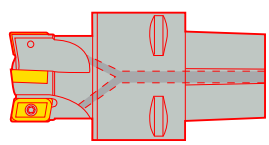
Ex.: R217.69-1225.**RE**-12-3AN

Type HSK



Ex.: R217.94-**HSK**100A-080-104-12.5SA

Type Cx – Seco-Capto™



Ex.: **C5**-R217.69-054-10-5A

Insert clamping system

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.

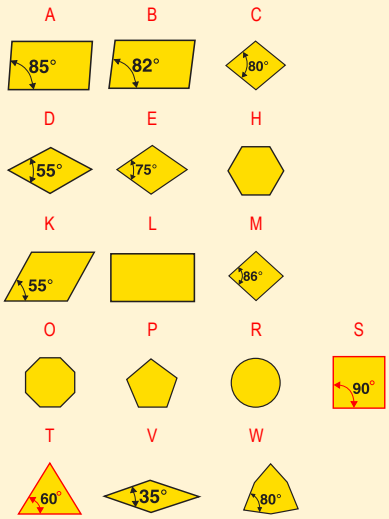
Code keys inserts

Inserts-Metric series, Extract from ISO 1832—1991

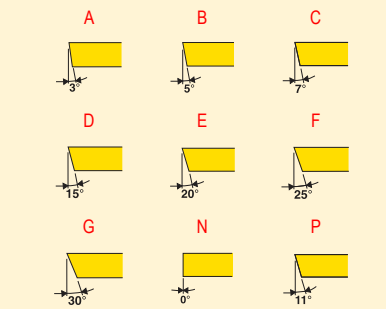
Dimensions refer to theoretical measurements. Nominal dimensions and tolerances on Seco inserts may differ from the table below.

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

1. Shape



2. Side clearance angle



O = Special

3. Tolerances

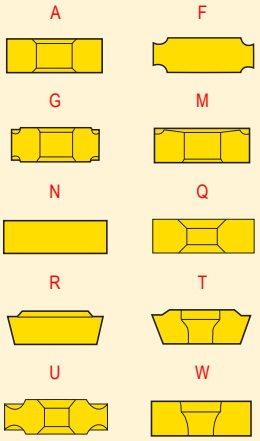
Tol.-class	Tolerance +/- mm		For IC, dimension mm									
	S	IC	3,175*	4,76	6,35	9,525	12,7	15,875	19,05	25,4	31,75	38,1*
A	0,025	0,025	•	•	•	•	•	•	•	•	•	•
E	0,025	0,025	•	•	•	•	•	•	•	•	•	•
F	0,025	0,013	•	•	•	•	•	•	•	•	•	•
G	0,05*	0,025	•	•	•							
	0,13	0,025				•	•	•	•	•	•	•
H	0,025	0,013	•	•	•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

* Not ISO

Code keys inserts

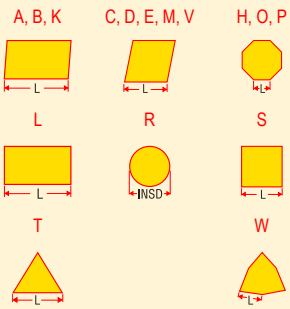
Inserts-Metric series, Extract from ISO 1832—1991

4 Type

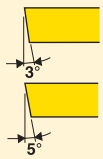


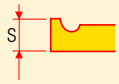
X=Special

5. Cutting edge length



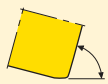
6. Thickness





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

7. Insert with corner chamfer/nose radius



1st letter

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



2nd letter

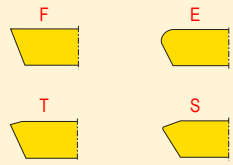
A = 3°	F = 25°
B = 5°	G = 30°
C = 7°	N = 0°
D = 15°	P = 11°
E = 20°	
Z = Special	



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

8. Cutting edge designation



Not mandatory information

9. Direction of cutting

R



Right-rotated

L



Left-rotated

N

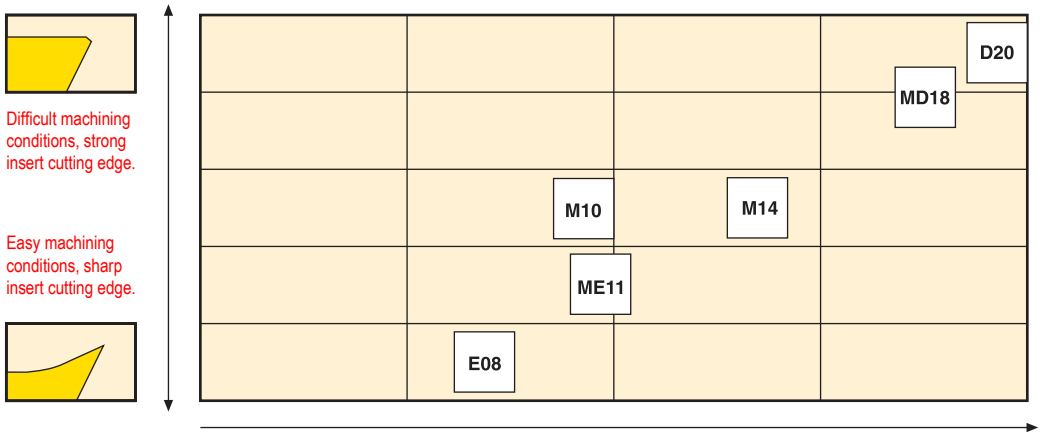
Neutral
(R- and L-rotated)

10. Internal designation

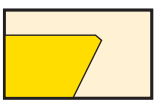
Machining conditions
E = Easy
M = Medium
D = Difficult

Designation system

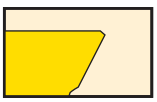
The Seco designation system for milling inserts has been developed to provide the user with better guidance concerning the fields of application for the various insert geometries



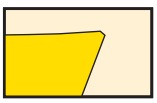
Examples of different insert geometries for a specific insert type



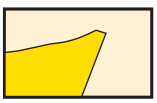
..AFTN-D20 Negative and very protected cutting edge



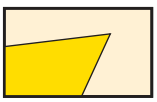
..AFTN-MD18 Negative and protected cutting edge



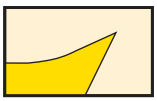
..AFTN-M14 Positive and protected cutting edge



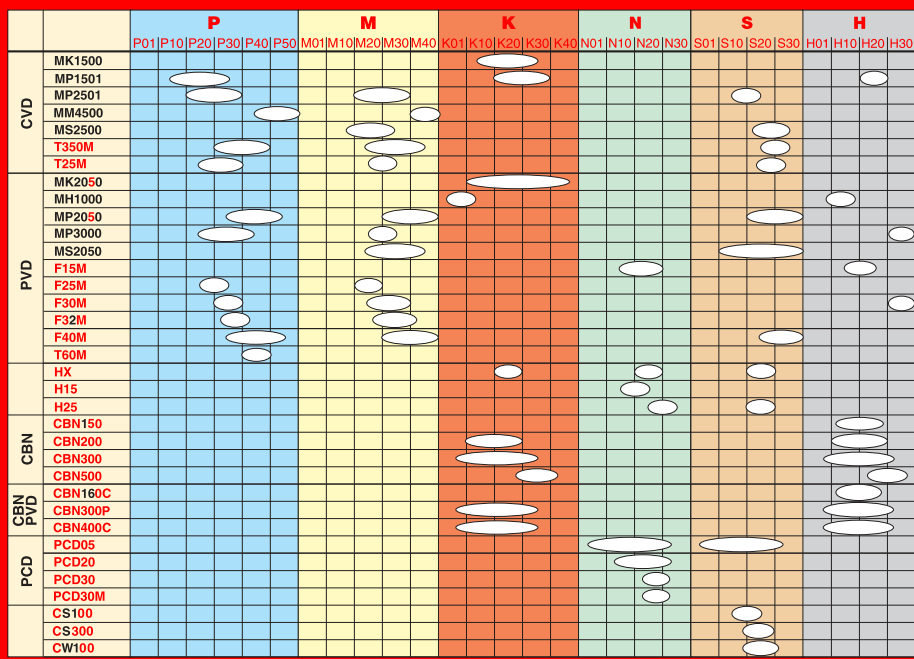
..AFTN-ME11 Very positive and protected cutting edge



..AFN-M10 Positive and sharp cutting edge

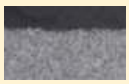


..AFN-E08 Very positive and very sharp cutting edge

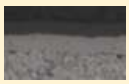
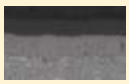
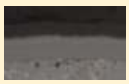
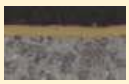

P
P01 P10 P20 P30 P40 P50
M
M01 M10 M20 M30 M40
K
K01 K10 K20 K30 K40
N
N01 N10 N20 N30
S
S01 S10 S20 S30
H
H01 H10 H20 H30
CVD
MK1500
MP1501
MP2501
MM4500
MS2500
T350M
T25M
PVD
MK2050
MH1000
MP2050
MP3000
MS2050
F15M
F25M
F30M
F32M
F40M
T60M
HX
H15
H25
CBN
CBN150
CBN200
CBN300
CBN500
CBN PVD
CBN160C
CBN300P
CBN400C
PCD
PCD05
PCD20
PCD30
PCD30M
CS100
CS300
CW100

Insert grades

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.

CVD coated grades

	**MP2501**	CVD-coated grade based on Duratomic® coating, First choice in steel for maximizing manufacturing output under most varying productivity. Alternative choice stainless steel applications under stable condition. Ti(C, N)-Al_2O_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_2O_3
	**MP1501**	CVD-coated grade based on Duratomic® coating. Grade for high performance and productivity in steel material under stable conditions and for milliing hardened steel. Excellent grade for grey and nodular cast iron. Ti (C, N) – Al_2O_3
	**MS2500**	Optimization grade for superalloy materials, also suitable for rough milling in tool steel. Ti (C, N) – Al_2O_3
	**MM4500**	Extremly 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_2O_3
	**T60M**	Tough grade for Minimaster inserts. Suitable for milling in soft and medium hard steel. (Ti, Al) N – TiN

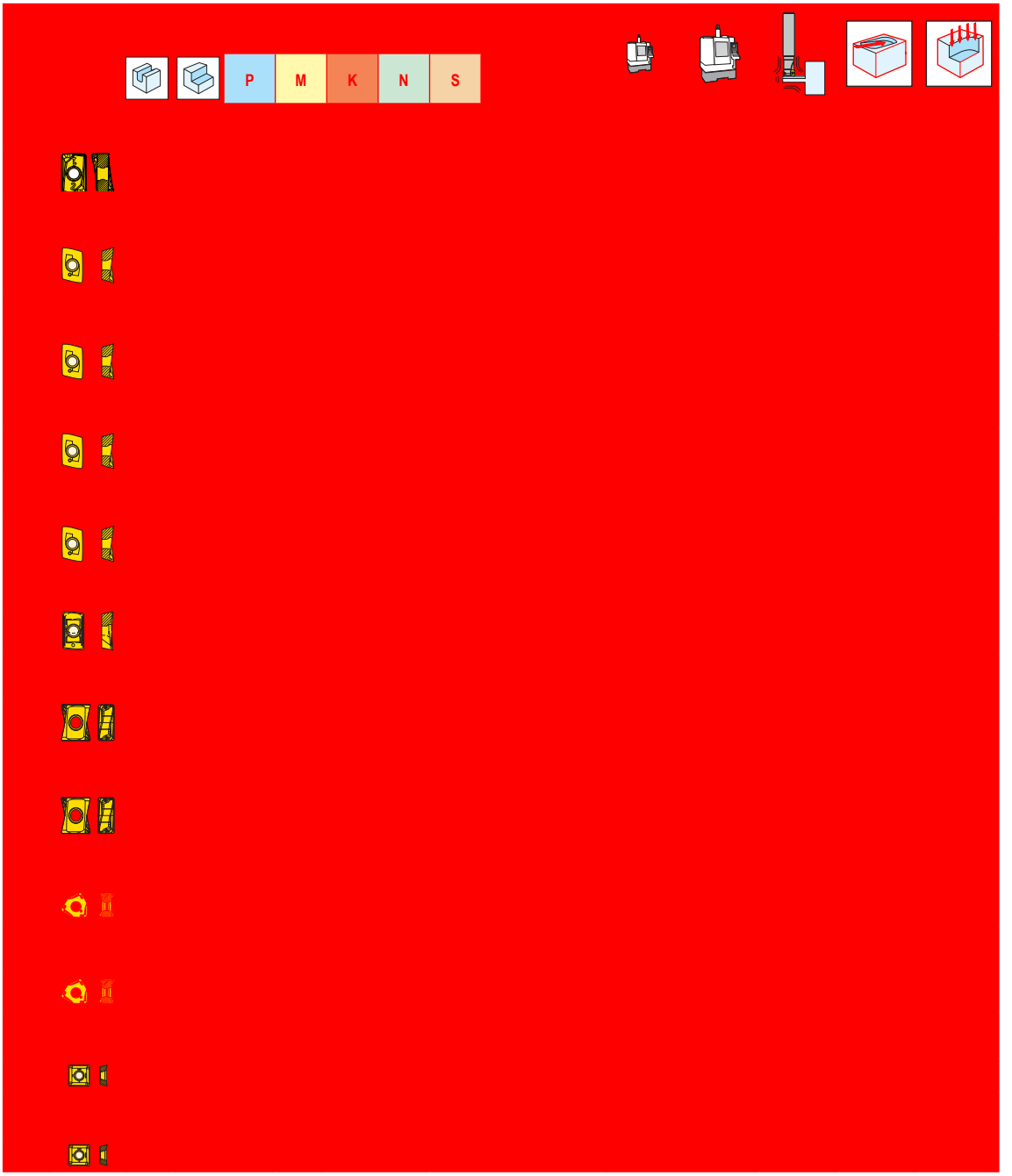
Insert grades

PVD coated grades

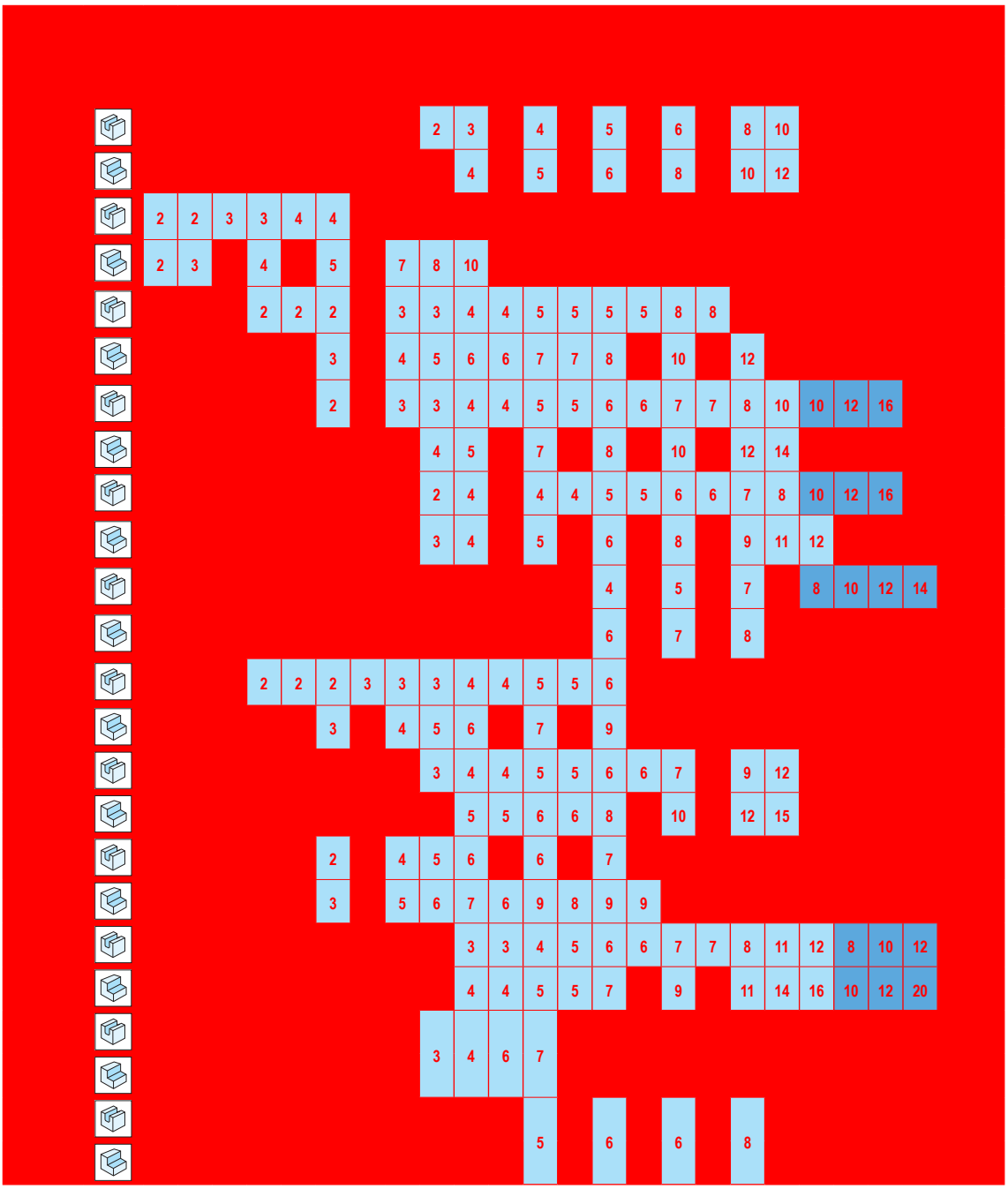
	**F40M**	PVD-coated grade for fine to medium rough milling. First choice for milling with small feeds and/or low cutting speeds. Excellent for milling when there is a risk of vibrations and when coolant is used. Recommended for machining superalloys. (Ti, Al) N – TiN
	**MK2050**	PVD-coated grade for 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
	**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 stinless 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
	**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

APMXE	Depth of cut maximum in feed direction end
AZ	plunge depth maximum
BHTA	Body half taper angle
C	Keyway depth
CCER	Curved cutting edge radius
CF	Spot chamfer
Cmax	Helical interpolation hole diameter maximum
CPNDIA	Connection pin diameter
CW	Cutting width
DCB	Connection bore diameter
DCSFMS	Contact surface diameter machine side
DCX	Cutting diameter maximum
FDESU	Feed direction suitability end
FDSSU	Feed direction suitability side
GAMO	Rake angle orthogonal
HC	Thread height actual
INSD	Insert diameter
KAPRE	Tool cutting edge angle in feed direction end
KCH	Corner chamfer angle
L	Cutting edge length
LE	Cutting edge effective length
LS	Shank length
OAL	Overall length
PNA	Profile included angle
RP	Programming radius
RPMX	Rotational speed maximum
S1	Insert thickness alt 1
TDZ	Thread diameter size
TTL	True tip length
ZEFP	Peripheral effective cutting edge count
SA	sphere angle
DC1	cutting diameter 1
FHA	flute helix angle
SIG	point angle
DN	neck diameter

Square shoulder and slot milling cutters



Square shoulder and slot milling cutters



x — Fixed pocket (x indicates number of teeth)

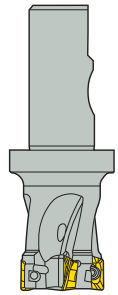
x — With cassette (x indicates number of teeth)

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.

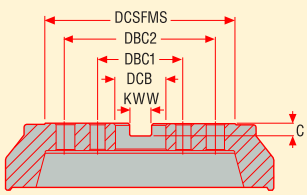


Code key for square shoulder and slot milling cutter 217/220.69

R	217	.	69	-	25	32	.	3S	-	12	-	4	AN

- 217 = With shank
- 220 = For arbor
- Shank diameter
- Shank type: 0 = Cylindrical; 3 = Weldon; 3S = Seco Weldon; RE = Combimaster
- Effective No. of teeth (ZEFP)
- Right hand rotation; Cx = For Seco-Capto
- Cutter system
- Cutter diameter
- Insert size
- A = With through coolant supply; AD=Anti vibration material with through coolant supply; T = Close pitch version for contouring operations; C = With adjustable cassettes; N = Coated

Dimensions of mounting

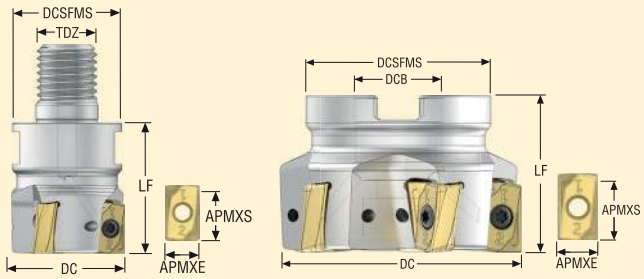


Dimensions in mm						Spindle-nose
DCSFMS	DCB	KWW	C	DBC1	DBC2	
30-35	16	8,4	5,6	–	–	–
42-47	22	10,4	6,3	–	–	–
48-62	27	12,4	7	–	–	–
60-90	32	14,4	8	–	–	–
90-130	40	16,4	9	66,7	–	(8xxx)
130-270	60	25,7	14	101,6	177,8	(8xxx)

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

Double Turbo 16 – R217/220.64-16





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 21-22
- For complete insert programme, see page(s) 666
- 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							
R217.64-1632.RE-ZO16-2A	Combimaster	5,0	15,0	32,0	30	22	M16	45,0	0,35	49,0	62,0	2	0,3	11400	ZOMX16..
R217.64-2040.RE-ZO16-3A	Combimaster	5,0	15,0	40,0	37	22	M20	45,0	0,25	65,0	78,0	3	0,4	10000	ZOMX16..
R217.64-2040.RE-ZO16-4A	Combimaster	5,0	15,0	40,0	37	22	M20	45,0	0,25	65,0	78,0	4	0,4	10000	ZOMX16..
R220.64-0050-ZO16-4A	Arbor	5,0	15,0	50,0	47	22	–	40,0	0,2	85,0	98,0	4	0,4	9000	ZOMX16..
R220.64-0050-ZO16-5A	Arbor	5,0	15,0	50,0	47	22	–	40,0	0,2	85,0	98,0	5	0,4	9000	ZOMX16..
R220.64-0063-ZO16-5A	Arbor	5,0	15,0	63,0	47	22	–	40,0	0,15	111,0	124,0	5	0,6	8200	ZOMX16..
R220.64-0063-ZO16-6A	Arbor	5,0	15,0	63,0	47	22	–	40,0	0,15	111,0	124,0	6	0,6	8200	ZOMX16..
R220.64-0080-ZO16-6A	Arbor	5,0	15,0	80,0	62	27	–	50,0	0,1	145,0	158,0	6	1,1	7200	ZOMX16..
R220.64-0080-ZO16-8A	Arbor	5,0	15,0	80,0	62	27	–	50,0	0,1	145,0	158,0	8	1,1	7200	ZOMX16..
R220.64-0100-ZO16-10A	Arbor	5,0	15,0	100,0	77	32	–	50,0	–	–	–	10	1,8	6500	ZOMX16..
R220.64-0100-ZO16-8A	Arbor	5,0	15,0	100,0	77	32	–	50,0	–	–	–	8	1,8	6500	ZOMX16..
R220.64-0125-ZO16-10A	Arbor	5,0	15,0	125,0	90	40	–	50,0	–	–	–	10	2,8	5800	ZOMX16..
R220.64-0125-ZO16-12A	Arbor	5,0	15,0	125,0	90	40	–	50,0	–	–	–	12	2,8	5800	ZOMX16..

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

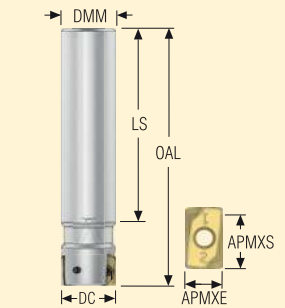
For cutter	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R217.64-1632-2040	C04011B-T15P	T15P-2	–	3,5
R220.64-0050-0063	C04011B-T15P	T15P-2	220.17-692	3,5
R220.64-0080-0125	C04011B-T15P	T15P-2	–	3,5

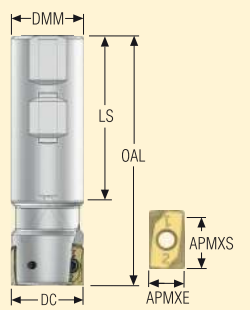
Please check availability in current price and stock-list

Torque keys, see page 710

Double Turbo 16 – R217.64-16







KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 21-22
- For complete insert programme, see page(s) 666
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max		KG		Insert
		APMXE	APMXS	DC	DMM	OAL	LS							
R217.64-3232.0-ZO16-2A	Cylindrical	5,0	15,0	32	32	150	113	0,35	49,0	62,0	2	0,6	11400	ZOMX16..
R217.64-3240.0-ZO16-3A	Cylindrical	5,0	15,0	40	32	150	113	0,25	65,0	78,0	3	0,6	11400	ZOMX16..
R217.64-3240.0-ZO16-4A	Cylindrical	5,0	15,0	40	32	150	113	0,25	65,0	78,0	4	0,6	11400	ZOMX16..
R217.64-3232.3-ZO16-2A	Weldon	5,0	15,0	32	32	110	73	0,35	49,0	62,0	2	0,6	11400	ZOMX16..
R217.64-3240.3-ZO16-3A	Weldon	5,0	15,0	40	32	110	73	0,25	65,0	78,0	3	0,7	10000	ZOMX16..
R217.64-3240.3-ZO16-4A	Weldon	5,0	15,0	40	32	110	73	0,25	65,0	78,0	4	0,8	10000	ZOMX16..

Spare Parts

For cutter	Insert screw	Insert key	Torque value (Nm)
R217.64-3232-3240	C04011B-T15P	T15P-2	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

R217/220.64-16 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	ZOMX160708TR-ME10 F40M	7,0	0,14	0,15	0,24
P2	ZOMX160708TR-ME10 F40M	7,0	0,14	0,16	0,24
P3	ZOMX160708TR-M12 MP2501	7,0	0,16	0,18	0,28
P4	ZOMX160708TR-M12 MP2501	7,0	0,16	0,17	0,26
P5	ZOMX160708TR-M12 MP2501	7,0	0,16	0,17	0,26
P6	ZOMX160708TR-M12 MP2501	7,0	0,16	0,17	0,26
P7	ZOMX160708TR-M12 MP2501	7,0	0,16	0,17	0,26
P8	ZOMX160708TR-M12 MP2501	7,0	0,16	0,18	0,28
P11	ZOMX160708TR-M12 MS2500	7,0	0,16	0,17	0,26
P12	ZOMX160708TR-M12 MS2500	6,0	0,11	0,12	0,18
M1	ZOMX160708TR-ME10 F40M	7,0	0,14	0,16	0,24
M2	ZOMX160708TR-ME10 F40M	7,0	0,13	0,14	0,22
M3	ZOMX160708TR-ME10 F40M	6,0	0,10	0,11	0,17
M4	ZOMX160708TR-ME10 MS2050	4,5	0,090	0,10	0,15
M5	ZOMX160708TR-ME10 MS2050	4,5	0,090	0,10	0,15
K1	ZOMX160708TR-M12 MK2050	7,0	0,17	0,19	0,28
K2	ZOMX160708TR-M12 MK2050	7,0	0,16	0,17	0,26
K3	ZOMX160708TR-M12 MK2050	7,0	0,16	0,17	0,26
K4	ZOMX160708TR-M12 MK2050	7,0	0,16	0,17	0,26
K5	ZOMX160708TR-M12 MK2050	7,0	0,14	0,15	0,24
K6	ZOMX160708TR-M12 MK2050	7,0	0,16	0,17	0,26
K7	ZOMX160708TR-M12 MP3000	7,0	0,14	0,15	0,24
S1	ZOMX160708TR-ME10 MS2050	4,5	0,090	0,10	0,15
S2	ZOMX160708TR-ME10 MS2050	4,5	0,090	0,10	0,15
S3	ZOMX160708TR-ME10 MS2050	4,5	0,085	0,095	0,14
S11	ZOMX160708TR-ME10 F40M	5,0	0,11	0,11	0,17
S12	ZOMX160708TR-ME10 F40M	5,0	0,11	0,11	0,17
S13	ZOMX160708TR-ME10 F40M	4,5	0,090	0,10	0,15
H5	ZOMX160708TR-M12 MP3000	6,0	0,11	0,12	0,18
H8	ZOMX160708TR-M12 MP3000	5,0	0,080	0,090	0,14
H11	ZOMX160708TR-M12 MP3000	6,0	0,11	0,12	0,18
H12	ZOMX160708TR-M12 MP3000	5,0	0,080	0,090	0,14

SMG = Seco material group
f_z = mm/tooth
v_c = m/min
a_e/DC = %
All cutting data are start values

R217/220.64-16 – Cutting data v_c = (m/min)

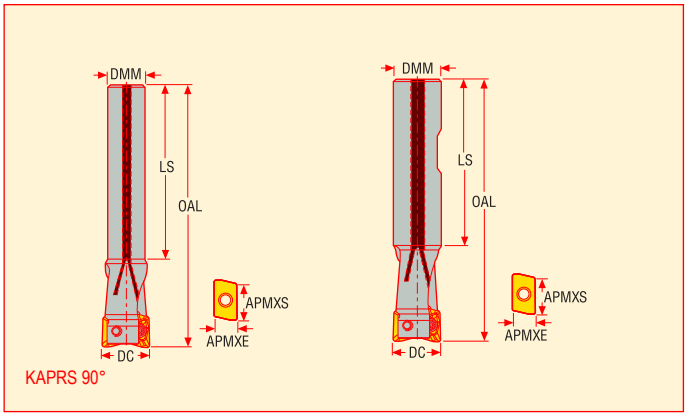
	MP1501			MP2501			MP3000			MK2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	305	410	480	270	365	425	255	345	405	265	355	420
P2	300	390	470	265	350	415	250	330	395	260	340	410
P3	260	345	405	230	305	360	220	290	340	230	300	355
P4	230	305	365	205	270	320	195	260	305	200	270	315
P5	220	295	345	195	260	305	185	245	290	190	255	305
P6	245	330	390	220	290	345	205	275	325	215	285	340
P7	235	310	370	205	275	325	195	260	310	205	270	320
P8	220	290	340	195	255	300	185	240	285	190	250	295
P11	225	300	355	200	265	315	190	255	300	195	265	310
P12	150	195	235	130	175	205	125	165	195	130	170	205
M1	—	—	—	190	250	300	185	245	295	—	—	—
M2	—	—	—	155	210	245	155	205	245	—	—	—
M3	—	—	—	125	170	205	125	165	200	—	—	—
M4	—	—	—	100	135	155	100	130	155	—	—	—
M5	—	—	—	85	110	130	80	110	130	—	—	—
K1	235	310	370	210	275	330	200	260	310	280	370	440
K2	210	280	330	185	245	290	175	235	275	250	330	390
K3	175	235	280	155	210	245	150	200	235	210	280	330
K4	170	225	265	150	200	235	140	190	225	200	265	315
K5	105	140	160	90	125	145	85	115	135	125	165	190
K6	150	200	235	130	175	210	125	165	195	175	235	280
K7	135	180	205	120	155	185	110	150	175	160	210	245
S1	—	—	—	49	65	75	46	60	70	—	—	—
S2	—	—	—	39	50	60	37	49	60	—	—	—
S3	—	—	—	35	46	55	33	43	50	—	—	—
S11	—	—	—	65	90	105	65	85	100	—	—	—
S12	—	—	—	47	60	75	44	60	70	—	—	—
S13	—	—	—	28	37	43	26	34	40	—	—	—
H5	49	65	75	40	55	60	39	50	60	—	—	—
H7	—	—	—	—	—	—	—	—	—	—	—	—
H11	65	85	100	50	65	80	49	65	75	—	—	—
H12	95	125	145	85	110	130	80	105	125	—	—	—

	MS2050			MS2500			F40M		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	255	340	400	295	395	465	205	275	325
P2	250	325	390	290	380	455	200	265	315
P3	215	285	340	250	330	390	175	230	270
P4	195	250	300	220	295	350	155	205	245
P5	185	245	290	210	285	335	145	195	235
P6	205	275	325	240	320	375	165	220	260
P7	195	260	305	225	300	355	155	210	245
P8	180	240	290	210	280	330	145	195	230
P11	190	255	295	220	290	345	150	205	240
P12	125	165	195	145	190	225	100	130	155
M1	200	265	315	205	270	325	160	210	255
M2	165	220	260	170	225	270	135	175	210
M3	135	180	210	140	185	220	110	145	170
M4	105	140	165	110	145	170	85	115	130
M5	90	115	135	90	120	140	70	95	110
K1	—	—	—	—	—	—	160	210	250
K2	—	—	—	—	—	—	140	185	220
K3	—	—	—	—	—	—	120	160	185
K4	—	—	—	—	—	—	115	150	180
K5	—	—	—	—	—	—	70	95	110
K6	—	—	—	—	—	—	100	135	155
K7	—	—	—	—	—	—	90	120	140
S1	49	65	75	55	70	85	40	55	60
S2	40	55	60	43	55	65	32	43	50
S3	35	46	55	38	50	60	28	37	43
S11	70	90	105	75	100	115	55	75	85
S12	47	65	75	50	70	80	38	50	60
S13	28	37	43	30	40	47	22	30	35
H5	—	—	—	—	—	—	33	44	50
H7	—	—	—	—	—	—	—	—	—
H11	—	—	—	—	—	—	42	55	65
H12	—	—	—	—	—	—	65	85	100

Turbo 06 – R217.69-06



- For insert selection and cutting data recommendations, see page(s) 26-27
- For complete insert programme, see page(s) 661
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max		KG		Insert
		APMXE	APMXS	DC	DMM	OAL	LS							
R217.69-0810.0-06-2N	Cylindrical	3,0	5,0	10	8	100	82	10,0	14,5	19,0	2	0,1	60000	XO.X06..
R217.69-0810.0-06-2AN	Cylindrical	3,0	5,0	10	8	100	82	10,0	14,5	19,0	2	0,1	60000	XO.X06..
R217.69-1010.0-06-2AD	Cylindrical	3,0	5,0	10	10	55	38	10,0	14,5	19,0	2	0,1	60000	XO.X06..
R217.69-1010.0-06-2N	Cylindrical	3,0	5,0	10	10	100	82	10,0	14,5	19,0	2	0,1	60000	XO.X06..
R217.69-1010.0-06-2AN	Cylindrical	3,0	5,0	10	10	55	38	10,0	14,5	19,0	2	0,1	60000	XO.X06..
R217.69-1012.0-06-2N	Cylindrical	3,0	5,0	12	10	120	102	6,5	18,5	23,0	2	0,1	54400	XO.X06..
R217.69-1012.0-06-2AN	Cylindrical	3,0	5,0	12	10	120	102	6,5	18,5	23,0	2	0,1	54400	XO.X06..
R217.69-1212.0-06-2N	Cylindrical	3,0	5,0	12	12	120	102	6,5	18,5	23,0	2	0,2	54400	XO.X06..
R217.69-1212.0-06-2AN	Cylindrical	3,0	5,0	12	12	80	62	6,5	18,5	23,0	2	0,1	54400	XO.X06..
R217.69-1212.0-06-3AD	Cylindrical	3,0	5,0	12	12	80	62	6,5	18,5	23,0	3	0,2	54400	XO.X06..
R217.69-1212.0-06-3AN	Cylindrical	3,0	5,0	12	12	60	42	6,5	18,5	23,0	3	0,1	54400	XO.X06..
R217.69-1214.0-06-3AN	Cylindrical	3,0	5,0	14	12	140	122	5,0	22,5	27,0	3	0,2	51200	XO.X06..
R217.69-1416.0-06-3AN	Cylindrical	3,0	5,0	16	14	160	140	4,0	26,5	31,0	3	0,2	48000	XO.X06..
R217.69-1616.0-06-3AN	Cylindrical	3,0	5,0	16	16	90	70	4,0	26,5	31,0	3	0,2	48000	XO.X06..
R217.69-1616.0-06-4AD	Cylindrical	3,0	5,0	16	16	90	70	4,0	26,5	31,0	4	0,3	48000	XO.X06..
R217.69-1616.0-06-4AN	Cylindrical	3,0	5,0	16	16	90	70	4,0	26,5	31,0	4	0,2	48000	XO.X06..
R217.69-1618.0-06-4AN	Cylindrical	3,0	5,0	18	16	180	160	3,0	30,5	35,0	4	0,3	45600	XO.X06..
R217.69-1616.3-06-3AN	Weldon	3,0	5,0	16	16	70	50	4,0	26,5	31,0	3	0,1	48000	XO.X06..
R217.69-1616.3-06-4AN	Weldon	3,0	5,0	16	16	70	50	4,0	26,5	31,0	4	0,1	48000	XO.X06..

Spare Parts

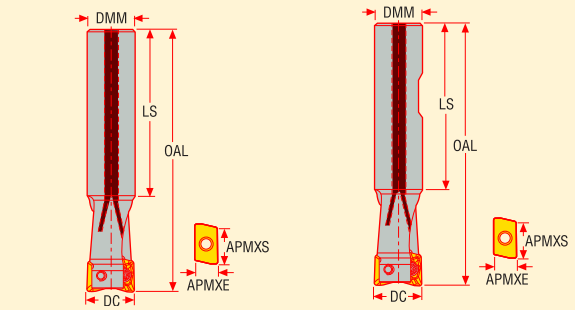
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.69-..	DOUBLE-T	C01804-T06P	H4B-T06P	0,5

Please check availability in current price and stock-list

Torque keys, see page 710

Turbo 06 – R217.69-06





- For insert selection and cutting data recommendations, see page(s) 26-27
- For complete insert programme, see page(s) 661
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max		KG		Insert
		APMXE	APMXS	DC	DMM	OAL	LS							
R217.69-1820.0-06-4AN	Cylindrical	3,0	5,0	20	18	200	180	2,5	34,5	39,0	4	0,4	44000	XO.X06..
R217.69-2020.0-06-4AN	Cylindrical	3,0	5,0	20	20	105	85	2,5	34,5	39,0	4	0,3	44000	XO.X06..
R217.69-2020.0-06-5AD	Cylindrical	3,0	5,0	20	20	105	85	2,5	34,5	39,0	5	0,5	44000	XO.X06..
R217.69-2020.0-06-5AN	Cylindrical	3,0	5,0	20	20	105	85	2,5	34,5	39,0	5	0,3	44000	XO.X06..
R217.69-2025.0-06-7AN	Cylindrical	3,0	5,0	25	20	115	95	2,5	44,5	49,0	7	0,3	37600	XO.X06..
R217.69-2532.0-06-8AN	Cylindrical	3,0	5,0	32	25	130	105	1,5	58,5	63,0	8	0,5	33600	XO.X06..
R217.69-3240.0-06-10AN	Cylindrical	3,0	5,0	40	32	140	115	1,0	74,5	79,0	10	0,9	28000	XO.X06..
R217.69-2020.3-06-4AN	Weldon	3,0	5,0	20	20	80	60	2,5	34,5	39,0	4	0,2	44000	XO.X06..
R217.69-2020.3-06-5AN	Weldon	3,0	5,0	20	20	85	65	2,5	34,5	39,0	5	0,3	44000	XO.X06..
R217.69-2025.3-06-7AN	Weldon	3,0	5,0	25	20	90	70	2,5	44,5	49,0	7	0,2	37600	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

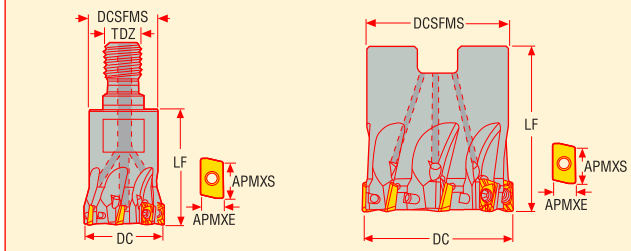
Please check availability in current price and stock-list

Torque keys, see page 710

Turbo 06 – R217/220.69-06



- For insert selection and cutting data recommendations, see page(s) 26-27
- For complete insert programme, see page(s) 661
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm							RMPX°	C min	C max		KG		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	26,5	31,0	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	34,5	39,0	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	44,5	49,0	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	58,5	63,0	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	74,5	79,0	10	0,3	28000	XO.X06..
R220.69-0032-06-8AN	Arbor	3,0	5,0	32,0	30	16	–	35,0	1,5	58,5	63,0	8	0,2	33600	XO.X06..
R220.69-0040-06-10AN	Arbor	3,0	5,0	40,0	35	16	–	35,0	1,0	74,5	79,0	10	0,2	18600	XO.X06..

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 710

R217/220.69-06 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	XOMX060204R-M05 F40M	2,5	0,070	0,075	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	2,0	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	2,0	0,055	0,060	0,090
M4	XOMX060204R-M05 MP3000	1,5	0,048	0,050	0,075
M5	XOMX060204R-M05 MM4500	1,5	0,048	0,050	0,075
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	0,075
S2	XOMX060204R-M05 F40M	1,5	0,048	0,050	0,075
S3	XOMX060204R-M05 F40M	1,5	0,044	0,048	0,070
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	0,060	0,080
H5	XOMX060204R-M05 MP3000	2,0	0,046	0,050	0,075
H8	XOMX060204R-M05 MP3000	1,7	0,034	0,038	0,055
H11	XOMX060204R-M05 MP3000	2,0	0,046	0,050	0,075
H12	XOMX060204R-M05 MP3000	1,7	0,034	0,038	0,055

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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

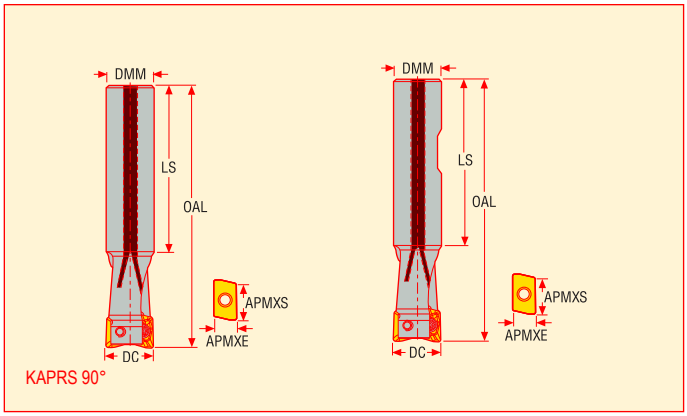
	MP3000			MM4500			MS2050			F15M		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	345	450	530	220	295	340	—	—	—	335	435	510
P2	335	435	510	215	280	330	—	—	—	325	425	500
P3	285	380	450	185	245	290	—	—	—	285	370	430
P4	255	335	395	165	215	255	—	—	—	250	325	385
P5	245	325	375	160	210	245	—	—	—	240	310	370
P6	275	360	425	180	235	275	—	—	—	265	350	415
P7	260	340	400	170	220	260	230	300	350	250	330	390
P8	240	320	375	155	205	245	210	280	330	240	310	360
P11	255	330	390	165	215	250	220	290	340	245	320	380
P12	160	210	245	105	135	160	140	185	215	160	210	240
M1	250	325	385	185	240	285	235	305	365	260	345	405
M2	205	270	315	150	200	235	195	255	300	215	280	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	—	—	—	—	—	—	255	335	395
K2	235	305	360	—	—	—	—	—	—	225	295	350
K3	195	260	305	—	—	—	—	—	—	190	250	295
K4	190	245	290	—	—	—	—	—	—	185	240	285
K5	115	150	175	—	—	—	—	—	—	110	145	170
K6	165	220	255	—	—	—	—	—	—	160	210	250
K7	145	190	225	—	—	—	—	—	—	145	190	220
N1	1975	2575	3050	—	—	—	—	—	—	1925	2525	2950
N2	800	1050	1225	—	—	—	—	—	—	780	1025	1200
N3	530	690	820	—	—	—	—	—	—	520	680	790
N11	—	—	—	—	—	—	—	—	—	590	780	910
S1	60	80	90	29	38	44	55	75	85	65	80	95
S2	48	65	75	23	31	35	45	60	70	50	65	75
S3	42	55	65	20	27	31	40	50	60	44	60	65
S11	85	110	125	40	55	60	80	105	120	90	115	135
S12	55	75	85	37	49	55	55	70	85	60	80	90
S13	33	44	50	22	29	33	32	42	48	36	46	55
H5	50	65	75	—	—	—	—	—	—	55	70	80
H8	55	70	80	—	—	—	—	—	—	55	70	85
H11	65	85	100	—	—	—	—	—	—	65	90	100
H12	100	135	155	—	—	—	—	—	—	100	130	150

	F40M			H15		
SMG	100%	30%	10%	100%	30%	10%
P1	275	360	420	—	—	—
P2	265	345	410	—	—	—
P3	230	300	360	—	—	—
P4	205	265	315	—	—	—
P5	195	260	300	—	—	—
P6	220	290	340	—	—	—
P7	210	275	320	—	—	—
P8	195	255	300	—	—	—
P11	200	265	310	—	—	—
P12	130	170	195	—	—	—
M1	215	280	330	—	—	—
M2	175	230	270	—	—	—
M3	140	185	215	—	—	—
M4	110	145	165	—	—	—
M5	90	120	140	—	—	—
K1	210	275	325	—	—	—
K2	185	245	285	—	—	—
K3	160	205	240	—	—	—
K4	150	200	230	—	—	—
K5	90	120	140	—	—	—
K6	135	175	205	—	—	—
K7	115	155	180	—	—	—
N1	1575	2050	2450	1650	2175	2575
N2	640	830	990	670	880	1050
N3	425	560	660	445	590	690
N11	485	630	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	—	—	—

Square shoulder and slot milling cutters

Turbo 10 – R217.69-10





- For insert selection and cutting data recommendations, see page(s) 31-32
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max		KG		Insert
		APMXE	APMXS	DC	DMM	OAL	LS							
R217.69-1416.0-10-2A	Cylindrical	6,0	9,0	16	14	160	134	7,5	21,0	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	21,0	30,5	2	0,2	29400	XO.X10T3..
R217.69-1618.0-10-2A	Cylindrical	6,0	9,0	18	16	160	134	6,0	25,0	34,5	2	0,3	27800	XO.X10T3..
R217.69-1820.0-10-2A	Cylindrical	6,0	9,0	20	18	200	170	4,5	29,0	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	29,0	38,5	2	0,4	26300	XO.X10T3..
R217.69-2020.0-10-3A	Cylindrical	6,0	9,0	20	20	150	115	4,5	29,0	38,5	3	0,3	26300	XO.X10T3..
R217.69-2225.0-10-3A	Cylindrical	6,0	9,0	25	22	200	170	3,0	39,0	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	39,0	48,5	3	0,6	23500	XO.X10T3..
R217.69-2525.0-10-4A	Cylindrical	6,0	9,0	25	25	170	130	3,0	39,0	48,5	4	0,6	23500	XO.X10T3..
R217.69-3232.0-10-3A	Cylindrical	6,0	9,0	32	32	195	155	2,0	53,0	62,5	3	1,1	20800	XO.X10T3..
R217.69-3232.0-10-5A	Cylindrical	6,0	9,0	32	32	195	155	2,0	53,0	62,5	5	1,1	20800	XO.X10T3..
R217.69-1616.3-10-2A	Weldon	6,0	9,0	16	16	78	54	7,5	21,0	30,5	2	0,1	29400	XO.X10T3..
R217.69-2018.3-10-2A	Weldon	6,0	9,0	18	20	85	56	6,0	25,0	34,5	2	0,2	27800	XO.X10T3..
R217.69-2020.3-10-2A	Weldon	6,0	9,0	20	20	90	61	4,5	29,0	38,5	2	0,2	26300	XO.X10T3..
R217.69-2020.3-10-3A	Weldon	6,0	9,0	20	20	90	61	4,5	29,0	38,5	3	0,2	26300	XO.X10T3..
R217.69-2525.3-10-3A	Weldon	6,0	9,0	25	25	101	67	3,0	39,0	48,5	3	0,4	23500	XO.X10T3..
R217.69-2525.3-10-4A	Weldon	6,0	9,0	25	25	101	67	3,0	39,0	48,5	4	0,3	23500	XO.X10T3..
R217.69-3232.3-10-3A	Weldon	6,0	9,0	32	32	110	75	2,0	53,0	62,5	3	0,6	20800	XO.X10T3..
R217.69-3232.3-10-5A	Weldon	6,0	9,0	32	32	110	75	2,0	53,0	62,5	5	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

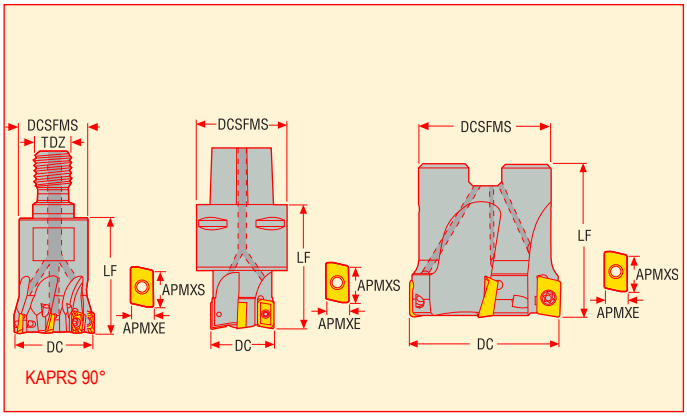
Please check availability in current price and stock-list

Torque keys, see page 710

Turbo 10 – R217/220.69-10



- For insert selection and cutting data recommendations, see page(s) 31-32
- For complete insert programme, see page(s) 662
- 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							
R217.69-0816.RE-10-2A	Combimaster	6,0	9,0	16,0	14	–	M8	23,0	7,5	21,0	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	29,0	38,5	2	0,1	26300	XO.X10T3..
R217.69-1020.RE-10-3A	Combimaster	6,0	9,0	20,0	19	–	M10	28,0	4,5	29,0	38,5	3	0,1	26300	XO.X10T3..
R217.69-1225.RE-10-3A	Combimaster	6,0	9,0	25,0	23	–	M12	30,0	3,0	39,0	48,5	3	0,1	23500	XO.X10T3..
R217.69-1225.RE-10-4A	Combimaster	6,0	9,0	25,0	23	–	M12	30,0	3,0	39,0	48,5	4	0,1	23500	XO.X10T3..
R217.69-1632.RE-10-3A	Combimaster	6,0	9,0	32,0	30	–	M16	40,0	2,0	53,0	62,5	3	0,2	20800	XO.X10T3..
R217.69-1632.RE-10-5A	Combimaster	6,0	9,0	32,0	30	–	M16	40,0	2,0	53,0	62,5	5	0,2	20800	XO.X10T3..
R217.69-2040.RE-10-4A	Combimaster	6,0	9,0	40,0	37	–	M20	40,0	1,5	69,0	78,5	4	0,4	18600	XO.X10T3..
R217.69-2040.RE-10-6A	Combimaster	6,0	9,0	40,0	37	–	M20	40,0	1,5	69,0	78,5	6	0,4	18600	XO.X10T3..
C4-R217.69-044-10-4A	Seco-Capto	6,0	9,0	44,0	40	–	–	60,0	1,3	77,0	86,5	4	0,6	28000	XO.X10T3..
R220.69-0032-10-4A	Arbor	6,0	9,0	32,0	30	16	–	35,0	2,0	53,0	62,5	4	0,2	20800	XO.X10T3..
R220.69-0032-10-5A	Arbor	6,0	9,0	32,0	30	16	–	35,0	2,0	53,0	62,5	5	0,2	20800	XO.X10T3..
R220.69-0040-10-4A	Arbor	6,0	9,0	40,0	35	16	–	40,0	1,5	69,0	78,5	4	0,2	18600	XO.X10T3..
R220.69-0040-10-6A	Arbor	6,0	9,0	40,0	35	16	–	40,0	1,5	69,0	78,5	6	0,2	18600	XO.X10T3..
R220.69-0044-10-4A	Arbor	6,0	9,0	44,0	35	16	–	40,0	1,3	77,0	86,5	4	0,3	18600	XO.X10T3..

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

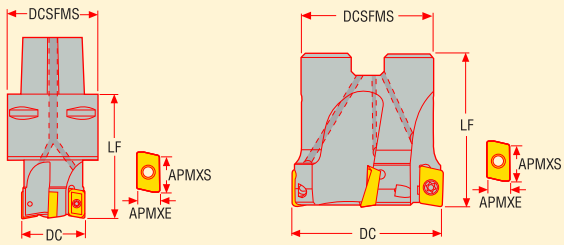
For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R217.69-..	DOUBLE-T	C02506-T07P	H4B-T07P	–	0,9
Cx-R217.69-..	DOUBLE-T	C02506-T07P	H4B-T07P	–	0,9
R220.69-0032	DOUBLE-T	C02506-T07P	H4B-T07P	220.17-688	0,9
R220.69-0040-0044	DOUBLE-T	C02506-T07P	H4B-T07P	MC6S8X30	0,9

Please check availability in current price and stock-list

Torque keys, see page 710

Turbo 10 – R217/220.69-10





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 31-32
- For complete insert programme, see page(s) 662
- 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	LF							
C5-R217.69-054-10-5A	Seco-Capto	6,0	9,0	54,0	50	–	60,0	1,2	97,0	106,5	5	0,9	14200	XO.X10T3..
R220.69-0050-10-5A	Arbor	6,0	9,0	50,0	47	22	40,0	1,2	89,0	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	93,0	102,5	5	0,4	16400	XO.X10T3..
R220.69-0050-10-7A	Arbor	6,0	9,0	50,0	47	22	40,0	1,2	89,0	98,5	7	0,4	16600	XO.X10T3..
R220.69-0063-10-5A	Arbor	6,0	9,0	63,0	52	27	40,0	0,9	115,0	124,5	5	0,6	14800	XO.X10T3..
R220.69-0063-10-8A	Arbor	6,0	9,0	63,0	52	27	40,0	0,9	115,0	124,5	8	0,6	14800	XO.X10T3..
R220.69-0066-10-5A	Arbor	6,0	9,0	66,0	52	27	40,0	0,9	121,0	130,5	5	0,7	14800	XO.X10T3..
R220.69-0080-10-8A	Arbor	6,0	9,0	80,0	62	27	50,0	0,5	149,0	158,5	8	1,1	13200	XO.X10T3..
R220.69-0080-10-10A	Arbor	6,0	9,0	80,0	62	27	50,0	0,5	149,0	158,5	10	1,1	13200	XO.X10T3..
R220.69-0084-10-8A	Arbor	6,0	9,0	84,0	62	27	50,0	0,5	157,0	166,5	8	1,2	12900	XO.X10T3..
R220.69-0100-10-12A	Arbor	6,0	9,0	100,0	77	32	50,0	0,5	189,0	198,5	12	1,8	11800	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)
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
R220.69-0080-0100	DOUBLE-T	C02506-T07P	H4B-T07P	–	0,9

Please check availability in current price and stock-list

Torque keys, see page 710

R217/220.69-10 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	XOMX10T308TR-ME07 F40M	4,5	0,10	0,11	0,17
P2	XOMX10T308TR-ME07 F40M	4,5	0,10	0,11	0,17
P3	XOMX10T308TR-ME07 MP2501	4,5	0,095	0,10	0,16
P4	XOMX10T308TR-ME07 MP2501	4,5	0,095	0,10	0,16
P5	XOMX10T308TR-M09 MP2501	4,5	0,12	0,13	0,20
P6	XOMX10T308TR-M09 MP2501	4,5	0,12	0,13	0,20
P7	XOMX10T308TR-M09 MP2501	4,5	0,12	0,13	0,20
P8	XOMX10T308TR-M09 MP2501	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	0,14
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	0,090
M5	XOEX10T308R-M06 T350M	2,5	0,055	0,065	0,090
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	0,090
S2	XOEX10T308R-M06 T350M	2,5	0,055	0,065	0,090
S3	XOEX10T308R-M06 T350M	2,5	0,055	0,060	0,085
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	0,090
H5	XOMX10T308TR-M09 MP3000	3,5	0,080	0,090	0,13
H8	XOMX10T308TR-M09 MP3000	3,0	0,065	0,070	0,10
H11	XOMX10T308TR-M09 MP1501	3,5	0,080	0,090	0,13
H12	XOMX10T308TR-M09 MP1501	3,0	0,065	0,070	0,10

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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

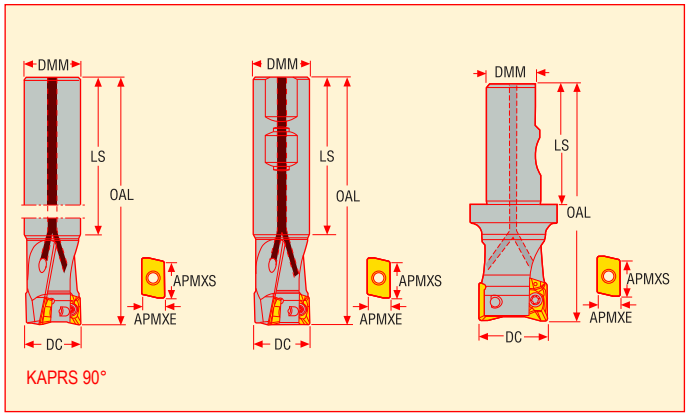
	MP1501			MP2050			MP2501			MP3000			MM4500			MK1500			MK2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	380	500	590	330	435	510	340	445	520	320	420	495	205	275	320	—	—	—	295	390	460
P2	370	490	570	325	425	500	330	435	510	310	410	480	200	265	310	—	—	—	290	380	445
P3	325	430	500	280	375	435	285	380	445	270	360	420	175	235	270	—	—	—	255	335	395
P4	285	380	440	250	330	385	250	335	390	240	320	370	155	205	240	—	—	—	225	295	345
P5	275	360	425	240	315	370	245	320	380	230	305	360	150	195	230	—	—	—	215	280	330
P6	310	405	480	270	355	415	275	360	425	260	340	405	170	220	260	—	—	—	240	315	370
P7	290	385	455	255	335	395	260	340	400	245	320	380	160	210	245	—	—	—	225	300	350
P8	270	360	420	235	315	365	240	320	375	230	305	355	150	195	230	—	—	—	215	280	330
P11	285	370	440	245	325	385	250	330	390	240	310	370	155	200	240	—	—	—	220	290	340
P12	185	240	285	160	210	245	160	215	250	155	200	240	100	130	155	—	—	—	145	190	225
M1	—	—	—	230	305	355	235	310	365	235	305	360	175	230	270	—	—	—	—	—	—
M2	—	—	—	190	250	295	195	260	305	195	255	300	145	190	225	—	—	—	—	—	—
M3	—	—	—	155	205	240	160	210	245	155	205	240	115	155	180	—	—	—	—	—	—
M4	—	—	—	120	160	180	125	160	185	120	160	185	90	120	135	—	—	—	—	—	—
M5	—	—	—	100	130	150	105	135	155	100	130	155	75	100	115	—	—	—	—	—	—
K1	295	385	455	255	335	395	260	345	400	—	—	—	—	—	—	370	485	570	310	410	480
K2	260	345	405	230	300	355	230	305	360	—	—	—	—	—	—	330	430	510	275	365	430
K3	220	290	345	195	255	300	195	255	305	—	—	—	—	—	—	280	365	430	235	310	360
K4	210	275	330	185	240	285	185	245	290	—	—	—	—	—	—	265	350	410	220	295	345
K5	130	170	200	110	145	170	115	150	175	—	—	—	—	—	—	160	210	250	135	180	210
K6	185	245	290	160	210	250	165	215	255	—	—	—	—	—	—	235	305	360	195	260	305
K7	165	215	255	140	190	220	145	190	225	—	—	—	—	—	—	205	270	320	175	230	270
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	60	75	90	—	—	—	55	75	85	28	36	42	—	—	—	—	—	—
S2	—	—	—	48	60	70	—	—	—	46	60	70	22	29	34	—	—	—	—	—	—
S3	—	—	—	42	55	65	—	—	—	40	50	60	20	25	30	—	—	—	—	—	—
S11	—	—	—	80	110	125	—	—	—	80	105	120	39	50	60	—	—	—	—	—	—
S12	—	—	—	55	75	85	—	—	—	55	75	85	36	47	55	—	—	—	—	—	—
S13	—	—	—	33	43	50	—	—	—	32	42	48	21	27	31	—	—	—	—	—	—
H5	60	80	95	48	65	75	—	—	—	48	65	75	—	—	—	—	—	—	—	—	—
H8	65	85	100	50	65	75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H11	75	100	120	60	80	95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H12	115	150	175	100	130	155	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

	MS2050			MS2500			T350M			F40M			H15			MP1020		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	365	480	570	295	385	455	255	335	395	—	—	—	430	460	475
P2	—	—	—	355	465	550	285	375	445	250	330	385	—	—	—	415	450	460
P3	—	—	—	310	405	475	250	330	385	215	290	335	—	—	—	360	385	395
P4	—	—	—	275	360	425	220	290	340	190	255	295	—	—	—	315	340	340
P5	—	—	—	260	345	405	215	280	330	185	245	285	—	—	—	300	320	325
P6	—	—	—	295	390	455	240	315	370	210	270	320	—	—	—	340	360	365
P7	210	280	330	275	365	430	225	295	350	195	255	305	—	—	—	320	340	345
P8	200	260	305	260	340	400	210	280	325	185	245	280	—	—	—	300	325	335
P11	205	270	320	270	355	420	220	285	340	190	250	295	—	—	—	310	330	335
P12	135	175	205	175	230	265	140	185	220	120	160	190	—	—	—	165	165	160
M1	220	285	340	255	335	395	220	290	340	200	265	310	—	—	—	—	—	—
M2	180	240	280	210	275	325	185	240	285	165	220	260	—	—	—	—	—	—
M3	145	190	220	170	225	255	145	195	230	135	175	205	—	—	—	—	—	—
M4	115	150	170	135	170	200	115	150	175	105	135	160	—	—	—	—	—	—
M5	95	125	145	110	145	165	95	125	145	90	115	130	—	—	—	—	—	—
K1	—	—	—	—	—	—	—	—	—	195	260	305	—	—	—	—	—	—
K2	—	—	—	—	—	—	—	—	—	175	230	270	—	—	—	—	—	—
K3	—	—	—	—	—	—	—	—	—	150	195	230	—	—	—	—	—	—
K4	—	—	—	—	—	—	—	—	—	140	185	220	—	—	—	—	—	—
K5	—	—	—	—	—	—	—	—	—	85	115	135	—	—	—	—	—	—
K6	—	—	—	—	—	—	—	—	—	125	165	195	—	—	—	—	—	—
K7	—	—	—	—	—	—	—	—	—	110	145	170	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	1450	1925	2250	1525	1975	2350	—	—	—
N2	—	—	—	—	—	—	—	—	—	590	780	910	610	800	950	—	—	—
N3	—	—	—	—	—	—	—	—	—	390	520	610	410	530	630	—	—	—
N11	—	—	—	—	—	—	—	—	—	450	590	690	465	610	720	—	—	—
S1	55	70	80	65	85	100	55	70	80	49	65	75	—	—	—	—	—	—
S2	43	55	65	50	70	80	44	55	65	40	50	60	—	—	—	—	—	—
S3	37	49	55	45	60	70	38	50	55	35	45	50	—	—	—	—	—	—
S11	75	95	110	90	120	135	75	100	115	70	90	105	—	—	—	—	—	—
S12	50	65	75	60	80	95	50	70	80	47	65	70	—	—	—	—	—	—
S13	30	39	45	37	47	55	30	40	46	28	36	41	—	—	—	—	—	—
H5	—	—	—	—	—	—	47	60	75	41	55	65	—	—	—	—	—	—
H8	—	—	—	—	—	—	50	65	75	44	55	65	—	—	—	—	—	—
H11	—	—	—	—	—	—	60	80	95	50	70	80	—	—	—	—	—	—
H12	—	—	—	—	—	—	90	115	135	80	100	120	—	—	—	—	—	—

Turbo 12 – R217.69-12



- For insert selection and cutting data recommendations, see page(s) 37-38
- For complete insert programme, see page(s) 663
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max		KG		Insert
		APMXE	APMXS	DC	DMM	OAL	LS							
R217.69-1820.0-12-2AN	Cylindrical	7,0	11,0	20	18	150	120	8,0	27,5	38,0	2	0,3	23200	XO.X12..
R217.69-2020.0-12-2AN	Cylindrical	7,0	11,0	20	20	150	120	8,0	27,5	38,0	2	0,4	23200	XO.X12..
R217.69-2225.0-12-2AN	Cylindrical	7,0	11,0	25	22	170	135	5,0	37,5	48,0	2	0,5	20800	XO.X12..
R217.69-2525.0-12-2AN	Cylindrical	7,0	11,0	25	25	170	135	5,0	37,5	48,0	2	0,6	20800	XO.X12..
R217.69-2525.0-12-3AN	Cylindrical	7,0	11,0	25	25	170	135	5,0	37,5	48,0	3	0,6	20800	XO.X12..
R217.69-3032.0-12-3AN	Cylindrical	7,0	11,0	32	30	195	155	3,0	51,5	62,0	3	1,0	18400	XO.X12..
R217.69-3232.0-12-3AN	Cylindrical	7,0	11,0	32	32	195	155	3,0	51,5	62,0	3	1,1	18400	XO.X12..
R217.69-3232.0-12-4AN	Cylindrical	7,0	11,0	32	32	195	155	3,0	51,5	62,0	4	1,1	18400	XO.X12..
R217.69-2020.3-12-2AN	Weldon	7,0	11,0	20	20	85	55	8,0	27,5	38,0	2	0,2	23200	XO.X12..
R217.69-2525.3-12-3AN	Weldon	7,0	11,0	25	25	95	60	5,0	37,5	48,0	3	0,3	20800	XO.X12..
R217.69-3232.3-12-3AN	Weldon	7,0	11,0	32	32	105	65	3,0	51,5	62,0	3	0,6	18400	XO.X12..
R217.69-3232.3-12-4AN	Weldon	7,0	11,0	32	32	105	65	3,0	51,5	62,0	4	0,6	18400	XO.X12..
R217.69-2025.3S-12-3AN	Seco-Weldon	7,0	11,0	25	20	100	50	5,0	37,5	48,0	3	0,3	20800	XO.X12..
R217.69-2532.3S-12-4AN	Seco-Weldon	7,0	11,0	32	25	110	56	3,0	51,5	62,0	4	0,5	18400	XO.X12..
R217.69-3240.3S-12-5AN	Seco-Weldon	7,0	11,0	40	32	120	60	2,5	67,5	78,0	5	0,8	16400	XO.X12..

Spare Parts

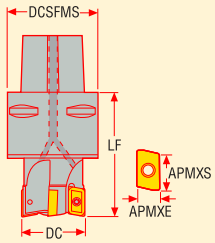
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.69-.. Ø20-25	DOUBLE-T	C03507-T10P	H4B-T10P	3,0
R217.69-.. Ø32	DOUBLE-T	C03508-T10P	H4B-T10P	3,0
R217.69-.. Ø40	DOUBLE-T	C03509-T10P	H4B-T10P	3,0

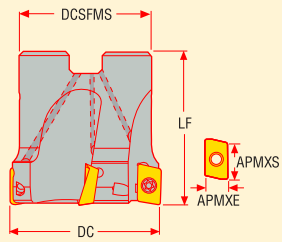
Please check availability in current price and stock-list

Torque keys, see page 710

Turbo 12 – R217/220.69-12







KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 37-38
- For complete insert programme, see page(s) 663
- 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	LF							
C5-R217.69-054-12-5AN	Seco-Capto	7,0	11,0	54,0	50	–	60,0	1,7	95,5	106,0	5	1,0	14200	XO.X12..
R220.69-0050-12-5AN	Arbor	7,0	11,0	50,0	47	22	40,0	2,0	87,5	98,0	5	0,4	14800	XO.X12..
R220.69-0052-12-5AN	Arbor	7,0	11,0	52,0	47	22	40,0	1,7	91,5	102,0	5	0,6	14200	XO.X12..
R220.69-0050-12-7AN	Arbor	7,0	11,0	50,0	47	22	40,0	2,0	87,5	98,0	7	0,4	14800	XO.X12..
R220.69-0063-12-8AN	Arbor	7,0	11,0	63,0	52	27	40,0	1,5	113,5	124,0	8	0,6	13200	XO.X12..
R220.69-0063-12-6AN	Arbor	7,0	11,0	63,0	52	27	40,0	1,5	113,5	124,0	6	0,5	13200	XO.X12..
R220.69-0066-12-6AN	Arbor	7,0	11,0	66,0	52	27	40,0	1,5	119,5	130,0	6	0,9	13200	XO.X12..
R220.69-0080-12-7AN	Arbor	7,0	11,0	80,0	62	27	50,0	1,0	147,5	158,0	7	1,1	11600	XO.X12..
R220.69-0084-12-7AN	Arbor	7,0	11,0	84,0	62	27	50,0	1,0	155,5	166,0	7	1,4	11300	XO.X12..
R220.69-0080-12-10AN	Arbor	7,0	11,0	80,0	62	27	50,0	1,0	147,5	158,0	10	1,0	11600	XO.X12..
R220.69-0100-12-8AN	Arbor	7,0	11,0	100,0	77	32	50,0	0,5	187,5	198,0	8	1,7	10400	XO.X12..
R220.69-0100-12-12AN	Arbor	7,0	11,0	100,0	77	32	50,0	0,5	187,5	198,0	12	1,7	10400	XO.X12..
R220.69-0125-12-10AN	Arbor	7,0	11,0	125,0	90	40	63,0	0,5	237,5	248,0	10	3,2	9200	XO.X12..
R220.69-0125-12-14AN	Arbor	7,0	11,0	125,0	90	40	63,0	0,5	237,5	248,0	14	3,2	9200	XO.X12..

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
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
R220.69-0080-0084	DOUBLE-T	C03509-T10P	H4B-T10P	–	3,0
R220.69-0100-0125	DOUBLE-T	C03509-T10P	H4B-T10PL	–	3,0

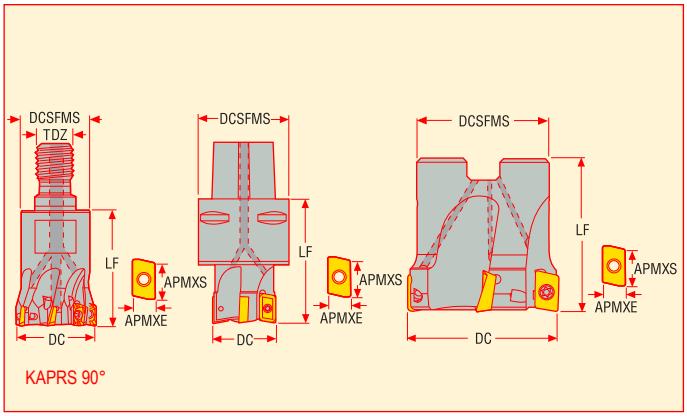
Please check availability in current price and stock-list

Torque keys, see page 710

Turbo 12 – R217/220.69-12



- For insert selection and cutting data recommendations, see page(s) 37-38
- For complete insert programme, see page(s) 663
- 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							
R217.69-1020.RE-12-2AN	Combimaster	7,0	11,0	20,0	18	–	M10	28,0	8,0	27,5	38,0	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	37,5	48,0	3	0,1	20800	XO.X12..
R217.69-1632.RE-12-4AN	Combimaster	7,0	11,0	32,0	30	–	M16	40,0	3,0	51,5	62,0	4	0,2	18400	XO.X12..
R217.69-1632.RE-12-3AN	Combimaster	7,0	11,0	32,0	30	–	M16	40,0	3,0	51,5	62,0	3	0,2	18400	XO.X12..
R217.69-1640.RE-12-4AN	Combimaster	7,0	11,0	40,0	30	–	M16	40,0	2,5	67,5	78,0	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	67,5	78,0	4	0,4	16400	XO.X12..
R217.69-1640.RE-12-5AN	Combimaster	7,0	11,0	40,0	30	–	M16	40,0	2,5	67,5	78,0	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	67,5	78,0	5	0,4	16400	XO.X12..
C5-R217.69-040-12-4AN	Seco-Capto	7,0	11,0	40,0	50	–	–	80,0	2,5	67,5	78,0	4	0,9	16400	XO.X12..
R220.69-0032-12-3AN	Arbor	7,0	11,0	32,0	30	16	–	35,0	3,0	51,5	62,0	3	0,3	18400	XO.X12..
R220.69-0032-12-4AN	Arbor	7,0	11,0	32,0	30	16	–	35,0	3,0	51,5	62,0	4	0,3	18400	XO.X12..
R220.69-0040-12-4AN	Arbor	7,0	11,0	40,0	35	16	–	40,0	2,5	67,5	78,0	4	0,4	16400	XO.X12..
R220.69-0040-12-5AN	Arbor	7,0	11,0	40,0	35	16	–	40,0	2,5	67,5	78,0	5	0,2	16400	XO.X12..
R220.69-0044-12-4AN	Arbor	7,0	11,0	44,0	36	16	–	40,0	2,2	75,5	86,0	4	0,1	15600	XO.X12..

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- Ø32	DOUBLE-T	C03508-T10P	H4B-T10P	–	3,0
R217.69- Ø40	DOUBLE-T	C03509-T10P	H4B-T10P	–	3,0
C5-R217.69-..	DOUBLE-T	C03509-T10P	H4B-T10P	–	3,0
R220.69-0032	DOUBLE-T	C03507-T10P	H4B-T10P	220.17-688	3,0
R220.69-0040-0044	DOUBLE-T	C03509-T10P	H4B-T10P	MC6S8X30	3,0

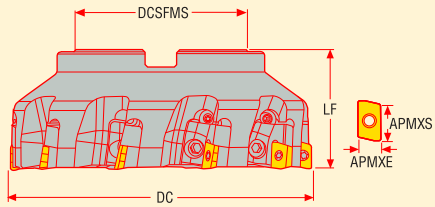
Please check availability in current price and stock-list

Torque keys, see page 710

Turbo 12 – R220.69-12C



- For insert selection and cutting data recommendations, see page(s) 37-38
- For complete insert programme, see page(s) 663
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max		KG		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	237,5	248,0	8	3,1	9200	XO.X12..
R220.69-8160-12-10CN	Arbor	7,0	11,0	160,0	90	40	63,0	0,3	307,5	318,0	10	5,3	8200	XO.X12..
R220.69-8200-12-12CN	Arbor	7,0	11,0	200,0	130	60	63,0	0,3	387,5	398,0	12	7,4	7300	XO.X12..
R220.69-8250-12-16CN	Arbor	7,0	11,0	250,0	130	60	63,0	0,2	487,5	498,0	16	14,8	6500	XO.X12..

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 710

R217/220.69-12 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	XOMX120408TR-ME08 F40M	5,0	0,14	0,15	0,24
P2	XOMX120408TR-ME08 F40M	5,0	0,14	0,16	0,24
P3	XOMX120408TR-M12 MP2501	5,0	0,16	0,18	0,28
P4	XOMX120408TR-M12 MP2501	5,0	0,16	0,18	0,26
P5	XOMX120408TR-M12 MP2501	5,0	0,16	0,17	0,26
P6	XOMX120408TR-M12 MP2501	5,0	0,16	0,17	0,26
P7	XOMX120408TR-M12 MP2501	5,0	0,16	0,17	0,26
P8	XOMX120408TR-M12 MP2501	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	0,17
M3	XOEX120408R-M07 F40M	4,5	0,085	0,090	0,14
M4	XOEX120408R-M07 T350M	3,0	0,075	0,080	0,12
M5	XOEX120408R-M07 T350M	3,0	0,075	0,080	0,12
K1	XOMX120408TR-M12 MK2050	5,0	0,17	0,19	0,28
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	0,12
S2	XOEX120408R-M07 T350M	3,0	0,075	0,080	0,12
S3	XOEX120408R-M07 T350M	3,0	0,070	0,075	0,11
S11	XOEX120408R-M07 MS2050	4,0	0,085	0,095	0,14
S12	XOEX120408R-M07 MS2050	4,0	0,085	0,095	0,14
S13	XOEX120408R-M07 MS2050	3,0	0,075	0,080	0,12
H5	XOMX120408TR-MD13 MP3000	4,5	0,12	0,13	0,19
H8	XOMX120408TR-MD13 MP3000	4,0	0,090	0,10	0,15
H11	XOMX120408TR-MD13 MP1501	4,5	0,12	0,13	0,19
H12	XOMX120408TR-MD13 MP1501	4,0	0,090	0,10	0,15

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

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

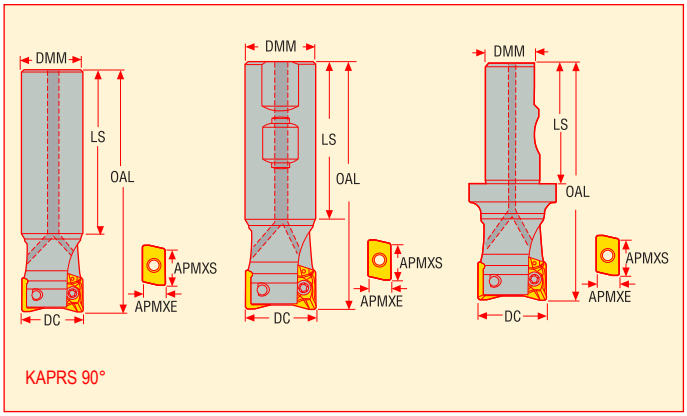
	MP1501			MP2050			MP2501			MP3000			MM4500			MK1500			MK2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	295	390	465	315	415	480	265	345	410	250	325	390	195	260	300	—	—	—	260	340	405
P2	290	380	450	300	395	470	255	335	400	240	320	380	185	245	295	—	—	—	250	330	395
P3	255	330	390	260	345	410	225	295	345	210	280	325	165	215	255	—	—	—	220	290	340
P4	225	290	350	230	305	360	195	260	310	185	245	295	145	190	225	—	—	—	195	255	305
P5	215	285	335	220	295	350	190	250	295	180	235	280	140	185	220	—	—	—	185	245	290
P6	240	320	375	255	335	390	210	280	330	200	265	315	160	210	245	—	—	—	210	275	325
P7	225	300	355	240	315	370	200	265	315	190	250	295	150	195	230	—	—	—	195	260	310
P8	215	280	325	220	290	345	190	245	290	180	235	275	140	180	215	—	—	—	185	245	285
P11	220	290	345	235	305	360	195	260	305	185	245	290	145	190	225	—	—	—	190	255	300
P12	145	190	225	150	195	230	130	170	200	120	160	185	95	125	145	—	—	—	125	165	195
M1	—	—	—	215	280	335	185	240	290	180	240	285	160	210	250	—	—	—	—	—	—
M2	—	—	—	175	240	280	150	200	240	150	200	235	130	180	210	—	—	—	—	—	—
M3	—	—	—	145	190	220	125	165	195	120	160	190	110	145	165	—	—	—	—	—	—
M4	—	—	—	115	150	175	100	130	150	95	130	145	85	110	130	—	—	—	—	—	—
M5	—	—	—	95	125	145	80	110	125	80	105	125	70	95	110	—	—	—	—	—	—
K1	230	300	355	235	310	370	200	265	315	190	250	300	—	—	—	285	375	450	270	355	425
K2	200	270	315	210	280	330	180	240	280	170	225	265	—	—	—	255	335	395	240	320	375
K3	170	225	270	175	240	280	150	200	235	145	190	225	—	—	—	215	285	335	205	270	320
K4	165	215	255	170	230	265	145	190	225	135	180	215	—	—	—	205	270	320	195	260	305
K5	100	135	155	105	140	160	90	120	140	85	110	130	—	—	—	125	170	195	120	160	185
K6	145	190	225	150	200	235	125	170	200	120	160	190	—	—	—	180	240	285	170	225	265
K7	130	170	200	135	180	205	115	150	175	110	145	165	—	—	—	160	215	250	155	205	235
N1	—	—	—	—	—	—	—	—	—	1400	1850	2200	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	560	750	890	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	375	500	590	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	55	75	85	—	—	—	45	60	70	26	34	40	—	—	—	—	—	—
S2	—	—	—	45	60	70	—	—	—	36	48	55	21	28	32	—	—	—	—	—	—
S3	—	—	—	39	50	60	—	—	—	32	42	48	18	24	28	—	—	—	—	—	—
S11	—	—	—	75	100	120	—	—	—	60	80	95	36	47	55	—	—	—	—	—	—
S12	—	—	—	55	70	80	—	—	—	43	55	65	33	44	50	—	—	—	—	—	—
S13	—	—	—	31	41	47	—	—	—	25	34	39	19	26	30	—	—	—	—	—	—
H5	48	65	75	45	60	70	39	50	60	38	50	60	—	—	—	—	—	—	—	—	—
H8	50	70	80	48	65	75	41	55	65	40	55	60	—	—	—	—	—	—	—	—	—
H11	60	80	95	55	75	90	49	65	75	48	65	75	—	—	—	—	—	—	—	—	—
H12	90	125	140	95	125	145	80	110	125	75	105	120	—	—	—	—	—	—	—	—	—

	MS2050			MS2500			T350M			F15M			F40M			H15			MP1020		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	350	460	530	230	300	360	—	—	—	225	300	350	—	—	—	405	460	485
P2	—	—	—	330	435	520	225	290	350	—	—	—	220	285	340	—	—	—	380	435	475
P3	—	—	—	290	385	455	195	255	300	—	—	—	190	250	300	—	—	—	340	385	410
P4	—	—	—	255	340	400	170	225	270	—	—	—	170	220	265	—	—	—	300	340	360
P5	—	—	—	245	330	385	165	220	255	—	—	—	165	215	250	—	—	—	285	330	345
P6	—	—	—	280	370	435	185	245	290	—	—	—	185	240	280	—	—	—	335	370	390
P7	205	265	315	265	350	410	175	230	275	—	—	—	170	230	265	—	—	—	315	350	365
P8	185	245	290	245	325	380	165	215	250	—	—	—	160	210	250	—	—	—	285	325	345
P11	200	260	305	260	340	400	170	225	265	—	—	—	165	220	260	—	—	—	305	340	355
P12	130	165	195	165	220	255	110	145	170	—	—	—	110	145	170	—	—	—	185	195	195
M1	205	270	320	235	315	375	170	225	270	—	—	—	175	230	275	—	—	—	—	—	—
M2	170	225	265	195	265	310	140	190	220	—	—	—	145	195	225	—	—	—	—	—	—
M3	140	185	210	160	215	245	115	155	180	—	—	—	115	155	185	—	—	—	—	—	—
M4	110	145	165	125	165	190	90	120	140	—	—	—	95	125	140	—	—	—	—	—	—
M5	90	120	135	105	140	160	75	100	115	—	—	—	75	105	120	—	—	—	—	—	—
K1	—	—	—	—	—	—	175	230	275	240	315	370	—	—	—	—	—	—	—	—	—
K2	—	—	—	—	—	—	155	205	245	215	280	330	—	—	—	—	—	—	—	—	—
K3	—	—	—	—	—	—	130	175	205	180	235	280	—	—	—	—	—	—	—	—	—
K4	—	—	—	—	—	—	125	165	195	175	225	265	—	—	—	—	—	—	—	—	—
K5	—	—	—	—	—	—	80	105	120	105	140	160	—	—	—	—	—	—	—	—	—
K6	—	—	—	—	—	—	110	145	175	150	200	235	—	—	—	—	—	—	—	—	—
K7	—	—	—	—	—	—	100	130	155	135	175	205	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	1775	2350	2750	1275	1675	2000	1400	1850	2175	—	—	—
N2	—	—	—	—	—	—	—	—	—	720	950	1100	520	680	810	570	750	880	—	—	—
N3	—	—	—	—	—	—	—	—	—	475	630	740	345	455	540	380	500	580	—	—	—
N11	—	—	—	—	—	—	—	—	—	550	720	840	395	520	610	430	570	670	—	—	—
S1	50	65	75	60	80	95	43	55	65	—	—	—	43	60	65	—	—	—	—	—	—
S2	41	55	60	50	65	75	34	46	55	—	—	—	35	47	55	—	—	—	—	—	—
S3	36	47	55	43	55	65	30	40	46	—	—	—	31	41	47	—	—	—	—	—	—
S11	70	90	105	85	110	130	60	80	90	—	—	—	60	80	95	—	—	—	—	—	—
S12	48	65	75	60	80	90	40	55	65	—	—	—	41	55	65	—	—	—	—	—	—
S13	28	38	43	35	46	55	24	32	37	—	—	—	24	32	37	—	—	—	—	—	—
H5	—	—	—	—	—	—	37	49	55	—	—	—	—	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	40	55	60	—	—	—	—	—	—	—	—	—	—	—	—
H11	—	—	—	—	—	—	47	60	75	—	—	—	—	—	—	—	—	—	—	—	—
H12	—	—	—	—	—	—	70	95	110	—	—	—	—	—	—	—	—	—	—	—	—

Turbo 18 – R217.69-18



- For insert selection and cutting data recommendations, see page(s) 43-44
- For complete insert programme, see page(s) 664
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max		KG		Insert
		APMXE	APMXS	DC	DMM	OAL	LS							
R217.69-3032.0-18-2AN	Cylindrical	10,0	17,0	32	30	210	170	7,0	46,0	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	46,0	61,5	2	1,2	11100	XO.X18..
R217.69-3232.0-18-3AN	Cylindrical	10,0	17,0	32	32	210	170	7,0	46,0	61,5	3	1,2	11100	XO.X18..
R217.69-3240.0-18-3AN	Cylindrical	10,0	17,0	40	32	210	165	4,5	62,0	77,5	3	1,2	9900	XO.X18..
R217.69-3240.0-18-4AN	Cylindrical	10,0	17,0	40	32	210	165	4,5	62,0	77,5	4	1,2	9900	XO.X18..
R217.69-3232.3-18-2AN	Weldon	10,0	17,0	32	32	110	70	7,0	46,0	61,5	2	0,6	11100	XO.X18..
R217.69-3232.3-18-3AN	Weldon	10,0	17,0	32	32	110	70	7,0	46,0	61,5	3	0,6	11100	XO.X18..
R217.69-2532.3S-18-2AN	Seco-Weldon	10,0	17,0	32	25	110	56	7,0	46,0	61,5	2	0,5	11100	XO.X18..
R217.69-3240.3S-18-3AN	Seco-Weldon	10,0	17,0	40	32	120	60	4,5	62,0	77,5	3	0,8	9900	XO.X18..

Spare Parts

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

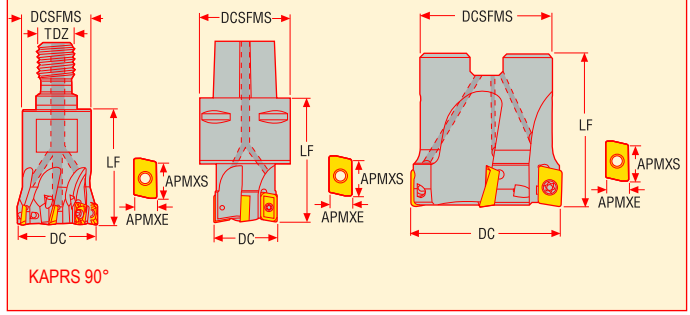
Please check availability in current price and stock-list

Torque keys, see page 710

Square shoulder and slot milling cutters

Turbo 18 – R217/220.69-18





- For insert selection and cutting data recommendations, see page(s) 43-44
- For complete insert programme, see page(s) 664
- 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-18-2AN	Combimaster	10,0	17,0	32,0	30	–	M16	45,0	7,0	46,0	61,5	2	0,2	11100	XO.X18..
R217.69-1632.RE-18-3AN	Combimaster	10,0	17,0	32,0	30	–	M16	45,0	7,0	46,0	61,5	3	0,2	11100	XO.X18..
R217.69-1640.RE-18-3AN	Combimaster	10,0	17,0	40,0	30	–	M16	45,0	4,5	62,0	77,5	3	0,3	9900	XO.X18..
R217.69-1640.RE-18-4AN	Combimaster	10,0	17,0	40,0	30	–	M16	45,0	4,5	62,0	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	62,0	77,5	3	0,4	9900	XO.X18..
R217.69-2040.RE-18-4AN	Combimaster	10,0	17,0	40,0	37	–	M20	45,0	4,5	62,0	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	62,0	77,5	3	1,1	9900	XO.X18..
C6-R217.69-066-18-5AN	Seco-Capto	10,0	17,0	66,0	63	–	–	60,0	2,0	114,0	129,5	5	1,4	7700	XO.X18..
R220.69-0050-18-4AN	Arbor	10,0	17,0	50,0	47	22	–	40,0	3,0	82,0	97,5	4	0,3	8900	XO.X18..
R220.69-0050-18-5AN	Arbor	10,0	17,0	50,0	47	22	–	40,0	3,0	82,0	97,5	5	0,3	8900	XO.X18..
R220.69-0052-18-4AN	Arbor	10,0	17,0	52,0	47	22	–	40,0	3,15	86,0	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	108,0	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	108,0	123,5	5	0,5	7900	XO.X18..
R220.69-0063-18-6AN	Arbor	10,0	17,0	63,0	52	27	–	40,0	2,4	108,0	123,5	6	0,5	7900	XO.X18..
R220.69-0066-18-5AN	Arbor	10,0	17,0	66,0	52	27	–	40,0	2,0	114,0	129,5	5	0,6	7900	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

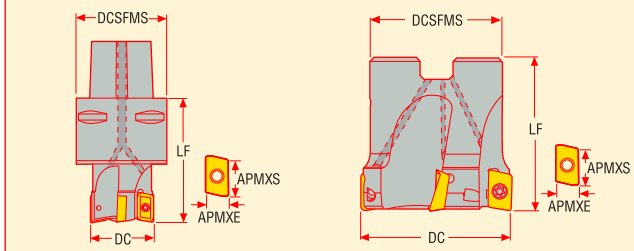
Please check availability in current price and stock-list

Torque keys, see page 710

Turbo 18 – R217/220.69-18



- For insert selection and cutting data recommendations, see page(s) 43-44
- For complete insert programme, see page(s) 664
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max		KG		Insert
		APMXE	APMXS	DC	DCSFMS	DCB	LF							
C6-R217.69-080-18-6AN	Seco-Capto	10,0	17,0	80,0	63	–	60,0	1,5	142,0	157,5	6	1,7	7000	XO.X18..
R220.69-0080-18-5AN	Arbor	10,0	17,0	80,0	62	27	50,0	1,5	142,0	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	142,0	157,5	6	1,0	7000	XO.X18..
R220.69-0080-18-8AN	Arbor	10,0	17,0	80,0	62	27	50,0	1,5	142,0	157,5	8	1,0	7000	XO.X18..
R220.69-0084-18-6AN	Arbor	10,0	17,0	84,0	62	27	50,0	1,5	150,0	165,5	6	1,3	7000	XO.X18..
R220.69-0100-18-6AN	Arbor	10,0	17,0	100,0	77	32	50,0	1,0	182,0	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	182,0	197,5	7	1,6	6300	XO.X18..
R220.69-0100-18-9AN	Arbor	10,0	17,0	100,0	77	32	50,0	1,0	182,0	197,5	9	1,6	6300	XO.X18..
R220.69-0125-18-7AN	Arbor	10,0	17,0	125,0	90	40	63,0	1,0	232,0	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	232,0	247,5	8	3,0	5600	XO.X18..
R220.69-0125-18-11AN	Arbor	10,0	17,0	125,0	90	40	63,0	1,0	232,0	247,5	11	3,0	5600	XO.X18..
R220.69-8160-18-7N	Arbor	10,0	17,0	160,0	90	40	63,0	0,5	302,0	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	302,0	317,5	9	4,6	5000	XO.X18..
R220.69-8160-18-12N	Arbor	10,0	17,0	160,0	90	40	63,0	0,5	302,0	317,5	12	4,6	5000	XO.X18..

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

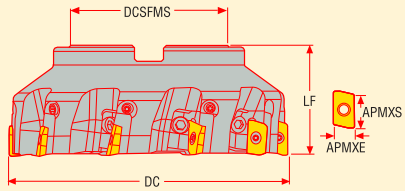
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
Cx-R217.69-..	DOUBLE-T	C04510-T20P	H6B-T20P	5,0
R220.69-0080-0084	DOUBLE-T	C04510-T20P	H6B-T20P	5,0
R220.69-0100-8160	DOUBLE-T	C04510-T20P	H6B-T20PL	5,0

Please check availability in current price and stock-list

Torque keys, see page 710

Turbo 18 – R220.69-18C





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 43-44
- For complete insert programme, see page(s) 664
- 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	LF							
R220.69-0125-18-8CN	Arbor	10,0	17,0	125,0	90	40	63,0	1,0	232,0	247,5	8	3,3	5600	XO.X18..
R220.69-8160-18-10CN	Arbor	10,0	17,0	160,0	90	40	63,0	0,7	302,0	317,5	10	5,2	5000	XO.X18..
R220.69-8200-18-12CN	Arbor	10,0	17,0	200,0	130	60	63,0	0,5	382,0	397,5	12	7,4	4400	XO.X18..
R220.69-8250-18-16CN	Arbor	10,0	17,0	250,0	130	60	63,0	0,4	482,0	497,5	16	14,7	3900	XO.X18..

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

Please check availability in current price and stock-list

Torque keys, see page 710

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 MP2501	8,0	0,19	0,20	0,32
P4	XOMX180608TR-M14 MP2501	8,0	0,19	0,20	0,32
P5	XOMX180608TR-M14 MP2501	8,0	0,18	0,20	0,30
P6	XOMX180608TR-M14 MP2501	8,0	0,18	0,20	0,30
P7	XOMX180608TR-M14 MP2501	8,0	0,18	0,20	0,30
P8	XOMX180608TR-MD15 MP2501	8,0	0,20	0,22	0,34
P11	XOMX180608TR-M14 T350M	8,0	0,18	0,20	0,30
P12	XOMX180608TR-MD15 MP2501	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	0,17
S12	XOMX180608R-M10 MS2050	6,0	0,10	0,11	0,17
S13	XOMX180608R-M10 MS2050	5,0	0,090	0,10	0,15
H5	XOMX180608TR-MD15 MP3000	7,0	0,13	0,15	0,22
H8	XOMX180608TR-MD15 MP3000	6,0	0,10	0,11	0,17
H11	XOMX180608TR-MD15 MP1501	7,0	0,13	0,15	0,22
H12	XOMX180608TR-MD15 MP1501	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

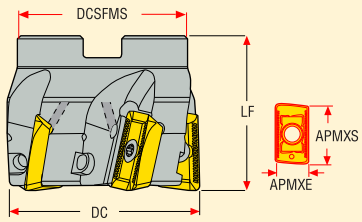
R217/220.69-18 – Cutting data v_c = (m/min)

	MP1501			MP2501			MP3000			MM4500			MK1500			MK2050		
SMG	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	—	—	—	—	—	—	1375	1825	2175	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—

	MS2050			T350M			F40M			H25		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	—	—	—	195	255	310	—	—	—
P2	—	—	—	—	—	—	190	250	295	—	—	—
P3	—	—	—	—	—	—	165	220	260	—	—	—
P4	—	—	—	—	—	—	145	195	230	—	—	—
P5	—	—	—	—	—	—	140	185	220	—	—	—
P6	—	—	—	—	—	—	160	210	250	—	—	—
P7	190	250	290	—	—	—	150	195	235	—	—	—
P8	175	230	275	160	215	250	140	185	215	—	—	—
P11	180	240	285	165	220	260	145	190	230	—	—	—
P12	120	160	185	110	145	175	95	125	150	—	—	—
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	—	—	—

R220.90-26 ABEX





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 47
- For complete insert programme, see page(s) 623
- 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	LF							
R220.90-0063-26-4AM	Arbor	10,0	20,0	63,0	55	27	50,0	1,5	107,6	123,5	4	0,7	6700	ABEX26..
R220.90-0063-26-5AM	Arbor	10,0	20,0	63,0	55	27	50,0	1,5	107,6	123,5	5	0,7	6700	ABEX26..
R220.90-0063-26-6AM	Arbor	10,0	20,0	63,0	55	27	50,0	1,5	107,6	123,5	6	1,9	6700	ABEX26..
R220.90-0080-26-5AM	Arbor	10,0	20,0	80,0	62	27	50,0	1,0	141,6	157,5	5	1,9	5900	ABEX26..
R220.90-0125-26-7AM	Arbor	10,0	20,0	125,0	90	40	63,0	0,5	231,6	247,5	7	1,9	4700	ABEX26..

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.90-0063-0080	DOUBLE-T	C05013-T20P	H6B-T20P	MC6S12X35	5,0
R220.90-0100-0125	DOUBLE-T	C05013-T20P	H6B-T20PL	–	5,0

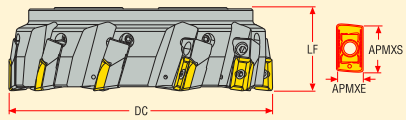
Please check availability in current price and stock-list

Torque keys, see page 710

Square shoulder and slot milling cutters

R220.90 ABEX





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 47
- For complete insert programme, see page(s) 623
- 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	LF							
R220.90-8160-26-8CAN	Arbor	10,0	20,0	160,0	90	40	63,0	0,4	296,5	316,8	8	5,3	4200	ABEX26..
R220.90-8200-26-10CAN	Arbor	10,0	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	10,0	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..

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	C05013-T20P	H6B-T20PL	FS96018	AB26PRN	5,0

Please check availability in current price and stock-list

Torque keys, see page 710

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 MP2501	10,0	0,20	0,22	0,34
P4	ABEX2606ZFFR-M15 MP2501	10,0	0,20	0,22	0,34
P5	ABEX2606ZFFR-M15 MP2501	10,0	0,20	0,22	0,32
P6	ABEX2606ZFFR-M15 MP2501	10,0	0,20	0,22	0,32
P7	ABEX2606ZFFR-M15 MP2501	10,0	0,20	0,22	0,32
P8	ABEX2606ZFFR-M15 MP2501	10,0	0,20	0,22	0,34
P11	ABEX2606ZFFR-M15 T350M	10,0	0,20	0,22	0,32
P12	ABEX2606ZFFR-M15 MP2501	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	0,32
M3	ABEX2606ZFFR-M15 F40M	8,0	0,16	0,17	0,26
M4	ABEX2606ZFFR-M15 T350M	6,0	0,14	0,16	0,22
M5	ABEX2606ZFFR-M15 T350M	6,0	0,14	0,16	0,22
K1	ABEX2606ZFFR-M15 MK1500	10,0	0,22	0,24	0,36
K2	ABEX2606ZFFR-M15 MK1500	10,0	0,20	0,22	0,32
K3	ABEX2606ZFFR-M15 MK1500	10,0	0,20	0,22	0,32
K4	ABEX2606ZFFR-M15 MK1500	10,0	0,20	0,22	0,32
K5	ABEX2606ZFFR-M15 T350M	10,0	0,18	0,19	0,30
K6	ABEX2606ZFFR-M15 T350M	10,0	0,20	0,22	0,32
K7	ABEX2606ZFFR-M15 T350M	10,0	0,18	0,19	0,30

SMG = Seco material group
f_z = mm/tooth
v_c = m/min
a_e/DC = %
All cutting data are start values

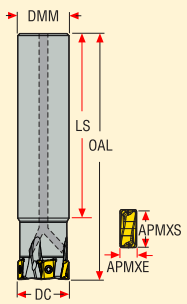
R220.90-26 ABEX – Cutting data v_c = (m/min)

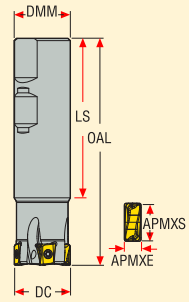
SMG	MP1501			MP2501			MK1500			T350M			F40M		
	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	280	370	440	245	330	390	—	—	—	215	285	340	185	250	295
P2	270	360	430	240	320	380	—	—	—	210	280	330	180	240	285
P3	240	320	375	215	285	330	—	—	—	185	245	290	160	215	250
P4	210	280	330	190	250	290	—	—	—	165	215	255	145	190	220
P5	205	270	320	180	240	285	—	—	—	155	205	250	135	180	215
P6	230	300	360	200	265	320	—	—	—	175	230	280	155	200	240
P7	215	285	340	190	250	300	—	—	—	165	220	260	145	190	230
P8	205	270	315	180	240	280	—	—	—	155	205	245	135	180	210
P11	210	275	330	185	245	295	—	—	—	160	215	255	140	185	220
P12	140	185	215	125	165	190	—	—	—	105	145	165	95	125	145
M1	—	—	—	175	230	275	—	—	—	160	215	255	145	195	230
M2	—	—	—	145	190	230	—	—	—	135	180	215	120	160	195
M3	—	—	—	120	160	185	—	—	—	110	150	175	100	135	155
M4	—	—	—	95	125	145	—	—	—	90	120	135	80	105	125
M5	—	—	—	80	105	120	—	—	—	75	100	115	65	90	105
K1	215	285	340	190	255	300	270	360	425	165	220	260	145	190	225
K2	190	255	305	170	225	270	240	320	380	150	195	235	130	170	205
K3	165	215	260	145	190	230	205	270	325	125	165	200	110	145	175
K4	155	205	245	140	180	220	195	260	310	120	160	190	105	140	165
K5	95	130	150	85	115	130	120	160	185	75	100	115	65	85	100
K6	135	180	215	120	160	190	170	225	270	105	140	165	90	120	145
K7	120	165	190	110	145	170	155	205	240	95	125	145	80	110	130

Square T4 – R217.94-08



- For insert selection and cutting data recommendations, see page(s) 50–51
- For complete insert programme, see page(s) 628
- For ISO attribute explanation, see page 15





KAPRS 90°

Designation	Type of mounting	Dimensions in mm							KG		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..
R217.94-1820.0-08-2A	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..
R217.94-2020.0-08-3A	Cylindrical	2,0	8,0	20,0	20,0	110,0	80,0	3	0,3	18400	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..
R217.94-2525.0-08-4A	Cylindrical	2,0	8,0	25,0	25,0	120,0	90,0	4	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..
R217.94-3232.0-08-5A	Cylindrical	2,0	8,0	32,0	32,0	130,0	100,0	5	0,8	14600	LOEX08..
R217.94-1616.3-08-2A	Weldon	2,0	8,0	16,0	16,0	78,0	53,0	2	0,1	20600	LOEX08..
R217.94-2018.3-08-2A	Weldon	2,0	8,0	18,0	20,0	90,0	60,0	2	0,2	19400	LOEX08..
R217.94-2020.3-08-2A	Weldon	2,0	8,0	20,0	20,0	90,0	60,0	2	0,2	18400	LOEX08..
R217.94-2020.3-08-3A	Weldon	2,0	8,0	20,0	20,0	90,0	60,0	3	0,2	18400	LOEX08..
R217.94-2522.3-08-3A	Weldon	2,0	8,0	22,0	25,0	101,0	71,0	3	0,3	17600	LOEX08..
R217.94-2525.3-08-3A	Weldon	2,0	8,0	25,0	25,0	101,0	71,0	3	0,4	16500	LOEX08..
R217.94-2525.3-08-4A	Weldon	2,0	8,0	25,0	25,0	101,0	71,0	4	0,4	16500	LOEX08..
R217.94-3232.3-08-5A	Weldon	2,0	8,0	32,0	32,0	105,0	75,0	5	0,6	14600	LOEX08..

Spare Parts

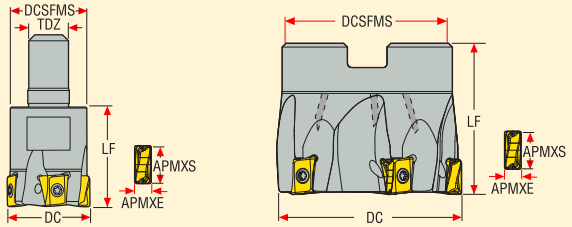
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.94-.. Ø16-18	DOUBLE-T	C02707-T08P	H4B-T08P	1,2
R217.94-.. Ø20-32	DOUBLE-T	C02708-T08P	H4B-T08P	1,2

Please check availability in current price and stock-list

Torque keys, see page 710

Square T4 – R217/220.94-08





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 50–51
- For complete insert programme, see page(s) 628
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm								KG		Insert
		APMXE	APMXS	DC	DCSFMS	DCB	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..
R217.94-1020.RE-08-3A	Combimaster	2,0	8,0	20,0	18,5	–	M10	28,0	3	0,1	18400	LOEX08..
R217.94-1225.RE-08-3A	Combimaster	2,0	8,0	25,0	23,0	–	M12	30,0	3	0,1	16500	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-08-3A	Combimaster	2,0	8,0	32,0	30,0	–	M16	35,0	3	0,2	14600	LOEX08..
R217.94-1632.RE-08-5A	Combimaster	2,0	8,0	32,0	30,0	–	M16	35,0	5	0,2	14600	LOEX08..
R217.94-2040.RE-08-6A	Combimaster	2,0	8,0	39,975	36,5	–	M20	40,0	6	0,4	13000	LOEX08..
R220.94-0032-08-3A	Arbor	2,0	8,0	32,0	29,3	16,0	–	35,0	3	0,2	13000	LOEX08..
R220.94-0032-08-5A	Arbor	2,0	8,0	32,0	29,3	16,0	–	35,0	5	0,2	13000	LOEX08..
R220.94-0040-08-4A	Arbor	2,0	8,0	40,0	35,0	16,0	–	40,0	4	0,3	13000	LOEX08..
R220.94-0040-08-6A	Arbor	2,0	8,0	40,0	35,0	16,0	–	40,0	6	0,3	13000	LOEX08..
R220.94-0050-08-5A	Arbor	2,0	8,0	50,0	45,0	22,0	–	40,0	5	0,4	11700	LOEX08..
R220.94-0050-08-7A	Arbor	2,0	8,0	50,0	45,0	22,0	–	40,0	7	0,4	11700	LOEX08..
R220.94-0063-08-6A	Arbor	2,0	8,0	63,0	56,0	27,0	–	40,0	6	0,6	10400	LOEX08..
R220.94-0063-08-9A	Arbor	2,0	8,0	63,0	56,0	27,0	–	40,0	9	0,6	10400	LOEX08..

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-.. Ø16	DOUBLE-T	C02707-T08P	H4B-T08P	–	1,2
R217.94-.. Ø20-40	DOUBLE-T	C02708-T08P	H4B-T08P	–	1,2
R220.94-0032	DOUBLE-T	C02707-T08P	H4B-T08P	TCEI0825	1,2
R220.94-0040	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 710

R217/220.94-08 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	LOEX080408TR-M08 F40M	4,0	0,11	0,12	0,19
P2	LOEX080408TR-M08 F40M	4,0	0,12	0,13	0,19
P3	LOEX080408TR-M08 MP2501	4,0	0,11	0,12	0,18
P4	LOEX080408TR-M08 MP2501	4,0	0,11	0,12	0,18
P5	LOEX080408TR-M08 MP2501	4,0	0,11	0,12	0,18
P6	LOEX080408TR-M08 MP2501	4,0	0,10	0,11	0,17
P7	LOEX080408TR-M08 MP2501	4,0	0,10	0,11	0,17
P8	LOEX080408TR-M08 MP2501	4,0	0,11	0,12	0,18
P11	LOEX080408TR-M08 MP3000	4,0	0,10	0,11	0,17
P12	LOEX080408TR-M08 MP2501	3,0	0,075	0,080	0,12
M1	LOEX080408TR-M08 F40M	4,0	0,12	0,13	0,19
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	0,19
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	0,25
N2	LOEX080408TR-M08 F40M	4,0	0,15	0,16	0,25
N3	LOEX080408TR-M08 F40M	4,0	0,15	0,16	0,25
N11	LOEX080408TR-M08 F40M	4,0	0,15	0,16	0,25
S1	LOEX080408TR-M08 F40M	2,5	0,075	0,085	0,12
S2	LOEX080408TR-M08 F40M	2,5	0,075	0,085	0,12
S3	LOEX080408TR-M08 F40M	2,5	0,070	0,080	0,11
S11	LOEX080408TR-M08 MS2050	2,5	0,085	0,095	0,14
S12	LOEX080408TR-M08 MS2050	2,5	0,085	0,095	0,14
S13	LOEX080408TR-M08 MS2050	2,5	0,075	0,085	0,12
H5	LOEX080408TR-M08 MP3000	3,0	0,075	0,080	0,12
H8	LOEX080408TR-M08 MP3000	2,5	0,055	0,060	0,090
H11	LOEX080408TR-M08 MP3000	3,0	0,075	0,080	0,12
H12	LOEX080408TR-M08 MP3000	2,5	0,055	0,060	0,090

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)

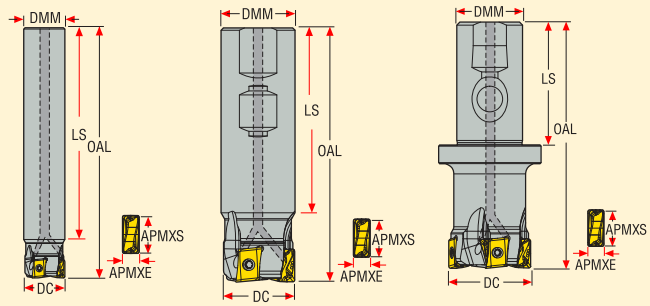
	MP1501			MP2050			MP2501			MP3000			MM4500			MK1500			MK2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	355	470	550	295	390	460	315	415	485	300	395	460	195	255	300	—	—	—	310	410	475
P2	340	445	530	290	380	445	300	395	470	285	375	445	185	245	290	—	—	—	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	55	75	85	50	70	80	25	34	39	—	—	—	—	—	—
S2	—	—	—	43	55	65	45	60	70	42	55	65	21	27	31	—	—	—	—	—	—
S3	—	—	—	37	49	55	39	50	60	37	49	55	18	24	28	—	—	—	—	—	—
S11	—	—	—	75	95	115	80	100	120	75	95	110	36	47	55	—	—	—	—	—	—
S12	—	—	—	50	65	80	55	70	80	50	65	80	33	43	50	—	—	—	—	—	—
H5	55	75	85	43	55	65	45	60	70	44	60	70	—	—	—	—	—	—	—	—	—
H8	60	80	90	46	60	70	49	65	75	47	60	70	—	—	—	—	—	—	—	—	—
H11	70	95	110	55	70	85	55	75	90	55	75	85	—	—	—	—	—	—	—	—	—
H12	110	140	165	90	120	140	95	125	145	90	120	140	—	—	—	—	—	—	—	—	—

	MS2050			MS2500			T350M			F40M		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	330	440	520	275	360	420	240	315	365
P2	—	—	—	320	425	500	260	345	410	225	300	355
P3	—	—	—	285	375	435	230	305	360	200	265	310
P4	—	—	—	250	330	390	200	265	315	175	230	275
P5	—	—	—	240	315	375	195	255	300	170	220	260
P6	—	—	—	275	360	420	220	295	345	195	255	300
P7	200	265	310	260	340	395	210	275	325	180	240	280
P8	185	245	290	240	315	365	195	255	300	170	220	260
P11	195	255	300	250	330	385	205	270	315	175	235	275
P12	125	165	190	160	215	245	130	170	200	115	150	175
M1	200	265	315	230	305	360	200	265	315	185	240	290
M2	165	220	260	190	250	300	165	220	260	150	200	235
M3	135	180	210	155	205	240	135	180	210	125	165	190
K1	—	—	—	—	—	—	205	275	325	180	240	285
K2	—	—	—	—	—	—	185	240	285	160	210	250
K3	—	—	—	—	—	—	155	205	240	135	180	210
K4	—	—	—	—	—	—	150	195	230	130	170	200
K5	—	—	—	—	—	—	90	120	140	80	105	125
K6	—	—	—	—	—	—	130	170	205	115	150	175
K7	—	—	—	—	—	—	115	155	180	100	135	160
N1	—	—	—	—	—	—	—	—	—	1325	1775	2075
N2	—	—	—	—	—	—	—	—	—	540	720	840
N3	—	—	—	—	—	—	—	—	—	360	480	560
N11	—	—	—	—	—	—	—	—	—	410	550	640
S1	50	65	75	60	80	90	50	65	75	45	60	70
S2	40	55	60	48	65	75	40	55	60	36	48	55
S3	35	46	55	42	55	65	35	46	55	32	42	49
S11	70	90	105	85	110	125	70	90	105	65	85	95
S12	48	65	75	60	75	90	48	65	75	44	55	65
S13	28	37	43	34	45	50	28	37	43	25	33	39
H5	—	—	—	—	—	—	43	55	65	38	50	60
H8	—	—	—	—	—	—	47	60	70	40	55	60
H11	—	—	—	—	—	—	55	75	85	48	65	75
H12	—	—	—	—	—	—	85	110	125	75	95	110

Square T4 – R217.94-12



- For insert selection and cutting data recommendations, see page(s) 54-55
- For complete insert programme, see page(s) 628
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm							KG		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
R217.94-3232.0-12-3A	Cylindrical	3,5	12,0	32,0	32,0	195,0	165,0	3	1,2	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
R217.94-2525.3-12-2A	Weldon	3,5	12,0	25,0	25,0	101,0	71,0	2	0,4	14000	LOEX12
R217.94-3232.3-12-3A	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
R217.94-3240.3S-12-4A	Seco-Weldon	3,5	12,0	40,0	32,0	120,0	60,0	4	1,3	11100	LOEX12

Spare Parts

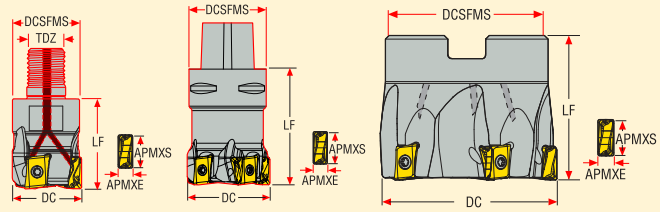
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.94-2525	DOUBLE-T	C040105B-T15P	H4B-T15P	3,5
R217.94-..	DOUBLE-T	C04012B-T15P	H4B-T15P	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

Square T4 – R217/220.94-12





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 54-55
- For complete insert programme, see page(s) 628
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm								KG		Insert
		APMXE	APMXS	DC	DCSFMS	DCB	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
R217.94-2040.RE-12-5A	Combimaster	3,5	12,0	40,0	36,5	16,0	M20	40,0	5	0,5	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
C5-R217.94-054-12-5A	Seco-Capto	3,5	12,0	54,0	50,0	–	–	60,0	5	1,0	9500	LOEX12
C6-R217.94-066-12-6A	Seco-Capto	3,5	12,0	66,0	63,0	–	–	60,0	6	1,6	8600	LOEX12
R220.94-0040-12-4A	Arbor	3,5	12,0	40,0	35,0	16,0	–	40,0	4	0,3	11100	LOEX12
R220.94-0040-12-5A	Arbor	3,5	12,0	40,0	35,0	16,0	–	40,0	5	0,4	11100	LOEX12
R220.94-0050-12-5A	Arbor	3,5	12,0	50,0	45,0	22,0	–	40,0	5	0,5	9900	LOEX12
R220.94-0050-12-6A	Arbor	3,5	12,0	50,0	45,0	22,0	–	40,0	6	0,5	9900	LOEX12
R220.94-0063-12-6A	Arbor	3,5	12,0	63,0	56,0	27,0	–	40,0	6	0,7	8800	LOEX12
R220.94-0063-12-6A-22	Arbor	3,5	12,0	63,0	56,0	22,0	–	40,0	6	0,6	8800	LOEX12
R220.94-0063-12-8A	Arbor	3,5	12,0	63,0	56,0	27,0	–	40,0	8	0,7	8800	LOEX12
R220.94-0063-12-8A-22	Arbor	3,5	12,0	63,0	56,0	22,0	–	40,0	8	0,6	8800	LOEX12
R220.94-0080-12-7A	Arbor	3,5	12,0	80,0	62,0	27,0	–	50,0	7	1,3	7800	LOEX12
R220.94-0080-12-10A	Arbor	3,5	12,0	80,0	62,0	27,0	–	50,0	10	1,3	7800	LOEX12
R220.94-0100-12-9A	Arbor	3,5	12,0	100,0	77,0	32,0	–	50,0	9	1,8	7000	LOEX12
R220.94-0100-12-12A	Arbor	3,5	12,0	100,0	77,0	32,0	–	50,0	12	1,9	7000	LOEX12
R220.94-0125-12-12A	Arbor	3,5	12,0	125,0	90,0	40,0	–	63,0	12	3,3	6300	LOEX12

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
Cx/R217.94-..	DOUBLE-T	C04012B-T15P	H4B-T15P	–	3,5
R220.94-0040	DOUBLE-T	C04012B-T15P	H4B-T15P	TCEI0825	3,5
R220.94-0050	DOUBLE-T	C04012B-T15P	H4B-T15P	220.17-692	3,5
R220.94-0063	DOUBLE-T	C04012B-T15P	H4B-T15P	MLC6S12X30	3,5
R220.94-0063-22	DOUBLE-T	C04012B-T15P	H4B-T15P	220.17-692	3,5
R220.94-0080	DOUBLE-T	C04012B-T15P	H4B-T15P	MC6S12X35	3,5
R220.94-0100-0125	DOUBLE-T	C04012B-T15P	H4B-T15PL	–	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

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 MP2501	6,0	0,16	0,18	0,28
P4	LOEX120708TR-M12 MP2501	6,0	0,16	0,17	0,26
P5	LOEX120708TR-M12 MP2501	6,0	0,16	0,17	0,26
P6	LOEX120708TR-M12 MP2501	6,0	0,16	0,17	0,26
P7	LOEX120708TR-M12 MP2501	6,0	0,16	0,17	0,26
P8	LOEX120708TR-M12 MP2501	6,0	0,16	0,18	0,28
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	0,17
M4	LOEX120708R-M09 F40M	3,5	0,095	0,10	0,15
M5	LOEX120708R-M09 F40M	3,5	0,095	0,10	0,15
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	0,15
S2	LOEX120708R-M09 MS2050	3,5	0,095	0,10	0,15
S3	LOEX120708TR-M12 MS2050	3,5	0,11	0,12	0,18
S11	LOEX120708R-M09 MS2050	4,0	0,11	0,12	0,17
S12	LOEX120708R-M09 MS2050	4,0	0,11	0,12	0,17
S13	LOEX120708TR-M12 MS2050	3,5	0,12	0,13	0,20
H5	LOEX120708TR-M12 MP3000	4,5	0,12	0,13	0,19
H8	LOEX120708TR-M12 MP3000	4,0	0,090	0,10	0,15
H11	LOEX120708TR-MD13 MP1501	4,5	0,12	0,13	0,19
H12	LOEX120708TR-MD13 MP1501	4,0	0,090	0,10	0,15

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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

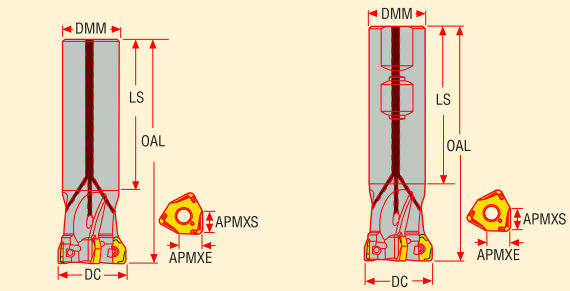
	MP1501			MP2050			MP2501			MP3000			MM4500			MK1500			MK2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	295	385	460	265	350	415	275	360	435	255	335	400	165	220	260	—	—	—	250	330	390
P2	280	375	440	255	340	400	265	350	420	245	330	385	160	215	250	—	—	—	240	320	380
P3	245	330	385	220	295	350	235	305	360	215	285	335	140	185	220	—	—	—	210	285	330
P4	220	290	340	200	260	305	205	275	325	190	250	295	125	165	190	—	—	—	185	250	290
P5	210	275	330	190	250	300	195	265	310	185	240	290	120	155	185	—	—	—	180	240	285
P6	235	315	375	215	285	335	220	295	350	205	275	325	135	180	210	—	—	—	200	265	320
P7	225	300	350	200	270	315	210	280	330	195	260	305	125	170	200	—	—	—	190	250	300
P8	205	275	325	185	250	295	195	260	305	180	240	285	115	155	185	—	—	—	175	240	280
P11	215	290	340	195	260	310	200	270	320	190	250	295	120	165	195	—	—	—	185	245	290
P12	140	190	225	130	170	200	135	175	210	125	165	195	80	105	125	—	—	—	120	160	195
M1	—	—	—	180	245	285	190	255	305	185	245	285	135	180	215	—	—	—	—	—	—
M2	—	—	—	150	200	240	160	210	250	155	200	240	115	150	180	—	—	—	—	—	—
M3	—	—	—	125	165	195	130	170	205	125	165	195	90	125	145	—	—	—	—	—	—
K1	225	300	350	200	270	315	210	280	335	195	260	305	—	—	—	275	365	430	260	345	410
K2	200	265	315	180	235	285	185	250	295	175	230	275	—	—	—	245	325	385	235	310	365
K3	170	220	265	150	200	240	160	210	250	145	195	230	—	—	—	210	275	330	195	260	310
K4	160	210	255	145	190	230	150	200	240	140	185	220	—	—	—	200	260	315	190	250	295
K5	100	130	155	90	120	140	95	125	145	85	115	135	—	—	—	120	160	190	115	155	180
K6	140	185	225	130	170	200	135	175	210	125	165	195	—	—	—	175	230	275	165	220	260
K7	130	165	200	115	150	180	120	160	185	110	145	170	—	—	—	155	205	245	145	195	230
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	48	65	75	50	65	75	46	60	70	22	30	34	—	—	—	—	—	—
S2	—	—	—	38	50	60	40	55	60	37	49	55	18	24	28	—	—	—	—	—	—
S3	—	—	—	34	45	50	35	47	55	32	43	50	16	21	25	—	—	—	—	—	—
S11	—	—	—	65	85	105	70	90	110	65	85	100	31	41	48	—	—	—	—	—	—
S12	—	—	—	45	60	70	47	65	75	44	60	70	28	38	45	—	—	—	—	—	—
S13	—	—	—	27	36	41	28	37	43	26	34	40	17	22	26	—	—	—	—	—	—
H5	47	65	75	38	50	60	40	55	65	38	50	60	—	—	—	—	—	—	—	—	—
H8	50	65	80	42	55	65	43	60	65	42	55	65	—	—	—	—	—	—	—	—	—
H11	60	80	95	49	65	75	50	70	80	49	65	75	—	—	—	—	—	—	—	—	—
H12	90	120	140	85	110	130	85	115	130	80	105	125	—	—	—	—	—	—	—	—	—

	MS2050			MS2500			T25M			T350M			F40M		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	300	395	470	245	325	380	235	310	370	205	270	320
P2	—	—	—	290	385	460	240	310	370	225	300	355	195	260	305
P3	—	—	—	255	335	395	205	275	330	195	265	310	170	230	270
P4	—	—	—	225	300	355	185	240	290	175	230	275	155	200	235
P5	—	—	—	215	285	340	175	235	275	170	220	265	145	195	230
P6	—	—	—	240	320	380	200	265	310	190	255	300	165	220	260
P7	185	250	290	225	305	360	185	250	290	180	240	280	155	205	245
P8	175	230	275	215	280	330	175	230	275	165	220	260	145	195	225
P11	180	240	285	220	295	350	180	240	285	175	230	275	150	200	240
P12	120	155	185	145	195	230	120	155	185	115	150	180	100	130	155
M1	195	250	300	210	275	330	195	250	300	175	235	270	155	210	245
M2	160	210	250	170	230	270	160	210	250	145	190	230	130	175	210
M3	130	170	200	140	185	220	130	170	200	120	155	185	105	145	170
M4	100	135	155	110	145	170	100	135	155	95	125	145	85	115	130
M5	85	110	130	90	125	145	85	110	130	75	105	120	70	95	110
K1	—	—	—	—	—	—	190	245	295	180	240	280	155	210	245
K2	—	—	—	—	—	—	170	225	260	160	210	250	140	185	220
K3	—	—	—	—	—	—	140	190	220	135	180	215	120	155	185
K4	—	—	—	—	—	—	135	180	210	130	170	205	110	150	175
K5	—	—	—	—	—	—	80	110	130	80	105	125	70	90	110
K6	—	—	—	—	—	—	120	160	185	115	150	180	100	130	155
K7	—	—	—	—	—	—	105	140	165	100	135	160	90	115	140
N1	—	—	—	—	—	—	—	—	—	—	—	—	1125	1525	1800
N2	—	—	—	—	—	—	—	—	—	—	—	—	460	610	720
N3	—	—	—	—	—	—	—	—	—	—	—	—	305	410	485
N11	—	—	—	—	—	—	—	—	—	—	—	—	350	465	550
S1	47	65	75	55	70	85	—	—	—	43	60	65	39	55	60
S2	38	50	60	44	60	65	—	—	—	35	47	55	32	42	49
S3	33	44	50	38	50	60	—	—	—	31	41	48	28	37	43
S11	65	85	100	75	100	120	—	—	—	60	80	95	55	70	85
S12	45	60	70	50	70	80	—	—	—	41	55	65	38	50	60
S13	26	35	41	30	40	47	—	—	—	24	33	38	22	30	34
H5	—	—	—	—	—	—	—	—	—	38	50	60	33	44	50
H8	—	—	—	—	—	—	—	—	—	41	55	65	36	47	55
H11	—	—	—	—	—	—	—	—	—	48	65	75	42	55	65
H12	—	—	—	—	—	—	—	—	—	75	95	115	65	85	100

Square 6™ – R217.96-04



- For insert selection and cutting data recommendations, see page(s) 58-59
- For complete insert programme, see page(s) 659
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm							KG		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..
R217.96-2020.0-04-2A	Cylindrical	2,0	4,0	20	20	150	121	2	1,9	29400	XNEX04..
R217.96-2020.0-04-3A	Cylindrical	2,0	4,0	20	20	150	121	3	0,3	29400	XNEX04..
R217.96-2525.0-04-4A	Cylindrical	2,0	4,0	25	25	170	141	4	0,6	26300	XNEX04..
R217.96-2525.0-04-5A	Cylindrical	2,0	4,0	25	25	170	141	5	0,6	26300	XNEX04..
R217.96-3232.0-04-5A	Cylindrical	2,0	4,0	32	32	195	164	5	1,2	23200	XNEX04..
R217.96-3232.0-04-6A	Cylindrical	2,0	4,0	32	32	195	164	6	1,2	23200	XNEX04..
R217.96-2020.3-04-2A	Weldon	2,0	4,0	20	20	90	61	2	1,9	29400	XNEX04..
R217.96-2020.3-04-3A	Weldon	2,0	4,0	20	20	90	61	3	0,2	29400	XNEX04..
R217.96-2525.3-04-4A	Weldon	2,0	4,0	25	25	101	67	4	0,4	26300	XNEX04..
R217.96-2525.3-04-5A	Weldon	2,0	4,0	25	25	101	67	5	0,4	26300	XNEX04..
R217.96-3232.3-04-5A	Weldon	2,0	4,0	32	32	105	68	5	0,5	23200	XNEX04..

Spare Parts

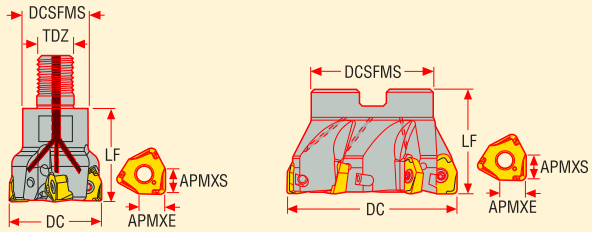
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.96-..	DOUBLE-T	C02506-T08P	H4B-T08P	1,2

Please check availability in current price and stock-list

Torque keys, see page 710

Square 6™ – R217/220.96-04





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 58-59
- For complete insert programme, see page(s) 659
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm								KG		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-04-4A	Combimaster	2,0	4,0	25,0	23	–	M12	30,0	4	0,1	26300	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-04-5A	Combimaster	2,0	4,0	32,0	30	–	M16	40,0	5	0,3	23200	XNEX04..
R217.96-1632.RE-04-6A	Combimaster	2,0	4,0	32,0	30	–	M16	40,0	6	0,3	23200	XNEX04..
R217.96-2040.RE-04-7A	Combimaster	2,0	4,0	40,0	37	–	M20	40,0	7	0,4	20700	XNEX04..
R220.96-0032-04-6A	Arbor	2,0	4,0	32,0	35	16	–	40,0	6	0,2	23200	XNEX04..
R220.96-0040-04-7A	Arbor	2,0	4,0	40,0	35	16	–	40,0	7	0,3	20700	XNEX04..
R220.96-0032-04-4A	Arbor	2,0	4,0	32,0	35	16	–	40,0	4	0,2	23200	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..
R220.96-0050-04-8A	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..
R220.96-0063-04-7A	Arbor	2,0	4,0	63,0	62	27	–	40,0	7	0,7	150000	XNEX04..
R220.96-0063-04-9A	Arbor	2,0	4,0	63,0	52	27	–	40,0	9	0,7	16500	XNEX04..

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 710

R217/220.96-04 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	XNEX040304TR-M08 F40M	2,0	0,11	0,13	0,19
P2	XNEX040304TR-M08 F40M	2,0	0,12	0,13	0,19
P3	XNEX040304TR-M08 MP2501	2,0	0,11	0,12	0,18
P4	XNEX040304TR-M08 MP2501	2,0	0,11	0,12	0,18
P5	XNEX040304TR-M08 MP2501	2,0	0,11	0,12	0,18
P6	XNEX040304TR-M08 MP2501	2,0	0,10	0,11	0,17
P7	XNEX040304TR-M08 MP2501	2,0	0,10	0,11	0,17
P8	XNEX040304TR-M08 MP2501	2,0	0,11	0,12	0,18
P11	XNEX040304TR-M08 MP3000	2,0	0,10	0,11	0,17
P12	XNEX040304TR-M08 MP2501	1,6	0,075	0,080	0,12
M1	XNEX040304R-M06 F40M	2,0	0,085	0,095	0,15
M2	XNEX040304R-M06 F40M	2,0	0,080	0,085	0,13
M3	XNEX040304R-M06 F40M	1,6	0,065	0,070	0,11
M4	XNEX040304R-M06 F40M	1,2	0,060	0,065	0,090
M5	XNEX040304R-M06 F40M	1,2	0,060	0,065	0,090
K1	XNEX040304TR-M08 MK2050	2,0	0,12	0,13	0,19
K2	XNEX040304TR-M08 MK2050	2,0	0,11	0,12	0,18
K3	XNEX040304TR-M08 MK2050	2,0	0,11	0,12	0,18
K4	XNEX040304TR-M08 MK2050	2,0	0,11	0,12	0,18
K5	XNEX040304TR-M08 MK2050	2,0	0,095	0,10	0,16
K6	XNEX040304TR-M08 MK2050	2,0	0,11	0,12	0,18
K7	XNEX040304TR-M08 MK2050	2,0	0,095	0,10	0,16
N1	XNEX040304R-M06 F40M	2,0	0,11	0,12	0,19
N2	XNEX040304R-M06 F40M	2,0	0,11	0,12	0,19
N3	XNEX040304R-M06 F40M	2,0	0,11	0,12	0,19
N11	XNEX040304R-M06 F40M	2,0	0,11	0,12	0,19
S1	XNEX040304R-M06 F40M	1,2	0,060	0,065	0,090
S2	XNEX040304R-M06 F40M	1,2	0,060	0,065	0,090
S3	XNEX040304R-M06 F40M	1,2	0,055	0,060	0,085
S11	XNEX040304R-M06 MS2050	1,4	0,065	0,070	0,11
S12	XNEX040304R-M06 MS2050	1,4	0,065	0,070	0,11
S13	XNEX040304R-M06 MS2050	1,2	0,060	0,065	0,090
H5	XNEX040304TR-M08 MP3000	1,6	0,075	0,080	0,12
H8	XNEX040304TR-M08 MP3000	1,4	0,055	0,060	0,090
H11	XNEX040304TR-M08 MP3000	1,6	0,075	0,080	0,12
H12	XNEX040304TR-M08 MP3000	1,4	0,055	0,060	0,090

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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

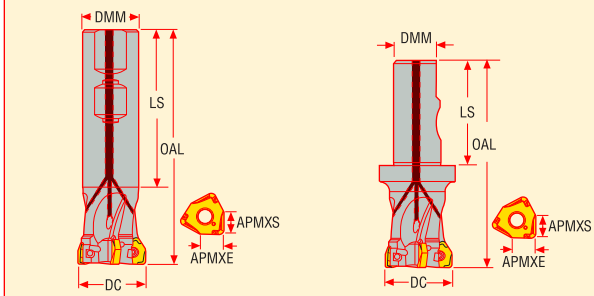
	MP1501			MP2501			MP3000			MM4500			MK1500			MK2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	350	465	540	310	410	480	295	390	455	190	255	295	—	—	—	305	405	470
P2	340	455	530	300	400	465	285	380	440	185	245	285	—	—	—	300	395	460
P3	295	390	460	260	345	405	245	325	385	160	210	250	—	—	—	255	340	400
P4	265	350	410	235	310	360	220	295	345	145	190	220	—	—	—	230	305	355
P5	255	335	390	225	295	345	210	280	325	135	180	210	—	—	—	220	290	340
P6	285	375	440	250	330	390	240	315	365	155	205	240	—	—	—	245	325	380
P7	270	355	415	235	315	365	225	295	345	145	190	225	—	—	—	235	310	360
P8	245	325	385	220	290	340	205	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	195	225
M1	—	—	—	220	290	335	215	285	330	160	210	245	—	—	—	—	—	—
M2	—	—	—	180	240	280	175	235	275	130	175	205	—	—	—	—	—	—
M3	—	—	—	145	190	225	140	190	220	105	140	165	—	—	—	—	—	—
M4	—	—	—	115	150	170	110	145	170	85	110	125	—	—	—	—	—	—
M5	—	—	—	95	125	145	95	120	140	70	90	105	—	—	—	—	—	—
K1	270	360	415	240	320	370	225	300	350	—	—	—	340	450	520	320	425	495
K2	240	315	370	210	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	160	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	—	—	—	55	75	85	50	70	80	25	33	38	—	—	—	—	—	—
S2	—	—	—	44	60	65	42	55	65	20	27	31	—	—	—	—	—	—
S3	—	—	—	39	50	60	37	48	55	18	23	27	—	—	—	—	—	—
S11	—	—	—	75	100	120	70	95	110	35	46	55	—	—	—	—	—	—
S12	—	—	—	55	70	80	50	65	75	33	43	50	—	—	—	—	—	—
S13	—	—	—	31	41	47	29	39	44	19	25	29	—	—	—	—	—	—
H5	55	75	85	45	60	70	44	60	70	—	—	—	—	—	—	—	—	—
H8	60	80	90	48	65	75	47	60	70	—	—	—	—	—	—	—	—	—
H11	70	95	110	55	75	90	55	75	85	—	—	—	—	—	—	—	—	—
H12	105	140	160	95	125	145	90	115	135	—	—	—	—	—	—	—	—	—

	MS2050			F40M		
SMG	100%	30%	10%	100%	30%	10%
P1	—	—	—	235	310	360
P2	—	—	—	230	305	355
P3	—	—	—	195	260	305
P4	—	—	—	180	235	275
P5	—	—	—	170	225	260
P6	—	—	—	190	250	295
P7	220	290	340	180	235	275
P8	205	270	315	165	220	260
P11	210	280	330	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	195	230	120	160	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	840
N3	—	—	—	355	480	560
N11	—	—	—	410	550	640
S1	55	70	80	45	60	70
S2	44	55	65	36	48	55
S3	38	50	60	32	41	48
S11	75	100	115	60	80	95
S12	55	70	80	43	55	65
S13	30	40	46	25	33	38
H5	—	—	—	37	50	60
H8	—	—	—	40	50	60
H11	—	—	—	48	65	75
H12	—	—	—	70	95	110

Square shoulder and slot milling cutters

Square 6™ – R217.96-08





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 64–65
- For complete insert programme, see page(s) 659
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXE	APMXS	DC	DMM	OAL	LS				
R217.96-3240.3-08-3A	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..

Spare Parts

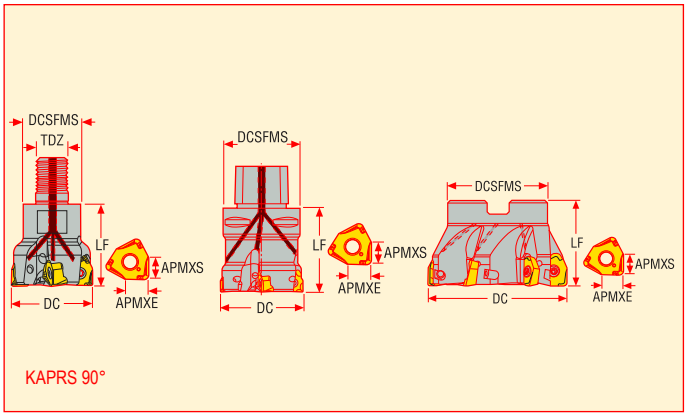
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.96-..	DOUBLE-T	C04011-T15P	H4B-T15P	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

Square 6™ – R217/220.96-08





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 64–65
- For complete insert programme, see page(s) 659
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm								KG		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..
R217.96-1640.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-R217.96-044-08-3A	Seco-Capto	3,0	7,5	44,0	40	–	–	60,0	3	0,6	11300	XNEX08..
C4-R217.96-044-08-4A	Seco-Capto	3,0	7,5	44,0	40	–	–	60,0	4	0,5	11300	XNEX08..
C5-R217.96-054-08-4A	Seco-Capto	3,0	7,5	54,0	50	–	–	60,0	4	0,9	10200	XNEX08..
C5-R217.96-054-08-5A	Seco-Capto	3,0	7,5	54,0	50	–	–	60,0	5	0,9	10200	XNEX08..
C5-R217.96-063-08-6A	Seco-Capto	3,0	7,5	63,0	50	–	–	60,0	6	1,0	9400	XNEX08..
C5-R217.96-063-08-7A	Seco-Capto	3,0	7,5	63,0	50	–	–	60,0	7	1,0	9400	XNEX08..
C6-R217.96-066-08-7A	Seco-Capto	3,0	7,5	66,0	63	–	–	60,0	7	1,4	9400	XNEX08..
R220.96-0050-08-4A	Arbor	3,0	7,5	50,0	47	22	–	40,0	4	0,3	10600	XNEX08..
R220.96-0050-08-5A	Arbor	3,0	7,5	50,0	47	22	–	40,0	5	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..
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..
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..
R220.96-0066-08-6A	Arbor	3,0	7,5	66,0	47	22	–	40,0	6	0,6	9400	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
R220.96-0050-0063	DOUBLE-T	C04011-T15P	H4B-T15P	220.17-696	3,5
R220.96-0063-27	DOUBLE-T	C04011-T15P	H4B-T15P	220.17-693	3,5
R220.96-0063-7A	DOUBLE-T	C04011-T15P	H4B-T15P	220.17-692	3,5
R220.96-0066	DOUBLE-T	C04011-T15P	H4B-T15P	220.17-692	3,5

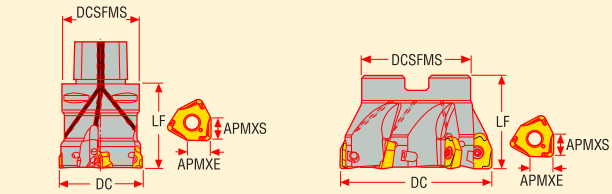
Please check availability in current price and stock-list

Torque keys, see page 710

Square 6™ – R217/220.96-08



- For insert selection and cutting data recommendations, see page(s) 64–65
- For complete insert programme, see page(s) 659
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm									Insert
		APMXE	APMXS	DC	DCSFMS	DCB	LF		KG		
C6-R217.96-080-08-7A	Seco-Capto	3,0	7,5	80,0	63	–	60,0	7	1,7	8400	XNEX08..
C6-R217.96-080-08-9A	Seco-Capto	3,0	7,5	80,0	63	–	60,0	9	1,2	8400	XNEX08..
R220.96-0080-08-5A	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..
R220.96-0080-08-9A	Arbor	3,0	7,5	80,0	62	27	50,0	9	1,0	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..
R220.96-0100-08-11A	Arbor	3,0	7,5	100,0	77	32	50,0	11	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..
R220.96-0125-08-14A	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..
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)
C.-R217.96-..	DOUBLE-T	C04011-T15P	H4B-T15P	–	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

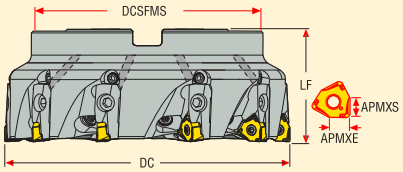
Please check availability in current price and stock-list

Torque keys, see page 710

Square 6™ – R220.96-08



- For insert selection and cutting data recommendations, see page(s) 64–65
- For complete insert programme, see page(s) 659
- For ISO attribute explanation, see page 15



KAPRS 90°

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

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 710

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 MP2501	3,5	0,18	0,20	0,30
P4	XNEX080608TR-M13 MP2501	3,5	0,18	0,19	0,30
P5	XNEX080608TR-M13 MP2501	3,5	0,17	0,19	0,28
P6	XNEX080608TR-M13 MP2501	3,5	0,17	0,19	0,28
P7	XNEX080608TR-M13 MP2501	3,5	0,17	0,19	0,28
P8	XNEX080608TR-M13 MP2501	3,5	0,18	0,20	0,30
P11	XNEX080608TR-M13 T350M	3,5	0,17	0,19	0,28
P12	XNEX080608TR-M13 MP2501	3,0	0,12	0,13	0,19
M1	XNEX080608R-M08 F40M	3,5	0,12	0,13	0,19
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	0,12
M5	XNEX080608R-M08 T350M	2,0	0,080	0,085	0,12
K1	XNEX080608TR-M13 MK2050	3,5	0,19	0,20	0,32
K2	XNEX080608TR-M13 MK2050	3,5	0,17	0,19	0,28
K3	XNEX080608TR-M13 MK2050	3,5	0,17	0,19	0,28
K4	XNEX080608TR-M13 MK2050	3,5	0,17	0,19	0,28
K5	XNEX080608TR-M13 MK2050	3,5	0,16	0,17	0,26
K6	XNEX080608TR-M13 MK2050	3,5	0,17	0,19	0,28
K7	XNEX080608TR-M13 MK2050	3,5	0,16	0,17	0,26
N1	XNEX080608R-M08 H25	3,5	0,15	0,16	0,25
N2	XNEX080608R-M08 H25	3,5	0,15	0,16	0,25
N3	XNEX080608R-M08 H25	3,5	0,15	0,16	0,25
N11	XNEX080608R-M08 H25	3,5	0,15	0,16	0,25
S1	XNEX080608R-M08 T350M	2,0	0,080	0,085	0,12
S2	XNEX080608R-M08 T350M	2,0	0,080	0,085	0,12
S3	XNEX080608R-M08 T350M	2,0	0,075	0,080	0,11
S11	XNEX080608R-M08 MS2050	2,5	0,085	0,095	0,14
S12	XNEX080608R-M08 MS2050	2,5	0,085	0,095	0,14
S13	XNEX080608R-M08 MS2050	2,0	0,080	0,085	0,12
H5	XNEX080608TR-M13 MP3000	3,0	0,12	0,13	0,19
H8	XNEX080608TR-M13 MP3000	2,5	0,090	0,10	0,15
H11	XNEX080608TR-MD15 MP1501	3,0	0,14	0,15	0,22
H12	XNEX080608TR-MD15 MP1501	2,5	0,11	0,12	0,17

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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

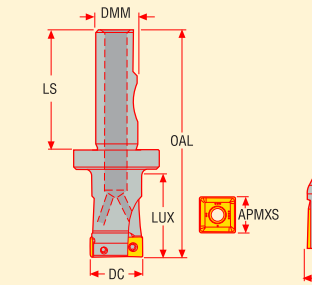
	MP1501			MP2050			MP2501			MP3000			MM4500			MK1500			MK2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	345	455	530	300	395	475	305	405	475	290	385	450	185	250	290	—	—	—	260	350	415
P2	335	445	520	290	385	460	295	395	460	280	375	435	180	240	285	—	—	—	255	340	395
P3	295	380	460	255	340	400	260	340	405	245	320	385	160	210	250	—	—	—	220	290	345
P4	260	345	405	225	300	355	230	305	360	220	290	340	140	185	220	—	—	—	195	260	305
P5	250	330	385	215	285	340	220	290	340	210	275	325	135	180	210	—	—	—	190	250	295
P6	280	370	435	245	325	385	245	325	385	235	310	365	150	200	235	—	—	—	210	280	335
P7	265	345	410	230	310	365	235	310	360	220	290	345	145	190	220	—	—	—	200	265	315
P8	250	320	385	215	285	340	220	285	340	210	270	325	135	175	210	—	—	—	185	245	290
P11	255	340	395	220	300	355	225	300	350	215	285	335	140	185	215	—	—	—	195	255	305
P12	170	220	260	145	190	225	150	195	230	140	185	220	90	120	140	—	—	—	125	170	200
M1	—	—	—	210	275	330	215	285	330	210	280	325	155	205	245	—	—	—	—	—	—
M2	—	—	—	175	230	270	175	235	275	175	230	270	130	170	200	—	—	—	—	—	—
M3	—	—	—	140	185	220	145	185	220	140	185	220	105	135	160	—	—	—	—	—	—
M4	—	—	—	110	145	170	110	150	170	110	145	170	80	110	125	—	—	—	—	—	—
M5	—	—	—	90	120	140	90	125	145	90	120	140	70	90	105	—	—	—	—	—	—
K1	265	350	410	230	305	365	235	310	365	—	—	—	—	—	—	290	385	450	275	365	425
K2	235	310	365	205	270	320	210	275	325	—	—	—	—	—	—	260	340	405	245	320	385
K3	200	265	310	175	230	270	175	235	275	—	—	—	—	—	—	220	285	345	205	270	325
K4	190	250	295	165	220	260	170	225	260	—	—	—	—	—	—	210	275	325	195	260	310
K5	115	155	180	100	135	160	105	135	160	—	—	—	—	—	—	125	170	200	120	160	190
K6	165	220	260	145	195	230	150	195	230	—	—	—	—	—	—	185	240	290	175	230	275
K7	150	195	230	130	175	205	130	175	205	—	—	—	—	—	—	160	215	255	155	205	240
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	55	70	85	—	—	—	50	70	80	25	33	38	—	—	—	—	—	—
S2	—	—	—	43	55	65	—	—	—	41	55	65	20	27	31	—	—	—	—	—	—
S3	—	—	—	38	50	60	—	—	—	36	48	55	18	23	27	—	—	—	—	—	—
S11	—	—	—	75	100	115	—	—	—	70	95	110	35	46	55	—	—	—	—	—	—
S12	—	—	—	50	70	80	—	—	—	49	65	75	32	42	50	—	—	—	—	—	—
S13	—	—	—	30	40	47	—	—	—	29	38	44	19	25	29	—	—	—	—	—	—
H5	55	75	85	43	60	70	—	—	—	44	55	70	—	—	—	—	—	—	—	—	—
H8	60	75	90	47	60	70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H11	70	95	110	55	75	85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H12	105	140	165	95	120	140	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

	MS2050			MS2500			T350M			F40M			H25		
SMG	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	—	—	—
P2	—	—	—	325	430	510	260	345	400	225	300	350	—	—	—
P3	—	—	—	285	375	445	230	295	355	200	255	310	—	—	—
P4	—	—	—	250	330	395	200	265	310	175	230	270	—	—	—
P5	—	—	—	240	315	375	190	255	300	165	220	260	—	—	—
P6	—	—	—	270	365	425	215	285	335	185	245	290	—	—	—
P7	195	260	310	255	345	405	205	270	315	175	235	275	—	—	—
P8	185	240	285	240	315	375	190	250	300	165	215	260	—	—	—
P11	190	255	300	245	335	390	195	260	305	170	225	265	—	—	—
P12	125	165	190	160	215	250	130	170	200	110	145	175	—	—	—
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	1975
N2	—	—	—	—	—	—	—	—	—	530	700	830	510	680	790
N3	—	—	—	—	—	—	—	—	—	350	470	550	340	450	530
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



- For insert selection and cutting data recommendations, see page(s) 67–68
- For complete insert programme, see page(s) 654
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm										KG		Insert
		APMXS	DC	DCSFMS	DCB	DMM	OAL	LF	LUX	LS				
R217.99-2532.3S-09-3A	Seco-Weldon	8,0	32	–	–	25	111	–	43	55	3	0,5	18600	SONX09T3
R220.99-0040-09-4T	Arbor	8,0	40	35,0	16,0	–	–	40	–	–	4	0,2	16600	SONX09T3
R220.99-0050-09-4	Arbor	8,0	50	47,0	22,0	–	–	40	–	–	4	0,4	14800	SONX09T3
R220.99-0050-09-6T	Arbor	8,0	50	47,0	22,0	–	–	40	–	–	6	0,3	14800	SONX09T3
R220.99-0063-09-7T	Arbor	8,0	63	47,0	22,0	–	–	40	–	–	7	0,5	13200	SONX09T3

Spare Parts

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

Please check availability in current price and stock-list

Torque keys, see page 710

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 MP2501	4,0	0,14	0,15	0,22
P4	SONX09T308TR-M10 MP2501	4,0	0,14	0,15	0,22
P5	SONX09T308TR-M10 MP2501	4,0	0,13	0,14	0,22
P6	SONX09T308TR-M10 MP2501	4,0	0,13	0,14	0,22
P7	SONX09T308TR-M10 MP2501	4,0	0,13	0,14	0,22
P8	SONX09T308TR-M10 MP2501	4,0	0,14	0,15	0,22
P11	SONX09T304TR-M10 T350M	4,0	0,13	0,14	0,22
P12	SONX09T308TR-M10 MP2501	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	0,10
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	0,17
S12	SONX09T304TR-ME06 F40M	2,5	0,065	0,070	0,10

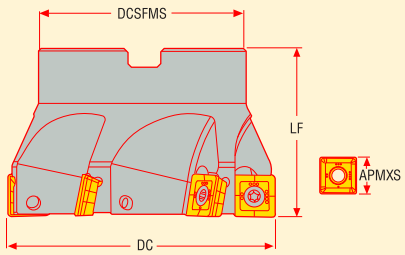
SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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

	MP2501			MK1500			MK2050			T350M			F40M		
SMG	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	195	255	305	170	225	270
K2	205	270	315	290	380	445	275	360	420	175	230	270	155	205	240
K3	170	230	265	245	325	375	230	305	355	145	195	230	130	175	200
K4	165	220	255	235	310	360	220	290	340	140	185	220	125	165	190
K5	100	130	155	140	185	220	135	175	205	85	115	135	75	100	115
K6	145	190	225	205	270	315	195	255	300	125	165	190	110	145	170
K7	130	170	200	180	240	280	170	225	265	110	145	170	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

Midi Square – R220.99-12





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 70–71
- For complete insert programme, see page(s) 654
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						KG		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

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

Please check availability in current price and stock-list

Torque keys, see page 710

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 MP2501	5,0	0,16	0,18	0,28
P4	SONX120508TR-M12 MP2501	5,0	0,16	0,18	0,26
P5	SONX120508TR-M12 MP2501	5,0	0,16	0,17	0,26
P6	SONX120508TR-M12 MP2501	5,0	0,16	0,17	0,26
P7	SONX120508TR-M12 MP2501	5,0	0,16	0,17	0,26
P8	SONX120508TR-M12 MP2501	5,0	0,16	0,18	0,28
P11	SONX120508TR-M12 T350M	5,0	0,16	0,17	0,26
P12	SONX120508TR-M12 MP2501	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	0,17
M3	SONX120508TR-M12 F40M	4,5	0,13	0,14	0,20
M4	SONX120508TR-M12 F40M	3,0	0,11	0,12	0,18
M5	SONX120508TR-M12 F40M	3,0	0,11	0,12	0,18
K1	SONX120508TR-M12 MK2050	5,0	0,17	0,19	0,28
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	0,15	0,24
K6	SONX120508TR-M12 MK2050	5,0	0,16	0,17	0,26
K7	SONX120508TR-M12 MK2050	5,0	0,14	0,15	0,24
N1	SONX120508TR-ME08 F40M	5,0	0,15	0,16	0,25
N2	SONX120508TR-ME08 F40M	5,0	0,15	0,16	0,25
N3	SONX120508TR-ME08 F40M	5,0	0,15	0,16	0,25
N11	SONX120508TR-ME08 F40M	5,0	0,15	0,16	0,25
S1	SONX120508TR-M12 T350M	3,0	0,11	0,12	0,18
S2	SONX120508TR-M12 T350M	3,0	0,11	0,12	0,18
S3	SONX120508TR-M12 T350M	3,0	0,10	0,11	0,17
S11	SONX120508TR-M12 T350M	4,0	0,13	0,14	0,20
S12	SONX120508TR-ME08 F40M	4,0	0,085	0,095	0,14

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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

	MP1501			MP2501			MK1500			MK2050			T350M			F40M		
SMG	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	185	245	295	165	215	255
K2	215	285	335	190	250	295	270	360	420	255	340	400	165	220	260	145	190	225
K3	180	240	285	160	215	250	225	305	355	215	285	335	140	185	220	120	160	190
K4	175	230	270	155	205	240	215	290	340	205	275	320	135	180	210	115	155	180
K5	105	140	165	95	125	145	135	180	205	125	170	195	85	110	125	70	95	110
K6	150	205	240	135	180	210	190	255	300	180	240	285	120	155	185	100	135	160
K7	135	180	210	120	160	185	170	230	265	165	215	250	105	140	165	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/ 4,0/5,0/6,3	◩	■	■	■	◩
	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	_	■	□	_	□
235.15	— -	■	■	■	-	■	Chamfer	■	■	◩	-	-

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											75-76
				16	20											
2					25	25	34	34		42						79-80
						42	50	58	58	42	66					
2						33	33	33	33	44	44	55	44	66		83-85
							55	66		106		107		107		
2								47		62	47	62	47	62	62	88-90
										77		93		93	77	
4						36	36	36		43						93-94
						43	50	50	57	57	64					
4										46		46				97-99
										58		81		69	81	
2 & 4 half effective										50/59/ 77		77		68	77	102
2 & 4 full and half effective										72/120		72/160		72/120		106
2												38		38/50		110
1							40			50				90		113

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

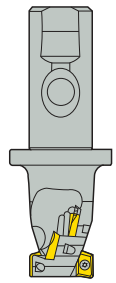
x — For contouring operations only(x indicates the maximum depth of cut)

Slotting and contouring

Contouring only

Code key

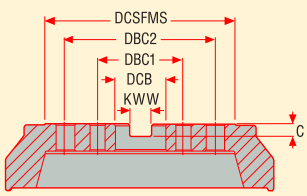
Note that parts of the code can vary for different cutter systems



R	217	.	69	-	25	32	.	3S	-	042	-	10	.	4	A

- R: Right hand rotation; Cx = For Seco-Capto
- 217: 215/217=With shank; 220 = For Arbor; 235 = Finishing
- 69: 69 = Rectangular positive 2 cutting edges; 94 = Tangential 4 cutting edges; 59 = Square positive 4 cutting edges; 15 = Finishing
- 25: Shank diameter (except for Arbor type)
- 32: Cutter diameter
- 3S: Shank type (except for Arbor type); 0 = Cylindrical; 3 = Weldon; 3S = Seco Weldon; RE = Combimaster
- 042: Max. axial cutting depht
- 10: Insert size
- 4: Effective No. of flutes (ZEFP)
- A: A = With through coolant supply; N = Coated; S = Set; H = Heavy Duty; K = Full effective (for .59 only); R6 = Compatible with radius 6.3 mm

Dimensions of mounting

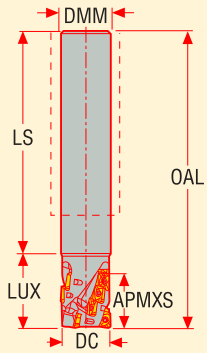


Dimensions in mm						Spindle-nose
DCSFMS	DCB	KWW	C	DBC1	DBC2	
30-35	16	8,4	5,6	–	–	–
42-47	22	10,4	6.3	–	–	–
48-62	27	12,4	7	–	–	–
60-90	32	14,4	8	–	–	–
90-130	40	16,4	9	66,7	–	(8xxx)
130-270	60	25,7	14	101,6	177,8	(8xxx)

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

Turbo 06 – R217.69-06





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 77–78
- For complete insert programme, see page(s) 661
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max	ZEFP		KG		Insert
		APMXS	DC	DMM	OAL	LUX	LS								
R217.69-1612.0-10-06.2N	Cylindrical	10,0	12,0	16,0	98,0	23,0	66,0	6,5	18,48	23,25	2	4	0,2	54400	XO.X06..
R217.69-1616.0-15-06.3N	Cylindrical	15,0	16,0	16,0	110,0	30,0	80,0	4,0	26,48	31,25	3	9	0,2	48000	XO.X06..
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..

Modification of the cutter body needed for radii > 0,8 mm

Spare Parts

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

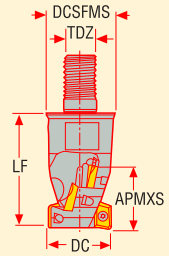
Please check availability in current price and stock-list

Torque keys, see page 710

Turbo 06 – R217.69-06



- For insert selection and cutting data recommendations, see page(s) 77–78
- For complete insert programme, see page(s) 661
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm					RMPX°	C min	C max	ZEFP		KG		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..
R217.69-1020.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..

Modification of the cutter body needed for radii > 0,8 mm

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 710

R217.69-06 – Insert selection

SMG		f_z		
		100%	30%	10%
P1	XOMX060208R-M05 F40M	0,055	0,060	0,095
P2	XOMX060208R-M05 F40M	0,060	0,065	0,095
P3	XOMX060208R-M05 F40M	0,055	0,060	0,090
P4	XOMX060208R-M05 F40M	0,055	0,060	0,090
P5	XOMX060208R-M05 F40M	0,050	0,055	0,085
P6	XOMX060208R-M05 F40M	0,050	0,055	0,085
P7	XOMX060208R-M05 F40M	0,050	0,055	0,085
P8	XOMX060208R-M05 F40M	0,055	0,060	0,090
P11	XOMX060208R-M05 MP3000	0,050	0,055	0,085
P12	XOMX060208R-M05 MP3000	0,036	0,038	0,060
M1	XOMX060208R-M05 MS2050	0,060	0,065	0,095
M2	XOMX060208R-M05 MS2050	0,050	0,055	0,085
M3	XOMX060208R-M05 MS2050	0,042	0,046	0,070
M4	XOMX060208R-M05 MS2050	0,038	0,040	0,060
M5	XOMX060208R-M05 MS2050	0,038	0,040	0,060
K1	XOMX060208R-M05 F40M	0,060	0,065	0,095
K2	XOMX060208R-M05 F40M	0,050	0,055	0,085
K3	XOMX060208R-M05 F40M	0,050	0,055	0,085
K4	XOMX060208R-M05 F40M	0,050	0,055	0,085
K5	XOMX060208R-M05 F40M	0,048	0,050	0,080
K6	XOMX060208R-M05 F40M	0,050	0,055	0,085
K7	XOMX060208R-M05 F40M	0,048	0,050	0,080
N1	XOEX060204FR-E03 H15	0,060	0,065	0,10
N2	XOEX060204FR-E03 H15	0,060	0,065	0,10
N3	XOEX060204FR-E03 H15	0,060	0,065	0,10
N11	XOEX060204FR-E03 H15	0,060	0,065	0,10
S1	XOMX060208R-M05 F40M	0,038	0,040	0,060
S2	XOMX060208R-M05 F40M	0,038	0,040	0,060
S3	XOMX060208R-M05 F40M	0,034	0,038	0,055
S11	XOMX060208R-M05 MS2050	0,042	0,046	0,070
S12	XOMX060208R-M05 MS2050	0,042	0,046	0,070
S13	XOMX060208R-M05 MS2050	0,038	0,040	0,060
H5	XOMX060208R-M05 MP3000	0,036	0,038	0,060
H8	XOMX060208R-M05 MP3000	0,028	0,030	0,046
H11	XOMX060208R-M05 MP3000	0,036	0,038	0,060
H12	XOMX060208R-M05 MP3000	0,028	0,030	0,046

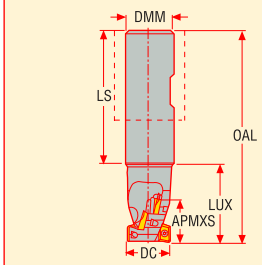
SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

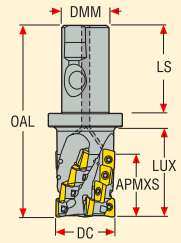
R217.69-06 – Cutting data v_c = (m/min)

	F40M			F30M			F15M			MP3000			MS2050			MM4500			H15		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	160	180	190	165	180	190	175	190	200	175	195	205	—	—	—	145	165	175	—	—	—
P2	160	175	185	160	180	190	170	190	200	175	190	200	—	—	—	145	160	175	—	—	—
P3	150	165	180	155	170	180	160	180	190	165	180	195	—	—	—	135	155	165	—	—	—
P4	140	160	170	145	160	175	155	170	180	155	175	185	—	—	—	125	145	155	—	—	—
P5	140	155	165	140	160	170	150	170	180	155	170	180	—	—	—	125	145	155	—	—	—
P6	145	165	175	150	170	180	160	175	185	160	180	190	—	—	—	135	150	160	—	—	—
P7	145	160	170	145	165	175	155	175	185	160	175	185	150	165	175	130	145	155	—	—	—
P8	140	155	165	140	160	170	150	170	180	155	170	180	145	160	175	125	140	155	—	—	—
P11	140	160	170	145	160	170	155	170	180	155	175	185	145	165	175	125	145	155	—	—	—
P12	110	130	140	115	130	140	125	140	150	125	145	155	115	135	145	95	115	125	—	—	—
M1	145	160	175	145	165	175	155	175	185	155	170	185	150	170	180	135	150	165	—	—	—
M2	130	150	160	135	155	165	145	160	170	140	160	170	140	155	165	120	140	150	—	—	—
M3	115	135	145	120	135	150	130	145	155	125	145	155	125	140	150	105	125	135	—	—	—
M4	100	115	125	100	120	130	110	130	140	110	125	135	105	125	135	90	105	115	—	—	—
M5	85	105	115	90	110	120	100	115	125	95	115	125	95	110	120	75	95	105	—	—	—
K1	145	160	170	145	165	175	155	175	185	—	—	—	—	—	—	—	—	—	—	—	—
K2	135	155	165	140	155	165	150	165	175	—	—	—	—	—	—	—	—	—	—	—	—
K3	125	140	155	130	145	155	135	155	165	—	—	—	—	—	—	—	—	—	—	—	—
K4	120	140	150	125	140	155	135	150	160	—	—	—	—	—	—	—	—	—	—	—	—
K5	85	105	115	90	110	120	100	120	130	—	—	—	—	—	—	—	—	—	—	—	—
K6	115	130	140	115	135	145	125	145	155	—	—	—	—	—	—	—	—	—	—	—	—
K7	105	120	130	105	125	135	115	135	145	—	—	—	—	—	—	—	—	—	—	—	—
N1	275	295	305	280	300	310	290	305	320	290	310	320	—	—	—	—	—	—	280	300	310
N2	215	235	245	220	240	250	230	245	260	230	250	260	—	—	—	—	—	—	220	240	250
N3	190	210	220	195	210	220	200	220	230	205	225	235	—	—	—	—	—	—	190	210	220
N11	200	215	230	200	220	230	210	230	240	—	—	—	—	—	—	—	—	—	200	220	230
S1	50	65	75	55	70	80	60	80	90	60	75	85	55	75	85	29	38	44	—	—	—
S2	41	55	60	43	55	65	49	65	75	47	60	70	45	60	70	23	30	35	—	—	—
S3	36	46	55	38	49	55	43	55	65	42	55	65	39	50	60	20	26	31	—	—	—
S11	70	90	100	75	90	100	85	100	110	80	100	110	80	95	105	40	55	60	—	—	—
S12	49	65	75	43	55	65	60	75	85	55	75	85	55	70	80	37	49	55	—	—	—
S13	29	37	43	25	33	38	34	45	50	33	43	50	31	41	48	21	28	33	—	—	—
H5	43	55	65	45	60	70	50	65	75	50	65	75	—	—	—	—	—	—	—	—	—
H8	44	60	65	47	60	70	55	70	80	50	70	80	—	—	—	—	—	—	—	—	—
H11	55	70	80	55	75	85	65	85	95	65	80	90	—	—	—	—	—	—	—	—	—
H12	80	95	105	80	100	110	90	110	120	95	110	120	—	—	—	—	—	—	—	—	—

Turbo 10 – R217.69-10







KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 81–82
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max	ZEFP		KG		Insert
		APMXS	DC	DMM	OAL	LUX	LS								
R217.69-2020.3-017-10.2A	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.X10..
R217.69-2020.3-025-10.1A	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.X10..
R217.69-2525.3-025-10.2A	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.X10..
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.X10..*
R217.69-2025.3S-034-10.3A	Seco-Weldon	34,0	25,0	20,0	100,0	43,0	50,0	3,0	38,96	48,5	3	12	0,4	23500	XO.X10..*
R217.69-2525.3S-034-10.3A	Seco-Weldon	34,0	25,0	25,0	110,0	43,0	56,0	3,0	38,96	48,5	3	12	0,4	23500	XO.X10..*
R217.69-2525.3S-042-10.2A	Seco-Weldon	42,0	25,0	25,0	120,0	53,0	56,0	3,0	38,96	48,5	2	10	0,5	23500	XO.X10..
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.X10..*
R217.69-2532.3S-042-10.4A	Seco-Weldon	42,0	32,0	25,0	120,0	53,0	56,0	2,0	52,96	62,5	4	20	0,4	20800	XO.X10..*
R217.69-2532.3S-050-10.3A	Seco-Weldon	50,0	32,0	25,0	130,0	63,0	56,0	2,0	52,96	62,5	3	18	0,5	20800	XO.X10..
R217.69-3240.3S-058-10.4A	Seco-Weldon	58,0	40,0	32,0	144,0	72,0	60,0	1,5	68,96	78,5	4	28	0,9	18600	XO.X10..

Modification of the cutter body needed for radii > 2,0 mm
* No axial support in the front row for radii > 1,6 mm

Spare Parts

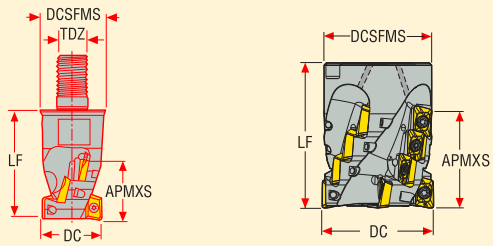
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.69-..	DOUBLE-T	C02506-T07P	H4B-T07P	0,9

Please check availability in current price and stock-list
Torque keys, see page 710

Turbo 10 – R217/220.69-10



- For insert selection and cutting data recommendations, see page(s) 81–82
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max	ZEFP		KG		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.X10..
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.X10..*
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.X10..
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.X10..
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.X10..*
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.X10..*
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.X10..
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.X10..*
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.X10..
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.X10..*

Modification of the cutter body needed for radii > 2,0 mm
* No axial support in the front row for radii > 1,6 mm

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
Cx-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

Please check availability in current price and stock-list
Torque keys, see page 710

For Combimaster Shanks, see Machining Navigator Tooling System

R217/220.69-10 – Insert selection

SMG		f_z		
		100%	30%	10%
P1	XOMX10T308TR-ME07 MP2501	0,080	0,085	0,13
P2	XOMX10T308TR-ME07 MP2501	0,080	0,090	0,13
P3	XOMX10T308TR-ME07 MP2501	0,075	0,085	0,13
P4	XOMX10T308TR-M09 MP2501	0,095	0,10	0,16
P5	XOMX10T308TR-M09 MP2501	0,095	0,10	0,16
P6	XOMX10T308TR-M09 MP2501	0,095	0,10	0,16
P7	XOMX10T308TR-M09 MP2501	0,095	0,10	0,16
P8	XOMX10T308TR-M09 MP2501	0,10	0,11	0,16
P11	XOMX10T308TR-M09 T350M	0,095	0,10	0,16
P12	XOMX10T308TR-M09 T350M	0,065	0,070	0,11
M1	XOEX10T308R-M06 MS2050	0,070	0,075	0,12
M2	XOEX10T308R-M06 MS2050	0,065	0,070	0,10
M3	XOEX10T308R-M06 MS2050	0,050	0,055	0,085
M4	XOMX10T308TR-ME07 MS2050	0,050	0,055	0,085
M5	XOMX10T304TR-ME07 MS2050	0,050	0,055	0,085
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	XOMX10T308TR-ME07 F40M	0,050	0,055	0,085
S2	XOMX10T308TR-ME07 F40M	0,050	0,055	0,085
S3	XOMX10T308TR-ME07 F40M	0,048	0,050	0,080
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 MP3000	0,065	0,070	0,11
H8	XOMX10T308TR-M09 MP3000	0,048	0,055	0,080
H11	XOMX10T308TR-M09 MP3000	0,065	0,070	0,11
H12	XOMX10T308TR-M09 MP3000	0,048	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

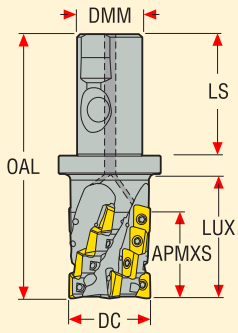
R217/220.69-10 – Cutting data v_c = (m/min)

	MP1501			MP2501			MP3000			T350M			F40M			MP2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	155	170	180	150	165	175	145	160	170	140	155	165	140	155	165	155	170	180
P2	155	170	180	145	165	175	145	160	170	140	155	165	135	155	165	150	170	180
P3	145	160	170	140	155	165	135	150	160	130	145	155	130	145	155	145	160	170
P4	140	155	165	130	150	160	130	145	155	125	140	150	120	140	150	135	155	165
P5	135	155	160	130	145	155	125	140	150	120	135	145	120	135	145	135	150	160
P6	145	160	170	135	150	160	130	150	160	125	145	155	125	140	150	140	155	165
P7	140	155	165	130	150	160	130	145	155	125	140	150	125	140	150	140	155	165
P8	135	150	160	130	145	155	125	140	150	120	135	145	120	135	145	135	150	160
P11	135	155	165	130	145	155	125	145	155	120	140	150	120	135	145	135	150	160
P12	110	130	135	105	120	130	100	115	125	95	110	120	95	110	120	110	125	135
M1	—	—	—	125	145	155	125	145	155	125	140	150	125	140	150	130	150	160
M2	—	—	—	115	130	140	115	130	140	110	130	135	110	130	140	120	135	145
M3	—	—	—	105	120	130	100	120	125	100	115	125	100	115	125	105	125	135
M4	—	—	—	90	105	115	85	105	110	85	100	110	85	100	110	90	110	120
M5	—	—	—	75	95	100	75	90	100	70	90	100	75	90	100	80	95	105
K1	140	155	165	135	150	160	130	145	155	125	140	150	125	140	150	140	155	165
K2	130	150	160	125	140	150	120	140	150	115	135	145	115	130	140	130	145	155
K3	120	140	150	115	130	140	110	130	140	105	125	135	105	120	130	120	135	145
K4	120	135	145	110	130	140	110	125	135	105	120	130	100	120	130	115	135	145
K5	90	105	115	85	100	110	80	95	105	75	90	100	75	90	100	90	105	115
K6	110	130	140	105	120	130	100	120	130	95	115	125	95	110	120	110	125	135
K7	105	120	130	100	115	125	95	110	120	90	105	115	90	105	115	105	120	130
N1	—	—	—	—	—	—	250	265	275	—	—	—	245	260	270	—	—	—
N2	—	—	—	—	—	—	195	210	220	—	—	—	190	205	215	—	—	—
N3	—	—	—	—	—	—	170	190	195	—	—	—	165	180	190	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	175	190	200	—	—	—
S1	—	—	—	—	—	—	44	55	65	41	55	65	42	55	65	50	65	75
S2	—	—	—	—	—	—	35	46	55	33	44	50	34	44	50	40	55	60
S3	—	—	—	—	—	—	31	40	47	29	38	45	29	39	45	35	46	55
S11	—	—	—	—	—	—	60	75	85	60	75	85	60	75	85	70	85	95
S12	—	—	—	—	—	—	42	55	65	40	55	60	40	55	60	48	65	75
S13	—	—	—	—	—	—	24	32	38	23	31	36	23	31	36	28	37	43
H5	47	60	70	38	50	60	37	48	55	36	48	55	35	46	55	41	55	60
H8	50	65	75	40	50	60	39	50	60	39	50	60	37	48	55	43	55	65
H11	60	75	85	48	65	75	47	60	70	46	60	70	45	60	70	50	65	75
H12	85	100	110	75	95	105	75	90	100	70	85	95	65	80	90	80	95	105

	MK1500			MK2050			MS2050			MS2500			MM4500			H15		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	150	165	175	—	—	—	160	175	185	125	145	150	—	—	—
P2	—	—	—	145	165	170	—	—	—	155	175	185	125	140	150	—	—	—
P3	—	—	—	135	155	165	—	—	—	150	165	175	115	130	140	—	—	—
P4	—	—	—	130	145	155	—	—	—	140	155	170	110	125	135	—	—	—
P5	—	—	—	125	145	155	—	—	—	140	155	165	105	120	130	—	—	—
P6	—	—	—	135	150	160	—	—	—	145	160	170	115	130	140	—	—	—
P7	—	—	—	130	150	155	130	145	155	140	160	170	110	125	135	—	—	—
P8	—	—	—	125	145	155	125	140	150	140	155	165	105	120	130	—	—	—
P11	—	—	—	130	145	155	125	140	150	140	155	165	110	125	135	—	—	—
P12	—	—	—	105	120	130	100	115	125	115	130	140	80	95	105	—	—	—
M1	—	—	—	—	—	—	130	145	155	135	155	165	115	130	140	—	—	—
M2	—	—	—	—	—	—	115	135	145	125	140	150	105	120	130	—	—	—
M3	—	—	—	—	—	—	105	120	130	115	130	140	90	105	115	—	—	—
M4	—	—	—	—	—	—	90	105	115	95	115	120	75	90	100	—	—	—
M5	—	—	—	—	—	—	75	95	105	85	100	110	65	80	90	—	—	—
K1	155	170	180	150	165	175	—	—	—	—	—	—	—	—	—	—	—	—
K2	145	165	175	145	160	170	—	—	—	—	—	—	—	—	—	—	—	—
K3	135	155	165	135	150	160	—	—	—	—	—	—	—	—	—	—	—	—
K4	135	150	160	130	145	155	—	—	—	—	—	—	—	—	—	—	—	—
K5	105	120	130	100	115	125	—	—	—	—	—	—	—	—	—	—	—	—
K6	125	145	150	120	140	150	—	—	—	—	—	—	—	—	—	—	—	—
K7	120	135	145	115	130	140	—	—	—	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	245	260	270
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	190	205	215
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	165	180	195
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	175	190	200
S1	—	—	—	—	—	—	45	60	70	55	70	80	24	31	36	—	—	—
S2	—	—	—	—	—	—	36	47	55	43	55	65	19	25	29	—	—	—
S3	—	—	—	—	—	—	32	41	48	38	50	60	17	22	25	—	—	—
S11	—	—	—	—	—	—	65	80	90	75	90	100	33	43	50	—	—	—
S12	—	—	—	—	—	—	44	55	65	55	70	80	30	40	47	—	—	—
S13	—	—	—	—	—	—	25	33	38	30	40	47	18	23	27	—	—	—
H5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Turbo 12 – R217.69-12





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 86–87
- For complete insert programme, see page(s) 663
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max	ZEFP		KG		Insert
		APMXS	DC	DMM	OAL	LUX	LS								
R217.69-2025.3S-022-12.2AN	Seco-Weldon	22,0	25,0	20,0	99,5	38,0	50,0	5,0	37,12	48,25	2	4	0,3	20800	XO.X12..*
R217.69-2525.3S-033-12.2AN	Seco-Weldon	33,0	25,0	25,0	115,5	43,0	56,0	5,0	37,12	48,25	2	6	0,4	20800	XO.X12..*
R217.69-2532.3S-033-12.2AN	Seco-Weldon	33,0	32,0	25,0	115,5	47,0	56,0	3,0	51,12	62,25	2	6	0,5	18400	XO.X12..
R217.69-2532.3S-033-12.3AN	Seco-Weldon	33,0	32,0	25,0	115,5	48,0	56,0	3,0	51,12	62,25	3	9	0,5	18400	XO.X12..*
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-033-12.3AN	Seco-Weldon	33,0	40,0	32,0	119,5	49,0	60,0	2,5	67,12	78,25	3	9	0,8	16400	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..

Modification of the cutter body needed for radii > 3,1 mm
* No axial support in the front row for radii > 1,6 mm

Spare Parts

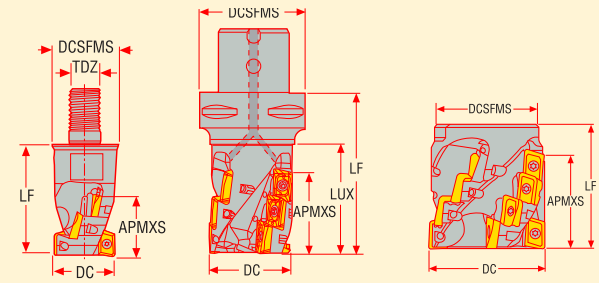
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.69-..Ø25	DOUBLE-T	C03507-T10P	H4B-T10P	3,0
R217.69-..Ø32	DOUBLE-T	C03508-T10P	H4B-T10P	3,0
R217.69-..Ø40-50	DOUBLE-T	C03509-T10P	H4B-T10P	3,0

Please check availability in current price and stock-list
Torque keys, see page 710

Turbo 12 – R217/220.69-12



- For insert selection and cutting data recommendations, see page(s) 86–87
- For complete insert programme, see page(s) 663
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max	ZEFP		KG		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	67,12	78,25	3	9	0,4	16400	XO.X12..
R217.69-2040.RE-044-12.4AN	Combimaster	44,0	40,0	36,5	–	M20	61,0	2,5	67,12	78,25	4	16	0,4	16400	XO.X12..*
C5-R217.69-032-044-12.3AN	Seco-Capto	44,0	32,0	50,0	–	–	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	–	–	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	–	–	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	–	–	103,0	2,5	67,12	78,25	3	18	1,2	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..
C6-R217.69-050-055-12.4AN	Seco-Capto	55,0	50,0	63,0	–	–	92,0	2,0	87,12	98,25	4	20	1,4	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..
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..
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..
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..*
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..
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..

Modification of the cutter body needed for radii > 3,1 mm
* No axial support in the front row for radii > 1,6 mm

Spare Parts

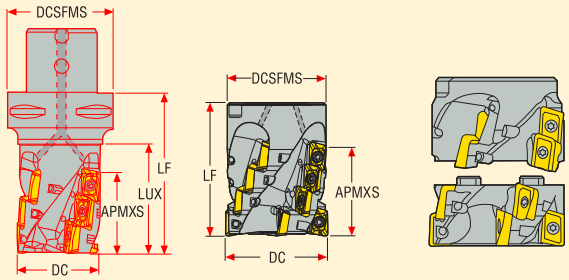
For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R217.69-..Ø25	DOUBLE-T	C03507-T10P	H4B-T10P	–	3,0
R217.69-../C5-R217.69-Ø32	DOUBLE-T	C03508-T10P	H4B-T10P	–	3,0
R217.69-../Cx-R217.69-Ø40-66	DOUBLE-T	C03509-T10P	H4B-T10P	–	3,0
R220.69-Ø50-033	DOUBLE-T	C03509-T10P	H4B-T10P	MC6S12X40	3,0
R220.69-Ø50/Ø63-033-044	DOUBLE-T	C03509-T10P	H4B-T10P	MC6S12X50	3,0
R220.69-Ø50/Ø63-044-055	DOUBLE-T	C03509-T10P	H4B-T10P	MC6S12X60	3,0
R220.69-Ø80	DOUBLE-T	C03509-T10P	H4B-T10P	MP6S16X80	3,0

Please check availability in current price and stock-list
Torque keys, see page 710

For Combimaster Shanks, see Machining Navigator Tooling System

Turbo 12 – R217/220.69-12





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 86–87
- For complete insert programme, see page(s) 663
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max	ZEFP		KG		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..
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..
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..

Modification of the cutter body needed for radii > 3,1 mm
* No axial support in the front row for radii > 1,6 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
C6-R217.69-063-12.5SAN	R220.69-RE063033-12.5AN	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

Please check availability in current price and stock-list
Torque keys, see page 710

R217/220.69-12 – Insert selection

SMG		f_z		
		100%	30%	10%
P1	XOMX120408TR-ME08 MP2501	0,095	0,11	0,16
P2	XOMX120408TR-ME08 MP2501	0,10	0,11	0,16
P3	XOMX120408TR-ME08 MP2501	0,095	0,10	0,16
P4	XOMX120408TR-M12 MP2501	0,14	0,15	0,22
P5	XOMX120408TR-M12 MP2501	0,13	0,15	0,22
P6	XOMX120408TR-M12 MP2501	0,13	0,15	0,22
P7	XOMX120408TR-M12 MP2501	0,13	0,15	0,22
P8	XOMX120408TR-M12 MP2501	0,14	0,15	0,24
P11	XOMX120408TR-M12 T350M	0,13	0,15	0,22
P12	XOMX120408TR-M12 T350M	0,090	0,10	0,15
M1	XOEX120408R-M07 MS2050	0,10	0,11	0,16
M2	XOEX120408R-M07 MS2050	0,090	0,10	0,15
M3	XOEX120408R-M07 MS2050	0,070	0,080	0,12
M4	XOMX120408TR-ME08 MS2050	0,065	0,070	0,10
M5	XOMX120408TR-ME08 MS2050	0,065	0,070	0,10
K1	XOMX120408TR-MD13 MK2050	0,16	0,17	0,26
K2	XOMX120408TR-MD13 MK2050	0,15	0,16	0,24
K3	XOMX120408TR-MD13 MK2050	0,15	0,16	0,24
K4	XOMX120408TR-MD13 MK2050	0,15	0,16	0,24
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	XOEX120408FR-E06 H15	0,11	0,12	0,18
N3	XOEX120408FR-E06 H15	0,11	0,12	0,18
N11	XOEX120408FR-E06 H15	0,11	0,12	0,18
S1	XOEX120408R-M07 F40M	0,065	0,070	0,10
S2	XOEX120408R-M07 F40M	0,065	0,070	0,10
S3	XOEX120408R-M07 F40M	0,060	0,065	0,095
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	0,10
H5	XOMX120408TR-MD13 MP3000	0,10	0,11	0,17
H8	XOMX120408TR-MD13 MP3000	0,075	0,085	0,13
H11	XOMX120412TR-MD13 MP3000	0,10	0,11	0,17
H12	XOMX120408TR-MD13 MP3000	0,075	0,085	0,13

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

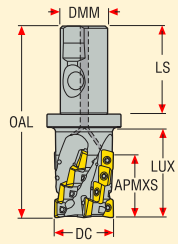
R217/220.69-12 – Cutting data v_c = (m/min)

	MP1501			MP2501			MP3000			T350M			F40M			MP2050		
SMG	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	150	170	180
P2	145	165	175	140	155	165	135	155	165	130	150	160	125	140	150	150	165	175
P3	140	155	165	130	150	160	130	145	155	125	140	150	115	130	140	140	160	170
P4	130	150	160	125	140	150	120	140	150	115	135	140	105	125	135	135	150	160
P5	130	145	155	120	140	150	120	135	145	115	130	140	105	120	135	130	150	160
P6	135	155	165	130	145	155	125	140	155	120	140	150	115	130	140	140	155	165
P7	135	150	160	125	145	155	125	140	150	120	135	145	110	125	135	135	150	160
P8	130	145	155	120	140	150	120	135	145	115	130	140	105	120	130	130	145	160
P11	130	150	160	125	140	150	120	135	150	115	135	145	105	125	135	135	150	160
P12	105	120	130	100	115	125	95	110	120	90	105	115	80	100	110	105	125	135
M1	—	—	—	120	135	150	120	135	145	115	130	145	110	125	140	130	145	155
M2	—	—	—	110	125	135	105	125	135	105	120	130	100	115	125	120	135	145
M3	—	—	—	95	115	120	95	110	120	90	110	120	85	105	115	105	120	130
M4	—	—	—	80	100	105	80	100	105	75	95	105	70	90	95	90	105	115
M5	—	—	—	70	85	95	70	85	95	65	85	90	60	75	85	80	95	105
K1	130	150	160	125	140	155	120	140	150	115	135	145	110	125	135	135	150	160
K2	125	140	155	120	135	145	115	130	145	110	125	140	105	120	130	130	145	155
K3	115	130	145	110	125	135	105	120	135	100	115	130	95	110	120	120	135	145
K4	115	130	140	105	120	135	100	120	130	100	115	125	90	105	115	115	130	140
K5	85	100	110	75	95	105	75	90	100	70	85	95	60	75	85	85	105	110
K6	105	120	135	100	115	125	95	110	125	90	105	115	80	100	110	110	125	135
K7	100	115	125	90	110	120	90	105	115	85	100	110	75	90	100	100	120	125
N1	—	—	—	—	—	—	240	260	270	—	—	—	230	245	255	—	—	—
N2	—	—	—	—	—	—	190	205	215	—	—	—	175	190	200	—	—	—
N3	—	—	—	—	—	—	165	180	190	—	—	—	150	165	175	—	—	—
N11	—	—	—	—	—	—	170	190	200	—	—	—	160	175	185	—	—	—
S1	—	—	—	—	—	—	39	55	60	37	49	55	34	45	50	48	65	75
S2	—	—	—	—	—	—	32	42	49	30	39	46	27	36	42	39	50	60
S3	—	—	—	—	—	—	28	37	43	26	34	40	24	31	37	34	44	50
S11	—	—	—	—	—	—	55	70	80	50	70	75	47	60	70	65	85	95
S12	—	—	—	—	—	—	38	50	60	36	47	55	33	43	50	47	60	70
S13	—	—	—	—	—	—	22	30	34	21	28	32	19	25	29	27	35	42
H5	42	55	65	34	45	55	34	44	55	33	43	50	28	37	44	40	50	60
H8	45	60	70	36	48	55	36	48	55	35	46	55	30	40	47	42	55	65
H11	55	70	80	43	55	65	43	55	65	42	55	65	36	47	55	50	65	75
H12	80	95	105	70	90	95	70	85	95	65	80	90	55	70	80	80	95	105

	MK1500			MK2050			MS2500			MS2050			H15		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	160	175	185	170	185	195	—	—	—	—	—	—
P2	—	—	—	155	175	185	165	185	195	—	—	—	—	—	—
P3	—	—	—	145	165	175	155	175	185	—	—	—	—	—	—
P4	—	—	—	135	155	165	150	165	180	—	—	—	—	—	—
P5	—	—	—	135	155	165	145	165	175	—	—	—	—	—	—
P6	—	—	—	145	160	175	155	170	185	—	—	—	—	—	—
P7	—	—	—	140	160	170	150	170	180	135	150	160	—	—	—
P8	—	—	—	135	155	165	145	165	175	130	145	155	—	—	—
P11	—	—	—	140	155	165	150	165	175	130	150	160	—	—	—
P12	—	—	—	110	125	140	120	135	150	100	120	130	—	—	—
M1	—	—	—	—	—	—	145	160	175	135	150	165	—	—	—
M2	—	—	—	—	—	—	130	150	160	120	140	150	—	—	—
M3	—	—	—	—	—	—	115	135	145	105	125	135	—	—	—
M4	—	—	—	—	—	—	100	120	130	90	110	120	—	—	—
M5	—	—	—	—	—	—	85	105	115	75	95	105	—	—	—
K1	155	175	185	160	180	190	—	—	—	—	—	—	—	—	—
K2	150	165	180	155	170	180	—	—	—	—	—	—	—	—	—
K3	135	155	170	140	160	170	—	—	—	—	—	—	—	—	—
K4	135	150	165	140	155	170	—	—	—	—	—	—	—	—	—
K5	100	120	130	105	125	135	—	—	—	—	—	—	—	—	—
K6	125	145	155	130	150	160	—	—	—	—	—	—	—	—	—
K7	120	135	150	120	140	150	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—	260	280	290
N2	—	—	—	—	—	—	—	—	—	—	—	—	200	220	230
N3	—	—	—	—	—	—	—	—	—	—	—	—	175	195	205
N11	—	—	—	—	—	—	—	—	—	—	—	—	185	200	215
S1	—	—	—	—	—	—	55	70	80	44	60	70	—	—	—
S2	—	—	—	—	—	—	43	55	65	35	46	55	—	—	—
S3	—	—	—	—	—	—	38	49	60	31	41	48	—	—	—
S11	—	—	—	—	—	—	75	90	105	60	80	90	—	—	—
S12	—	—	—	—	—	—	50	70	80	43	55	65	—	—	—
S13	—	—	—	—	—	—	30	39	47	25	32	38	—	—	—
H5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Turbo 18 – R217.69-18





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 91–92
- For complete insert programme, see page(s) 664
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max	ZEFP		KG		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..

Modification of the cutter body needed for radii > 3,1 mm

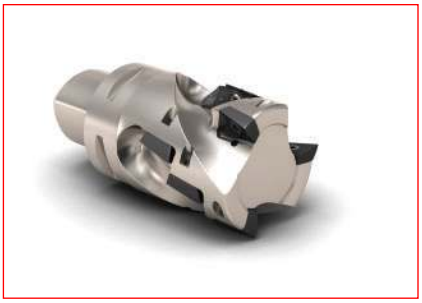
Spare Parts

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

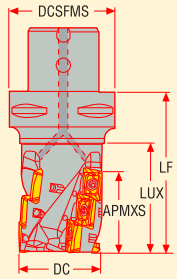
Please check availability in current price and stock-list

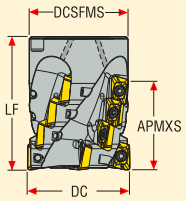
Torque keys, see page 710

Turbo 18 – R217/220.69-18



- For insert selection and cutting data recommendations, see page(s) 91–92
- For complete insert programme, see page(s) 664
- For ISO attribute explanation, see page 15





KAPRS 90°

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max	ZEFP		KG		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..
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..
R220.69-00063-047-18.4AN	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..
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..

Modification of the cutter body needed for radii > 3,1 mm

Spare Parts

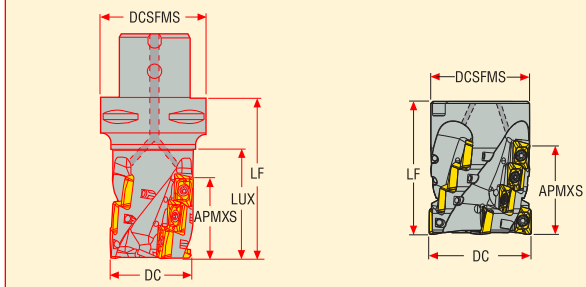
For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
C5-C6-R217.69-..	DOUBLE-T	C04510-T20P	H6B-T20P	–	5,0
R220.69-00063	DOUBLE-T	C04510-T20P	H6B-T20P	MC6S12X60	5,0
R220.69-00080	DOUBLE-T	C04510-T20P	H6B-T20P	MC6S16X70	5,0
R220.69-00100	DOUBLE-T	C04510-T20P	H6B-T20PL	MC6S20X70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

Please check availability in current price and stock-list

Torque keys, see page 710

Turbo 18 – R217/220.69-18





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 91–92
- For complete insert programme, see page(s) 664
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max	ZEFP		KG		Insert
		APMXS	DC	DCSFMS	DCB	LF	LUX								
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..
R220.69-00063-077-18.4SAN	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..
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..

Modification of the cutter 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)
C8-R217.69-080	R220.69-RE080031-18.5AN	DOUBLE-T	C04510-T20P	H6B-T20P	MC6S16X40	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
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 710

R217/220.69-18 – Insert selection

SMG		f_z		
		100%	30%	10%
P1	XOMX180608TR-ME13 MP2501	0,15	0,16	0,24
P2	XOMX180608TR-ME13 MP2501	0,15	0,16	0,25
P3	XOMX180608TR-ME13 MP2501	0,14	0,15	0,24
P4	XOMX180608TR-M14 MP2501	0,15	0,16	0,25
P5	XOMX180608TR-M14 MP2501	0,15	0,16	0,24
P6	XOMX180608TR-M14 MP2501	0,14	0,16	0,24
P7	XOMX180608TR-M14 MP2501	0,14	0,16	0,24
P8	XOMX180608TR-M14 MP2501	0,15	0,17	0,25
P11	XOMX180608TR-M14 T350M	0,14	0,16	0,24
P12	XOMX180608TR-M14 T350M	0,10	0,11	0,17
M1	XOMX180608R-M10 MS2050	0,11	0,12	0,19
M2	XOMX180608R-M10 MS2050	0,10	0,11	0,17
M3	XOMX180608R-M10 MS2050	0,085	0,090	0,14
M4	XOMX180608TR-M14 T350M	0,10	0,11	0,17
M5	XOMX180608TR-M14 T350M	0,10	0,11	0,17
K1	XOMX180608TR-MD15 MK2050	0,17	0,19	0,28
K2	XOMX180608TR-MD15 MK2050	0,16	0,17	0,26
K3	XOMX180608TR-MD15 MK2050	0,16	0,17	0,26
K4	XOMX180608TR-MD15 MK2050	0,16	0,17	0,26
K5	XOMX180608TR-MD15 MK2050	0,14	0,15	0,24
K6	XOMX180608TR-MD15 MK2050	0,16	0,17	0,26
K7	XOMX180608TR-MD15 MK2050	0,14	0,15	0,24
N1	XOEX180608FR-E10 H25	0,15	0,16	0,24
N2	XOEX180608FR-E10 H25	0,15	0,16	0,24
N3	XOEX180608FR-E10 H25	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 MP3000	0,11	0,12	0,18
H8	XOMX180608TR-MD15 MP3000	0,080	0,090	0,14
H11	XOMX180608TR-MD15 MP3000	0,11	0,12	0,18
H12	XOMX180608TR-MD15 MP3000	0,080	0,090	0,14

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)

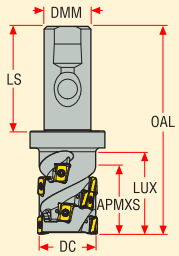
	MP1501			MP2501			MP3000			T350M			F30M			F40M		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	150	165	175	140	160	170	140	155	165	135	150	160	130	145	155	125	140	150
P2	145	165	175	140	155	170	135	155	165	130	150	160	125	145	155	125	140	150
P3	140	155	165	130	150	160	130	145	155	125	140	150	120	135	145	115	130	145
P4	130	150	160	125	140	150	120	140	150	115	135	145	110	130	140	110	125	135
P5	130	145	155	120	140	150	120	135	145	115	130	140	110	125	135	105	120	135
P6	135	155	165	130	145	155	125	145	155	120	140	150	115	130	145	115	130	140
P7	135	150	160	125	140	155	125	140	150	120	135	145	110	130	140	110	125	135
P8	130	145	155	120	140	150	120	135	145	115	130	140	110	125	135	105	120	130
P11	130	150	160	125	140	150	120	135	150	115	130	145	110	125	135	110	125	135
P12	105	120	130	100	115	125	95	110	120	90	105	115	85	100	110	80	100	110
M1	—	—	—	120	140	150	120	135	145	115	135	145	115	130	140	110	130	140
M2	—	—	—	110	125	135	105	125	135	105	120	130	100	120	130	100	115	125
M3	—	—	—	95	115	125	95	110	125	90	110	120	90	105	115	85	105	115
M4	—	—	—	80	100	110	80	100	105	80	95	105	75	90	100	70	90	100
M5	—	—	—	70	90	95	70	85	95	65	85	95	65	80	90	60	80	85
K1	135	150	160	125	145	155	125	140	150	120	135	145	110	130	140	110	125	135
K2	125	145	155	120	135	145	115	130	145	110	125	140	105	120	135	100	120	130
K3	115	135	145	110	125	135	105	120	135	100	115	130	95	110	125	90	110	120
K4	115	130	140	105	125	135	100	120	130	95	115	125	90	110	120	90	105	115
K5	85	100	110	75	95	105	75	90	100	70	85	95	65	80	90	60	75	85
K6	105	125	135	100	115	125	95	110	125	90	105	120	85	100	110	80	100	110
K7	100	115	125	90	110	120	90	105	115	85	100	110	80	95	105	75	90	100
N1	—	—	—	—	—	—	245	260	270	—	—	—	230	250	260	230	245	255
N2	—	—	—	—	—	—	190	205	215	—	—	—	180	195	205	175	190	200
N3	—	—	—	—	—	—	165	180	190	—	—	—	155	170	180	150	165	175
N11	—	—	—	—	—	—	—	—	—	—	—	—	160	180	190	160	175	185
S1	—	—	—	—	—	—	40	50	60	38	50	60	36	47	55	34	45	55
S2	—	—	—	—	—	—	32	42	50	30	40	47	29	38	45	28	36	43
S3	—	—	—	—	—	—	28	37	43	26	35	41	25	34	39	24	32	37
S11	—	—	—	—	—	—	55	70	80	50	70	80	49	65	75	47	60	75
S12	—	—	—	—	—	—	38	50	60	36	47	55	28	38	45	33	43	50
S13	—	—	—	—	—	—	22	29	35	21	28	33	17	22	26	19	25	30
H5	43	55	65	34	45	55	34	44	50	33	43	50	30	40	47	29	38	45
H8	46	60	70	37	48	55	36	47	55	36	46	55	32	42	50	31	40	48
H11	55	70	80	44	60	70	43	55	65	42	55	65	38	50	60	37	48	55
H12	80	95	105	70	90	100	70	85	95	65	80	90	60	75	85	55	70	80

	MK1500			MK2050			MS2050			H25		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	140	155	165	—	—	—	—	—	—
P2	—	—	—	140	155	165	—	—	—	—	—	—
P3	—	—	—	130	145	155	—	—	—	—	—	—
P4	—	—	—	120	140	150	—	—	—	—	—	—
P5	—	—	—	120	135	145	—	—	—	—	—	—
P6	—	—	—	130	145	155	—	—	—	—	—	—
P7	—	—	—	125	140	150	125	140	150	—	—	—
P8	—	—	—	120	135	145	120	135	145	—	—	—
P11	—	—	—	120	140	150	120	140	150	—	—	—
P12	—	—	—	95	115	125	95	110	120	—	—	—
M1	—	—	—	—	—	—	125	140	150	—	—	—
M2	—	—	—	—	—	—	115	130	140	—	—	—
M3	—	—	—	—	—	—	100	115	125	—	—	—
M4	—	—	—	—	—	—	85	100	110	—	—	—
M5	—	—	—	—	—	—	75	90	100	—	—	—
K1	145	160	175	140	160	170	—	—	—	—	—	—
K2	140	155	165	135	150	165	—	—	—	—	—	—
K3	130	145	155	125	140	155	—	—	—	—	—	—
K4	125	145	155	120	140	150	—	—	—	—	—	—
K5	95	115	125	95	110	120	—	—	—	—	—	—
K6	120	135	145	115	130	140	—	—	—	—	—	—
K7	110	130	140	110	125	135	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	235	255	265
N2	—	—	—	—	—	—	—	—	—	185	200	210
N3	—	—	—	—	—	—	—	—	—	160	175	185
N11	—	—	—	—	—	—	—	—	—	165	185	195
S1	—	—	—	—	—	—	42	55	65	—	—	—
S2	—	—	—	—	—	—	34	45	55	—	—	—
S3	—	—	—	—	—	—	30	39	46	—	—	—
S11	—	—	—	—	—	—	60	75	85	—	—	—
S12	—	—	—	—	—	—	41	55	65	—	—	—
S13	—	—	—	—	—	—	24	31	37	—	—	—
H5	—	—	—	—	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—	—	—	—	—
H11	—	—	—	—	—	—	—	—	—	—	—	—
H12	—	—	—	—	—	—	—	—	—	—	—	—

R217.94-08



- For insert selection and cutting data recommendations, see page(s) 95-96
- For complete insert programme, see page(s) 628
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm						ZEFP		KG		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..
R217.94-2025.3S-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-036-08.3A	Seco-Weldon	36,0	40,0	32,0	115,0	45,0	60,0	3	15	0,8	16400	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..

Spare Parts

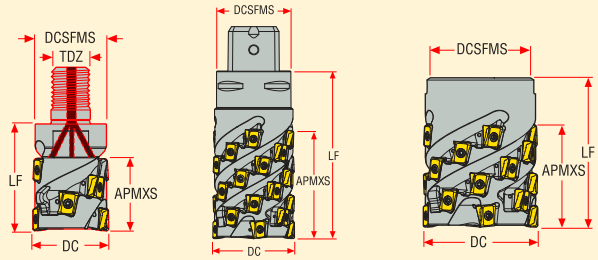
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.94-..	DOUBLE-T	C02708-T08P	H4B-T08P	1,2

Please check availability in current price and stock-list

Torque keys, see page 710

R217/220.94-08





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 95-96
- For complete insert programme, see page(s) 628
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							ZEFP		KG		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	43,0	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..
C5-R217.94-054-064-08.5A	Seco-Capto	64,0	54,0	50,0	–	–	98,0	78,0	5	45	1,4	14800	LOEX08..
R220.94-00050-043-08.4A	Arbor	43,0	50,0	48,0	27,0	–	65,0	–	4	24	0,6	14800	LOEX08..
R220.94-00050-057-08.5A	Arbor	57,0	50,0	48,0	27,0	–	70,0	–	5	40	0,6	14800	LOEX08..

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

Please check availability in current price and stock-list

Torque keys, see page 710

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 MS2050	0,085	0,090	0,14
P12	LOEX080408TR-M08 MS2050	0,055	0,060	0,095
M1	LOEX080408TR-M08 MS2050	0,090	0,10	0,15
M2	LOEX080408TR-M08 MS2050	0,085	0,090	0,14
M3	LOEX080408TR-M08 MS2050	0,065	0,075	0,11
M4	LOEX080408TR-M08 MS2050	0,060	0,065	0,10
M5	LOEX080408TR-M08 MS2050	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
N1	LOEX080408TR-M08 F40M	0,12	0,13	0,20
N2	LOEX080408TR-M08 F40M	0,12	0,13	0,20
N3	LOEX080408TR-M08 F40M	0,12	0,13	0,20
N11	LOEX080408TR-M08 F40M	0,12	0,13	0,20
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	0,090
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
H5	LOEX080408TR-M08 MP3000	0,055	0,060	0,095
H8	LOEX080408TR-M08 MP3000	0,044	0,048	0,070
H11	LOEX080408TR-M08 MP3000	0,055	0,060	0,095
H12	LOEX080408TR-M08 MP3000	0,044	0,048	0,070

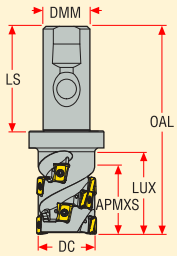
SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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

	F40M			MP3000			MK2050			MS2050			MP2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	150	170	180	165	185	195	165	185	195	—	—	—	165	185	195
P2	150	165	180	165	180	195	165	180	195	—	—	—	165	180	195
P3	140	160	170	155	170	185	155	175	185	—	—	—	155	170	185
P4	130	150	160	145	165	175	145	165	175	—	—	—	145	165	175
P5	130	145	160	145	160	175	145	160	175	—	—	—	145	160	175
P6	135	155	165	150	170	180	150	170	180	—	—	—	150	170	180
P7	130	150	160	145	165	175	145	165	175	140	155	170	145	165	175
P8	130	145	155	145	160	170	145	160	170	135	150	165	145	160	175
P11	130	150	160	145	165	175	145	165	175	135	155	165	145	165	175
P12	100	120	130	115	135	145	115	135	145	110	125	135	115	135	145
M1	135	150	165	145	160	175	—	—	—	140	160	170	140	160	170
M2	120	140	150	130	150	160	—	—	—	130	145	155	130	150	160
M3	110	125	135	120	135	145	—	—	—	115	130	145	115	135	145
M4	90	110	120	100	120	130	—	—	—	95	115	125	100	115	125
M5	80	95	105	90	105	115	—	—	—	85	100	115	85	105	115
K1	135	150	165	150	165	180	170	185	200	—	—	—	150	165	180
K2	125	145	155	140	160	170	160	180	190	—	—	—	140	160	170
K3	115	130	145	130	145	160	150	170	180	—	—	—	130	150	160
K4	110	130	140	125	145	155	145	165	175	—	—	—	125	145	155
K5	80	95	105	95	110	120	115	130	140	—	—	—	95	110	125
K6	100	120	130	115	135	145	140	155	165	—	—	—	115	135	145
K7	95	115	125	110	130	140	130	150	160	—	—	—	110	130	140
N1	265	285	295	—	—	—	—	—	—	—	—	—	—	—	—
N2	205	225	235	—	—	—	—	—	—	—	—	—	—	—	—
N3	180	195	210	—	—	—	—	—	—	—	—	—	—	—	—
N11	185	205	215	—	—	—	—	—	—	—	—	—	—	—	—
S1	44	60	70	50	65	75	—	—	—	49	65	75	50	70	80
S2	36	47	55	41	55	65	—	—	—	39	50	60	42	55	65
S3	31	41	48	36	48	55	—	—	—	34	45	55	37	49	55
S11	60	80	90	70	90	100	—	—	—	70	85	95	75	90	100
S12	43	55	65	50	65	75	—	—	—	48	60	75	50	65	75
S13	25	33	38	29	38	44	—	—	—	27	36	42	29	39	45
H5	38	49	55	44	60	65	—	—	—	—	—	—	42	55	65
H8	39	50	60	46	60	70	—	—	—	—	—	—	45	60	70
H11	48	65	75	55	75	85	—	—	—	—	—	—	55	70	80
H12	70	90	100	85	105	115	—	—	—	—	—	—	85	105	115

Helical T4 – R217/220.94-12





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 100-101
- For complete insert programme, see page(s) 628
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							ZEFP		KG		Insert
		APMXS	DC	DMM	OAL	LUX	OAL	LS					
R217.94-3250.3S-035-12.3A	Seco-Weldon	35,0	50,0	32,0	120,0	51,0	120,0	60,0	3	9	1,0	9900	LOEX12..
R217.94-3250.3S-058-12.4A	Seco-Weldon	58,0	50,0	32,0	135,0	66,0	135,0	60,0	4	20	1,1	9900	LOEX12..

Spare Parts

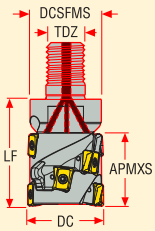
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.94-..	DOUBLE-T	C04012B-T15P	H4B-T15P	3,5

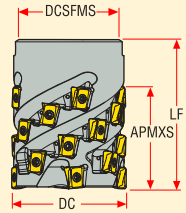
Please check availability in current price and stock-list

Torque keys, see page 710

Helical T4 – R217/220.94-12







KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 100-101
- For complete insert programme, see page(s) 628
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm					ZEFP		KG		Insert
		APMXS	DC	DCSFMS	TDZ	LF					
R217.94-2040.RE-035-12.2A	Combimaster	35,0	40	37	M20	50	2	6	0,4	11000	LOEX12..
R220.94-00050-046-12.3A	Arbor	46,0	50	46	–	70	3	12	0,5	9900	LOEX12..
R220.94-00050-046-12.4A	Arbor	46,0	50	46	–	65	4	16	0,5	9900	LOEX12..
R220.94-00050-058-12.4A	Arbor	58,0	50	46	–	80	4	20	0,6	9900	LOEX12..
R220.94-00063-046-12.4A	Arbor	46,0	63	60	–	65	4	16	0,9	8800	LOEX12..
R220.94-00063-058-12.5A	Arbor	58,0	63	60	–	75	5	25	1,1	8800	LOEX12..
R220.94-00063-081-12.4A	Arbor	81,0	63	60	–	93	4	28	1,3	8800	LOEX12..
R220.94-00080-069-12.5A	Arbor	69,0	80	77	–	90	5	30	2,2	7800	LOEX12..
R220.94-00100-081-12.6A	Arbor	81,0	100	97	–	93	6	42	3,7	7000	LOEX12..

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R217.94-../C5-C6-R217.94-..	DOUBLE-T	C04012B-T15P	H4B-T15P	–	3,5
R220.94-..Ø50-63	DOUBLE-T	C04012B-T15P	H4B-T15P	MC6S12X60	3,5
R220.94-..Ø50-63-058	DOUBLE-T	C04012B-T15P	H4B-T15P	MC6S12X70	3,5
R220.94-..Ø63-081	DOUBLE-T	C04012B-T15P	H4B-T15P	MP6S12X80	3,5
R220.94-..Ø80	DOUBLE-T	C04012B-T15P	H4B-T15P	MP6S16X80	3,5
R220.94-..Ø100	DOUBLE-T	C04012B-T15P	H4B-T15P	MP6S20X80	3,5

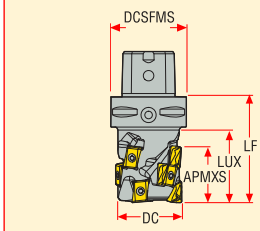
Please check availability in current price and stock-list

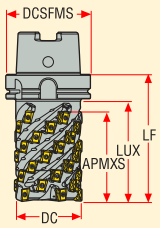
Torque keys, see page 710

Helical T4 – R217/220.94-12



- For insert selection and cutting data recommendations, see page(s) 100-101
- For complete insert programme, see page(s) 628
- For ISO attribute explanation, see page 15





KAPRS 90°

Designation	Type of mounting	Dimensions in mm					ZEFP		KG		Insert
		APMXS	DC	DCSFMS	LUX	LF					
C5-R217.94-044-035-12.3A	Seco-Capto	35,0	44,0	50,0	48,0	70,0	3	9	0,8	10600	LOEX12..
C5-R217.94-044-058-12.3A	Seco-Capto	58,0	44,0	50,0	73,0	95,0	3	15	0,9	10600	LOEX12..
C6-R217.94-050-081-12.4SA	Seco-Capto	81,0	50,0	63,0	91,0	115,0	4	28	1,4	10000	LOEX12..
C5-R217.94-054-069-12.4A	Seco-Capto	69,0	54,0	50,0	84,1	105,0	4	24	1,3	9700	LOEX12..
C6-R217.94-063-092-12.4SA	Seco-Capto	92,0	63,0	63,0	101,5	125,0	4	32	2,3	9000	LOEX12..
C6-R217.94-066-081-12.5A	Seco-Capto	81,0	66,0	63,0	101,7	115,0	5	35	2,3	8700	LOEX12..
R217.94-HSK100A-080-104-12.5SA	HSK	104,0	80,0	100,0	118,5	150,0	5	45	5,4	7800	LOEX12..

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	C04012B-T15P	H4B-T15P	–	3,5
C6-R217.94-..050	R220.94-RE050023-12.4A	DOUBLE-T	C04012B-T15P	H4B-T15P	220.17-692M	3,5
C6-R217.94-..063	R220.94-RE063036-12.4A	DOUBLE-T	C04012B-T15P	H4B-T15P	MC6S12X35	3,5
R220.94-HSK100	R220.94-RE080036-12.5A	DOUBLE-T	C04012B-T15P	H4B-T15P	MC6S16X40	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

R217/220.94-12 – Insert selection

SMG		f_z		
		100%	30%	10%
P1	LOEX120708R-M09 MP2501	0,10	0,11	0,17
P2	LOEX120708R-M09 MP2501	0,10	0,11	0,17
P3	LOEX120708R-M09 MP2501	0,095	0,11	0,16
P4	LOEX120708TR-M12 MP2501	0,13	0,14	0,22
P5	LOEX120708TR-M12 MP2501	0,12	0,14	0,20
P6	LOEX120708TR-M12 MP2501	0,12	0,13	0,20
P7	LOEX120708TR-M12 MP2501	0,12	0,13	0,20
P8	LOEX120708TR-M12 MP2501	0,13	0,14	0,22
P11	LOEX120708TR-M12 T350M	0,13	0,15	0,22
P12	LOEX120708TR-M12 T350M	0,090	0,10	0,15
M1	LOEX120708R-M09 MS2050	0,11	0,12	0,19
M2	LOEX120708R-M09 MS2050	0,10	0,11	0,17
M3	LOEX120708R-M09 MS2050	0,085	0,090	0,14
M4	LOEX120708TR-M12 MS2050	0,095	0,10	0,16
M5	LOEX120708TR-M12 MS2050	0,095	0,10	0,16
K1	LOEX120708TR-MD13 MK2050	0,16	0,17	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
N1	LOEX120708R-M09 F40M	0,15	0,16	0,24
N2	LOEX120708R-M09 F40M	0,15	0,16	0,24
N3	LOEX120708R-M09 F40M	0,15	0,16	0,24
N11	LOEX120708R-M09 F40M	0,15	0,16	0,24
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	LOEX120716R-M09 MS2050	0,085	0,090	0,14
S12	LOEX120708R-M09 MS2050	0,085	0,090	0,14
S13	LOEX120708R-M09 MS2050	0,075	0,080	0,12

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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

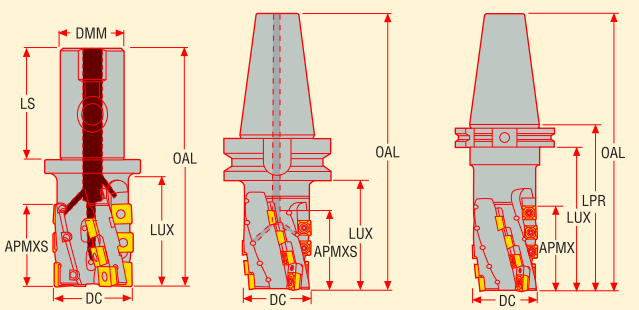
	MP1501			MP2501			MP3000			T350M			F40M			MP2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	165	180	195	160	175	190	155	175	185	150	165	180	140	160	170	155	175	185
P2	160	180	190	155	175	185	150	170	180	145	165	175	135	155	165	155	175	185
P3	150	170	180	150	165	180	145	160	170	135	155	165	130	145	160	145	165	175
P4	145	165	175	140	160	170	135	155	165	130	150	160	120	140	150	135	155	165
P5	140	160	170	140	155	170	130	150	165	125	145	155	115	135	150	135	155	165
P6	150	165	180	145	165	175	140	160	170	135	155	165	125	145	155	145	160	175
P7	145	165	175	140	160	170	135	155	165	130	150	160	120	140	150	140	155	170
P8	140	160	170	135	155	165	130	150	160	125	145	155	115	135	145	135	155	165
P11	145	160	175	140	160	170	135	150	165	130	145	160	120	135	150	135	155	165
P12	115	135	145	110	130	140	105	125	135	100	120	130	90	110	120	110	125	140
M1	—	—	—	135	155	165	130	150	160	130	150	160	120	140	150	130	150	160
M2	—	—	—	125	140	155	120	140	150	115	135	145	110	130	140	120	140	150
M3	—	—	—	110	125	140	105	125	135	100	120	130	95	115	125	105	125	135
M4	—	—	—	90	110	120	90	110	120	85	105	115	80	100	110	90	110	120
M5	—	—	—	80	100	110	75	95	105	75	95	105	70	85	95	75	95	105
K1	145	165	175	140	160	170	135	155	165	130	150	160	120	140	150	140	160	170
K2	135	155	170	135	150	165	130	145	160	120	140	155	115	130	145	130	150	160
K3	125	145	155	125	140	155	115	135	150	110	130	140	100	120	135	120	140	150
K4	125	140	155	120	140	150	115	135	145	110	125	140	100	120	130	115	135	145
K5	90	110	120	85	105	115	80	100	110	75	95	105	65	85	95	85	105	115
K6	115	135	145	110	130	140	105	125	135	100	120	130	90	110	120	110	125	140
K7	110	125	140	105	120	135	100	115	130	95	110	125	85	100	115	100	120	130
N1	—	—	—	—	—	—	—	—	—	—	—	—	255	275	285	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—	195	215	225	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—	165	185	195	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	175	195	205	—	—	—
S1	—	—	—	47	65	75	44	60	70	42	55	65	38	50	60	46	60	70
S2	—	—	—	38	50	60	35	47	55	34	45	50	31	41	47	37	49	55
S3	—	—	—	34	44	50	31	41	48	29	39	46	27	35	41	32	43	50
S11	—	—	—	65	85	95	60	80	90	60	75	85	50	70	80	65	80	95
S12	—	—	—	46	60	70	42	55	65	40	55	65	36	48	55	44	60	70
S13	—	—	—	27	35	41	25	33	38	23	31	36	21	28	33	26	34	40
H5	46	60	70	39	50	60	38	49	60	37	49	60	32	42	50	38	49	60
H8	49	65	75	42	55	65	40	55	60	39	50	60	34	45	55	40	55	60
H11	60	75	90	50	65	75	48	65	75	47	60	75	41	55	65	48	65	75
H12	85	105	115	80	100	110	75	95	105	70	90	100	60	80	90	80	95	105

	MK1500			MK2050			MS2050			MS2500			MM4500		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	150	170	185	—	—	—	165	185	195	130	150	160
P2	—	—	—	150	170	180	—	—	—	160	180	190	130	150	160
P3	—	—	—	140	160	170	—	—	—	155	175	185	120	140	150
P4	—	—	—	135	150	165	—	—	—	145	165	175	110	130	140
P5	—	—	—	130	150	160	—	—	—	145	160	175	110	130	140
P6	—	—	—	140	155	170	—	—	—	150	170	180	115	135	145
P7	—	—	—	135	155	165	135	150	165	150	165	180	115	130	145
P8	—	—	—	130	150	160	130	145	160	140	160	170	110	125	140
P11	—	—	—	135	150	165	130	150	160	145	165	175	110	130	140
P12	—	—	—	105	125	135	105	120	130	115	135	145	85	100	110
M1	—	—	—	—	—	—	135	155	165	140	160	170	120	140	150
M2	—	—	—	—	—	—	125	140	150	130	145	160	105	125	135
M3	—	—	—	—	—	—	110	125	135	115	135	145	90	110	120
M4	—	—	—	—	—	—	90	110	120	95	115	125	75	95	105
M5	—	—	—	—	—	—	80	95	110	85	105	115	65	80	90
K1	160	180	190	155	175	185	—	—	—	—	—	—	—	—	—
K2	150	170	180	145	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	145	160	125	145	155	—	—	—	—	—	—	—	—	—
K7	120	140	150	120	135	150	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	—	—	—	45	60	70	50	70	80	23	30	36
S2	—	—	—	—	—	—	36	48	55	41	55	65	19	25	29
S3	—	—	—	—	—	—	32	42	50	37	48	55	16	21	25
S11	—	—	—	—	—	—	65	80	90	70	90	100	32	43	50
S12	—	—	—	—	—	—	43	60	70	50	65	75	30	39	46
S13	—	—	—	—	—	—	25	33	39	29	38	45	17	23	27
H5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

R215.59-12.4 – Half effective

Slotting and contouring





- For insert selection and cutting data recommendations, see page(s) 108-109
- For complete insert programme, see page(s) 624, 639
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							ZEFP		KG		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*

*All corner radii can be used in front row insert, modification of the body needed for radii > = 3,0 mm

Spare Parts

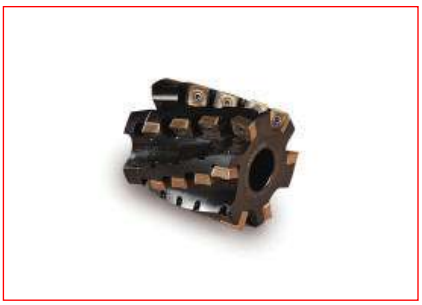
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R215.59-12.4	DOUBLE-T	C45011-T20P	H6B-T20P	5,0

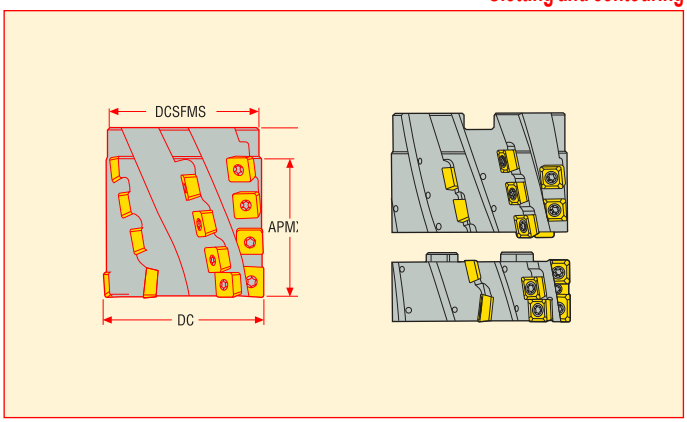
Please check availability in current price and stock-list

Torque keys, see page 710

R220.59-12.4 – Half effective

Slotting and contouring





- For insert selection and cutting data recommendations, see page(s) 108-109
- For complete insert programme, see page(s) 624, 639
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm				ZEFP		KG		No. of inserts	
		APMXS	DC	DCSFMS	DCB					SCE.	ACE.
R220.59-00063.059-12.4	Arbor	59,0	63,0	62,0	27,0	2	14	0,9	7400	12*	2*
R220.59-00080.068-12.4	Arbor	68,0	80,0	77,0	32,0	2	16	1,5	6500	14*	2*
R220.59-00080.068-12.6	Arbor	68,0	80,0	77,0	32,0	3	24	2,2	6500	21*	3*
R220.59-00100077-12.8S	Arbor	77,0	100,0	90,0	40,0	4	36	3,9	5800	32*	4*
R220.59-00100077-12.8SR6	Arbor	77,0	100,0	90,0	40,0	4	32	4,5	5800	32*	4*

*All corner radii can be used in front row insert, modification of the body needed for radii > = 3,0 mm

Spare Parts

For cutter	Replaceable end	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.59-00063	–	DOUBLE-T	C45011-T20P	H6B-T20P	MC6S12X50	5,0
R220.59-00080	–	DOUBLE-T	C45011-T20P	H6B-T20P	MC6S16X70	5,0
R220.59-00100..S	R220.59-RE100034-12.8	DOUBLE-T	C45011-T20P	H6B-T20PL	215.59-693S	5,0
R220.59-00100..SR	R220.59-RE100034-12.8R6	DOUBLE-T	C45011-T20P	H6B-T20PL	215.59-693S	5,0

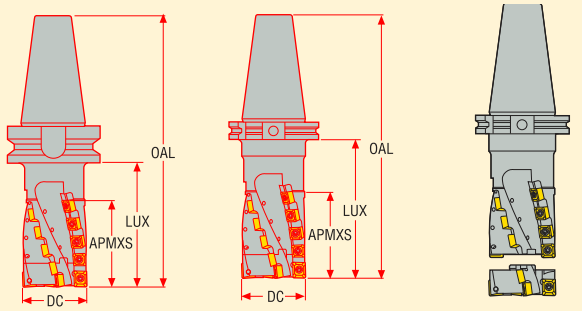
Please check availability in current price and stock-list

Torque keys, see page 710

R215.59-12.4 – Half effective



Contouring only – Long edge



- For insert selection and cutting data recommendations, see page(s) 108-109
- For complete insert programme, see page(s) 624, 639
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm					ZEFP		KG		No. of inserts		
		APMXS	DC	OAL	LUX	LPR					SCE.	ACE.	SCEX
R215.59-BT50.080.095-12.4S	BT 50	95,0	80,0	275,0	135,0	173,0	2	22	6,6	6500	20*	2*	2*
R215.59-CV50080095-12.6S	CV50-DIN	95,0	80,0	252,0	131,0	150,0	3	33	5,9	6500	30*	3*	3*

*All corner radii can be used in front row insert, modification of the body needed for radii > = 3,0 mm

Spare Parts

For cutter	Replaceable end	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.59-080-12.4S	R220.59-RE080034-12.4	DOUBLE-T	C45011-T20P	H6B-T20P	215.59-692S	5,0
R220.59-080-12.6S	R220.59-RE080034-12.6	DOUBLE-T	C45011-T20P	H6B-T20P	215.59-692S	5,0

Please check availability in current price and stock-list

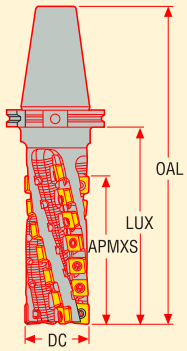
Torque keys, see page 710

R215.59-12.4 – Half effective



- For insert selection and cutting data recommendations, see page(s) 108-109
- For complete insert programme, see page(s) 624, 639
- For ISO attribute explanation, see page 15

Contouring only – Extra long edge



KAPRS 90°

Designation	Type of mounting	Dimensions in mm					ZEFP		KG		No. of inserts		
		APMXS	DC	OAL	LUX	LPR					SCE.	ACE.	SCEX
R215.59-CV50050120-12.4	CV50-DIN	120,0	50,0	282,0	145,0	180,0	2	28	4,5	8300	26*	2*	2*
R215.59-CV50063120-12.4S	CV50-DIN	120,0	63,0	302,0	165,0	200,0	2	28	5,6	7400	26*	2*	2*
R215.59-CV50063120-12.4SR6	CV50-DIN	120,0	63,0	302,0	165,0	200,0	2	28	5,8	7400	24*	2*	2*
R215.59-CV50063160-12.4S	CV50-DIN	160,0	63,0	352,0	200,0	235,0	2	36	6,2	7400	34*	2*	2*
R215.59-CV50063160-12.4SR6	CV50-DIN	160,0	63,0	352,0	200,0	235,0	2	36	6,2	7400	32*	2*	2*

*All corner radii can be used in front row insert, modification of the body needed for radii > = 3,0 mm

Spare Parts

For cutter	Replaceable end	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R215.59-50	–	DOUBLE-T	C45011-T20P	H6B-T20P	–	5,0
R215.59-63-12.4S	R220.59-RE063024-12.4	DOUBLE-T	C45011-T20P	H6B-T20P	215.59-691	5,0
R215.59-63-12.4SR	R220.59-RE063024-12.4R6	DOUBLE-T	C45011-T20P	H6B-T20P	215.59-691	5,0

Please check availability in current price and stock-list

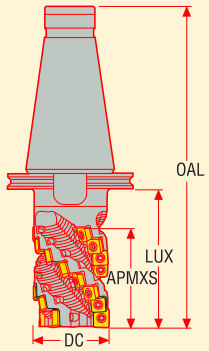
Torque keys, see page 710

R215.59-12.4..K – Full effective

Contouring only



- For insert selection and cutting data recommendations, see page(s) 108-109
- For complete insert programme, see page(s) 624, 639
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm					ZEFP		KG		No. of inserts		
		APMXS	DC	OAL	LUX	LPR					SCE.	ACE.	SCEX
R215.59-50063110-12.3K	SA50-DIN 2080	110,0	63,0	292,0	126,0	165,0	3	33	5,2	7400	30	3*	3*

*All ACET15.. 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.xK	DOUBLE-T	C45011-T20P	H6B-T20P	5,0

Please check availability in current price and stock-list

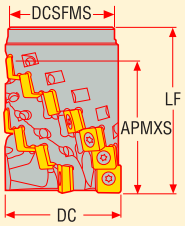
Torque keys, see page 710

R220.59-12..K – Full effective

Contouring only



- For insert selection and cutting data recommendations, see page(s) 108-109
- For complete insert programme, see page(s) 624, 639
- For ISO attribute explanation, see page 15



KAPRS 90°

Designation	Type of mounting	Dimensions in mm					ZEFP		KG		No. of inserts	
		APMXS	DC	DCSFMS	DCB	LF					SCE.	ACE.
R220.59-00063.072-12.4K	Arbor	72,0	63,0	62,0	27,0	90,0	4	28	1,2	7400	24	4*
R220.59-00080.072-12.5K	Arbor	72,0	80,0	74,7	32,0	100,0	5	35	2,3	6500	30	5*

*All corner radii can be used in front row insert, modification of the body needed for radii > = 3,0 mm

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.59-00063	DOUBLE-T	C45011-T20P	H6B-T20P	MC6S12X80	5,0
R220.59-00080	DOUBLE-T	C45011-T20P	H6B-T20P	MC6S16X80	5,0

Please check availability in current price and stock-list

Torque keys, see page 710

215/220.59-12– Insert selection

SMG			f_z		
			100%	30%	10%
P1	ACET150612TR-M11 MP2501	SCET120612T-M11 MP2501	0,12	0,13	0,20
P2	ACET150612TR-M11 MP2501	SCET120612T-M11 MP2501	0,13	0,14	0,22
P3	ACET150612TR-M11 MP2501	SCET120612T-M11 MP2501	0,12	0,13	0,20
P4	ACET150612TR-M11 MP2501	SCET120612T-M11 MP2501	0,12	0,13	0,20
P5	ACET150612TR-M11 MP2501	SCET120612T-M11 MP2501	0,11	0,12	0,19
P6	ACET150612TR-M11 MP2501	SCET120612T-M11 MP2501	0,11	0,12	0,19
P7	ACET150612TR-M11 MP2501	SCET120612T-M11 MP2501	0,11	0,12	0,19
P8	ACET150612TR-M11 MP2501	SCET120612T-M11 MP2501	0,12	0,13	0,20
P11	ACET150612TR-M11 T350M	SCET120612T-M11 T350M	0,11	0,12	0,19
P12	ACET150612TR-M11 T350M	SCET120612T-M11 T350M	0,080	0,085	0,13
M1	ACET150612TR-ME10 MS2050	SCET120612R-M10 MS2050	0,11	0,12	0,19
M2	ACET150612TR-ME10 MS2050	SCET120612R-M10 MS2050	0,10	0,11	0,17
M3	ACET150612TR-ME10 MS2050	SCET120612R-M10 MS2050	0,085	0,090	0,14
M4	ACET150612TR-M11 T350M	SCET120612T-M11 T350M	0,080	0,090	0,13
M5	ACET150612TR-M11 T350M	SCET120612T-M11 T350M	0,080	0,090	0,13
K1	ACET150612TR-M14 MK1500	SCET120612T-M14 MK1500	0,16	0,17	0,26
K2	ACET150612TR-M14 MK1500	SCET120612T-M14 MK1500	0,15	0,16	0,24
K3	ACET150612TR-M14 MK1500	SCET120612T-M14 MK1500	0,15	0,16	0,24
K4	ACET150612TR-M14 MK1500	SCET120612T-M14 MK1500	0,15	0,16	0,24
K5	ACET150612TR-M14 MK1500	SCET120612T-M14 MK1500	0,13	0,14	0,22
K6	ACET150612TR-M14 MK1500	SCET120612T-M14 MK1500	0,15	0,16	0,24
K7	ACET150612TR-M14 MK1500	SCET120612T-M14 MK1500	0,13	0,14	0,22
S1	ACET150612TR-M11 F40M	SCET120612T-M11 F40M	0,080	0,090	0,13
S2	ACET150612TR-M11 F40M	SCET120612T-M11 F40M	0,080	0,090	0,13
S3	ACET150612TR-M11 F40M	SCET120612T-M11 F40M	0,075	0,080	0,12
S11	ACET150612TR-ME10 MS2050	SCET120612R-M10 MS2050	0,085	0,090	0,14
S12	ACET150612TR-ME10 MS2050	SCET120612R-M10 MS2050	0,085	0,090	0,14
S13	ACET150612TR-ME10 MS2050	SCET120612R-M10 MS2050	0,075	0,080	0,12
H5	ACET150612TR-M11 T350M	SCET120612T-M11 T350M	0,080	0,085	0,13
H8	ACET150612TR-M11 T350M	SCET120612T-M11 T350M	0,060	0,065	0,10
H11	ACET150612TR-M11 T350M	SCET120612T-M11 T350M	0,080	0,085	0,13
H12	ACET150612TR-M11 T350M	SCET120612T-M11 T350M	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

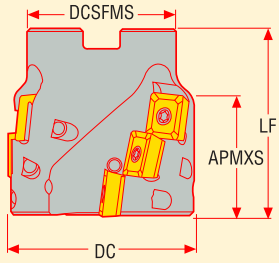
215/220.59-12 – Cutting data v_c = (m/min)

	MP1501			MP2501			MP3000			T350M			MK1500			F40M			MS2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	135	145	155	125	140	150	120	135	140	120	135	140	—	—	—	115	125	135	120	135	140
P2	130	145	150	125	140	145	120	130	140	120	130	140	—	—	—	110	125	135	120	135	140
P3	125	140	145	120	130	140	115	125	135	110	125	135	—	—	—	105	120	125	115	125	135
P4	120	130	140	115	125	135	105	120	130	105	120	125	—	—	—	100	115	120	105	120	130
P5	115	130	140	110	125	130	105	120	125	105	120	125	—	—	—	100	110	120	105	120	125
P6	125	135	145	115	130	140	110	125	130	110	125	130	—	—	—	105	115	125	110	125	130
P7	120	135	140	115	130	135	110	120	130	110	120	130	—	—	—	100	115	120	110	120	130
P8	115	130	135	110	125	130	105	115	125	105	115	125	—	—	—	100	110	120	105	120	125
P11	120	130	140	115	125	135	105	120	125	105	120	125	—	—	—	100	115	120	110	120	130
P12	100	110	120	95	105	115	85	100	110	85	100	105	—	—	—	80	95	100	90	100	110
M1	—	—	—	110	125	130	105	120	125	105	120	125	—	—	—	100	115	125	110	125	130
M2	—	—	—	100	115	120	95	110	120	100	110	120	—	—	—	95	105	115	100	115	120
M3	—	—	—	90	105	110	85	100	110	90	100	110	—	—	—	85	95	105	90	105	110
M4	—	—	—	80	90	100	75	90	95	75	90	95	—	—	—	70	85	95	80	90	100
M5	—	—	—	70	85	90	65	80	90	70	80	90	—	—	—	65	75	85	70	85	90
K1	120	135	140	115	125	135	110	120	130	110	120	130	130	140	150	100	115	120	—	—	—
K2	115	130	135	110	120	130	100	115	125	105	115	125	120	135	145	95	110	115	—	—	—
K3	105	120	130	100	115	120	95	110	115	95	110	115	115	125	135	90	100	110	—	—	—
K4	105	120	125	100	110	120	90	105	115	95	105	115	110	125	135	85	100	105	—	—	—
K5	80	95	105	75	90	95	70	85	90	70	85	90	90	105	110	65	75	85	—	—	—
K6	100	110	120	95	105	115	85	100	110	85	100	110	105	120	130	80	95	100	—	—	—
K7	95	105	115	90	100	110	80	95	100	80	95	100	100	115	120	75	90	95	—	—	—
S1	—	—	—	46	60	65	41	55	60	41	55	60	—	—	—	38	49	55	44	55	65
S2	—	—	—	37	49	55	33	43	50	33	44	50	—	—	—	30	40	47	35	47	55
S3	—	—	—	33	43	50	29	38	45	29	39	46	—	—	—	27	35	42	31	41	49
S11	—	—	—	60	75	85	55	70	75	55	70	75	—	—	—	50	65	75	60	75	80
S12	—	—	—	45	60	65	39	50	60	40	50	60	—	—	—	37	48	55	43	55	65
S13	—	—	—	26	34	41	23	30	36	23	31	36	—	—	—	21	28	33	25	33	39
H5	47	60	70	38	50	60	34	45	55	36	48	55	—	—	—	32	42	49	—	—	—
H8	50	65	70	41	55	60	37	49	55	39	50	60	—	—	—	34	45	50	—	—	—
H11	60	70	80	48	60	70	44	55	65	46	60	65	—	—	—	40	55	60	—	—	—
H12	75	90	100	70	85	90	65	80	85	65	80	85	—	—	—	60	70	80	—	—	—

R220.69-15H – High feed rates

Slotting and contouring





- For insert selection and cutting data recommendations, see page(s) 111-112
- For complete insert programme, see page(s) 624
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm				ZEFP		KG		Insert
		APMXS	DC	DCSFMS	LF					
R220.69-0063038-15.4H	Arbor	38,0	63,0	62,0	63,0	4	12	0,7	7400	ACE.1506
R220.69-0080038-15.5H	Arbor	38,0	80,0	77,0	63,0	5	15	1,2	6500	ACE.1506
R220.69-0080050-15.5H	Arbor	50,0	80,0	77,0	75,0	5	20	1,5	6500	ACE.1506

Spare Parts

For cutter	Stop screw	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.69-0063	CH9411-T09P	DOUBLE-T	C45011-T20P	H6B-T20P	MC6S12X50	5,0
R220.69-0080	CH9411-T09P	DOUBLE-T	C45011-T20P	H6B-T20P	MC6S16X50	5,0

Please check availability in current price and stock-list

Torque keys, see page 710

R215220.69-15XH – Insert selection

SMG		f_z		
		100%	30%	10%
P1	ACET150612TR-M11 MP2501	0,13	0,15	0,22
P2	ACET150612TR-M11 MP2501	0,14	0,15	0,22
P3	ACET150612TR-M11 MP2501	0,13	0,14	0,22
P4	ACET150612TR-M11 MP2501	0,13	0,14	0,20
P5	ACET150612TR-M11 MP2501	0,12	0,13	0,20
P6	ACET150612TR-M11 MP2501	0,12	0,13	0,20
P7	ACET150612TR-M11 MP2501	0,12	0,13	0,20
P8	ACET150612TR-M11 MP2501	0,13	0,14	0,22
P11	ACET150612TR-M11 T350M	0,12	0,13	0,20
P12	ACET150612TR-M11 T350M	0,085	0,090	0,14
M1	ACET150612TR-ME10 MS2050	0,12	0,13	0,20
M2	ACET150612TR-ME10 MS2050	0,11	0,12	0,19
M3	ACET150612TR-ME10 MS2050	0,090	0,10	0,15
M4	ACET150612TR-M11 T350M	0,085	0,095	0,14
M5	ACET150612TR-M11 T350M	0,085	0,095	0,14
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-M14 MK1500	0,14	0,15	0,24
K6	ACET150612TR-M14 MK1500	0,16	0,17	0,26
K7	ACET150612TR-M14 MK1500	0,14	0,15	0,24
S1	ACET150612TR-M11 F40M	0,085	0,095	0,14
S2	ACET150612TR-M11 F40M	0,085	0,095	0,14
S3	ACET150612TR-M11 F40M	0,080	0,090	0,13
S11	ACET150612TR-ME10 MS2050	0,090	0,10	0,15
S12	ACET150612TR-ME10 MS2050	0,090	0,10	0,15
S13	ACET150612TR-ME10 MS2050	0,080	0,085	0,13
H5	ACET150612TR-M11 T350M	0,085	0,090	0,14
H8	ACET150612TR-M11 T350M	0,065	0,070	0,11
H11	ACET150612TR-M11 T350M	0,085	0,090	0,14
H12	ACET150612TR-M11 T350M	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

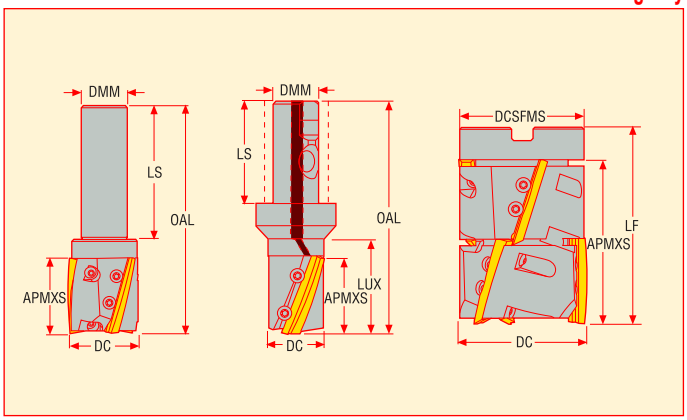
R215/220.69-15H – Cutting data v_c = (m/min)

	MP1501			MP2501			MP3000			T350M			MK1500			F40M			MS2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	175	195	210	165	185	200	155	175	190	155	175	190	—	—	—	145	165	180	160	180	190
P2	170	195	205	165	185	200	155	175	190	155	175	185	—	—	—	140	165	175	155	180	190
P3	165	185	195	155	175	185	145	165	175	145	165	175	—	—	—	135	155	165	145	165	180
P4	155	175	190	145	165	180	135	155	170	135	155	170	—	—	—	125	145	160	140	160	170
P5	150	170	185	140	165	175	130	150	165	130	155	165	—	—	—	120	140	155	135	155	165
P6	160	180	195	150	170	185	140	160	175	140	160	175	—	—	—	130	150	165	145	165	175
P7	155	175	190	145	165	180	135	155	170	135	155	170	—	—	—	125	145	160	140	160	170
P8	150	170	185	140	160	175	130	150	165	130	150	165	—	—	—	120	140	155	135	155	165
P11	155	175	185	145	165	180	135	155	165	135	155	165	—	—	—	125	145	155	135	155	170
P12	120	140	155	110	135	145	105	125	135	100	125	135	—	—	—	90	110	125	105	125	135
M1	—	—	—	140	160	175	130	155	165	135	155	170	—	—	—	125	145	160	140	160	175
M2	—	—	—	125	145	160	115	140	150	120	140	155	—	—	—	115	135	145	125	145	160
M3	—	—	—	110	130	145	100	125	135	105	125	140	—	—	—	95	120	130	110	130	145
M4	—	—	—	90	110	125	85	105	115	85	105	120	—	—	—	80	100	110	90	115	125
M5	—	—	—	80	100	110	70	90	105	75	95	105	—	—	—	65	85	100	80	100	110
K1	155	175	190	145	165	180	135	155	170	135	155	170	170	190	200	125	145	160	—	—	—
K2	145	170	180	140	160	170	125	150	160	130	150	160	160	180	195	120	140	150	—	—	—
K3	135	155	170	125	145	160	115	135	150	115	135	150	145	165	180	105	125	140	—	—	—
K4	130	150	165	120	145	155	110	135	145	110	135	145	145	165	175	100	120	135	—	—	—
K5	95	115	125	85	105	120	75	95	110	75	95	105	105	130	140	65	85	95	—	—	—
K6	120	145	155	115	135	145	100	125	135	100	125	135	135	155	165	90	115	125	—	—	—
K7	115	135	145	105	125	135	95	115	125	95	115	125	125	145	160	85	105	115	—	—	—
N1	—	—	—	—	—	—	285	305	320	—	—	—	—	—	—	275	295	310	—	—	—
N2	—	—	—	—	—	—	215	240	250	—	—	—	—	—	—	210	230	240	—	—	—
N3	—	—	—	—	—	—	185	205	220	—	—	—	—	—	—	175	195	210	—	—	—
N11	—	—	—	—	—	—	195	215	230	—	—	—	—	—	—	185	205	220	—	—	—
S1	—	—	—	46	60	70	40	50	60	41	55	65	—	—	—	37	48	55	44	60	65
S2	—	—	—	37	48	55	32	42	49	33	43	50	—	—	—	30	39	46	35	47	55
S3	—	—	—	32	42	49	28	37	43	29	37	44	—	—	—	26	34	40	31	41	48
S11	—	—	—	65	80	95	55	70	85	55	75	85	—	—	—	50	65	80	60	80	90
S12	—	—	—	44	55	70	38	50	60	39	50	60	—	—	—	35	46	55	42	55	65
S13	—	—	—	26	33	39	22	29	34	23	30	35	—	—	—	21	27	32	25	33	38
H5	46	60	70	37	49	55	34	45	50	36	47	55	—	—	—	31	41	48	—	—	—
H8	49	65	75	40	50	60	36	48	55	38	50	60	—	—	—	33	43	50	—	—	—
H11	60	80	90	47	60	75	43	55	65	45	60	70	—	—	—	39	50	60	—	—	—
H12	85	110	120	80	100	110	70	90	100	70	90	100	—	—	—	60	80	90	—	—	—

R235.15 – Finishing operations

Contouring only





- For insert selection and cutting data recommendations, see page(s) 114
- For complete insert programme, see page(s) 673
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm								ZEFP		KG		Insert
		APMXS	DC	DMM	DCSFMS	LF	OAL	LUX	LS					
R235.15-2532.0-40	Cylindrical	40,0	32,0	25,0	–	–	140,0	–	71,0	2	2	0,7	8000	R235.15-032
R235.15A-3250.0-50	Cylindrical	50,0	50,0	32,0	–	–	155,0	–	95,0	3	3	1,2	5500	R235.15-050
R235.15-2532.3S-40A	Seco-Weldon	40,0	32,0	25,0	–	–	125,0	50,0	56,0	2	2	0,7	8000	R235.15-032
R235.15A-3250.3S-50A	Seco-Weldon	50,0	50,0	32,0	–	–	120,0	60,0	70,0	3	3	0,9	5500	R235.15-050
R235.15A-0080-90	Arbor	90,0	80,0	–	75,0	120,0	–	–	–	3	6	3,2	4400	R235.15-080

Spare Parts

For cutter	Setting key	Setting gauge	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R235.15-2532	–	–	DOUBLE-T	CL85012-T25P	H6B-T25P	–	6,0
R235.15-3250	H4B-T15P	AU8019-T15P	DOUBLE-T	CL85012-T25P	H6B-T25P	–	6,0
R235.15-3250A	H4B-T15P	AU8019-T15P	DOUBLE-T	CL85012-T25P	H6B-T25P	–	6,0
R235.15A-0080	H4B-T15P	AU8019-T15P	DOUBLE-T	CL85012-T25P	H6B-T25P	MC6S16X100	6,0

Please check availability in current price and stock-list

Torque keys, see page 710

R235.15 – Insert selection

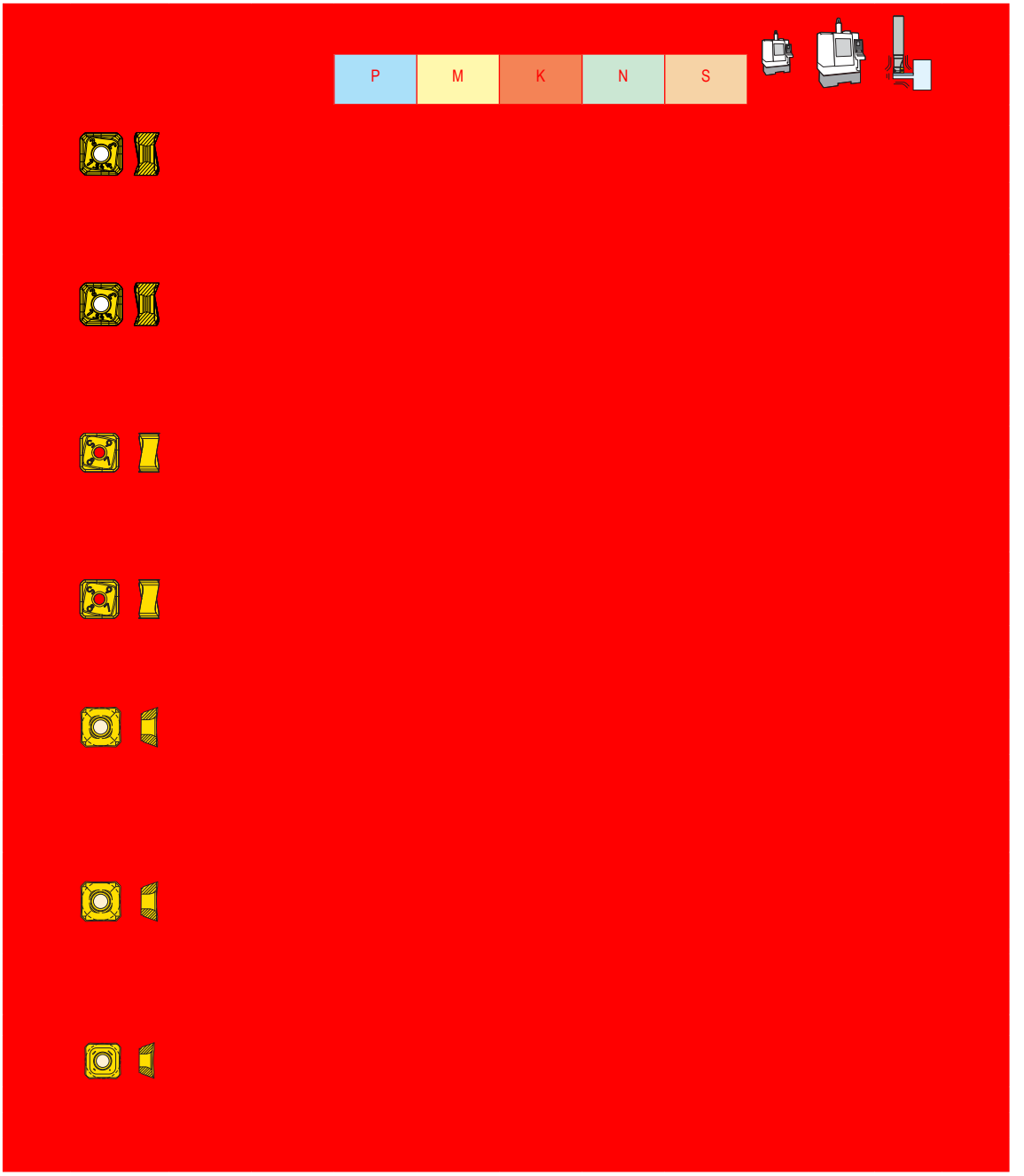
SMG		f_z 3%
P1	R235.15-xxx-E05 F30M	0,20
P2	R235.15-xxx-E05 F30M	0,22
P3	R235.15-xxx-E05 F30M	0,20
P4	R235.15-xxx-E05 F30M	0,20
P5	R235.15-xxx-E05 F30M	0,19
P6	R235.15-xxx-E05 F30M	0,19
P7	R235.15-xxx-E05 F30M	0,19
P8	R235.15-xxx-E05 F30M	0,20
P11	R235.15-xxx-E05 F30M	0,19
P12	R235.15-xxx-E05 F30M	0,13
M1	R235.15-xxx-E05 F30M	0,22
M2	R235.15-xxx-E05 F30M	0,19
M3	R235.15-xxx-E05 F30M	0,15
M4	R235.15-xxx-E05 F30M	0,13
M5	R235.15-xxx-E05 F30M	0,13
K1	R235.15-xxx-E05 F30M	0,22
K2	R235.15-xxx-E05 F30M	0,19
K3	R235.15-xxx-E05 F30M	0,19
K4	R235.15-xxx-E05 F30M	0,19
K5	R235.15-xxx-E05 F30M	0,17
K6	R235.15-xxx-E05 F30M	0,19
K7	R235.15-xxx-E05 F30M	0,17
N1	R235.15-xxx-E05 F30M	0,28
N2	R235.15-xxx-E05 F30M	0,28
N3	R235.15-xxx-E05 F30M	0,28
N11	R235.15-xxx-E05 F30M	0,28
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
S12	R235.15-xxx-E05 F30M	0,15
S13	R235.15-xxx-E05 F30M	0,13

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	120
M2	100
M3	80
M4	60
M5	50
K1	140
K2	125
K3	105
K4	100
K5	60
K6	90
K7	75
N1	870
N2	350
N3	235
N11	265
S1	42
S2	34
S3	30
S11	60
S12	41
S13	24

Face milling system



Face milling system

Insert	No. of cutting edges	Applica-tion	Cutter diameter (mm) available with effective number of teeth															See page
			20	24*/25	32	40	50	63	80	100	125	160	200	250	315	400	500	
SNMX14..AN	8						4	5	6	7	8	10	12					121, 123
							5	7	8	10	12	15	17					
												9	11	14	16			
SNMX14..ZN	8						4	5	6	7	8	10	12					122-123
							5	7	8	10	12	15	17					
												9	11	14	16			
SNMX22..AN	8								5	5	6	8						128, 130
									6	7	8	11						
													9	11	14			
SNMX22..ZN	8									5	6	8						129-130
									5	7	8	10						
													9	11	14			
SE..09T3	4		2	3	4	4	5	6	6	7								135-137
						5	6	7	8	10								
													8	10	12	16	20	
									5	6	8	10		16	18			
									6	8	10	14						
SE..1204	4									5	6	7						140-142
						3	4	5	6	7	8	10						
						4	5	6	8	10	12							
												7	8	10	12	16	20	
									5	6	8	10	12	16	18			
									6	8	10	14						
SE..1505	4							5	6	7	8	10	12					145-146
									7	9	10	14						
												7	8	10	12	16	20	
									5	6	8	10	12	16	18			
									6	8	10	14						

x — Fixed pocket (x indicates number of teeth)

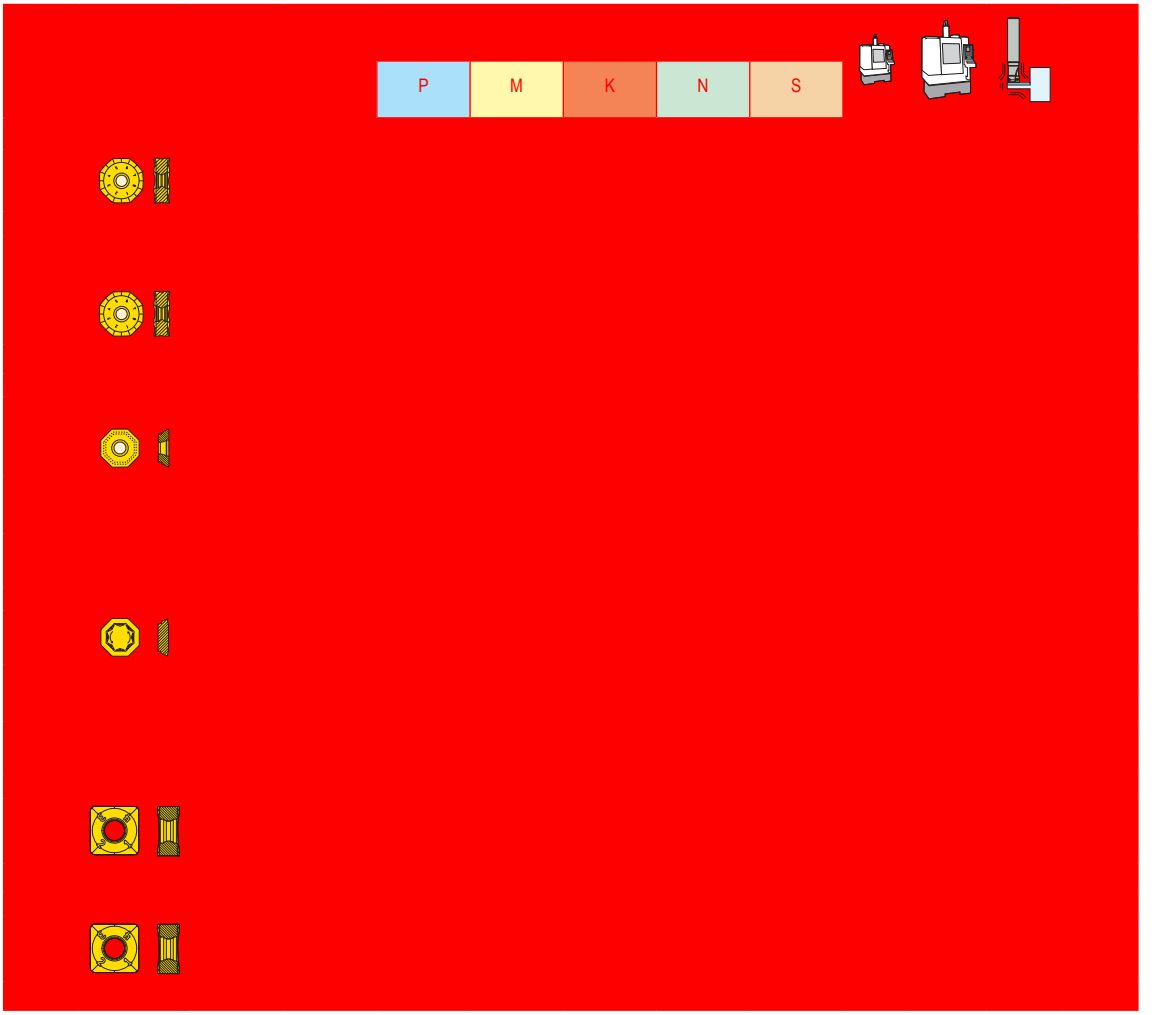
x — With cassette (x indicates number of teeth)

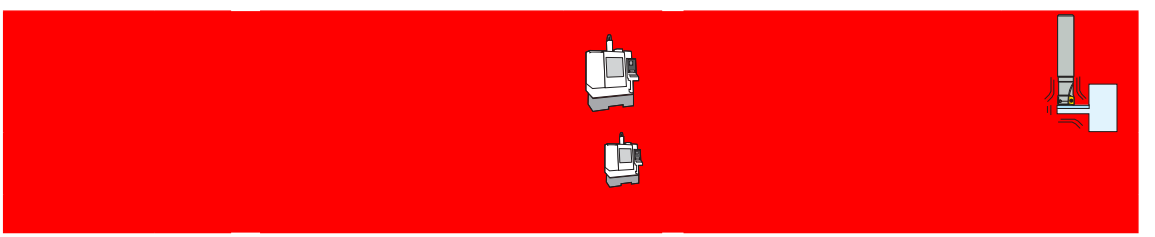
Troubleshooter for unstable fixturing and/or unstable conditions

Basic choice

Productivity

Face milling system





Face milling system

Insert	No. of cutting edges	Application	Cutter diameter (mm) 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										149-150
				3	4		5	6	6	7	8							
						5	6	8	10	12	14							
									6	8	10	14	18					
ON..09	16							5	6	7	8	10						154-156
								6	7	8	10	12	12	16	20			
									9	12	15	20	24	30	40	50	60	
											8	10	12	16	20			
OF..05	8				3	3	4	5	6	7	8	10						164-165
						4	5	6	8									
												7						
										6	8	10	12	16	20			
											10	14	18		28			
OF..07	8						4	4	5	6	8	10						168-170
								6	9	12	15							
												7						
										6	8	10	12	16				
											10	14	18	22	28			
SNMU12..	8						4	6	7	8	10	12						160
							5	7	9	11	13	16						
SNMU16..	8							4	6	8	10	12						162
								5	7	9	11	13						

x — Fixed pocket (x indicates number of teeth)

x — With cassette (x indicates number of teeth)

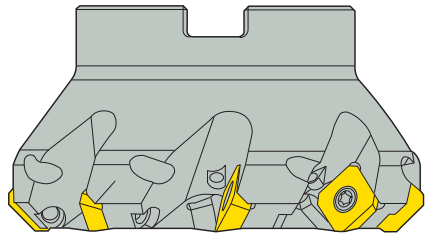
Troubleshooter for unstable fixturing and/or unstable conditions

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

Mounting type & Cutter diameter
0xxx = shell mill mounting
8xxx = Flange mounting
9xxx = CAP mounting

Effective No. of teeth (ZEFP)

R	220	.	53	-	0100	-	12	-	7	A

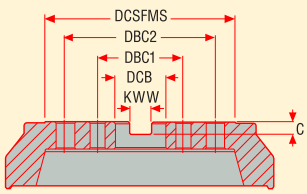
R = Right hand rotation
L = Left hand rotation
Cx = For Seco-Capto

Cutter system

Insert size

A = With through 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
C = Cassettes
S = Insert locking with screw
M = Modified

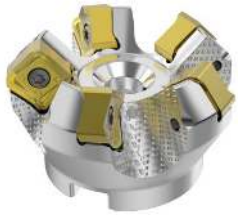
Dimensions of mounting

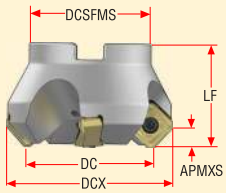


Dimensions in mm						Spindle-nose
DCSFMS	DCB	KWW	C	DBC1	DBC2	
30-35	16	8,4	5,6	–	–	–
42-47	22	10,4	6.3	–	–	–
48-62	27	12,4	7	–	–	–
60-90	32	14,4	8	–	–	–
90-130	40	16,4	9	66,7	–	(8xxx)
130-270	60	25,7	14	101,6	177,8	(8xxx)

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

Double Quattromill R220.54-14





KAPRS 48°

- For insert selection and cutting data recommendations, see page(s) 124-125
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF				
R220.54-0050-14-4A	Arbor	6,0	65,0	50,0	47,0	22,0	40,0	4	0,5	8500	SN.X1407AN
R220.54-0050-14-5A	Arbor	6,0	65,0	50,0	47,0	22,0	40,0	5	0,4	8500	SN.X1407AN
R220.54-0063-14-5A	Arbor	6,0	78,0	63,0	47,0	22,0	40,0	5	0,6	7600	SN.X1407AN
R220.54-0063-14-7A	Arbor	6,0	78,0	63,0	47,0	22,0	40,0	7	0,6	7600	SN.X1407AN
R220.54-0080-14-6A	Arbor	6,0	95,0	80,0	62,0	27,0	50,0	6	1,2	6700	SN.X1407AN
R220.54-0080-14-8A	Arbor	6,0	95,0	80,0	62,0	27,0	50,0	8	1,2	6700	SN.X1407AN
R220.54-0100-14-10A	Arbor	6,0	115,0	100,0	77,0	32,0	50,0	10	1,8	6000	SN.X1407AN
R220.54-0100-14-7A	Arbor	6,0	115,0	100,0	77,0	32,0	50,0	7	1,8	6000	SN.X1407AN
R220.54-0125-14-12A	Arbor	6,0	140,0	125,0	90,0	40,0	63,0	12	3,4	5400	SN.X1407AN
R220.54-0125-14-8A	Arbor	6,0	140,0	125,0	90,0	40,0	63,0	8	3,5	5400	SN.X1407AN
R220.54-8160-14-10A	Arbor	6,0	175,0	160,0	90,0	40,0	63,0	10	5,9	4700	SN.X1407AN
R220.54-8160-14-15A	Arbor	6,0	175,0	160,0	90,0	40,0	63,0	15	5,8	4700	SN.X1407AN
R220.54-8200-14-12A	Arbor	6,0	215,0	200,0	130,0	60,0	63,0	12	8,2	4200	SN.X1407AN
R220.54-8200-14-17A	Arbor	6,0	215,0	200,0	130,0	60,0	63,0	17	7,6	4200	SN.X1407AN

Spare Parts

For cutter	Lid screw	Lid	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.54-0050-0063	–	–	DOUBLE-T	C04011-T15P	H4B-T15P	220.17-691	3,5
R220-54-0080	–	–	DOUBLE-T	C04011-T15P	H4B-T15P	–	3,5
R220-54-0100-0125	–	–	DOUBLE-T	C04011-T15P	H4B-T15PL	–	3,5
R220-54-8160	MF6S4X8	SC-160-90	DOUBLE-T	C04011-T15P	H4B-T15PL	–	3,5
R220-54-8200	MF6S4X8	SC-200-90	DOUBLE-T	C04011-T15P	H4B-T15PL	–	3,5

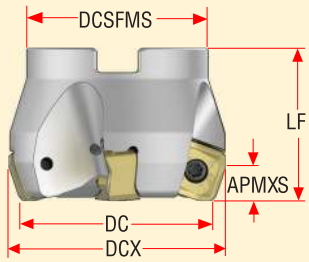
Please check availability in current price and stock-list

Torque keys, see page 710

Double Quattromill R220.56-14



- For insert selection and cutting data recommendations, see page(s) 126-127
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15



KAPRS 71°

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF				
R220.56-0050-14-4A	Arbor	8,0	57,0	50,0	47,0	22,0	40,0	4	0,4	8500	SN.X1407ZN
R220.56-0050-14-5A	Arbor	8,0	57,0	50,0	47,0	22,0	40,0	5	0,4	8500	SN.X1407ZN
R220.56-0063-14-5A	Arbor	8,0	70,0	63,0	47,0	22,0	40,0	5	0,5	7600	SN.X1407ZN
R220.56-0063-14-6A	Arbor	8,0	70,0	63,0	47,0	22,0	40,0	6	0,5	7600	SN.X1407ZN
R220.56-0080-14-6A	Arbor	8,0	87,0	80,0	62,0	27,0	50,0	6	1,0	6700	SN.X1407ZN
R220.56-0080-14-8A	Arbor	8,0	87,0	80,0	62,0	27,0	50,0	8	1,0	6700	SN.X1407ZN
R220.56-0100-14-10A	Arbor	8,0	107,0	100,0	77,0	32,0	50,0	10	1,6	6000	SN.X1407ZN
R220.56-0100-14-7A	Arbor	8,0	107,0	100,0	77,0	32,0	50,0	7	1,6	6000	SN.X1407ZN
R220.56-0125-14-12A	Arbor	8,0	132,0	125,0	90,0	40,0	63,0	12	3,1	5400	SN.X1407ZN
R220.56-0125-14-8A	Arbor	8,0	132,0	125,0	90,0	40,0	63,0	8	3,1	5400	SN.X1407ZN
R220.56-8160-14-10A	Arbor	8,0	167,0	160,0	90,0	40,0	63,0	10	5,1	4700	SN.X1407ZN
R220.56-8160-14-15A	Arbor	8,0	167,0	160,0	90,0	40,0	63,0	15	5,1	4700	SN.X1407ZN
R220.56-8200-14-12A	Arbor	8,0	207,0	200,0	130,0	60,0	63,0	12	6,9	4200	SN.X1407ZN
R220.56-8200-14-17A	Arbor	8,0	207,0	200,0	130,0	60,0	63,0	17	6,9	4200	SN.X1407ZN

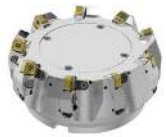
Spare Parts

For cutter	Lid screw	Lid	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.56-0050	–	–	DOUBLE-T	C04011-T15P	H4B-T15P	220.17-692	3,5
R220.56-0063	–	–	DOUBLE-T	C04011-T15P	H4B-T15P	220.17-692	3,5
R220.56-0080	–	–	DOUBLE-T	C04011-T15P	H4B-T15P	–	3,5
R220.56-0100-0125	–	–	DOUBLE-T	C04011-T15P	H4B-T15PL	–	3,5
R220.56-8160	MF6S4X8	SC-160-90	DOUBLE-T	C04011-T15P	H4B-T15PL	–	3,5
R220.56-8200	MF6S4X8	SC-200-90	DOUBLE-T	C04011-T15P	H4B-T15PL	–	3,5

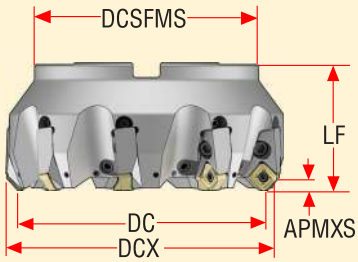
Please check availability in current price and stock-list

Torque keys, see page 710

Double Quattromill R220.54/R220.56-14CS



- For insert selection and cutting data recommendations, see page(s) 124-127
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15



KAPRS 48°/71°

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF				
R220.54-8160-14-9CA	Arbor	6,0	175,0	160,0	90,0	40,0	80,0	9	7,7	4700	SN.X1407AN
R220.54-8200-14-11CA	Arbor	6,0	215,0	200,0	90,0	60,0	80,0	11	9,8	4200	SN.X1407AN
R220.54-8250-14-14CA	Arbor	6,0	265,0	250,0	90,0	60,0	80,0	14	18,7	3800	SN.X1407AN
R220.54-8315-14-16CA	Arbor	6,0	330,0	315,0	225,0	60,0	80,0	16	4,5	3400	SN.X1407AN
R220.56-8160-14-9CA	Arbor	8,0	167,0	160,0	90,0	40,0	80,0	9	7,7	4700	SN.X1407ZN
R220.56-8200-14-11CA	Arbor	8,0	207,0	200,0	130,0	60,0	80,0	11	18,6	4200	SN.X1407ZN
R220.56-8250-14-14CA	Arbor	8,0	257,0	250,0	130,0	60,0	80,0	14	18,5	3800	SN.X1407ZN
R220.56-8315-14-16CA	Arbor	8,0	322,0	315,0	225,0	60,0	80,0	16	29,8	3400	SN.X1407ZN

Spare Parts

For cutter	Wedge screw	Wedge clamp	Setting gauge	Lid screw	Lid	Key (T-handle)	Insert screw	Insert key	Cassette screw	Cassette	Torque value (Nm)
R220.54-8160	LD8020-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-160-90	DOUBLE-T	C04011-T15P	H4B-T15PL	MC6S6X20	SN14AR	3,5
R220.54-8200	LD8020-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-200-90	DOUBLE-T	C04011-T15P	H4B-T15PL	MC6S6X20	SN14AR	3,5
R220.54-8250	LD8020-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-250-90	DOUBLE-T	C04011-T15P	H4B-T15PL	MC6S6X20	SN14AR	3,5
R220.54-8315	LD8020-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-315-90	DOUBLE-T	C04011-T15P	H4B-T15PL	MC6S6X20	SN14AR	3,5
R220.56-8160	LD8020-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-160-90	DOUBLE-T	C04011-T15P	H4B-T15PL	MC6S6X20	SN14ZR	3,5
R220.56-8200	LD8020-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-200-90	DOUBLE-T	C04011-T15P	H4B-T15PL	MC6S6X20	SN14ZR	3,5
R220.56-8250	LD8020-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-250-90	DOUBLE-T	C04011-T15P	H4B-T15PL	MC6S6X20	SN14ZR	3,5
R220.56-8315	LD8020-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-315-90	DOUBLE-T	C04011-T15P	H4B-T15PL	MC6S6X20	SN14ZR	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

R220.54-14 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	SNMX1407ANTR-M10 MP2501	5,0	0,26	0,30	0,46
P2	SNMX1407ANTR-M10 MP2501	5,0	0,26	0,30	0,46
P3	SNMX1407ANTR-M10 MP2501	5,0	0,25	0,28	0,44
P4	SNMX1407ANTR-M10 MP2501	5,0	0,25	0,28	0,42
P5	SNMX1407ANTR-M10 MP2501	5,0	0,24	0,28	0,42
P6	SNMX1407ANTR-M10 MP2501	5,0	0,24	0,26	0,42
P7	SNMX1407ANTR-M10 T350M	5,0	0,24	0,26	0,42
P8	SNMX1407ANTR-M10 T350M	5,0	0,25	0,28	0,44
P11	SNMX1407ANTR-M10 T350M	5,0	0,24	0,26	0,42
P12	SNMX1407ANTR-M10 T350M	4,0	0,17	0,18	0,28
M1	SNHX1407ANR-ME10 MS2050	5,0	0,24	0,26	0,40
M2	SNHX1407ANR-ME10 MS2050	5,0	0,20	0,24	0,36
M3	SNHX1407ANR-ME10 MS2050	4,0	0,17	0,19	0,28
M4	SNHX1407ANR-ME10 MS2050	3,0	0,15	0,16	0,25
M5	SNHX1407ANR-ME10 F40M	3,0	0,15	0,16	0,25
K1	SNMX1407ANTR-M16 MK2050	5,0	0,32	0,36	0,55
K2	SNMX1407ANTR-M16 MK2050	5,0	0,30	0,34	0,50
K3	SNMX1407ANTR-M16 MK2050	5,0	0,30	0,34	0,50
K4	SNMX1407ANTR-M16 MK2050	5,0	0,30	0,34	0,50
K5	SNMX1407ANTR-M16 MK2050	5,0	0,26	0,30	0,46
K6	SNMX1407ANTR-M16 MK2050	5,0	0,30	0,34	0,50
K7	SNMX1407ANTR-M16 MK2050	5,0	0,26	0,30	0,46
N1	SNHX1407ANR-ME10 H25	5,0	0,30	0,32	0,50
N2	SNHX1407ANR-ME10 H25	5,0	0,30	0,32	0,50
N3	SNHX1407ANR-ME10 H25	5,0	0,30	0,32	0,50
N11	SNHX1407ANR-ME10 H25	5,0	0,30	0,32	0,50
S1	SNMX1407ANTR-M10 MS2500	3,0	0,17	0,19	0,30
S2	SNMX1407ANTR-M10 MS2500	3,0	0,17	0,19	0,30
S3	SNMX1407ANTR-M10 MS2500	3,0	0,16	0,18	0,26
S11	SNHX1407ANR-ME10 MS2050	3,5	0,17	0,19	0,28
S12	SNHX1407ANR-ME10 MS2050	3,5	0,17	0,19	0,28
S13	SNHX1407ANR-ME10 MS2050	3,0	0,15	0,16	0,25
H5	SNMX1407ANTR-M16 MP1501	4,0	0,20	0,22	0,34
H8	SNMX1407ANTR-M16 MP1501	3,5	0,15	0,17	0,26
H11	SNMX1407ANTR-M16 MP1501	4,0	0,20	0,22	0,34
H12	SNMX1407ANTR-M16 MP1501	3,5	0,15	0,17	0,26
H21	SNMX1407ANTR-M16 MP1501	3,5	0,15	0,17	0,26

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R220.54-14 – Cutting data v_c = (m/min)

	MP1501			MP2501			T350M			MP3000			F40M			MK1500		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	270	365	435	240	325	385	225	300	355	245	325	385	195	260	310	—	—	—
P2	265	355	425	235	315	375	220	290	345	240	315	375	190	255	300	—	—	—
P3	235	310	365	205	275	325	190	255	300	205	280	330	165	225	265	—	—	—
P4	205	275	330	180	245	295	170	225	270	185	245	295	145	195	235	—	—	—
P5	195	265	315	175	235	280	165	215	260	175	235	280	140	185	225	—	—	—
P6	220	300	355	195	265	315	180	245	290	200	270	315	160	215	250	—	—	—
P7	210	285	335	185	250	295	170	235	275	185	255	295	150	205	235	—	—	—
P8	195	265	305	175	235	270	160	215	255	175	235	275	140	185	220	—	—	—
P11	200	275	325	180	245	290	165	225	265	180	245	290	145	195	230	—	—	—
P12	135	180	215	120	160	190	110	145	175	120	160	190	95	130	150	—	—	—
M1	—	—	—	170	225	270	170	225	265	180	235	280	155	205	245	—	—	—
M2	—	—	—	140	185	225	140	185	220	150	195	235	125	170	200	—	—	—
M3	—	—	—	115	155	180	110	150	180	120	160	185	100	135	160	—	—	—
M4	—	—	—	90	120	140	90	115	135	95	125	145	80	105	125	—	—	—
M5	—	—	—	75	100	115	75	95	115	75	100	120	65	90	105	—	—	—
K1	210	280	335	185	250	300	175	230	275	190	250	300	150	200	240	280	375	445
K2	185	250	300	165	220	265	155	205	245	170	220	265	135	180	215	250	335	400
K3	155	210	255	140	185	225	130	175	205	140	190	225	115	150	180	210	280	335
K4	150	200	245	135	180	215	125	165	200	135	180	215	110	145	170	205	270	320
K5	95	125	150	85	110	130	75	105	120	85	110	130	65	90	105	125	170	195
K6	130	175	215	115	155	190	110	145	175	120	160	190	95	125	150	180	235	285
K7	120	160	190	105	140	170	100	130	155	105	145	170	85	115	135	160	215	250
N1	—	—	—	—	—	—	—	—	—	—	—	—	1100	1475	1725	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—	440	590	700	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—	295	395	465	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	335	455	530	—	—	—
S1	—	—	—	44	60	70	41	55	65	43	55	65	37	49	60	—	—	—
S2	—	—	—	35	47	55	33	44	50	35	46	55	30	40	47	—	—	—
S3	—	—	—	31	41	49	29	38	46	31	40	49	26	35	42	—	—	—
S11	—	—	—	60	80	95	55	75	90	60	80	95	50	70	80	—	—	—
S12	—	—	—	41	55	65	39	50	60	41	55	65	36	48	55	—	—	—
S13	—	—	—	25	33	38	23	31	36	24	32	38	21	28	33	—	—	—
H5	45	60	70	36	48	55	36	49	60	37	50	60	31	42	50	—	—	—
H8	48	65	75	39	50	60	39	50	60	40	55	60	34	45	55	—	—	—
H11	55	75	90	46	60	75	46	60	75	47	65	75	40	55	65	—	—	—
H12	85	115	135	75	100	120	70	95	110	75	100	120	60	80	95	—	—	—
H21	48	65	75	39	50	60	39	50	60	40	55	60	34	45	55	—	—	—

	MK2050			MM4500			MS2050			MS2500			MP2050			H25		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	255	340	405	160	210	250	215	285	340	265	355	420	255	335	400	—	—	—
P2	250	330	390	155	205	245	210	280	330	255	345	410	245	330	390	—	—	—
P3	215	290	340	135	180	215	185	245	290	225	300	355	215	290	340	—	—	—
P4	190	255	305	120	160	190	160	215	260	200	265	320	190	255	305	—	—	—
P5	185	245	290	115	150	180	155	205	245	190	255	305	185	245	290	—	—	—
P6	205	280	325	130	175	205	175	235	275	215	290	345	205	280	325	—	—	—
P7	195	265	310	120	165	190	165	225	260	200	275	325	195	265	310	—	—	—
P8	180	245	285	115	150	180	155	205	245	190	255	295	180	245	285	—	—	—
P11	190	255	300	120	160	185	160	215	255	195	265	315	190	255	300	—	—	—
P12	125	165	195	75	105	120	105	140	165	130	175	205	125	165	195	—	—	—
M1	—	—	—	130	175	210	170	225	265	185	245	295	175	235	280	—	—	—
M2	—	—	—	110	145	175	140	185	220	150	205	245	145	195	230	—	—	—
M3	—	—	—	90	120	140	110	150	180	125	165	195	120	155	185	—	—	—
M4	—	—	—	70	90	105	90	115	135	100	130	150	90	120	145	—	—	—
M5	—	—	—	55	75	90	75	95	115	80	110	125	75	100	120	—	—	—
K1	265	355	425	—	—	—	—	—	—	—	—	—	195	260	310	—	—	—
K2	240	315	375	—	—	—	—	—	—	—	—	—	175	230	275	—	—	—
K3	200	265	320	—	—	—	—	—	—	—	—	—	145	195	235	—	—	—
K4	190	255	305	—	—	—	—	—	—	—	—	—	140	185	225	—	—	—
K5	115	160	185	—	—	—	—	—	—	—	—	—	85	115	135	—	—	—
K6	170	225	270	—	—	—	—	—	—	—	—	—	125	165	195	—	—	—
K7	150	205	240	—	—	—	—	—	—	—	—	—	110	150	175	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1075	1475	1750
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	435	600	710
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	290	400	470
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	335	455	540
S1	—	—	—	21	28	33	41	55	65	48	65	75	45	60	70	—	—	—
S2	—	—	—	17	23	26	33	44	50	38	50	60	36	48	55	—	—	—
S3	—	—	—	15	20	24	29	38	46	34	44	55	32	42	50	—	—	—
S11	—	—	—	29	39	46	55	75	90	65	90	105	60	85	100	—	—	—
S12	—	—	—	27	36	42	39	50	60	45	60	70	43	55	70	—	—	—
S13	—	—	—	16	21	25	23	31	36	27	36	42	25	34	39	—	—	—
H5	—	—	—	—	—	—	—	—	—	—	—	—	37	50	60	—	—	—
H8	—	—	—	—	—	—	—	—	—	—	—	—	40	55	60	—	—	—
H11	—	—	—	—	—	—	—	—	—	—	—	—	47	65	75	—	—	—
H12	—	—	—	—	—	—	—	—	—	—	—	—	80	105	125	—	—	—
H21	—	—	—	—	—	—	—	—	—	—	—	—	40	55	60	—	—	—

R220.56-14 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	SNMX1407ZNTR-M10 MP2501	6,0	0,20	0,22	0,36
P2	SNMX1407ZNTR-M10 MP2501	6,0	0,22	0,24	0,36
P3	SNMX1407ZNTR-M10 MP2501	6,0	0,20	0,22	0,34
P4	SNMX1407ZNTR-M10 MP2501	6,0	0,20	0,22	0,34
P5	SNMX1407ZNTR-M10 MP2501	6,0	0,19	0,22	0,32
P6	SNMX1407ZNTR-M10 MP2501	6,0	0,19	0,20	0,32
P7	SNMX1407ZNTR-M10 T350M	6,0	0,19	0,20	0,32
P8	SNMX1407ZNTR-M10 T350M	6,0	0,20	0,22	0,34
P11	SNMX1407ZNTR-M10 T350M	6,0	0,19	0,20	0,32
P12	SNMX1407ZNTR-M10 T350M	5,0	0,13	0,14	0,22
M1	SNHX1407ZNR-ME10 MS2050	6,0	0,18	0,20	0,30
M2	SNHX1407ZNR-ME10 MS2050	6,0	0,16	0,18	0,28
M3	SNHX1407ZNR-ME10 MS2050	5,0	0,13	0,14	0,22
M4	SNHX1407ZNR-ME10 MS2050	4,0	0,12	0,13	0,19
M5	SNHX1407ZNR-ME10 F40M	4,0	0,12	0,13	0,19
K1	SNMX1407ZNTR-M16 MK2050	6,0	0,26	0,28	0,44
K2	SNMX1407ZNTR-M16 MK2050	6,0	0,24	0,26	0,40
K3	SNMX1407ZNTR-M16 MK2050	6,0	0,24	0,26	0,40
K4	SNMX1407ZNTR-M16 MK2050	6,0	0,24	0,26	0,40
K5	SNMX1407ZNTR-M16 MK2050	6,0	0,22	0,24	0,36
K6	SNMX1407ZNTR-M16 MK2050	6,0	0,24	0,26	0,40
K7	SNMX1407ZNTR-M16 MK2050	6,0	0,22	0,24	0,36
N1	SNHX1407ZNR-ME10 H25	6,0	0,24	0,25	0,40
N2	SNHX1407ZNR-ME10 H25	6,0	0,24	0,25	0,40
N3	SNHX1407ZNR-ME10 H25	6,0	0,24	0,25	0,40
N11	SNHX1407ZNR-ME10 H25	6,0	0,24	0,25	0,40
S1	SNMX1407ZNTR-M10 MS2500	4,0	0,13	0,15	0,22
S2	SNMX1407ZNTR-M10 MS2500	4,0	0,13	0,15	0,22
S3	SNMX1407ZNTR-M10 MS2500	4,0	0,13	0,14	0,22
S11	SNHX1407ZNR-ME10 MS2050	4,5	0,13	0,14	0,22
S12	SNHX1407ZNR-ME10 MS2050	4,5	0,13	0,14	0,22
S13	SNHX1407ZNR-ME10 MS2050	4,0	0,12	0,13	0,19
H5	SNMX1407ZNTR-M16 MP1501	5,0	0,16	0,17	0,26
H8	SNMX1407ZNTR-M16 MP1501	4,5	0,12	0,13	0,20
H11	SNMX1407ZNTR-M16 MP1501	5,0	0,16	0,17	0,26
H12	SNMX1407ZNTR-M16 MP1501	4,5	0,12	0,13	0,20
H21	SNMX1407ZNTR-M16 MP1501	4,5	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

R220.56-14 – Cutting data v_c = (m/min)

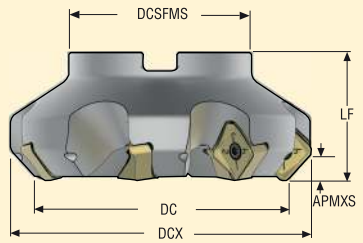
	MP1501			MP2501			T350M			MP3000			F40M			MK1500		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	270	360	430	240	320	380	225	300	350	245	325	380	195	260	305	—	—	—
P2	260	350	415	230	310	365	210	285	340	230	310	370	185	245	295	—	—	—
P3	230	310	360	205	275	320	190	250	300	205	275	325	165	220	260	—	—	—
P4	200	270	325	180	240	285	165	220	265	180	240	285	145	195	230	—	—	—
P5	195	260	310	170	230	275	160	210	255	175	230	275	140	185	220	—	—	—
P6	215	295	345	190	260	305	180	245	285	195	265	310	155	215	250	—	—	—
P7	205	280	325	180	245	290	170	230	270	185	250	295	150	200	235	—	—	—
P8	195	260	305	170	230	270	160	210	250	170	230	270	135	185	220	—	—	—
P11	200	270	320	175	240	280	165	225	265	180	245	285	145	195	230	—	—	—
P12	135	180	215	120	160	190	110	145	170	120	160	185	95	125	150	—	—	—
M1	—	—	—	165	225	265	165	220	265	170	230	275	150	200	240	—	—	—
M2	—	—	—	135	185	220	140	180	220	145	190	230	125	165	200	—	—	—
M3	—	—	—	115	155	180	115	150	175	120	155	185	105	135	160	—	—	—
M4	—	—	—	90	120	140	90	115	140	95	120	145	80	105	125	—	—	—
M5	—	—	—	75	100	115	75	95	115	80	100	120	65	85	105	—	—	—
K1	205	280	330	180	245	290	170	225	270	180	245	295	145	195	235	275	365	440
K2	185	245	295	160	220	260	150	200	240	165	220	265	130	175	210	250	325	395
K3	155	210	250	135	185	220	130	170	205	140	185	225	110	150	180	210	275	335
K4	150	200	235	130	175	210	125	160	195	135	175	215	105	140	170	200	265	320
K5	90	120	145	80	110	130	75	100	120	80	110	130	65	90	105	125	165	195
K6	130	175	210	115	155	185	110	145	170	120	155	185	95	125	150	175	230	280
K7	115	155	185	105	140	165	95	130	150	105	140	165	85	110	130	160	210	245
N1	—	—	—	—	—	—	—	—	—	—	—	—	1100	1450	1725	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—	440	580	690	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—	295	390	460	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	335	445	530	—	—	—
S1	—	—	—	43	55	70	41	55	65	43	55	70	37	49	60	—	—	—
S2	—	—	—	35	46	55	33	43	50	35	46	55	30	39	47	—	—	—
S3	—	—	—	31	40	48	29	38	45	30	40	47	26	35	41	—	—	—
S11	—	—	—	60	80	95	55	75	90	60	80	95	50	70	80	—	—	—
S12	—	—	—	41	55	65	40	50	60	42	55	65	36	47	55	—	—	—
S13	—	—	—	24	32	38	23	30	36	24	32	38	21	28	33	—	—	—
H5	44	60	70	36	48	55	36	48	55	37	49	60	31	42	50	—	—	—
H8	48	65	75	39	50	60	39	50	60	40	50	60	34	45	55	—	—	—
H11	55	75	90	45	60	70	46	60	75	47	65	75	40	55	65	—	—	—
H12	85	115	135	75	100	120	70	95	110	75	100	120	60	80	95	—	—	—
H21	48	65	75	39	50	60	39	50	60	40	50	60	34	45	55	—	—	—

	MK2050			MM4500			MS2050			MS2500			MP2050			H25		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	235	315	375	160	210	245	215	285	335	260	350	415	255	340	395	—	—	—
P2	225	305	360	150	200	240	200	270	325	250	340	400	240	320	385	—	—	—
P3	200	270	315	130	175	210	180	240	285	220	300	350	210	285	335	—	—	—
P4	175	235	280	115	155	185	160	210	250	195	265	310	185	250	295	—	—	—
P5	170	225	270	115	150	180	155	200	245	185	250	300	180	240	290	—	—	—
P6	190	260	300	125	170	200	170	235	275	210	285	335	205	275	325	—	—	—
P7	180	245	285	120	165	190	165	220	260	195	270	315	190	260	305	—	—	—
P8	170	225	265	110	150	175	150	200	240	185	250	295	180	240	280	—	—	—
P11	175	235	275	115	160	185	160	215	250	190	260	305	185	255	295	—	—	—
P12	115	155	185	75	105	120	105	140	165	130	175	205	125	165	195	—	—	—
M1	—	—	—	130	170	205	165	220	260	180	245	285	170	230	275	—	—	—
M2	—	—	—	110	145	170	140	180	220	150	200	240	145	190	230	—	—	—
M3	—	—	—	90	115	140	115	150	175	120	165	195	120	155	185	—	—	—
M4	—	—	—	70	90	110	90	115	140	95	130	150	90	120	145	—	—	—
M5	—	—	—	60	75	90	75	95	115	80	105	125	75	100	120	—	—	—
K1	245	330	390	—	—	—	—	—	—	—	—	—	190	255	305	—	—	—
K2	215	295	350	—	—	—	—	—	—	—	—	—	170	225	275	—	—	—
K3	185	250	295	—	—	—	—	—	—	—	—	—	145	190	230	—	—	—
K4	175	235	280	—	—	—	—	—	—	—	—	—	140	185	220	—	—	—
K5	110	145	175	—	—	—	—	—	—	—	—	—	85	115	135	—	—	—
K6	155	210	250	—	—	—	—	—	—	—	—	—	120	160	195	—	—	—
K7	140	185	220	—	—	—	—	—	—	—	—	—	110	145	170	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1075	1450	1700
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	430	590	690
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	285	390	460
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	325	445	520
S1	—	—	—	21	28	33	41	55	65	47	60	75	45	60	70	—	—	—
S2	—	—	—	17	22	27	33	43	50	38	50	60	36	48	55	—	—	—
S3	—	—	—	15	20	23	29	38	45	33	44	50	31	42	49	—	—	—
S11	—	—	—	29	39	46	55	75	90	65	85	105	65	85	100	—	—	—
S12	—	—	—	27	36	42	40	50	60	45	60	70	43	55	70	—	—	—
S13	—	—	—	16	21	25	23	30	36	27	35	41	25	33	40	—	—	—
H5	—	—	—	—	—	—	—	—	—	—	—	—	37	49	60	—	—	—
H8	—	—	—	—	—	—	—	—	—	—	—	—	40	50	60	—	—	—
H11	—	—	—	—	—	—	—	—	—	—	—	—	47	65	75	—	—	—
H12	—	—	—	—	—	—	—	—	—	—	—	—	80	105	125	—	—	—
H21	—	—	—	—	—	—	—	—	—	—	—	—	40	50	60	—	—	—

Double Quattromill R220.54-22



- For insert selection and cutting data recommendations, see page(s) 131-132
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15



KAPRS 48°

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF				
R220.54-0080-22-5A	Arbor	9,0	104,0	80,0	62,0	27,0	63,0	5	1,6	4600	SN.X2209AN
R220.54-0080-22-6A	Arbor	9,0	104,0	80,0	62,0	27,0	63,0	6	1,5	4600	SN.X2209AN
R220.54-0100-22-5A	Arbor	9,0	124,0	100,0	77,0	32,0	63,0	5	2,3	4000	SN.X2209AN
R220.54-0100-22-7A	Arbor	9,0	124,0	100,0	77,0	32,0	63,0	7	2,2	4000	SN.X2209AN
R220.54-0125-22-6A	Arbor	9,0	149,0	125,0	90,0	40,0	63,0	6	3,2	3700	SN.X2209AN
R220.54-0125-22-8A	Arbor	9,0	149,0	125,0	90,0	40,0	63,0	8	3,2	3700	SN.X2209AN
R220.54-8160-22-8A	Arbor	9,0	184,0	160,0	90,0	40,0	63,0	8	5,7	3300	SN.X2209AN
R220.54-8160-22-11A	Arbor	9,0	184,0	160,0	90,0	40,0	63,0	11	5,7	3300	SN.X2209AN

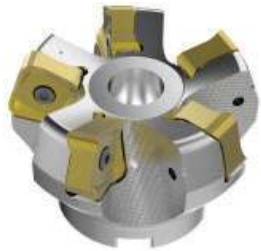
Spare Parts

For cutter	Lid screw	Lid	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R220.54-0080	–	–	DOUBLE-T	C05013-T20P	H6B-T20P	5,0
R220.54-0100-0125	–	–	DOUBLE-T	C05013-T20P	H6B-T20PL	5,0
R220.54-8160	MF6S4X8	SC-160-90	DOUBLE-T	C05013-T20P	H6B-T20PL	5,0

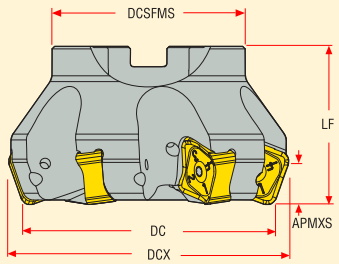
Please check availability in current price and stock-list

Torque keys, see page 710

Double Quattromill R220.56-22



- For insert selection and cutting data recommendations, see page(s) 133-134
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15



KAPRS 71°

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF				
R220.56-0080-22-5A	Arbor	13,0	91,5	80,0	62,0	27,0	63,0	5	1,4	4600	SN.X2209ZN
R220.56-0100-22-5A	Arbor	13,0	111,5	100,0	77,0	32,0	63,0	5	2,0	4000	SN.X2209ZN
R220.56-0100-22-7A	Arbor	13,0	111,5	100,0	77,0	32,0	63,0	7	1,9	4000	SN.X2209ZN
R220.56-0125-22-6A	Arbor	13,0	136,5	125,0	90,0	40,0	63,0	6	2,9	3700	SN.X2209ZN
R220.56-0125-22-8A	Arbor	13,0	136,5	125,0	90,0	40,0	63,0	8	2,9	3700	SN.X2209ZN
R220.56-8160-22-10A	Arbor	13,0	171,5	160,0	90,0	40,0	63,0	10	4,9	3300	SN.X2209ZN
R220.56-8160-22-8A	Arbor	13,0	171,5	160,0	90,0	40,0	63,0	8	5,0	3300	SN.X2209ZN

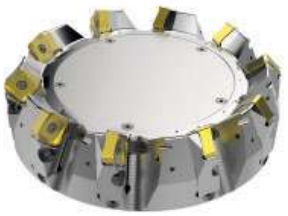
Spare Parts

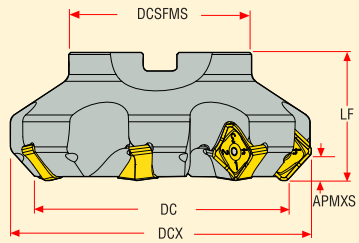
For cutter	Lid screw	Lid	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.56-0080	–	–	DOUBLE-T	C05013-T20P	H6B-T20P	MC6S12X35	5,0
R220.56-0100	–	–	DOUBLE-T	C05013-T20P	H6B-T20PL	–	5,0
R220.56-0125	–	–	DOUBLE-T	C05013-T20P	H6B-T20PL	–	5,0
R220.56-8160	MF6S4X8	SC-160-90	DOUBLE-T	C05013-T20P	H6B-T20PL	–	5,0

Please check availability in current price and stock-list

Torque keys, see page 710

Double Quattromill R220.54/R220.56-22CS





KAPRS 48°/71°

- For insert selection and cutting data recommendations, see page(s) 131-134
- For complete insert programme, see page(s) 653
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF				
R220.54-8200-22-9CS	Arbor	9,0	224,0	200,0	130,0	60,0	80,0	9	9,9	2700	SN.X2209AN
R220.54-8250-22-11CS	Arbor	9,0	274,0	250,0	130,0	60,0	80,0	11	17,9	2500	SN.X2209AN
R220.54-8315-22-14CS	Arbor	9,0	339,0	315,0	130,0	60,0	80,0	14	33,7	2200	SN.X2209AN
R220.56-8200-22-9CS	Arbor	13,0	211,5	200,0	130,0	60,0	80,0	9	9,9	2700	SN..22..ZN
R220.56-8250-22-11CS	Arbor	13,0	261,5	250,0	130,0	60,0	80,0	11	18,0	2500	SN.X2209ZN
R220.56-8315-22-14CS	Arbor	13,0	326,5	315,0	130,0	60,0	80,03	14	29,2	2200	SN.X2209ZN

Spare Parts

For cutter	Wedge screw	Wedge clamp	Setting gauge	Lid screw	Lid	Key (T-handle)	Insert screw	Insert key	Cassette screw	Cassette	Torque value (Nm)
R220.54-8200	LD8018-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-200-90	DOUBLE-T	C05013-T20P	H6B-T20PL	MC6S8X30	SN22AR	5,0
R220.54-8250	LD8020-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-250-90	DOUBLE-T	C05013-T20P	H6B-T20PL	MC6S8X30	SN22AR	5,0
R220.54-8315	LD8020-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-315-90	DOUBLE-T	C05013-T20P	H6B-T20PL	MC6S8X30	SN22AR	5,0
R220.56-8200	LD8018-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-200-90	DOUBLE-T	C05013-T20P	H6B-T20PL	MC6S8X30	SN22ZR	5,0
R220.56-8250	LD8020-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-250-90	DOUBLE-T	C05013-T20P	H6B-T20PL	MC6S8X30	SN22ZR	5,0
R220.56-8315	LD8020-T25P	CW0810	AU1114T-T15P	MF6S4X8	SC-315-90	DOUBLE-T	C05013-T20P	H6B-T20PL	MC6S8X30	SN22ZR	5,0

Please check availability in current price and stock-list

Torque keys, see page 710

R220.54-22 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	SNMX2209ANTR-M12 MP2501	7,0	0,38	0,42	0,65
P2	SNMX2209ANTR-M12 MP2501	7,0	0,38	0,44	0,65
P3	SNMX2209ANTR-M12 MP2501	7,0	0,36	0,40	0,65
P4	SNMX2209ANTR-M12 MP2501	7,0	0,36	0,40	0,60
P5	SNMX2209ANTR-M12 MP2501	7,0	0,34	0,40	0,60
P6	SNMX2209ANTR-M12 MP2501	7,0	0,34	0,38	0,60
P7	SNMX2209ANTR-M12 T350M	7,0	0,34	0,38	0,60
P8	SNMX2209ANTR-M12 T350M	7,0	0,36	0,40	0,65
P11	SNMX2209ANTR-M12 T350M	7,0	0,34	0,38	0,60
P12	SNMX2209ANTR-M12 T350M	6,0	0,24	0,26	0,42
M1	SNMX2209ANR-ME12 MS2050	7,0	0,28	0,32	0,50
M2	SNMX2209ANR-ME12 MS2050	7,0	0,26	0,30	0,46
M3	SNMX2209ANR-ME12 MS2050	6,0	0,20	0,24	0,36
M4	SNMX2209ANR-ME12 MS2050	4,5	0,18	0,20	0,32
M5	SNMX2209ANR-ME12 F40M	4,5	0,18	0,20	0,32
K1	SNMX2209ANTR-M18 MK2050	7,0	0,38	0,44	0,65
K2	SNMX2209ANTR-M18 MK2050	7,0	0,34	0,40	0,60
K3	SNMX2209ANTR-M18 MK2050	7,0	0,34	0,40	0,60
K4	SNMX2209ANTR-M18 MK2050	7,0	0,34	0,40	0,60
K5	SNMX2209ANTR-M18 MK2050	7,0	0,32	0,36	0,55
K6	SNMX2209ANTR-M18 MK2050	7,0	0,34	0,40	0,60
K7	SNMX2209ANTR-M18 MK2050	7,0	0,32	0,36	0,55
S1	SNMX2209ANTR-M12 MS2500	4,5	0,24	0,28	0,42
S2	SNMX2209ANTR-M12 MS2500	4,5	0,24	0,28	0,42
S3	SNMX2209ANTR-M12 MS2500	4,5	0,22	0,25	0,38
S11	SNMX2209ANR-ME12 MS2050	5,0	0,20	0,24	0,36
S12	SNMX2209ANR-ME12 MS2050	5,0	0,20	0,24	0,36
S13	SNMX2209ANR-ME12 MS2050	4,5	0,18	0,20	0,32
H5	SNMX2209ANTR-M18 MP1501	6,0	0,24	0,26	0,42
H8	SNMX2209ANTR-M18 MP1501	5,0	0,18	0,20	0,32
H11	SNMX2209ANTR-M18 MP1501	6,0	0,24	0,26	0,42
H12	SNMX2209ANTR-M18 MP1501	5,0	0,18	0,20	0,32
H21	SNMX2209ANTR-M18 MP1501	5,0	0,18	0,20	0,32

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R220.54-22 – Cutting data v_c = (m/min)

	MP1501			MP2501			T350M			F40M		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	275	375	445	240	330	390	205	280	330	175	240	285
P2	265	355	430	235	315	380	200	265	320	170	230	280
P3	235	315	370	205	280	330	175	235	275	150	205	240
P4	205	280	335	180	250	295	155	210	250	135	180	215
P5	200	265	320	175	235	285	150	200	240	130	175	210
P6	225	305	360	200	270	320	165	225	270	145	200	235
P7	210	290	340	190	255	300	160	215	255	135	185	220
P8	195	265	310	175	235	275	145	200	230	125	175	200
P11	205	280	330	180	250	290	155	210	245	135	180	215
P12	135	185	215	120	160	190	100	135	160	90	120	140
M1	—	—	—	170	230	275	155	205	250	140	185	225
M2	—	—	—	145	190	230	130	170	205	115	155	185
M3	—	—	—	115	155	185	105	140	165	95	125	150
M4	—	—	—	90	120	145	80	105	130	75	95	115
M5	—	—	—	75	100	120	70	90	105	60	80	95
K1	210	285	340	185	250	300	155	210	255	135	185	220
K2	190	255	305	170	225	270	140	190	225	125	165	195
K3	160	215	255	140	190	230	120	160	190	105	140	165
K4	155	205	245	135	180	215	115	150	185	100	135	160
K5	95	125	150	85	110	135	70	95	110	60	80	95
K6	135	180	215	120	160	190	100	135	160	90	115	140
K7	120	160	190	105	145	170	90	120	145	75	105	125
S1	—	—	—	44	60	70	38	50	60	35	45	55
S2	—	—	—	35	47	55	31	40	48	28	37	44
S3	—	—	—	31	42	50	27	36	43	25	33	39
S11	—	—	—	60	80	95	50	70	85	48	65	75
S12	—	—	—	42	55	65	36	48	60	33	44	55
S13	—	—	—	25	33	39	21	28	34	19	26	31
H5	45	60	70	36	49	60	34	45	55	29	39	46
H8	49	65	75	39	55	60	36	49	55	32	42	50
H11	55	75	90	46	60	75	43	60	70	37	50	60
H12	90	115	140	80	105	120	65	90	105	55	75	90
H21	49	65	75	39	55	60	36	49	55	32	42	50

	MK1500			MK2050			MS2050			MS2500			MP2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	240	325	385	—	—	—	265	360	430	230	315	370
P2	—	—	—	230	310	375	—	—	—	255	345	415	225	300	360
P3	—	—	—	205	275	325	—	—	—	225	305	360	195	265	310
P4	—	—	—	180	245	295	—	—	—	200	270	325	175	235	280
P5	—	—	—	175	235	280	—	—	—	195	260	310	170	225	270
P6	—	—	—	195	265	315	—	—	—	215	295	345	190	255	300
P7	—	—	—	185	250	295	150	205	240	205	280	330	180	240	285
P8	—	—	—	170	235	270	140	190	220	190	260	300	165	225	260
P11	—	—	—	180	245	290	145	200	235	200	270	320	175	235	275
P12	—	—	—	120	160	190	95	130	155	130	175	210	115	155	180
M1	—	—	—	—	—	—	155	205	250	185	245	300	160	215	260
M2	—	—	—	—	—	—	130	170	205	155	205	250	135	180	215
M3	—	—	—	—	—	—	105	140	165	125	165	200	110	145	175
M4	—	—	—	—	—	—	80	105	130	100	130	155	85	110	135
M5	—	—	—	—	—	—	70	90	105	80	105	130	70	95	110
K1	265	355	430	250	335	405	—	—	—	—	—	—	175	240	285
K2	240	320	380	225	300	360	—	—	—	—	—	—	160	215	255
K3	200	270	325	190	255	305	—	—	—	—	—	—	135	180	215
K4	190	255	310	180	245	290	—	—	—	—	—	—	130	170	205
K5	115	160	190	110	150	180	—	—	—	—	—	—	80	105	125
K6	170	225	270	160	215	255	—	—	—	—	—	—	115	150	180
K7	150	205	240	140	190	230	—	—	—	—	—	—	100	135	160
S1	—	—	—	—	—	—	38	50	60	48	65	75	42	55	65
S2	—	—	—	—	—	—	31	40	48	39	50	60	34	44	55
S3	—	—	—	—	—	—	27	36	43	34	45	55	30	39	47
S11	—	—	—	—	—	—	50	70	85	65	90	105	55	75	90
S12	—	—	—	—	—	—	36	48	60	46	60	75	40	55	65
S13	—	—	—	—	—	—	21	28	34	27	35	43	23	31	37
H5	—	—	—	—	—	—	—	—	—	—	—	—	34	46	55
H8	—	—	—	—	—	—	—	—	—	—	—	—	37	50	60
H11	—	—	—	—	—	—	—	—	—	—	—	—	44	60	70
H12	—	—	—	—	—	—	—	—	—	—	—	—	75	100	115
H21	—	—	—	—	—	—	—	—	—	—	—	—	37	50	60

R220.56-22 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	SNMX2209ZNTR-M12 MP2501	9,0	0,30	0,32	0,50
P2	SNMX2209ZNTR-M12 MP2501	9,0	0,30	0,34	0,50
P3	SNMX2209ZNTR-M12 MP2501	9,0	0,28	0,32	0,48
P4	SNMX2209ZNTR-M12 MP2501	9,0	0,28	0,30	0,48
P5	SNMX2209ZNTR-M12 MP2501	9,0	0,28	0,30	0,46
P6	SNMX2209ZNTR-M12 MP2501	9,0	0,28	0,30	0,46
P7	SNMX2209ZNTR-M18 T350M	9,0	0,28	0,30	0,46
P8	SNMX2209ZNTR-M18 T350M	9,0	0,28	0,32	0,48
P11	SNMX2209ZNTR-M18 T350M	9,0	0,28	0,30	0,46
P12	SNMX2209ZNTR-M18 T350M	7,0	0,19	0,20	0,32
M1	SNMX2209ZNR-ME12 MS2050	9,0	0,22	0,25	0,38
M2	SNMX2209ZNR-ME12 MS2050	9,0	0,20	0,22	0,36
M3	SNMX2209ZNR-ME12 MS2050	7,0	0,16	0,18	0,28
M4	SNMX2209ZNR-ME12 MS2050	5,0	0,14	0,16	0,24
M5	SNMX2209ZNR-ME12 F40M	5,0	0,14	0,16	0,24
K1	SNMX2209ZNTR-M18 MK2050	9,0	0,30	0,34	0,50
K2	SNMX2209ZNTR-M18 MK2050	9,0	0,28	0,30	0,46
K3	SNMX2209ZNTR-M18 MK2050	9,0	0,28	0,30	0,46
K4	SNMX2209ZNTR-M18 MK2050	9,0	0,28	0,30	0,46
K5	SNMX2209ZNTR-M18 MK2050	9,0	0,25	0,28	0,42
K6	SNMX2209ZNTR-M18 MK2050	9,0	0,28	0,30	0,46
K7	SNMX2209ZNTR-M18 MK2050	9,0	0,25	0,28	0,42
S1	SNMX2209ZNTR-M12 MP2050	5,0	0,19	0,22	0,32
S2	SNMX2209ZNTR-M12 MP2050	5,0	0,19	0,22	0,32
S3	SNMX2209ZNTR-M12 MP2050	5,0	0,18	0,20	0,30
S11	SNMX2209ZNR-ME12 MS2050	6,0	0,16	0,18	0,28
S12	SNMX2209ZNR-ME12 MS2050	6,0	0,16	0,18	0,28
S13	SNMX2209ZNR-ME12 MS2050	5,0	0,14	0,16	0,24
H5	SNMX2209ZNTR-M18 MP1501	7,0	0,19	0,20	0,32
H8	SNMX2209ZNTR-M18 MP1501	6,0	0,14	0,16	0,24
H11	SNMX2209ZNTR-M18 MP1501	7,0	0,19	0,20	0,32
H12	SNMX2209ZNTR-M18 MP1501	6,0	0,14	0,16	0,24
H21	SNMX2209ZNTR-M18 MP1501	6,0	0,14	0,16	0,24

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R220.56-22 – Cutting data v_c = (m/min)

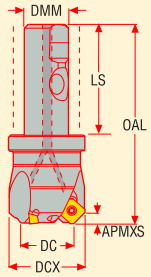
	MP1501			MP2501			T350M			F40M		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	270	365	435	240	325	385	205	285	335	195	260	310
P2	260	350	425	230	310	375	200	270	325	190	250	300
P3	230	305	370	205	270	325	180	235	285	160	220	260
P4	205	275	325	180	245	290	155	215	250	145	195	230
P5	195	265	315	170	235	280	150	205	245	140	190	220
P6	220	295	355	195	265	315	170	230	270	160	215	250
P7	205	280	335	180	250	295	160	215	255	150	200	240
P8	195	260	310	170	230	275	150	200	240	135	185	220
P11	200	270	325	175	240	285	155	210	250	145	195	230
P12	135	180	215	120	160	190	105	140	165	95	130	150
M1	—	—	—	165	225	270	155	210	250	150	205	240
M2	—	—	—	140	190	225	130	175	210	125	170	200
M3	—	—	—	115	155	180	105	145	170	105	135	160
M4	—	—	—	90	115	140	85	110	130	80	105	125
M5	—	—	—	75	100	120	70	90	110	65	90	105
K1	205	275	335	185	245	295	160	215	260	150	200	235
K2	185	250	300	165	220	265	140	195	230	135	180	210
K3	155	210	255	140	190	225	120	165	195	115	150	175
K4	150	200	240	130	180	215	115	155	185	110	145	170
K5	90	125	150	80	110	130	70	95	115	65	90	105
K6	130	180	210	115	160	190	100	140	165	95	130	150
K7	120	160	190	105	140	170	90	120	145	85	115	135
S1	—	—	—	43	55	70	39	50	60	37	49	60
S2	—	—	—	35	46	55	31	41	50	30	40	47
S3	—	—	—	31	41	49	27	36	44	27	35	42
S11	—	—	—	60	80	95	55	70	85	50	70	80
S12	—	—	—	41	55	65	37	50	60	36	48	55
S13	—	—	—	24	32	39	22	29	35	21	28	33
H5	44	60	70	36	48	55	34	46	55	32	42	50
H8	49	65	75	39	50	60	38	49	60	34	45	55
H11	55	75	90	45	60	70	44	60	70	40	55	65
H12	85	115	135	75	100	120	65	90	105	60	80	95
H21	49	65	75	39	50	60	38	49	60	34	45	55

	MK1500			MK2050			MS2050			MS2500			MP2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	235	320	380	—	—	—	260	355	420	225	310	365
P2	—	—	—	230	305	370	—	—	—	255	340	410	220	295	355
P3	—	—	—	200	270	320	—	—	—	225	295	355	195	260	310
P4	—	—	—	175	240	285	—	—	—	195	265	315	170	230	275
P5	—	—	—	170	230	275	—	—	—	185	255	305	165	220	265
P6	—	—	—	190	260	310	—	—	—	210	285	340	185	250	295
P7	—	—	—	180	245	290	145	200	240	200	270	320	175	235	280
P8	—	—	—	170	225	270	140	185	220	185	250	300	165	215	260
P11	—	—	—	175	235	280	140	195	230	195	265	315	170	230	270
P12	—	—	—	115	160	185	95	130	150	130	175	205	110	150	180
M1	—	—	—	—	—	—	150	200	245	180	240	295	155	210	255
M2	—	—	—	—	—	—	125	170	200	150	205	245	130	175	210
M3	—	—	—	—	—	—	105	140	165	125	165	195	105	145	170
M4	—	—	—	—	—	—	80	105	130	95	125	155	85	110	135
M5	—	—	—	—	—	—	65	90	105	80	105	130	70	90	110
K1	260	350	420	245	330	400	—	—	—	—	—	—	175	235	280
K2	230	315	375	220	300	355	—	—	—	—	—	—	155	210	250
K3	195	265	315	185	250	300	—	—	—	—	—	—	130	180	210
K4	185	255	305	175	240	285	—	—	—	—	—	—	125	170	205
K5	115	155	185	110	145	175	—	—	—	—	—	—	75	105	125
K6	165	225	265	155	210	250	—	—	—	—	—	—	110	150	180
K7	150	200	235	140	190	225	—	—	—	—	—	—	100	135	160
S1	—	—	—	—	—	—	38	49	60	47	60	75	41	55	65
S2	—	—	—	—	—	—	30	40	48	38	50	60	33	43	55
S3	—	—	—	—	—	—	27	35	42	33	44	55	29	39	46
S11	—	—	—	—	—	—	50	70	80	65	90	105	55	75	90
S12	—	—	—	—	—	—	36	48	55	45	60	70	39	55	60
S13	—	—	—	—	—	—	21	28	34	27	35	42	23	30	37
H5	—	—	—	—	—	—	—	—	—	—	—	—	34	46	55
H8	—	—	—	—	—	—	—	—	—	—	—	—	37	49	60
H11	—	—	—	—	—	—	—	—	—	—	—	—	43	60	70
H12	—	—	—	—	—	—	—	—	—	—	—	—	75	95	115
H21	—	—	—	—	—	—	—	—	—	—	—	—	37	49	60

Quattromill R217.53-09



- For insert selection and cutting data recommendations, see page(s) 138–139
- For complete insert programme, see page(s) 641
- For ISO attribute explanation, see page 15



KAPRS 45°

Designation	Type of mounting	Dimensions in mm							KG		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

Spare Parts

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

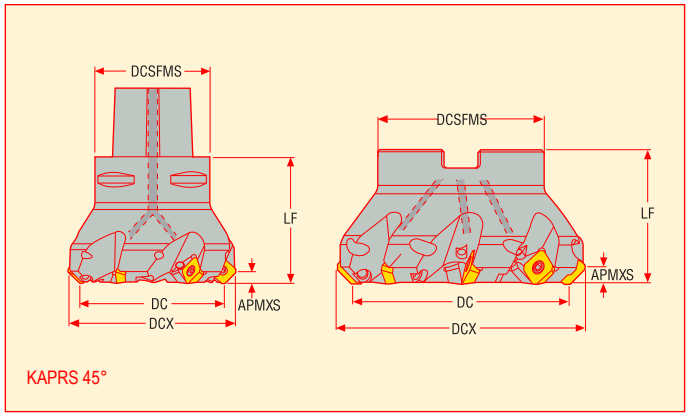
Please check availability in current price and stock-list

Torque keys, see page 710

Quattromill R220.53-09



- For insert selection and cutting data recommendations, see page(s) 138–139
- For complete insert programme, see page(s) 641
- For ISO attribute explanation, see page 15



KAPRS 45°

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF				
C5-R217.53-040-09-4A	Seco-Capto	4,5	50,0	40,0	50,0	–	55,0	4	0,8	17700	SE..09T3
R220.53-0032-09-4A	Arbor	4,5	42,0	32,0	35,0	16,0	40,0	4	0,3	19800	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
R220.53-0040-09-5A	Arbor	4,5	50,0	40,0	42,0	22,0	40,0	5	0,4	17700	SE..09T3
R220.53-0050-09-5A	Arbor	4,5	60,0	50,0	47,0	22,0	40,0	5	0,5	15800	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
R220.53-0063-09-6A	Arbor	4,5	73,0	63,0	47,0	22,0	40,0	6	0,6	14100	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
R220.53-0080-09-6A	Arbor	4,5	90,0	80,0	62,0	27,0	50,0	6	1,2	12500	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
R220.53-0100-09-7A	Arbor	4,5	110,0	100,0	77,0	32,0	50,0	7	1,8	11200	SE..09T3
R220.53-0100-09-10A	Arbor	4,5	110,0	100,0	77,0	32,0	50,0	10	1,8	11200	SE..09T3

Spare Parts

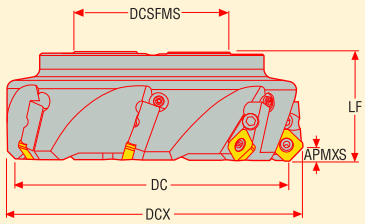
For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
C5-R217.53-..	DOUBLE-T	C03008-T09P	H4B-T09P	–	2,0
R220.53-0032	DOUBLE-T	C03008-T09P	H4B-T09P	220.17-690	2,0
R220.53-0040-0063	DOUBLE-T	C03008-T09P	H4B-T09P	220.17-696	2,0
R220.53-0080-0100	DOUBLE-T	C03008-T09P	H4B-T09P	–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

Please check availability in current price and stock-list

Torque keys, see page 710

Quattromill R220.53-09C





KAPRS 45°

- For insert selection and cutting data recommendations, see page(s) 138–139
- For complete insert programme, see page(s) 641
- For ISO attribute explanation, see page 15

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

Spare Parts

For cutter	Setting gauge	Key (T-handle)	Insert screw	Insert key	Cassette screw	Cassette	Torque value (Nm)
R220.53-09C	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 710

R220.53-09 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	SEMX09T3AFTN-ME06 MP2501	2,5	0,12	0,13	0,20
P2	SEMX09T3AFTN-ME06 MP2501	2,5	0,12	0,13	0,20
P3	SEMX09T3AFTN-ME06 MP2501	2,5	0,11	0,13	0,20
P4	SEMX09T3AFTN-ME06 MP2501	2,5	0,11	0,12	0,19
P5	SEMX09T3AFTN-ME06 MP2501	2,5	0,11	0,12	0,19
P6	SEMX09T3AFTN-M08 MP2501	2,5	0,15	0,16	0,25
P7	SEMX09T3AFTN-M08 MP2501	2,5	0,15	0,16	0,25
P8	SEMX09T3AFTN-M08 MP2501	2,5	0,15	0,17	0,26
P11	SEEX09T3AFTN-M08 T350M	2,5	0,15	0,16	0,25
P12	SEEX09T3AFTN-M08 T350M	2,0	0,10	0,11	0,17
M1	SEEX09T3AFTN-ME07 F40M	2,5	0,14	0,16	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	0,18
M5	SEMX09T3AFTN-M08 MM4500	1,6	0,10	0,11	0,18
K1	SEEX09T3AFTN-M08 MK1500	2,5	0,16	0,18	0,28
K2	SEEX09T3AFTN-M08 MK1500	2,5	0,15	0,16	0,25
K3	SEEX09T3AFTN-M08 MK2050	2,5	0,15	0,16	0,25
K4	SEEX09T3AFTN-M08 MK2050	2,5	0,15	0,16	0,25
K5	SEEX09T3AFTN-M08 MK2050	2,5	0,13	0,15	0,22
K6	SEEX09T3AFTN-M08 MK2050	2,5	0,15	0,16	0,25
K7	SEEX09T3AFTN-M08 MK2050	2,5	0,13	0,15	0,22
N1	SEEX09T3AFN-E04 H15	2,5	0,10	0,11	0,18
N2	SEEX09T3AFN-E04 H15	2,5	0,10	0,11	0,18
N3	SEEX09T3AFN-E04 F40M	2,5	0,10	0,11	0,18
N11	SEEX09T3AFN-E04 F40M	2,5	0,10	0,11	0,18
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	0,13
S12	SEEX09T3AFN-M05 MS2050	1,9	0,075	0,080	0,13
S13	SEEX09T3AFN-M05 MS2050	1,6	0,065	0,070	0,11
H5	SEEX09T3AFTN-D09 MP1501	2,0	0,11	0,12	0,19
H8	SEEX09T3AFTN-D09 MP1501	1,9	0,085	0,095	0,15
H11	SEEX09T3AFTN-D09 MP1501	2,0	0,11	0,12	0,19
H12	SEEX09T3AFTN-D09 MP1501	1,9	0,085	0,095	0,15
H21	SEEX09T3AFTN-D09 MP1501	1,9	0,085	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

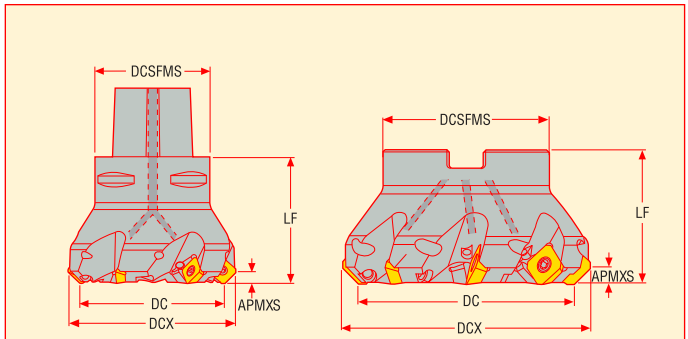
R220.53-09 – Cutting data v_c = (m/min)

	MP1501			MP2501			MP3000			T350M			F15M			F40M		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	335	450	530	305	410	480	325	435	510	320	430	500	—	—	—	230	310	365
P2	325	435	510	300	400	470	320	425	500	310	415	490	—	—	—	225	300	355
P3	285	380	445	260	345	410	280	365	435	275	360	430	—	—	—	200	265	310
P4	250	335	400	230	305	360	245	330	385	240	320	380	—	—	—	175	230	275
P5	240	325	385	220	295	350	235	315	365	230	310	365	—	—	—	165	225	265
P6	275	365	430	245	335	390	265	350	410	260	345	405	—	—	—	185	250	295
P7	260	345	405	235	315	370	250	335	390	245	325	385	—	—	—	175	240	280
P8	240	320	375	220	290	345	235	305	365	230	305	365	—	—	—	165	220	260
P11	250	335	395	225	305	360	245	325	380	235	320	375	—	—	—	170	230	270
P12	160	215	255	145	195	230	155	205	240	150	205	240	—	—	—	110	150	175
M1	—	—	—	215	285	340	240	320	375	240	320	380	—	—	—	180	245	285
M2	—	—	—	175	240	280	195	260	305	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	145
M5	—	—	—	95	125	145	100	130	155	100	135	160	—	—	—	80	105	125
K1	260	345	405	235	315	370	255	335	395	—	—	—	300	395	465	180	240	280
K2	225	310	365	210	280	330	225	300	350	—	—	—	265	350	410	160	215	250
K3	190	260	310	175	240	280	190	250	295	—	—	—	225	300	345	135	180	210
K4	185	250	295	170	225	270	180	240	280	—	—	—	215	285	330	130	170	205
K5	115	150	180	105	140	165	110	145	170	—	—	—	130	170	205	80	105	125
K6	160	220	260	150	200	235	160	210	250	—	—	—	190	250	290	110	150	180
K7	145	195	230	135	175	210	140	190	220	—	—	—	165	220	260	100	135	160
N1	—	—	—	—	—	—	1875	2525	2950	—	—	—	2250	3000	3500	1325	1775	2075
N2	—	—	—	—	—	—	760	1025	1200	—	—	—	910	1225	1425	540	720	840
N3	—	—	—	—	—	—	500	680	800	—	—	—	610	810	940	360	480	560
N11	—	—	—	—	—	—	—	—	—	—	—	—	690	930	1075	410	550	640
S1	—	—	—	—	—	—	55	75	90	55	75	90	—	—	—	44	60	70
S2	—	—	—	—	—	—	45	60	70	46	60	75	—	—	—	35	47	55
S3	—	—	—	—	—	—	39	50	60	40	55	65	—	—	—	31	40	49
S11	—	—	—	—	—	—	80	105	125	80	105	125	—	—	—	60	80	95
S12	—	—	—	—	—	—	55	75	85	55	75	85	—	—	—	42	55	65
S13	—	—	—	—	—	—	31	42	50	32	43	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	160	95	125	145	95	125	150	95	125	150	—	—	—	70	95	110
H21	55	75	90	47	60	75	50	65	80	55	70	85	—	—	—	39	50	60

	MK1500			MK2050			MM4500			MS2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	300	400	475	190	250	295	—	—	—
P2	—	—	—	295	390	460	185	245	290	—	—	—
P3	—	—	—	255	340	405	160	215	255	—	—	—
P4	—	—	—	225	300	355	140	190	220	—	—	—
P5	—	—	—	215	290	345	135	180	215	—	—	—
P6	—	—	—	245	330	385	150	205	240	—	—	—
P7	—	—	—	230	310	365	145	195	225	220	295	340
P8	—	—	—	215	290	340	135	180	210	205	270	325
P11	—	—	—	225	300	355	140	185	220	215	285	330
P12	—	—	—	145	195	230	90	120	145	135	180	210
M1	—	—	—	—	—	—	155	210	245	225	300	355
M2	—	—	—	—	—	—	130	175	205	185	250	290
M3	—	—	—	—	—	—	105	140	165	150	195	230
M4	—	—	—	—	—	—	80	110	125	115	150	180
M5	—	—	—	—	—	—	70	90	105	95	125	150
K1	335	445	530	315	420	500	—	—	—	—	—	—
K2	295	400	470	280	380	445	—	—	—	—	—	—
K3	250	335	395	235	320	375	—	—	—	—	—	—
K4	240	320	380	225	305	360	—	—	—	—	—	—
K5	150	195	235	140	185	220	—	—	—	—	—	—
K6	210	285	335	200	270	315	—	—	—	—	—	—
K7	190	250	300	180	235	280	—	—	—	—	—	—
S1	—	—	—	—	—	—	25	33	39	55	70	85
S2	—	—	—	—	—	—	20	27	31	43	55	65
S3	—	—	—	—	—	—	17	23	28	37	50	60
S11	—	—	—	—	—	—	34	46	55	75	100	115
S12	—	—	—	—	—	—	32	42	50	50	70	80
S13	—	—	—	—	—	—	19	25	29	30	40	47

Quattromill R217/220.53-12





KAPRS 45°

- For insert selection and cutting data recommendations, see page(s) 143–144
- For complete insert programme, see page(s) 641
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		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
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
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
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
R220.53-0040-12-3A	Arbor	6,0	52,0	40,0	47,0	22,0	40,0	3	0,4	16500	SE.X1204
R220.53-0040-12-4A	Arbor	6,0	52,0	40,0	47,0	22,0	40,0	4	0,4	16500	SE.X1204
R220.53-0050-12-4A	Arbor	6,0	62,0	50,0	47,0	22,0	40,0	4	0,5	14800	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
R220.53-0063-12-5A	Arbor	6,0	75,0	63,0	47,0	22,0	40,0	5	0,6	13200	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
R220.53-0063-12-9A	Arbor	6,0	75,0	63,0	47,0	22,0	40,0	9	0,6	13200	SE.X1204
R220.53-0080-12-6A	Arbor	6,0	92,0	80,0	62,0	27,0	50,0	6	1,1	11700	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
R220.53-0080-12-11A	Arbor	6,0	92,0	80,0	62,0	27,0	50,0	11	1,1	11700	SE.X1204

Spare Parts

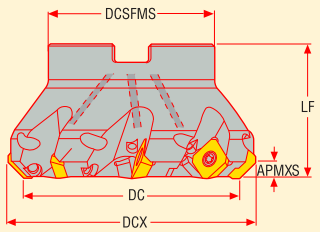
For cutter	Key (T-handle)	Insert screw	Insert key	Front insert key	Arbor screw	Torque value (Nm)
Cx-R217.53-12	DOUBLE-T	C04011-T15P	H4B-T15P	–	–	3,5
R220.53-0040-0063	DOUBLE-T	C04011-T15P	H4B-T15P	–	220.17-696	3,5
R220.53-0063-8160-9/11A	DOUBLE-T	C04008-H3	H6B-H3.0	T15P-E8	–	3,5
R220.53-0080	DOUBLE-T	C04011-T15P	H4B-T15P	–	–	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

Quattromill R220.53-12





KAPRS 45°

- For insert selection and cutting data recommendations, see page(s) 143–144
- For complete insert programme, see page(s) 641
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF				
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
R220.53-0100-12-10A	Arbor	6,0	112,0	100,0	77,0	32,0	50,0	10	1,7	10500	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
R220.53-0125-12-6A	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
R220.53-0125-12-12A	Arbor	6,0	137,0	125,0	90,0	40,0	63,0	12	3,1	9400	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
R220.53-8160-12-7	Arbor	6,0	172,0	160,0	90,0	40,0	63,0	7	4,6	8300	SE.X1204
R220.53-8160-12-17	Arbor	6,0	172,0	160,0	130,0	40,0	63,0	17	5,3	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
R220.53-8200-12-20	Arbor	6,0	212,0	200,0	160,0	60,0	63,0	20	7,2	7400	SE.X1204

Spare Parts

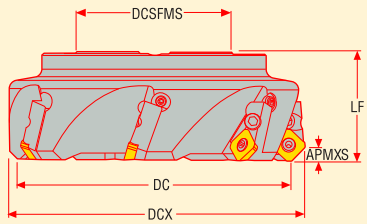
For cutter	Key (T-handle)	Insert screw	Insert key	Front insert key	Torque value (Nm)
R220.53-0100-8160	DOUBLE-T	C04011-T15P	H4B-T15PL	–	3,5
R220.53-0100-0125-12A/14A	DOUBLE-T	C04008-H3	H6B-H3.0	T15P-E8	3,5
R220.53-8160-8200-17/20	DOUBLE-T	C04008-H3	H6B-H3.0	T15P-E8	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

Quattromill R220.53-12C





KAPRS 45°

- For insert selection and cutting data recommendations, see page(s) 143–144
- For complete insert programme, see page(s) 641
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		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
R220.53-0080-12-6C	Arbor	6,0	92,0	80,0	62,0	27,0	50,0	6	1,7	7400	SE.X1204
R220.53-0100-12-6C	Arbor	6,0	112,0	100,0	77,0	32,0	50,0	6	2,6	6600	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
R220.53-0125-12-8C	Arbor	6,0	137,0	125,0	90,0	40,0	63,0	8	4,2	5900	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
R220.53-8160-12-7C	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
R220.53-8160-12-14C	Arbor	6,0	172,0	160,0	90,0	40,0	63,0	14	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

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
R220.53-0100-8315	AU1114T-T15P	DOUBLE-T	C04011-T15P	H4B-T15PL	FS96018	SE12AR-53	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

R220.53-12 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	SEMX1204AFTN-M15 MP2501	3,5	0,30	0,32	0,50
P2	SEMX1204AFTN-M15 MP2501	3,5	0,30	0,34	0,50
P3	SEMX1204AFTN-M15 MP2501	3,5	0,28	0,32	0,50
P4	SEMX1204AFTN-M15 MP2501	3,5	0,28	0,32	0,48
P5	SEMX1204AFTN-M15 MP2501	3,5	0,28	0,30	0,48
P6	SEMX1204AFTN-M15 MP2501	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	0,50
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	0,32
M3	SEEX1204AFN-M10 F40M	3,0	0,15	0,16	0,25
M4	SEEX1204AFN-M10 T350M	2,0	0,13	0,14	0,22
M5	SEEX1204AFTN-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	0,48
K3	SEMX1204AFTN-M15 MK2050	3,5	0,28	0,30	0,48
K4	SEMX1204AFTN-M15 MK2050	3,5	0,28	0,30	0,48
K5	SEMX1204AFTN-M15 MK2050	3,5	0,25	0,28	0,42
K6	SEMX1204AFTN-M15 MK2050	3,5	0,28	0,30	0,48
K7	SEMX1204AFTN-M15 MK2050	3,5	0,25	0,28	0,42
N1	SEEX1204AFN-E08 H25	3,5	0,20	0,22	0,36
N2	SEEX1204AFN-E08 H25	3,5	0,20	0,22	0,36
N3	SEEX1204AFN-E08 H25	3,5	0,20	0,22	0,36
N11	SEEX1204AFN-E08 H25	3,5	0,20	0,22	0,36
S1	SEEX1204AFTN-ME11 T350M	2,0	0,14	0,16	0,24
S2	SEEX1204AFTN-ME11 T350M	2,0	0,14	0,16	0,24
S3	SEEX1204AFTN-ME11 T350M	2,0	0,13	0,14	0,22
S11	SEEX1204AFN-M10 MS2050	2,5	0,15	0,16	0,25
S12	SEEX1204AFN-M10 MS2050	2,5	0,15	0,16	0,25
S13	SEEX1204AFN-M10 MS2050	2,0	0,13	0,14	0,22
H5	SEMX1204AFTN-MD19 MP1501	3,0	0,24	0,26	0,40
H8	SEMX1204AFTN-MD19 MP1501	2,5	0,18	0,20	0,30
H11	SEMX1204AFTN-MD19 MP1501	3,0	0,24	0,26	0,40
H12	SEMX1204AFTN-MD19 MP1501	2,5	0,18	0,20	0,30
H21	SEMX1204AFTN-MD19 MP1501	2,5	0,18	0,20	0,30

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

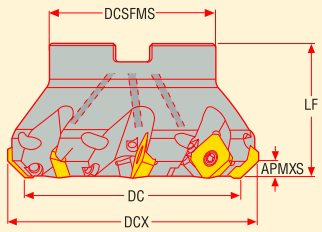
R220.53-12 – Cutting data v_c = (m/min)

	MP1501			MP2501			MP3000			T350M			F40M		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	300	400	485	265	355	430	220	300	355	230	310	375	200	270	325
P2	295	390	470	260	345	420	215	290	345	225	300	365	195	265	315
P3	260	345	405	230	305	360	190	255	300	200	265	315	175	230	275
P4	225	305	360	200	270	320	165	225	270	175	235	280	150	205	245
P5	215	295	345	190	260	305	160	220	260	165	230	265	145	200	230
P6	245	330	395	215	295	350	180	245	290	190	255	305	165	220	265
P7	230	310	370	205	275	330	170	230	275	175	240	285	155	210	250
P8	215	290	340	190	255	300	160	215	250	165	225	265	145	195	230
P11	225	305	360	195	270	320	165	225	265	170	235	280	150	205	240
P12	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	245	135	185	215	145	195	230	130	180	210
M3	—	—	—	125	170	200	110	150	175	120	160	190	105	145	170
M4	—	—	—	100	130	155	85	115	135	90	120	145	85	110	130
M5	—	—	—	80	110	130	70	95	115	75	100	120	70	90	110
K1	230	310	375	205	275	330	170	230	275	180	240	290	155	210	250
K2	205	280	330	180	250	290	155	205	245	160	215	255	140	190	220
K3	175	235	280	155	210	245	130	175	205	135	185	215	115	160	185
K4	165	225	265	145	200	235	125	170	200	130	175	205	110	150	180
K5	100	135	165	90	120	145	75	105	120	80	105	125	70	90	110
K6	145	200	235	130	175	205	110	150	175	115	155	180	100	135	155
K7	130	175	210	115	155	185	95	130	155	100	135	160	90	120	140
N1	—	—	—	—	—	—	1250	1675	1975	—	—	—	1125	1550	1825
N2	—	—	—	—	—	—	500	670	800	—	—	—	460	620	740
N3	—	—	—	—	—	—	335	450	530	—	—	—	305	415	490
N11	—	—	—	—	—	—	385	510	610	—	—	—	350	475	560
S1	—	—	—	—	—	—	40	55	65	43	55	70	39	50	60
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	85
S12	—	—	—	—	—	—	38	50	60	41	55	65	37	50	60
S13	—	—	—	—	—	—	23	30	36	24	32	38	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	65	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	65	37	49	60	41	55	65	36	47	55

	MK1500			MK2050			MM4500			MS2050			H25		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	260	350	425	165	220	265	—	—	—	—	—	—
P2	—	—	—	255	340	410	160	215	255	—	—	—	—	—	—
P3	—	—	—	225	300	355	140	185	220	—	—	—	—	—	—
P4	—	—	—	200	265	315	125	165	195	—	—	—	—	—	—
P5	—	—	—	190	255	300	120	160	190	—	—	—	—	—	—
P6	—	—	—	210	290	345	130	180	215	—	—	—	—	—	—
P7	—	—	—	200	275	325	125	170	200	195	260	305	—	—	—
P8	—	—	—	190	250	300	120	155	185	180	240	285	—	—	—
P11	—	—	—	195	265	315	120	165	195	190	250	295	—	—	—
P12	—	—	—	130	175	205	80	110	130	120	160	190	—	—	—
M1	—	—	—	—	—	—	135	185	220	200	265	315	—	—	—
M2	—	—	—	—	—	—	115	155	180	165	220	260	—	—	—
M3	—	—	—	—	—	—	90	125	145	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	410	245	330	390	—	—	—	—	—	—	—	—	—
K3	220	295	350	205	280	330	—	—	—	—	—	—	—	—	—
K4	210	285	335	195	270	315	—	—	—	—	—	—	—	—	—
K5	130	170	205	120	165	195	—	—	—	—	—	—	—	—	—
K6	185	250	295	175	235	275	—	—	—	—	—	—	—	—	—
K7	165	220	265	155	210	250	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—	1475	2000	2325
N2	—	—	—	—	—	—	—	—	—	—	—	—	600	810	940
N3	—	—	—	—	—	—	—	—	—	—	—	—	400	540	630
N11	—	—	—	—	—	—	—	—	—	—	—	—	460	620	720
S1	—	—	—	—	—	—	22	29	35	48	65	75	—	—	—
S2	—	—	—	—	—	—	18	23	28	38	50	60	—	—	—
S3	—	—	—	—	—	—	16	21	25	34	45	55	—	—	—
S11	—	—	—	—	—	—	31	41	49	65	90	105	—	—	—
S12	—	—	—	—	—	—	28	38	45	46	60	75	—	—	—
S13	—	—	—	—	—	—	17	22	26	27	36	43	—	—	—

Quattromill R220.53-15





KAPRS 45°

- For insert selection and cutting data recommendations, see page(s) 147–148
- For complete insert programme, see page(s) 642
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF				
R220.53-0063-15-5A	Arbor	7,5	78,0	63,0	47,0	22,0	40,0	5	0,6	8300	SE.X1505
R220.53-0080-15-6A	Arbor	7,5	96,0	80,0	62,0	27,0	50,0	6	1,2	7400	SE.X1505
R220.53-0080-15-7A	Arbor	7,5	96,0	80,0	62,0	27,0	50,0	7	1,2	7400	SE.X1505
R220.53-0100-15-7A	Arbor	7,5	116,0	100,0	77,0	32,0	50,0	7	1,8	6600	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
R220.53-0125-15-8A	Arbor	7,5	141,0	125,0	90,0	40,0	63,0	8	3,3	5900	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
R220.53-8160-15-10	Arbor	7,5	176,0	160,0	90,0	40,0	63,0	10	4,8	5200	SE.X1505
R220.53-8200-15-12	Arbor	7,5	216,0	200,0	130,0	60,0	63,0	12	7,7	4700	SE.X1505

Spare Parts

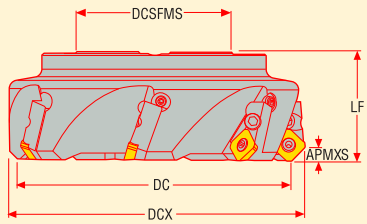
For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.53-0063	DOUBLE-T	C05013-T20P	H6B-T20P	220.17-696	5,0
R220.53-0080	DOUBLE-T	C05013-T20P	H6B-T20P	–	5,0
R220.53-0100-8200	DOUBLE-T	C05013-T20P	H6B-T20PL	–	5,0

Please check availability in current price and stock-list

Torque keys, see page 710

Quattromill R220.53-15C





KAPRS 45°

- For insert selection and cutting data recommendations, see page(s) 147–148
- For complete insert programme, see page(s) 642
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		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

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 710

R220.53-15 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	SEMX1505AFTN-M18 MP2501	4,5	0,36	0,40	0,60
P2	SEMX1505AFTN-M18 MP2501	4,5	0,36	0,40	0,65
P3	SEMX1505AFTN-M18 MP2501	4,5	0,34	0,38	0,60
P4	SEMX1505AFTN-M18 MP2501	4,5	0,34	0,38	0,60
P5	SEMX1505AFTN-M18 MP2501	4,5	0,34	0,36	0,55
P6	SEMX1505AFTN-M18 MP2501	4,5	0,32	0,36	0,55
P7	SEMX1505AFTN-M18 T350M	4,5	0,32	0,36	0,55
P8	SEMX1505AFTN-M18 T350M	4,5	0,34	0,38	0,60
P11	SEMX1505AFTN-M18 T350M	4,5	0,32	0,36	0,55
P12	SEMX1505AFTN-M18 T350M	3,5	0,22	0,25	0,38
M1	SEEX1505AFN-M12 F40M	4,5	0,24	0,26	0,42
M2	SEEX1505AFN-M12 F40M	4,5	0,22	0,25	0,38
M3	SEEX1505AFN-M12 F40M	3,5	0,18	0,20	0,30
M4	SEEX1505AFTN-M17 T350M	2,5	0,22	0,24	0,38
M5	SEEX1505AFTN-M17 T350M	2,5	0,22	0,24	0,38
K1	SEMX1505AFTN-M18 MK2050	4,5	0,36	0,40	0,65
K2	SEMX1505AFTN-M18 MK2050	4,5	0,34	0,36	0,55
K3	SEMX1505AFTN-M18 MK2050	4,5	0,34	0,36	0,55
K4	SEMX1505AFTN-M18 MK2050	4,5	0,34	0,36	0,55
K5	SEMX1505AFTN-M18 MK2050	4,5	0,30	0,34	0,50
K6	SEMX1505AFTN-M18 MK2050	4,5	0,34	0,36	0,55
K7	SEMX1505AFTN-M18 MK2050	4,5	0,30	0,34	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	0,25
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	SEMX1505AFTN-MD20 MP1501	3,5	0,25	0,28	0,42
H8	SEMX1505AFTN-MD20 MP1501	3,0	0,19	0,22	0,32
H11	SEMX1505AFTN-MD20 MP1501	3,5	0,25	0,28	0,42
H12	SEMX1505AFTN-MD20 MP1501	3,0	0,19	0,22	0,32
H21	SEMX1505AFTN-MD20 MP1501	3,0	0,19	0,22	0,32

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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

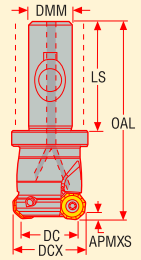
	MP1501			MP2501			MP3000			T350M			F40M		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	275	375	445	245	330	395	215	290	345	215	290	345	185	250	300
P2	270	365	425	240	320	375	210	285	335	205	280	325	180	245	285
P3	235	320	375	210	280	330	185	250	295	180	245	290	160	215	250
P4	210	280	330	185	250	290	160	220	260	160	215	255	140	190	220
P5	200	270	325	175	240	285	155	215	250	155	210	250	135	180	215
P6	225	305	365	200	270	320	175	240	280	175	235	280	150	205	245
P7	215	290	345	190	255	305	165	225	265	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	255	160	215	255	140	190	225
P12	140	180	220	120	160	195	105	145	170	105	140	170	90	120	145
M1	—	—	—	170	230	270	155	215	250	160	215	250	145	195	230
M2	—	—	—	140	195	230	130	180	210	130	180	215	120	165	195
M3	—	—	—	115	155	185	105	145	170	110	145	170	100	130	155
M4	—	—	—	90	120	145	85	110	130	85	115	135	75	105	120
M5	—	—	—	75	100	120	70	95	110	70	95	110	65	85	100
K1	215	285	335	190	255	295	165	225	265	165	220	260	145	195	225
K2	190	260	305	165	230	270	150	200	235	145	200	235	125	175	205
K3	160	220	260	140	195	230	125	170	200	125	170	200	105	145	175
K4	150	210	250	135	185	220	120	165	190	115	160	190	100	140	165
K5	95	125	150	85	110	135	75	100	120	75	95	115	65	85	100
K6	135	185	220	120	165	195	105	145	170	105	140	170	90	125	145
K7	120	160	195	105	145	175	95	130	155	95	125	150	80	110	130
N1	—	—	—	—	—	—	1225	1650	1925	—	—	—	1025	1425	1650
N2	—	—	—	—	—	—	490	670	780	—	—	—	420	570	670
N3	—	—	—	—	—	—	325	445	520	—	—	—	280	380	445
N11	—	—	—	—	—	—	375	510	590	—	—	—	320	435	510
S1	—	—	—	44	60	70	39	50	60	39	55	60	35	48	55
S2	—	—	—	35	48	55	31	42	50	31	43	50	29	39	46
S3	—	—	—	31	42	50	28	37	44	28	37	44	25	34	40
S11	—	—	—	60	80	95	55	70	85	55	75	85	50	65	80
S12	—	—	—	43	55	65	37	50	60	38	50	60	35	46	55
S13	—	—	—	25	33	39	22	29	35	22	30	35	20	27	32
H5	46	60	70	37	49	60	33	44	55	35	47	55	31	41	49
H8	49	65	75	40	55	60	36	47	55	38	50	60	33	44	50
H11	60	75	90	47	60	75	42	55	70	45	60	70	39	50	60
H12	90	115	140	80	105	120	70	90	110	70	90	105	60	80	95
H21	49	65	75	40	55	60	36	47	55	38	50	60	33	44	50

	MK1500			MK2050			MS2050			H25		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	240	325	390	—	—	—	—	—	—
P2	—	—	—	235	315	370	—	—	—	—	—	—
P3	—	—	—	205	275	325	—	—	—	—	—	—
P4	—	—	—	180	245	290	—	—	—	—	—	—
P5	—	—	—	175	235	280	—	—	—	—	—	—
P6	—	—	—	200	265	315	—	—	—	—	—	—
P7	—	—	—	185	250	300	180	240	285	—	—	—
P8	—	—	—	175	235	275	170	225	265	—	—	—
P11	—	—	—	180	245	290	175	235	275	—	—	—
P12	—	—	—	120	160	190	115	150	180	—	—	—
M1	—	—	—	—	—	—	185	245	290	—	—	—
M2	—	—	—	—	—	—	150	200	240	—	—	—
M3	—	—	—	—	—	—	120	165	195	—	—	—
M4	—	—	—	—	—	—	95	125	150	—	—	—
M5	—	—	—	—	—	—	80	105	125	—	—	—
K1	265	360	420	255	340	400	—	—	—	—	—	—
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	150	180	—	—	—	—	—	—
K6	170	230	275	160	220	260	—	—	—	—	—	—
K7	150	205	245	145	190	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	—	—	—	—	—	—	—	—	—	—	—	—

Double Octomill™ R217.48-05



- For insert selection and cutting data recommendations, see page(s) 152 - 153
- For complete insert programme, see page(s) 634
- For ISO attribute explanation, see page 15



KAPRS 40°

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXS	DCX	DC	DMM	OAL	LS				
R217.48-2025.3S-05-3SA	Seco-Weldon	3,0	33,0	25,0	20,0	90,0	50,0	3	0,3	20400	ON..05
R217.48-2532.3S-05-4SA	Seco-Weldon	3,0	40,0	32,0	25,0	90,0	50,0	4	0,5	18000	ON..05

Spare Parts

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

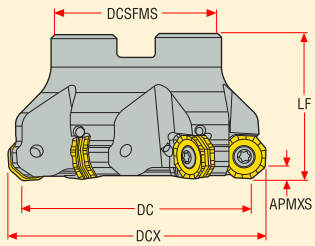
Please check availability in current price and stock-list

Torque keys, see page 710

Double Octomill™ R220.48-05



- For insert selection and cutting data recommendations, see page(s) 152 - 153
- For complete insert programme, see page(s) 634
- For ISO attribute explanation, see page 15



KAPRS 40°

Designation	Type of mounting	Dimensions in mm							KG		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..05
R220.48-0040-05-05SA	Arbor	3,0	48,35	40,0	35,0	16,0	40,0	5	0,3	16100	ON..05
R220.48-0050-05-04SA	Arbor	3,0	58,35	50,0	47,0	22,0	40,0	4	0,4	14400	ON..05
R220.48-0050-05-05SA	Arbor	3,0	58,35	50,0	47,0	22,0	40,0	5	0,4	14400	ON..05
R220.48-0050-05-06SA	Arbor	3,0	58,35	50,0	47,0	22,0	40,0	6	0,4	14400	ON..05
R220.48-0063-05-05SA	Arbor	3,0	71,35	63,0	47,0	22,0	40,0	5	0,6	12800	ON..05
R220.48-0063-05-06SA	Arbor	3,0	71,35	63,0	47,0	22,0	40,0	6	0,6	12800	ON..05
R220.48-0063-05-08SA	Arbor	3,0	71,35	63,0	47,0	22,0	40,0	8	0,6	12800	ON..05
R220.48-0080-05-06SA	Arbor	3,0	88,35	80,0	62,0	27,0	50,0	6	1,2	11400	ON..05
R220.48-0080-05-10SA	Arbor	3,0	88,35	80,0	62,0	27,0	50,0	10	1,1	11400	ON..05
R220.48-0100-05-07SA	Arbor	3,0	108,35	100,0	77,0	32,0	50,0	7	1,8	10200	ON..05
R220.48-0100-05-12SA	Arbor	3,0	108,35	100,0	77,0	32,0	50,0	12	1,8	10200	ON..05
R220.48-0125-05-08SA	Arbor	3,0	133,35	125,0	90,0	40,0	63,0	8	3,4	9100	ON..05

Spare Parts

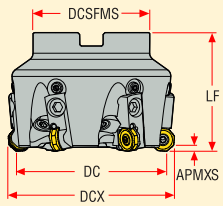
For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.48-0040	DOUBLE-T	C04009-T15P	H4B-T15P	TCEI0825	3,5
R220.48-0050-0063	DOUBLE-T	C04009-T15P	H4B-T15P	220.17-692	3,5
R220.48-0080	DOUBLE-T	C04009-T15P	H4B-T15P	–	3,5
R220.48-0100-0125	DOUBLE-T	C04009-T15P	H4B-T15PL	–	3,5
R220.48-0100	DOUBLE-T	C04009-T15P	H4B-T15PL	–	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

Double Octomill™ R220.48-05





KAPRS 40°

- For insert selection and cutting data recommendations, see page(s) 152 - 153
- For complete insert programme, see page(s) 634
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF				
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

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

Please check availability in current price and stock-list

Torque keys, see page 710

R220.48-05 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	ONMU050410ANTN-M10 MP2501	1,8	0,22	0,24	0,38
P2	ONMU050410ANTN-M10 MP2501	1,8	0,22	0,25	0,38
P3	ONMU050410ANTN-M10 MP2501	1,8	0,22	0,24	0,36
P4	ONMU050410ANTN-M10 MP2501	1,8	0,20	0,22	0,36
P5	ONMU050410ANTN-M10 MP2501	1,8	0,20	0,22	0,34
P6	ONMU050410ANTN-M10 MP2501	1,8	0,20	0,22	0,34
P7	ONMU050410ANTN-M10 MP2501	1,8	0,20	0,22	0,34
P8	ONMU050410ANTN-M10 T350M	1,8	0,22	0,24	0,36
P11	ONMU050410ANTN-M10 T350M	1,8	0,20	0,22	0,34
P12	ONMU050410ANTN-M10 T350M	1,4	0,14	0,15	0,24
M1	ONMU050410ANTN-ME10 F40M	1,8	0,22	0,25	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	0,16	0,24
M5	ONMU050410ANTN-M10 MM4500	1,1	0,14	0,16	0,24
K1	ONMU050410ANTN-M10 MK2050	1,8	0,22	0,25	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	0,32	0,48
N2	ONMU050410ANTN-ME10 F40M	1,8	0,28	0,32	0,48
N3	ONMU050410ANTN-ME10 F40M	1,8	0,28	0,32	0,48
N11	ONMU050410ANTN-ME10 F40M	1,8	0,28	0,32	0,48
S1	ONMU050410ANTN-ME10 F40M	1,1	0,14	0,16	0,24
S2	ONMU050410ANTN-ME10 F40M	1,1	0,14	0,16	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	0,16	0,24
H5	ONMU050410ANTN-M10 MP1501	1,4	0,14	0,15	0,24
H8	ONMU050410ANTN-M10 MP1501	1,3	0,11	0,12	0,18
H11	ONMU050410ANTN-M10 MP1501	1,4	0,14	0,15	0,24
H12	ONMU050410ANTN-M10 MP1501	1,3	0,11	0,12	0,18
H21	ONMU050410ANTN-M10 MP1501	1,3	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

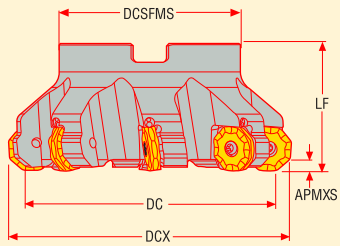
R220.48-05 – Cutting data v_c = (m/min)

	MP1501			MP2501			MP3000			T350M			F40M		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	320	425	500	280	375	445	265	355	420	245	330	385	215	285	335
P2	310	410	485	275	365	430	260	345	410	240	315	375	210	275	325
P3	265	355	425	235	315	375	225	300	355	205	275	330	180	240	285
P4	240	320	375	215	285	330	200	270	315	185	250	290	160	215	250
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	300	360	200	265	315	190	250	300	175	230	275	150	200	240
P11	235	315	375	210	280	330	200	265	315	185	245	290	160	210	250
P12	155	205	240	135	180	215	130	170	200	120	160	185	105	140	160
M1	—	—	—	200	260	310	195	255	305	185	245	290	165	220	265
M2	—	—	—	165	220	260	160	215	255	155	205	240	140	185	220
M3	—	—	—	135	175	205	130	170	205	125	165	195	110	150	175
M4	—	—	—	105	135	160	100	135	160	95	125	150	85	115	135
M5	—	—	—	85	110	135	85	110	130	80	105	125	75	95	115
K1	245	325	385	215	290	340	205	270	325	190	250	300	165	220	260
K2	220	290	345	195	260	305	185	245	290	170	225	265	145	195	230
K3	185	245	290	165	220	260	155	205	245	145	190	225	125	165	195
K4	175	235	280	155	210	245	150	200	235	135	180	215	120	160	185
K5	110	145	170	95	125	150	90	120	145	85	110	130	75	95	115
K6	155	210	245	140	185	215	130	175	205	120	160	190	105	140	165
K7	140	185	220	125	165	195	115	155	185	105	140	170	95	125	145
N1	—	—	—	—	—	—	—	—	—	—	—	—	1200	1600	1925
N2	—	—	—	—	—	—	—	—	—	—	—	—	490	650	770
N3	—	—	—	—	—	—	—	—	—	—	—	—	325	430	520
N11	—	—	—	—	—	—	—	—	—	—	—	—	375	495	590
S1	—	—	—	—	—	—	47	60	75	45	60	70	41	55	65
S2	—	—	—	—	—	—	38	50	60	36	47	55	33	43	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	33	40	23	30	36
H5	50	70	80	41	55	65	40	55	65	39	55	60	34	46	55
H8	55	70	85	43	60	70	42	55	65	42	55	65	36	48	55
H11	65	85	100	50	70	80	50	70	80	50	65	80	44	60	70
H12	95	130	155	85	115	135	80	110	130	75	100	120	65	85	105
H21	55	70	85	43	60	70	42	55	65	42	55	65	36	48	55

	MK1500			MK2050			MM4500			MS2050			MP2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	275	370	435	175	230	270	235	315	370	275	370	435
P2	—	—	—	270	360	425	170	225	265	230	305	360	270	355	425
P3	—	—	—	230	310	370	145	195	230	195	265	315	230	310	370
P4	—	—	—	210	280	325	130	175	205	180	240	275	210	280	325
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	260	310	120	165	195	165	220	265	195	260	310
P11	—	—	—	205	275	325	130	170	205	175	235	275	205	275	325
P12	—	—	—	135	180	210	85	110	130	115	150	180	135	180	210
M1	—	—	—	—	—	—	145	190	225	185	245	290	195	255	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	125	150	100	130	160
M5	—	—	—	—	—	—	65	80	100	80	105	125	85	110	130
K1	310	410	485	290	385	460	—	—	—	—	—	—	215	280	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	30	36	45	60	70	49	65	75
S2	—	—	—	—	—	—	19	24	29	36	47	55	39	50	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	33	40	28	36	43
H5	—	—	—	—	—	—	—	—	—	—	—	—	40	55	65
H8	—	—	—	—	—	—	—	—	—	—	—	—	42	55	65
H11	—	—	—	—	—	—	—	—	—	—	—	—	50	70	80
H12	—	—	—	—	—	—	—	—	—	—	—	—	85	110	135
H21	—	—	—	—	—	—	—	—	—	—	—	—	42	55	65

Double Octomill™ R220.48-09





KAPRS 40°

- For insert selection and cutting data recommendations, see page(s) 158 - 159
- For complete insert programme, see page(s) 634
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		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..09
R220.48-0063-09-06SA	Arbor	6,0	78,0	63,0	47,0	22,0	40,0	6	0,5	4900	ON..09
R220.48-0080-09-06SA	Arbor	6,0	95,0	80,0	62,0	27,0	50,0	6	1,0	4400	ON..09
R220.48-0080-09-07SA	Arbor	6,0	95,0	80,0	62,0	27,0	50,0	7	1,0	4400	ON..09
R220.48-0080-09-09M	Arbor	6,0	95,0	80,0	62,0	27,0	50,0	9	1,2	4400	ON..09
R220.48-0100-09-07SA	Arbor	6,0	115,0	100,0	77,0	32,0	50,0	7	1,6	3900	ON..09
R220.48-0100-09-08SA	Arbor	6,0	115,0	100,0	77,0	32,0	50,0	8	1,6	3900	ON..09
R220.48-0100-09-12M	Arbor	6,0	115,0	100,0	77,0	32,0	50,0	12	1,9	3900	ON..09
R220.48-0125-09-08SA	Arbor	6,0	140,0	125,0	90,0	40,0	63,0	8	2,9	3500	ON..09
R220.48-0125-09-10SA	Arbor	6,0	140,0	125,0	90,0	40,0	63,0	10	3,0	3500	ON..09
R220.48-0125-09-15M	Arbor	6,0	140,0	125,0	90,0	40,0	63,0	15	3,4	3500	ON..09
R220.48-8160-09-12S	Arbor	6,0	175,0	160,0	90,0	40,0	63,0	12	4,4	3100	ON..09
R220.48-8160-09-10S	Arbor	6,0	175,0	160,0	90,0	40,0	63,0	10	4,2	3100	ON..09
R220.48-8160-09-20M	Arbor	6,0	175,0	160,0	90,0	40,0	63,0	20	4,8	3100	ON..09
R220.48-8200-09-12S	Arbor	6,0	215,0	200,0	130,0	60,0	63,0	12	5,4	2700	ON..09
R220.48-8200-09-24M	Arbor	6,0	215,0	200,0	130,0	60,0	63,0	24	6,0	2700	ON..09
R220.48-8200-09-28M	Arbor	6,0	215,0	200,0	130,0	60,0	63,0	28	5,9	2700	ON..09
R220.48-8250-09-16S	Arbor	6,0	265,0	250,0	130,0	60,0	63,0	16	13,0	2500	ON..09
R220.48-8250-09-30M	Arbor	6,0	265,0	250,0	130,0	60,0	63,0	30	14,1	2500	ON..09
R220.48-8315-09-20S	Arbor	6,0	330,0	315,0	225,0	60,0	80,0	20	27,0	2200	ON..09
R220.48-8315-09-40M	Arbor	6,0	330,0	315,0	225,0	60,0	80,0	40	28,6	2200	ON..09

Spare Parts

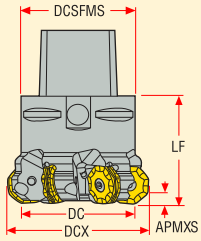
For cutter	Wedge kit	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.48-0063	–	DOUBLE-T	C05013-T20P	H6B-T20P	220.17-692	6,0
R220.48-0080	–	DOUBLE-T	C05013-T20P	H6B-T20P	–	6,0
R220.48-0080M	CW0816-RHA	DOUBLE-T	–	H6B-T20P	–	6,0
R220.48-0100-8315	–	DOUBLE-T	C05013-T20P	H6B-T20PL	–	6,0
R220.48-0100-8315M	CW0816-RHA	DOUBLE-T	–	H6B-T20PL	–	6,0

Please check availability in current price and stock-list

Torque keys, see page 710

Double Octomill™ Cx-R217.48-09





KAPRS 40°

- For insert selection and cutting data recommendations, see page(s) 158 - 159
- For complete insert programme, see page(s) 634
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						KG		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..09
C6-R217.48-063-09-06SA	Seco-Capto	6,0	78,0	63,0	63,0	63,0	6	1,5	4900	ON..09
C6-R217.48-080-09-06SA	Seco-Capto	6,0	95,0	80,0	63,0	63,0	6	1,7	4400	ON..09
C6-R217.48-080-09-07SA	Seco-Capto	6,0	95,0	80,0	63,0	63,0	7	1,8	4400	ON..09
C6-R217.48-080-09-09M	Seco-Capto	6,0	95,0	80,0	63,0	63,0	9	2,3	4400	ON..09
C6-R217.48-100-09-07SA	Seco-Capto	6,0	115,0	100,0	63,0	80,0	7	3,0	3900	ON..09
C8-R217.48-100-09-07SA	Seco-Capto	6,0	115,0	100,0	80,0	80,0	7	3,7	3900	ON..09
C8-R217.48-100-09-08SA	Seco-Capto	6,0	115,0	100,0	80,0	80,0	8	3,7	3900	ON..09
C8-R217.48-100-09-12M	Seco-Capto	6,0	115,0	100,0	80,0	80,0	12	4,0	3900	ON..09

Spare Parts

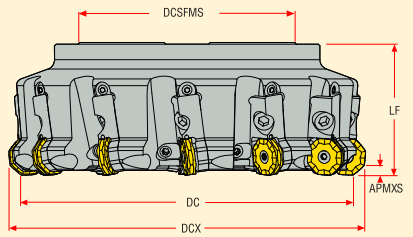
For cutter	Wedge kit	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
C6-217.48-063-080	–	DOUBLE-T	C05013-T20P	H6B-T20P	6,0
C6-C8-217.48-080M	CW0816-RHA	DOUBLE-T	–	H6B-T20P	6,0
C6-C8-217.48-100	–	DOUBLE-T	C05013-T20P	H6B-T20PL	6,0
C8-217.48-100M	CW0816-RHA	DOUBLE-T	–	H6B-T20PL	6,0

Please check availability in current price and stock-list

Torque keys, see page 710

Double Octomill™ R/L220.48-09CS





KAPRS 40°

- For insert selection and cutting data recommendations, see page(s) 158 - 159
- For complete insert programme, see page(s) 634
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		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..09
L220.48-0125-09-08CS	Arbor	6,0	140,0	125,0	90,0	40,0	80,0	8	4,9	3500	ON..09
R220.48-8160-09-10CS	Arbor	6,0	175,0	160,0	130,0	40,0	80,0	10	7,6	3100	ON..09
L220.48-8160-09-10CS	Arbor	6,0	175,0	160,0	130,0	40,0	80,0	10	7,6	3100	ON..09
R220.48-8200-09-12CS	Arbor	6,0	215,0	200,0	160,0	60,0	80,0	12	10,5	2700	ON..09
L220.48-8200-09-12CS	Arbor	6,0	215,0	200,0	160,0	60,0	80,0	12	10,5	2700	ON..09
R220.48-8250-09-16CS	Arbor	6,0	265,0	250,0	200,0	60,0	80,0	16	19,6	2500	ON..09
L220.48-8250-09-16CS	Arbor	6,0	265,0	250,0	200,0	60,0	80,0	16	19,6	2500	ON..09
R220.48-8315-09-20CS	Arbor	6,0	330,0	315,0	510,0	60,0	80,0	20	35,5	2200	ON..09

Spare Parts

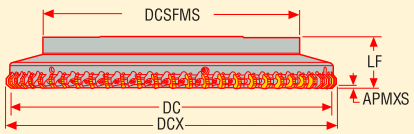
For cutter	Wedge screw	Wedge clamp	Setting gauge	Key (T-handle)	Insert screw	Insert key	Cassette screw	Cassette (R)	Cassette (L)	Torque value (Nm)
R220.48	LD8020-T25P	CW0810	AU1114T-T15P	DOUBLE-T	C05013-T20P	H6B-T20PL	FS98030	ON09AR	–	6,0
L220.48	LD8020-T25P	CW0810	AU1114T-T15P	DOUBLE-T	C05013-T20P	H6B-T20PL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

Please check availability in current price and stock-list

Torque keys, see page 710

Double Octomill™ R220.48-09 CAP





KAPRS 40°

- For insert selection and cutting data recommendations, see page(s) 158 - 159
- For complete insert programme, see page(s) 634
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm					Support body Part no.		KG		Insert
		APMXS	DCX	DC	DCSFMS	LF					
R220.48-9250-09-30M	CAP	6,0	265,0	250,0	220,0	63,0	260-425M-1	30	9,2	2500	ON..09
R220.48-9315-09-40M	CAP	6,0	330,0	315,0	285,0	63,0	260-431M-1	40	13,2	2200	ON..09
R220.48-9315-09-50M	CAP	6,0	330,0	315,0	285,0	63,0	260-431M-1	50	17,7	2200	ON..09
R220.48-9355-09-50M	CAP	6,0	370,0	355,0	285,0	63,0	260-435M-1	50	15,1	2000	ON..09
R220.48-9400-09-50M	CAP	6,0	415,0	400,0	370,0	63,0	260-440M-1	50	18,6	1900	ON..09
R220.48-9500-09-60M	CAP	6,0	515,0	500,0	470,0	63,0	260-450M-1	60	27,0	1700	ON..09

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 710

R220.48-09 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	ONMU090520ANTN-M12 MP2501	3,5	0,26	0,30	0,46
P2	ONMU090520ANTN-M12 MP2501	3,5	0,26	0,30	0,46
P3	ONMU090520ANTN-M12 MP2501	3,5	0,25	0,28	0,44
P4	ONMU090520ANTN-M12 MP2501	3,5	0,25	0,28	0,42
P5	ONMU090520ANTN-M12 MP2501	3,5	0,24	0,28	0,42
P6	ONMU090520ANTN-M12 MP2501	3,5	0,24	0,26	0,42
P7	ONMU090520ANTN-M12 MP2501	3,5	0,24	0,26	0,42
P8	ONMU090520ANTN-M12 T350M	3,5	0,25	0,28	0,44
P11	ONMU090520ANTN-M12 T350M	3,5	0,24	0,26	0,42
P12	ONMU090520ANTN-M12 T350M	3,0	0,17	0,18	0,28
M1	ONMU090520ANTN-ME12 F40M	3,5	0,26	0,30	0,46
M2	ONMU090520ANTN-ME12 F40M	3,5	0,24	0,28	0,42
M3	ONMU090520ANTN-ME12 F40M	3,0	0,19	0,22	0,34
M4	ONMU090520ANTN-ME12 T350M	2,0	0,17	0,19	0,30
M5	ONMU090520ANTN-ME12 MM4500	2,0	0,17	0,19	0,30
K1	ONMU090520ANTN-M14 MK2050	3,5	0,32	0,34	0,55
K2	ONMU090520ANTN-M14 MK2050	3,5	0,28	0,32	0,48
K3	ONMU090520ANTN-M14 MK2050	3,5	0,28	0,32	0,48
K4	ONMU090520ANTN-M14 MK2050	3,5	0,28	0,32	0,48
K5	ONMU090520ANTN-M14 MK2050	3,5	0,25	0,28	0,44
K6	ONMU090520ANTN-M14 MK2050	3,5	0,28	0,32	0,48
K7	ONMU090520ANTN-M14 MK2050	3,5	0,25	0,28	0,44
N1	ONMU090520ANTN-ME12 F40M	3,5	0,34	0,38	0,60
N2	ONMU090520ANTN-ME12 F40M	3,5	0,34	0,38	0,60
N3	ONMU090520ANTN-ME12 F40M	3,5	0,34	0,38	0,60
N11	ONMU090520ANTN-ME12 F40M	3,5	0,34	0,38	0,60
S1	ONMU090520ANTN-ME12 MS2500	2,0	0,17	0,19	0,30
S2	ONMU090520ANTN-ME12 MS2500	2,0	0,17	0,19	0,30
S3	ONMU090520ANTN-ME12 MS2500	2,0	0,16	0,17	0,28
S11	ONMU090520ANTN-ME12 MS2050	2,5	0,19	0,22	0,34
S12	ONMU090520ANTN-ME12 MS2050	2,5	0,19	0,22	0,34
S13	ONMU090520ANTN-ME12 MS2050	2,0	0,17	0,19	0,30
H5	ONMU090520ANTN-MD16 MP1501	3,0	0,22	0,24	0,38
H8	ONMU090520ANTN-MD16 MP1501	2,5	0,17	0,19	0,28
H11	ONMU090520ANTN-MD16 MP1501	3,0	0,22	0,24	0,38
H12	ONMU090520ANTN-MD16 MP1501	2,5	0,17	0,19	0,28
H21	ONMU090520ANTN-MD16 MP1501	2,5	0,17	0,19	0,28

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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

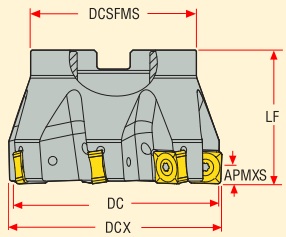
	MP1501			MP2501			MP3000			F40M			MK1500		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	280	380	440	250	335	390	235	315	370	185	250	295	—	—	—
P2	270	370	430	240	325	380	225	310	360	175	240	280	—	—	—
P3	235	325	380	210	285	340	200	270	320	155	210	250	—	—	—
P4	210	285	335	190	250	295	180	240	280	140	185	220	—	—	—
P5	205	270	325	180	240	285	170	225	270	135	180	215	—	—	—
P6	230	305	365	200	270	320	190	255	305	150	200	240	—	—	—
P7	215	285	345	190	255	305	180	240	290	140	190	230	—	—	—
P8	200	270	320	175	240	285	165	225	270	130	175	210	—	—	—
P11	210	280	335	185	245	295	175	235	280	135	185	220	—	—	—
P12	140	180	215	120	160	190	115	150	180	90	120	145	—	—	—
M1	—	—	—	170	235	275	170	230	270	140	190	225	—	—	—
M2	—	—	—	145	195	230	140	190	225	120	160	195	—	—	—
M3	—	—	—	120	155	185	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	340	190	260	300	180	245	285	140	190	225	265	365	430
K2	190	255	310	170	230	275	160	215	260	125	170	205	240	325	385
K3	165	220	260	145	195	230	135	185	220	105	145	175	205	275	325
K4	155	210	250	140	185	220	130	175	210	100	135	165	195	260	310
K5	95	130	150	85	115	135	80	110	125	60	85	100	120	160	190
K6	135	185	220	120	160	195	115	155	185	90	120	145	170	230	275
K7	125	165	195	110	145	170	105	140	165	80	110	125	155	205	245
N1	—	—	—	—	—	—	—	—	—	1025	1375	1650	—	—	—
N2	—	—	—	—	—	—	—	—	—	415	560	660	—	—	—
N3	—	—	—	—	—	—	—	—	—	280	375	440	—	—	—
N11	—	—	—	—	—	—	—	—	—	315	425	500	—	—	—
S1	—	—	—	—	—	—	41	55	65	35	47	55	—	—	—
S2	—	—	—	—	—	—	33	45	55	28	38	46	—	—	—
S3	—	—	—	—	—	—	30	40	47	25	33	40	—	—	—
S11	—	—	—	—	—	—	60	80	90	49	65	80	—	—	—
S12	—	—	—	—	—	—	40	55	65	34	46	55	—	—	—
S13	—	—	—	—	—	—	23	31	38	20	26	32	—	—	—
H5	46	60	70	37	49	60	36	47	55	30	40	48	—	—	—
H8	49	65	80	39	55	65	38	50	60	32	43	50	—	—	—
H11	60	75	90	47	60	75	46	60	70	39	50	60	—	—	—
H12	85	120	140	75	105	125	75	100	120	60	80	90	—	—	—
H21	49	65	80	39	55	65	38	50	60	32	43	50	—	—	—

	MK2050			MM4500			MS2050			MS2500			MP2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	245	330	385	165	220	265	225	300	355	290	385	455	265	355	420
P2	235	320	375	160	215	255	220	295	350	280	375	445	260	345	410
P3	205	280	330	140	190	225	190	255	305	240	330	385	225	305	355
P4	185	250	295	125	165	200	170	225	270	220	290	345	200	265	320
P5	175	235	285	120	160	190	165	215	260	210	275	330	190	255	305
P6	200	265	320	135	185	215	185	250	290	235	320	375	215	290	340
P7	185	250	300	125	170	200	170	235	275	220	300	355	205	275	320
P8	175	235	280	120	160	190	160	215	255	205	275	325	190	255	300
P11	180	245	290	125	165	195	170	225	265	215	290	345	195	270	315
P12	120	160	190	80	110	130	110	145	175	140	185	225	130	175	205
M1	—	—	—	140	185	220	175	235	280	200	270	320	185	245	295
M2	—	—	—	115	155	180	145	195	230	165	220	265	155	205	245
M3	—	—	—	95	125	145	120	155	190	135	180	215	125	165	195
M4	—	—	—	70	95	115	90	120	145	105	140	165	95	125	150
M5	—	—	—	60	80	95	75	100	120	85	115	140	80	105	125
K1	255	345	405	—	—	—	—	—	—	—	—	—	205	275	325
K2	230	305	365	—	—	—	—	—	—	—	—	—	180	240	290
K3	195	260	310	—	—	—	—	—	—	—	—	—	155	205	245
K4	185	245	295	—	—	—	—	—	—	—	—	—	145	195	235
K5	115	155	180	—	—	—	—	—	—	—	—	—	90	120	145
K6	165	220	260	—	—	—	—	—	—	—	—	—	130	170	205
K7	145	195	230	—	—	—	—	—	—	—	—	—	115	155	185
S1	—	—	—	22	29	35	43	55	70	50	70	80	47	60	75
S2	—	—	—	18	23	28	34	46	55	41	55	65	38	50	60
S3	—	—	—	15	21	25	30	41	48	36	48	55	33	44	55
S11	—	—	—	31	41	49	60	80	95	70	95	115	65	85	105
S12	—	—	—	28	38	45	42	55	65	49	65	80	46	60	70
S13	—	—	—	16	22	26	24	32	38	29	38	46	26	35	42
H5	—	—	—	—	—	—	—	—	—	—	—	—	38	50	60
H8	—	—	—	—	—	—	—	—	—	—	—	—	41	55	65
H11	—	—	—	—	—	—	—	—	—	—	—	—	49	65	80
H12	—	—	—	—	—	—	—	—	—	—	—	—	80	110	130
H21	—	—	—	—	—	—	—	—	—	—	—	—	41	55	65

R220.88-12



- For insert selection and cutting data recommendations, see page(s) 161
- For complete insert programme, see page(s) 652
- For ISO attribute explanation, see page 15



KAPRS 88°

Designation	Type of mounting	Dimensions in mm						RMPX°		KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF					
R220.88-0050-12-4SA	Arbor	9,0	51,2	50,0	47,0	22,0	40,0	1,0	4	0,4	12600	SNMU1204..
R220.88-0050-12-5SA	Arbor	9,0	51,2	50,0	47,0	22,0	40,0	1,0	5	0,4	12600	SNMU1204..
R220.88-0063-12-6SA	Arbor	9,0	64,2	63,0	47,0	22,0	40,0	0,8	6	0,5	11200	SNMU1204..
R220.88-0063-12-7SA	Arbor	9,0	64,2	63,0	47,0	22,0	40,0	0,8	7	0,5	11200	SNMU1204..
R220.88-0080-12-7SA	Arbor	9,0	81,15	80,0	62,0	27,0	50,0	0,6	7	1,0	9900	SNMU1204..
R220.88-0080-12-9SA	Arbor	9,0	81,15	80,0	62,0	27,0	50,0	0,6	9	1,0	9900	SNMU1204..
R220.88-0100-12-8SA	Arbor	9,0	101,15	100,0	77,0	32,0	50,0	0,4	8	1,6	8900	SNMU1204..
R220.88-0100-12-11SA	Arbor	9,0	101,15	100,0	77,0	32,0	50,0	0,4	11	1,6	8900	SNMU1204..
R220.88-0125-12-10SA	Arbor	9,0	126,15	125,0	90,0	40,0	63,0	0,4	10	3,0	7900	SNMU1204..
R220.88-0125-12-13SA	Arbor	9,0	126,15	125,0	90,0	40,0	63,0	0,4	13	3,0	7900	SNMU1204..
R220.88-8160-12-12S	Arbor	9,0	161,1	160,0	90,0	40,0	63,0	0,3	12	5,2	7000	SNMU1204..
R220.88-8160-12-16S	Arbor	9,0	161,1	160,0	90,0	40,0	63,0	0,3	16	5,2	7000	SNMU1204..

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 710

R220.88-12 – Insert selection

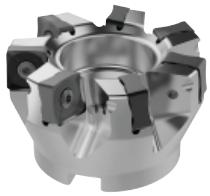
SMG		a_p	f_z		
			100%	30%	10%
P1	SNMU120410TN-M10 MP2501	5,0	0,14	0,15	0,24
P2	SNMU120410TN-M10 MP2501	5,0	0,14	0,16	0,24
P3	SNMU120410TN-M10 MP2501	5,0	0,14	0,15	0,22
P4	SNMU120410TN-M10 MP2501	5,0	0,13	0,14	0,22
P5	SNMU120410TN-M10 MP2501	5,0	0,13	0,14	0,22
P6	SNMU120410TN-M10 MP2501	5,0	0,13	0,14	0,22
P7	SNMU120410TN-M10 MP2501	5,0	0,13	0,14	0,22
P8	SNMU120410TN-M10 MS2500	5,0	0,14	0,15	0,22
P11	SNMU120410TN-M10 MS2500	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	0,25
K6	SNMU120410TN-MD13 MK2050	5,0	0,17	0,18	0,28
K7	SNMU120410TN-MD13 MK2050	5,0	0,15	0,17	0,25
H5	SNMU120410TN-MD13 MP1501	4,5	0,11	0,13	0,19
H8	SNMU120410TN-MD13 MP1501	4,0	0,090	0,095	0,15
H11	SNMU120410TN-MD13 MP1501	4,5	0,11	0,13	0,19
H12	SNMU120410TN-MD13 MP1501	4,0	0,090	0,095	0,15
H21	SNMU120410TN-MD13 MP1501	4,0	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

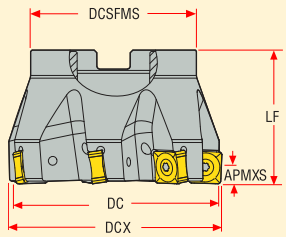
R220.88-12 – Cutting data v_c = (m/min)

SMG	MP1501			MP2501			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) 163
- For complete insert programme, see page(s) 652
- For ISO attribute explanation, see page 15



KAPRS 88°

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

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.88-0063	DOUBLE-T	C05013-T20P	H6B-T20P	220.17-692	5,0
R220.88-0080	DOUBLE-T	C05013-T20P	H6B-T20P	–	5,0
R220.88-0100-8160	DOUBLE-T	C05013-T20P	H6B-T20PL	–	5,0

Please check availability in current price and stock-list

Torque keys, see page 710

R220.88-16 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	SNMU160612TN-M10 MP2501	8,0	0,14	0,15	0,24
P2	SNMU160612TN-M10 MP2501	8,0	0,14	0,16	0,24
P3	SNMU160612TN-M10 MP2501	8,0	0,14	0,15	0,22
P4	SNMU160612TN-M10 MP2501	8,0	0,13	0,15	0,22
P5	SNMU160612TN-M10 MP2501	8,0	0,13	0,14	0,22
P6	SNMU160612TN-M10 MP2501	8,0	0,13	0,14	0,22
P7	SNMU160612TN-M10 MP2501	8,0	0,13	0,14	0,22
P8	SNMU160612TN-M10 MS2500	8,0	0,14	0,15	0,22
P11	SNMU160612TN-M10 MS2500	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 MP1501	6,0	0,14	0,15	0,24
H8	SNMU160612TN-MD16 MP1501	5,0	0,11	0,12	0,18
H11	SNMU160612TN-MD16 MP1501	6,0	0,14	0,15	0,24
H12	SNMU160612TN-MD16 MP1501	5,0	0,11	0,12	0,18
H21	SNMU160612TN-MD16 MP1501	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

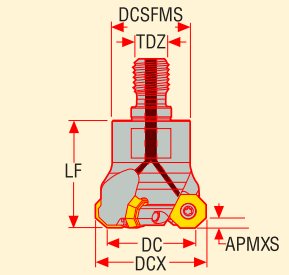
R220.88-16 – Cutting data v_c = (m/min)

SMG	MP1501			MP2501			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	—	—	—	—	—	—	—	—	—

Octomill R217/R220.43-05



- For insert selection and cutting data recommendations, see page(s) 166 - 167
- For complete insert programme, see page(s) 632
- For ISO attribute explanation, see page 15



KAPRS 43°

Designation	Type of mounting	Dimensions in mm							KG		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
R220.43-0040-05-4A	Arbor	3,5	49,0	40,0	35,0	16,0	40,0	4	0,3	13200	OFEX/OFMT05
R220.43-0050-05	Arbor	3,5	59,0	50,0	47,0	22,0	40,0	4	0,4	11900	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	Arbor	3,5	72,0	63,0	47,0	22,0	40,0	5	0,6	10600	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	Arbor	3,5	89,0	80,0	62,0	27,0	50,0	6	1,1	9400	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
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

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
R220.43-0100-8160	DOUBLE-T	C04008-T15P	H4B-T15PL	–	3,5

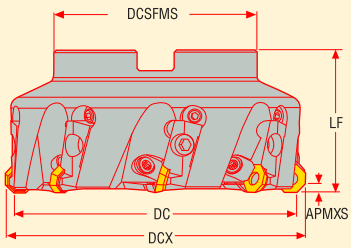
Please check availability in current price and stock-list

Torque keys, see page 710

Octomill R220.43-05CT



- For insert selection and cutting data recommendations, see page(s) 166 - 167
- For complete insert programme, see page(s) 632
- For ISO attribute explanation, see page 15



KAPRS 43°

Designation	Type of mounting	Dimensions in mm							KG		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
R220.43-0125-05CT	Arbor	3,5	134,0	125,0	90,0	40,0	63,0	10	4,0	3800	OFEX05T305
R220.43-8160-05C	Arbor	3,5	169,0	160,0	90,0	40,0	63,0	10	5,8	3300	OFEX05T305
R220.43-8160-05CT	Arbor	3,5	169,0	160,0	90,0	40,0	63,0	14	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
R220.43-8200-05CT	Arbor	3,5	209,0	200,0	130,0	60,0	63,0	18	7,4	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
R220.43-8315-05CT	Arbor	3,5	324,0	315,0	225,0	60,0	80,0	28	27,5	2400	OFEX05T305
R220.43-8160-05CG	Arbor	3,5	169,0	160,0	90,0	40,0	63,0	7	5,9	3300	OFEX05T305

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
R220.43-0125-8315CT	LD8020-T25P	AU1114T-T15P	DOUBLE-T	334.5-640	H6B-T25PL	FS96018	OF05AR	–	3,5
R220.43-8315-05C	LD8020-T25P	AU1114T-T15P	DOUBLE-T	CW0810	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 710

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	0,25
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	0,17	0,25
P7	OFEX05T305TN-M08 MP2501	2,0	0,15	0,17	0,25
P8	OFEX05T305TN-M08 MP2501	2,0	0,16	0,17	0,26
P11	OFEX05T305TN-M08 T350M	2,0	0,15	0,17	0,25
P12	OFEX05T305TN-M08 T350M	1,7	0,10	0,11	0,17
M1	OFEX05T305TN-ME07 T350M	2,0	0,15	0,16	0,25
M2	OFEX05T305TN-ME07 T350M	2,0	0,13	0,15	0,22
M3	OFEX05T305TN-ME07 T350M	1,7	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	0,15
S11	OFEX05T305TN-ME07 F40M	1,5	0,11	0,12	0,18
S12	OFEX05T305TN-ME07 F40M	1,5	0,11	0,12	0,18
S13	OFEX05T305TN-ME07 F40M	1,3	0,095	0,10	0,16
H5	OFEX05T305TN-D09 MP1501	1,7	0,12	0,13	0,20
H8	OFEX05T305TN-D09 MP1501	1,5	0,090	0,10	0,15
H11	OFEX05T305TN-D09 MP1501	1,7	0,12	0,13	0,20
H12	OFEX05T305TN-D09 MP1501	1,5	0,090	0,10	0,15
H21	OFEX05T305TN-D09 MP1501	1,5	0,090	0,10	0,15

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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

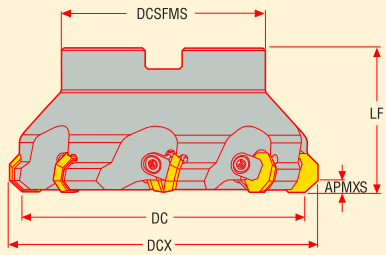
	MP1501			MP2501			T25M			T350M			F15M		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	330	445	520	305	405	480	295	390	465	265	355	415	—	—	—
P2	320	435	510	295	395	465	285	380	450	255	345	405	—	—	—
P3	280	370	445	255	345	410	250	335	390	225	300	355	—	—	—
P4	250	330	390	225	305	360	220	295	350	195	265	315	—	—	—
P5	240	315	380	220	290	345	215	280	335	190	250	300	—	—	—
P6	270	355	425	245	325	390	240	315	375	215	285	340	—	—	—
P7	255	335	400	235	305	365	225	295	355	205	265	320	—	—	—
P8	235	315	375	215	290	345	210	280	330	190	250	300	—	—	—
P11	245	325	390	225	300	355	220	290	345	195	260	310	—	—	—
P12	160	210	250	145	195	230	140	185	220	130	170	200	—	—	—
M1	—	—	—	210	285	335	230	305	360	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	160	—	—	—	90	120	140	125	165	190
K6	160	215	255	150	195	230	—	—	—	130	170	200	180	235	280
K7	145	190	225	130	175	205	—	—	—	115	150	180	160	210	245
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	—	—	—

	F30M			F40M			MK1500			H15		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	275	365	430	270	355	425	—	—	—	—	—	—
P2	265	345	410	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	285	340	—	—	—	—	—	—
P7	205	275	325	205	270	320	—	—	—	—	—	—
P8	195	255	300	190	255	300	—	—	—	—	—	—
P11	200	270	315	200	260	315	—	—	—	—	—	—
P12	130	170	200	130	170	200	—	—	—	—	—	—
M1	215	280	330	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	275	325	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	225	—	—	—
K6	130	175	205	130	170	205	210	275	330	—	—	—
K7	115	155	185	115	155	180	185	245	290	—	—	—
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 R220.43-07W



- For insert selection and cutting data recommendations, see page(s) 172–173
- For complete insert programme, see page(s) 633
- For ISO attribute explanation, see page 15



KAPRS 43°

Designation	Type of mounting	Dimensions in mm							KG		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

Spare Parts

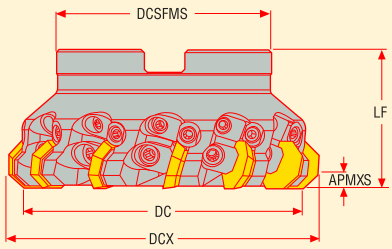
For cutter	Wedge screw	Wedge key	Key (T-handle)	Insert wedge	Arbor screw	Torque value (Nm)
R220.43-0050	LD8018-T25P	H6B-T25P	DOUBLE-T	334.5-640	220.17-696	6,0
R220.43-0063	LD8018-T25P	H6B-T25P	DOUBLE-T	CW0810	MF6S10X40	6,0
R220.43-0080	LD8018-T25P	H6B-T25P	DOUBLE-T	CW0810	MC6S12X35	6,0
R220.43-0100-8160	LD8018-T25P	H6B-T25PL	DOUBLE-T	CW0810	–	6,0

Please check availability in current price and stock-list

Torque keys, see page 710

Octomill R220.43-07T





KAPRS 43°

- For insert selection and cutting data recommendations, see page(s) 172–173
- For complete insert programme, see page(s) 633
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		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

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	LD8020-T25P	CW0608	LD6019-T15P	T15P-4ST	DOUBLE-T	334.5-640	H6B-T25P	AS6011	MF6S10X40	6,0
R220.43-0080	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

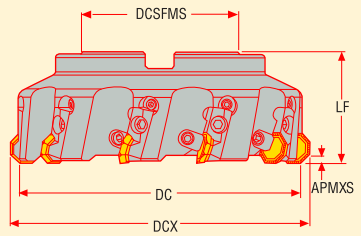
Please check availability in current price and stock-list

Torque keys, see page 710

Octomill R220.43-07C/CG



- For insert selection and cutting data recommendations, see page(s) 172–173
- For complete insert programme, see page(s) 633
- For ISO attribute explanation, see page 15



KAPRS 43°

Designation	Type of mounting	Dimensions in mm							KG		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

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	LD8020-T25P	H6B-T25PL	AU1114T-T15P	DOUBLE-T	CW0810	FS96018	OF07AR	220.17-694	6,0
R220.43-0125-8500	LD8020-T25P	H6B-T25PL	AU1114T-T15P	DOUBLE-T	CW0810	FS96018	OF07AR	–	6,0
R220.43-8160-07CG	LD8020-T25P	–	AU1114T-T15P	–	CW0810	FS96018	OF07AR	–	6,0

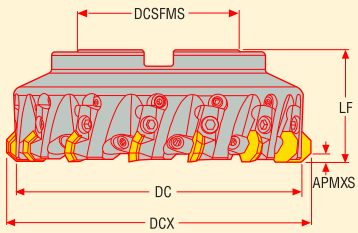
Please check availability in current price and stock-list

Torque keys, see page 710

Octomill R220.43-07T



- For insert selection and cutting data recommendations, see page(s) 172–173
- For complete insert programme, see page(s) 633
- For ISO attribute explanation, see page 15



KAPRS 43°

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF				
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

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

Please check availability in current price and stock-list

Torque keys, see page 710

R220.43-07 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	OFMR070405TR-ME13 MP2501	3,0	0,26	0,30	0,46
P2	OFMR070405TR-ME13 MP2501	3,0	0,28	0,30	0,46
P3	OFMR070405TR-ME13 MP2501	3,0	0,26	0,28	0,44
P4	OFMR070405TR-M15 MP2501	3,0	0,30	0,32	0,50
P5	OFMR070405TR-M15 MP2501	3,0	0,28	0,32	0,48
P6	OFMR070405TR-M15 MP2501	3,0	0,28	0,32	0,48
P7	OFMR070405TR-M15 T350M	3,0	0,28	0,32	0,48
P8	OFMR070405TR-M15 T350M	3,0	0,30	0,32	0,50
P11	OFMR070405TR-M15 T350M	3,0	0,28	0,32	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	0,25	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	0,30
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	0,30
S2	OFMR070405TR-ME13 T350M	1,8	0,17	0,19	0,30
S3	OFMR070405TR-ME13 T350M	1,8	0,16	0,18	0,28
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	0,30
H5	OFEN070405TN-D18 MP1501	2,5	0,24	0,26	0,40
H8	OFEN070405TN-D18 MP1501	2,0	0,18	0,20	0,30
H11	OFEN070405TN-D18 MP1501	2,5	0,24	0,26	0,40
H12	OFEN070405TN-D18 MP1501	2,0	0,18	0,20	0,30
H21	OFEN070405TN-D18 MP1501	2,0	0,18	0,20	0,30

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

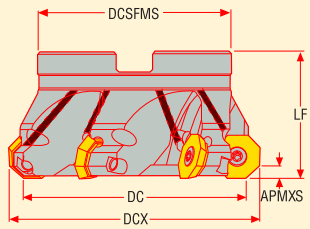
R220.43-07 – Cutting data v_c = (m/min)

	MP1501			MP2501			MP3000			T25M			T350M		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	280	375	445	250	335	395	275	365	430	210	275	330	230	310	370
P2	270	365	435	240	325	385	265	345	415	200	270	320	220	300	350
P3	235	320	375	210	285	330	230	305	360	175	235	275	195	265	310
P4	210	280	330	185	250	290	205	270	325	155	210	245	170	230	275
P5	205	270	325	180	240	285	195	255	310	150	200	240	165	220	265
P6	230	305	365	200	270	325	220	295	350	170	225	270	185	250	295
P7	215	285	345	190	255	305	205	280	330	160	210	255	175	235	280
P8	200	270	315	175	240	280	195	255	305	145	200	235	165	220	260
P11	210	275	335	185	245	295	200	270	320	155	205	245	170	225	270
P12	140	185	215	125	165	190	130	175	205	105	135	160	115	150	180
M1	—	—	—	170	235	280	200	260	310	160	220	260	170	230	270
M2	—	—	—	145	190	230	165	215	260	135	180	215	145	190	225
M3	—	—	—	120	160	185	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	275	330	155	215	255	175	235	275
K2	190	255	310	170	225	275	185	245	295	140	190	225	160	210	250
K3	165	215	260	145	190	230	155	205	250	120	160	190	135	175	210
K4	155	205	250	140	185	220	150	195	235	115	155	185	130	170	200
K5	95	130	150	85	115	135	90	120	145	70	95	110	80	105	125
K6	135	180	220	120	160	195	130	175	210	100	135	160	110	150	180
K7	120	165	195	105	145	170	120	155	185	90	120	145	100	135	160
N1	—	—	—	—	—	—	1550	2025	2425	—	—	—	—	—	—
N2	—	—	—	—	—	—	620	820	980	—	—	—	—	—	—
N3	—	—	—	—	—	—	415	550	650	—	—	—	—	—	—
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	70	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	90	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

	F15M			F40M			MK1500			MK2050			MM4500			H15		
SMG	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	220	—	—	—	180	245	290	115	155	180	—	—	—
P5	—	—	—	135	180	220	—	—	—	175	235	285	110	145	175	—	—	—
P6	—	—	—	155	205	245	—	—	—	200	265	320	125	165	200	—	—	—
P7	—	—	—	145	190	230	—	—	—	185	250	300	115	155	185	—	—	—
P8	—	—	—	135	180	210	—	—	—	175	235	275	110	145	170	—	—	—
P11	—	—	—	140	185	225	—	—	—	180	240	290	115	150	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	155	—	—	—	—	—	—	85	115	135	—	—	—
M4	—	—	—	75	100	120	—	—	—	—	—	—	65	90	105	—	—	—
M5	—	—	—	65	85	100	—	—	—	—	—	—	55	75	90	—	—	—
K1	250	335	395	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	1400	1650	—	—	—	—	—	—	—	—	—	1475	1975	2325
N2	750	1000	1175	425	570	670	—	—	—	—	—	—	—	—	—	590	800	940
N3	500	670	790	285	375	445	—	—	—	—	—	—	—	—	—	395	530	620
N11	570	770	900	325	430	510	—	—	—	—	—	—	—	—	—	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	41	—	—	—
S13	—	—	—	20	27	32	—	—	—	—	—	—	15	20	24	—	—	—
H5	—	—	—	31	41	48	—	—	—	—	—	—	—	—	—	—	—	—
H8	—	—	—	33	44	50	—	—	—	—	—	—	—	—	—	—	—	—
H11	—	—	—	39	55	60	—	—	—	—	—	—	—	—	—	—	—	—
H12	—	—	—	60	80	95	—	—	—	—	—	—	—	—	—	—	—	—
H21	—	—	—	33	44	50	—	—	—	—	—	—	—	—	—	—	—	—

Octomill R220.43-07S





- For insert selection and cutting data recommendations, see page(s) 175 - 176
- For complete insert programme, see page(s) 632
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		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

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 710

R220.43-07S – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	OFMT070405TN-ME13 MP2501	3,0	0,26	0,30	0,46
P2	OFMT070405TN-ME13 MP2501	3,0	0,28	0,30	0,46
P3	OFMT070405TN-M15 MP2501	3,0	0,30	0,32	0,50
P4	OFMT070405TN-M15 MP2501	3,0	0,30	0,32	0,50
P5	OFMT070405TN-M15 MP2501	3,0	0,28	0,32	0,50
P6	OFMT070405TN-M15 MP2501	3,0	0,28	0,32	0,48
P7	OFMT070405TN-M15 MP2501	3,0	0,28	0,32	0,48
P8	OFMT070405TN-M15 MP2501	3,0	0,30	0,32	0,50
P11	OFMT070405TN-M15 MP2501	3,0	0,28	0,32	0,48
P12	OFMT070405TN-M15 MP2501	2,5	0,19	0,22	0,34
M1	OFMT070405TN-ME13 F40M	3,0	0,28	0,30	0,46
M2	OFMT070405TN-ME13 F40M	3,0	0,25	0,28	0,42
M3	OFMT070405TN-ME13 F40M	2,5	0,20	0,22	0,34
M4	OFMT070405TR-M15 F40M	1,8	0,20	0,22	0,34
M5	OFMT070405TR-M15 F40M	1,8	0,20	0,22	0,34
K1	OFET070405TN-M16 MK1500	3,0	0,34	0,38	0,60
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	0,55
K6	OFEW070405TN-D18 MP1500	3,0	0,34	0,38	0,60
K7	OFEW070405TN-D18 MP1500	3,0	0,30	0,34	0,55
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	0,28
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	0,20	0,30
H11	OFEW070405TN-D18 MP1500	2,5	0,24	0,26	0,40
H12	OFEW070405TN-D18 MP1500	2,0	0,18	0,20	0,30
H21	OFEW070405TN-D18 MP1500	2,0	0,18	0,20	0,30

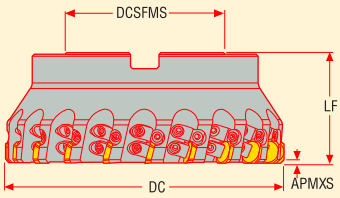
SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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

	MP1501			MP2501			T350M			F40M			MK1500		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	275	375	435	260	350	405	270	355	420	250	340	395	—	—	—
P2	265	355	425	250	340	395	255	345	410	245	320	385	—	—	—
P3	235	310	375	220	295	350	225	305	355	210	285	335	—	—	—
P4	210	280	330	195	260	310	200	265	315	190	250	295	—	—	—
P5	200	265	315	190	250	300	190	255	305	180	240	285	—	—	—
P6	225	300	355	210	280	335	215	285	340	200	275	320	—	—	—
P7	210	285	335	200	265	315	200	270	325	190	260	305	—	—	—
P8	195	265	315	185	250	295	190	255	300	175	240	280	—	—	—
P11	205	275	325	195	255	310	195	260	315	185	250	295	—	—	—
P12	135	180	215	130	170	200	130	170	205	120	160	190	—	—	—
M1	—	—	—	180	245	285	195	265	315	200	260	310	—	—	—
M2	—	—	—	150	200	240	165	220	260	160	215	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	255	305	275	365	445
K2	190	255	300	180	235	285	—	—	—	170	225	270	245	330	395
K3	160	215	255	150	200	240	—	—	—	145	190	230	210	280	335
K4	155	205	240	145	190	230	—	—	—	140	180	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	160	195	175	235	280
K7	120	160	190	110	150	180	—	—	—	110	145	170	155	210	250
N1	—	—	—	—	—	—	—	—	—	1425	1875	2225	—	—	—
N2	—	—	—	—	—	—	—	—	—	570	760	900	—	—	—
N3	—	—	—	—	—	—	—	—	—	385	510	600	—	—	—
N11	—	—	—	—	—	—	—	—	—	435	580	690	—	—	—
S1	—	—	—	—	—	—	49	65	75	48	60	75	—	—	—
S2	—	—	—	—	—	—	39	50	60	38	50	60	—	—	—
S3	—	—	—	—	—	—	34	45	55	34	44	50	—	—	—
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	55	70	40	55	65	—	—	—
H8	49	65	75	41	55	65	46	60	75	43	55	65	—	—	—
H11	55	75	90	49	65	75	55	75	85	50	70	80	—	—	—
H12	85	115	140	80	110	130	85	110	130	75	100	120	—	—	—
H21	49	65	75	41	55	65	46	60	75	43	55	65	—	—	—

220.30-12ST





KAPRS 88°

- For insert selection and cutting data recommendations, see page(s) 180
- For complete insert programme, see page(s) 641
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						KG		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	SE..1203..
R220.30-8160-12ST	Arbor	1,0	160,0	90,0	40,0	63,0	20	5,1	3800	SE..1203..
R220.30-8200-12ST	Arbor	1,0	200,0	130,0	60,0	63,0	25	7,2	3300	SE..1203..

Spare Parts

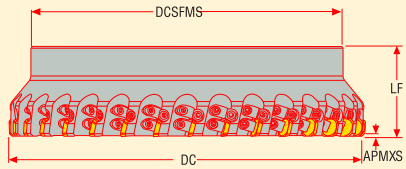
For cutter	Wedge screw	Setting screw	Setting gauge	Key	Insert wedge	Arbor screw	Torque value (Nm)
R220.30-0080	LD6018T-T15P	LD6019-T15P	AS6011	T15P-4ST	CW0608	MC6S12X40	3,5
R220.30-8160-8200	LD6018T-T15P	LD6019-T15P	AS6011	T15P-4ST	CW0608	–	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

220.30-12ST CAP





KAPRS 88°

- For insert selection and cutting data recommendations, see page(s) 180
- For complete insert programme, see page(s) 641
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm				Support body Part no.		KG		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..

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

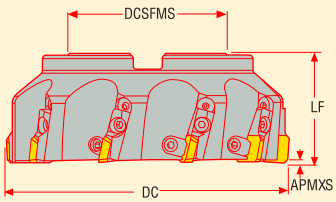
Please check availability in current price and stock-list

Torque keys, see page 710

220.30-12C



- For insert selection and cutting data recommendations, see page(s) 180
- For complete insert programme, see page(s) 641
- For ISO attribute explanation, see page 15



KAPRS 88°

Designation	Type of mounting	Dimensions in mm						KG		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

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 710

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

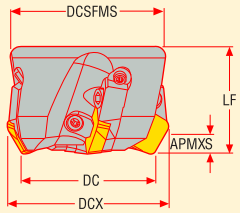
SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

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	225	295	350	—	—	—	—	—	—	—	—	—	—	—	—
P2	215	285	335	—	—	—	—	—	—	—	—	—	—	—	—
P3	185	250	295	—	—	—	—	—	—	—	—	—	—	—	—
P4	165	220	265	—	—	—	—	—	—	—	—	—	—	—	—
P5	160	215	250	—	—	—	—	—	—	—	—	—	—	—	—
P6	180	240	285	—	—	—	—	—	—	—	—	—	—	—	—
P7	170	225	270	—	—	—	—	—	—	—	—	—	—	—	—
P8	155	210	250	—	—	—	—	—	—	—	—	—	—	—	—
P11	165	220	260	—	—	—	—	—	—	—	—	—	—	—	—
P12	110	140	170	—	—	—	—	—	—	—	—	—	—	—	—
M1	165	220	260	—	—	—	—	—	—	—	—	—	—	—	—
M2	140	185	215	—	—	—	—	—	—	—	—	—	—	—	—
M3	110	150	175	—	—	—	—	—	—	—	—	—	—	—	—
M4	85	115	135	—	—	—	—	—	—	—	—	—	—	—	—
M5	75	95	115	—	—	—	—	—	—	—	—	—	—	—	—
K1	170	230	265	175	230	275	270	360	425	210	280	330	140	185	215
K2	150	205	240	155	205	245	245	320	380	190	250	295	125	165	195
K3	130	170	205	130	175	210	205	270	325	160	210	250	105	140	165
K4	125	165	195	125	165	200	195	260	310	150	200	240	100	130	155
K5	75	100	120	75	100	120	120	160	185	95	125	145	60	80	95
K6	110	145	170	110	145	175	175	230	270	135	175	210	90	115	140
K7	95	125	150	100	130	155	155	205	240	120	160	185	80	105	120
H5	36	47	55	37	48	60	—	—	—	45	60	70	—	—	—
H8	38	50	60	39	55	60	—	—	—	48	65	75	—	—	—
H11	46	60	70	47	60	75	—	—	—	55	75	90	—	—	—
H12	70	90	105	70	95	110	—	—	—	85	115	135	—	—	—
H21	38	50	60	39	55	60	—	—	—	48	65	75	—	—	—

R220.60-19CM





KAPRS 60°

- For insert selection and cutting data recommendations, see page(s) 182
- For complete insert programme, see page(s) 655
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		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	174,3	160,0	128,0	40,0	63,0	10	6,3	2300	SP..1906ZETR
R220.60-8200-19-12CM	Arbor	12,0	214,2	200,0	168,0	60,0	63,0	12	9,0	2000	SP..1906ZETR
R220.60-8250-19-16CM	Arbor	12,0	264,2	250,0	218,0	60,0	63,0	16	20,0	1800	SP..1906ZETR

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

Please check availability in current price and stock-list

Torque keys, see page 710

220.60 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	SPER1906ZETR-M17 T350M	7,0	0,28	0,30	0,48
P2	SPER1906ZETR-M17 T350M	7,0	0,28	0,32	0,48
P3	SPER1906ZETR-M17 T350M	7,0	0,26	0,30	0,46
P4	SPER1906ZETR-M17 T350M	7,0	0,26	0,28	0,44
P5	SPER1906ZETR-M17 T350M	7,0	0,26	0,28	0,44
P6	SPER1906ZETR-M17 T350M	7,0	0,25	0,28	0,44
P7	SPER1906ZETR-M17 T350M	7,0	0,25	0,28	0,44
P8	SPER1906ZETR-M17 T350M	7,0	0,26	0,30	0,46
P11	SPER1906ZETR-M17 T350M	7,0	0,25	0,28	0,44
P12	SPER1906ZETR-M17 T350M	6,0	0,17	0,19	0,30
M1	SPER1906ZETR-M17 T350M	7,0	0,28	0,32	0,48
M2	SPER1906ZETR-M17 T350M	7,0	0,26	0,28	0,44
M3	SPER1906ZETR-M17 T350M	6,0	0,20	0,22	0,34
M4	SPER1906ZETR-M17 T350M	4,5	0,18	0,20	0,30
M5	SPER1906ZETR-M17 T350M	4,5	0,18	0,20	0,30
K1	SPEN1906ZETR-D25 MP1501	7,0	0,42	0,46	0,70
K2	SPEN1906ZETR-D25 MP1501	7,0	0,38	0,42	0,65
K3	SPEN1906ZETR-D25 MP1501	7,0	0,38	0,42	0,65
K4	SPEN1906ZETR-D25 MP1501	7,0	0,38	0,42	0,65
K5	SPEN1906ZETR-D25 MP1501	7,0	0,34	0,38	0,60
K6	SPEN1906ZETR-D25 MP1501	7,0	0,38	0,42	0,65
K7	SPEN1906ZETR-D25 MP1501	7,0	0,34	0,38	0,60

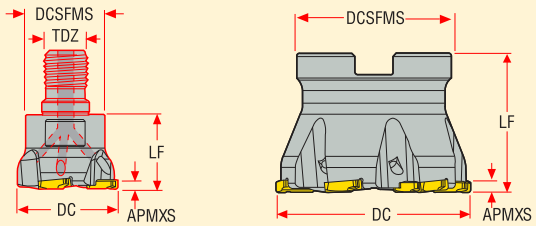
SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R220.60 – Cutting data v_c = (m/min)

SMG	MP1501			MP2501			T350M		
	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	215	295	345	190	260	305	—	—	—
P2	205	280	340	185	250	300	—	—	—
P3	180	245	300	160	220	265	—	—	—
P4	165	220	265	145	195	235	—	—	—
P5	155	210	250	140	185	220	—	—	—
P6	175	235	280	155	210	250	—	—	—
P7	165	225	265	145	200	235	—	—	—
P8	155	210	250	135	185	220	—	—	—
P11	160	215	260	140	190	230	—	—	—
P12	110	145	175	95	130	155	—	—	—
M1	—	—	—	130	180	215	135	185	220
M2	—	—	—	110	150	180	115	150	180
M3	—	—	—	90	120	150	90	125	145
M4	—	—	—	70	95	115	70	95	115
M5	—	—	—	60	80	95	60	80	95
K1	165	225	270	145	200	235	135	190	225
K2	150	200	240	130	175	210	125	165	200
K3	125	170	200	110	150	180	105	140	170
K4	120	160	190	105	145	170	100	135	160
K5	75	100	120	65	90	105	60	85	100
K6	105	145	170	95	125	150	90	120	145
K7	95	130	150	85	115	135	80	105	125

230.19





KAPRS 90°

- For insert selection and cutting data recommendations, see page(s) 184 - 185
- For complete insert programme, see page(s) 647
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMX	DC	DCSFMS	DCB	TDZ	LF				
R230.19-1030.RE-SN1103-3A	Combimaster	2,6	30,0	18,5	–	M10	20,0	3	0,1	18900	SNHQ1103xxR
R230.19-1640.RE-SN1203-3A	Combimaster	3,1	40,0	30,0	–	M16	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

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	220.17-692M	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 710

R230.19 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	SNHQ....-M07 F40M	1,3	0,13	0,13	0,20
P2	SNHQ....-M07 F40M	1,3	0,13	0,13	0,20
P3	SNHQ....-M07 F40M	1,3	0,13	0,13	0,19
P4	SNHQ....-M07 F40M	1,3	0,12	0,12	0,19
P5	SNHQ....-M07 F40M	1,3	0,12	0,12	0,19
P6	SNHQ....-M07 F40M	1,3	0,12	0,12	0,18
P7	SNHQ....-M07 F40M	1,3	0,12	0,12	0,18
P8	SNHQ....-M07 F40M	1,3	0,13	0,13	0,19
P11	SNHQ....-M07 F40M	1,3	0,12	0,12	0,18
P12	SNHQ....-M07 F40M	1,0	0,070	0,075	0,12
M1	SNHQ....-M07 F40M	1,3	0,13	0,13	0,20
M2	SNHQ....-M07 F40M	1,3	0,12	0,12	0,19
M3	SNHQ....-M07 F40M	1,0	0,11	0,10	0,15
M4	SNHQ....-M07 F40M	0,80	0,080	0,10	0,13
M5	SNHQ....-M07 F40M	0,80	0,080	0,10	0,13
K1	SNHQ....-M07 F40M	1,3	0,13	0,13	0,20
K2	SNHQ....-M07 F40M	1,3	0,12	0,12	0,19
K3	SNHQ....-M07 F40M	1,3	0,12	0,12	0,19
K4	SNHQ....-M07 F40M	1,3	0,12	0,12	0,19
K5	SNHQ....-M07 F40M	1,3	0,11	0,11	0,17
K6	SNHQ....-M07 F40M	1,3	0,12	0,12	0,19
K7	SNHQ....-M07 F40M	1,3	0,11	0,11	0,17
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	0,080	0,10	0,13
S2	SNHQ....-M07 F40M	0,80	0,080	0,10	0,13
S3	SNHQ....-M07 F40M	0,80	0,075	0,095	0,12
S11	SNHQ....-M07 F40M	0,90	0,11	0,11	0,15
S12	SNHQ....-M07 F40M	0,90	0,11	0,11	0,15
S13	SNHQ....-M07 F40M	0,80	0,080	0,10	0,13
H5	SNHQ....-M07 F40M	1,0	0,090	0,090	0,13
H8	SNHQ....-M07 F40M	0,90	0,070	0,070	0,095
H11	SNHQ....-M07 F40M	1,0	0,090	0,090	0,13
H12	SNHQ....-M07 F40M	0,90	0,070	0,070	0,095
H21	SNHQ....-M07 F40M	0,90	0,070	0,070	0,095

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R230.19 – Cutting data v_c = (m/min)

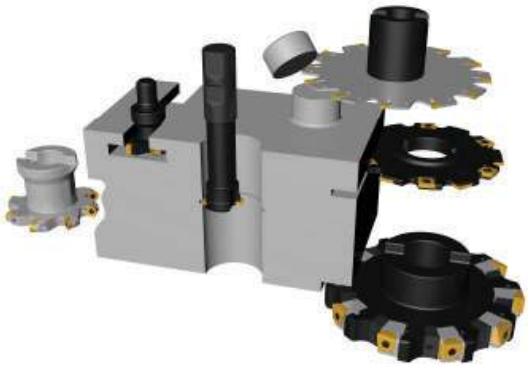
	MP2501			F30M			F40M			H25		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	290	385	450	230	305	360	220	290	340	—	—	—
P2	280	365	440	225	290	350	210	275	330	—	—	—
P3	245	320	380	195	255	305	185	245	290	—	—	—
P4	215	285	335	175	225	270	165	215	255	—	—	—
P5	205	275	320	165	220	255	155	210	245	—	—	—
P6	235	310	365	185	245	290	175	235	275	—	—	—
P7	220	295	345	175	235	275	165	220	260	—	—	—
P8	205	270	320	165	215	255	155	205	245	—	—	—
P11	215	285	335	170	225	265	160	215	255	—	—	—
P12	140	180	215	110	145	170	105	140	160	—	—	—
M1	200	265	315	180	235	280	170	225	270	—	—	—
M2	165	220	260	150	200	230	140	190	220	—	—	—
M3	135	175	210	120	155	185	115	150	175	—	—	—
M4	105	140	160	95	125	145	90	115	135	—	—	—
M5	90	115	135	80	100	120	75	95	115	—	—	—
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	2025	1250	1650	1950	1200	1600	1875
N2	—	—	—	530	700	820	510	660	780	490	650	760
N3	—	—	—	355	465	550	335	445	520	325	430	510
N11	—	—	—	405	530	630	385	510	600	375	490	580
S1	50	65	80	44	55	65	42	55	65	—	—	—
S2	41	55	65	35	46	55	34	44	50	—	—	—
S3	36	47	55	31	40	48	29	38	45	—	—	—
S11	70	95	110	60	80	95	60	75	90	—	—	—
S12	50	65	75	35	46	55	40	55	60	—	—	—
S13	29	38	44	21	27	32	23	31	36	—	—	—
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	—	—	—



Disc milling

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: 212



335.19 for small width of cut and sawing
Fixed pockets
Width 4-12mm
Page: 213

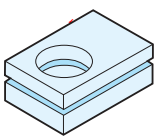


335.18 for medium width of cut
Fixed and adjustable width
Width 8-20mm
Page: 213



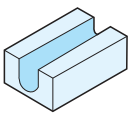
335.25 for large width of cut
Fixed and adjustable width
Width 13,5 -32mm
Page: 214

- And 4 other families dedicated to specific disc milling operation



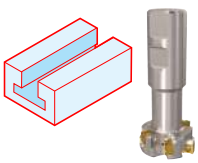


335.14 and 335.15 for circlips groove and narrow slotting
Width 0,7-5,15mm
Page: 188 (335.14) 212 (335.15)





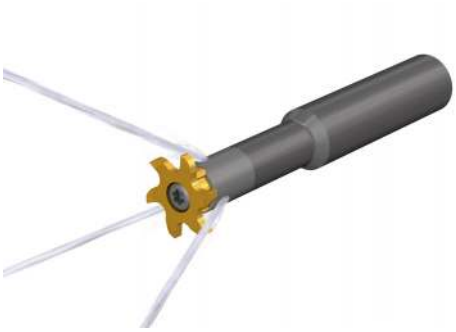
335.29 equipped with round insert - full radius profile and copy milling
Width 5 - 16 mm
Page: 214



335.16 for T-slots
Width 11 - 22 mm
Page: 294

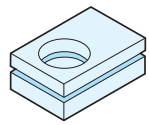
Disc Milling cutter 335.14

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 6 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 5 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

Right hand rotation		System		Width of cut : example 1.5mm Alternative: R20: Corner radius for full radius - example R=2mm C45: Top/ bottom chamfering - example 45° Threading code key: see page 203			Number of teeth Example Zc=3		Grade
R	335 .	14	-	217	150 .	12	Z3	- M03	F32M
	Disc Milling code			head diameter example: 21.7mm		Connection size (insert / shank) Example: 12mm		Edge geometry	

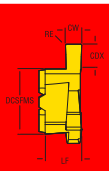
Code key cylindrical shank

System		Connection size (insert / shank) Example: 9mm		Access length including insert			-E for carbide shank otherwise steel shank
335 .	14	- 16	9 .	0	- 45	- 110	- E
Disc Milling code		Shank diameter DMM		.0 cylindrical connection type		Overall length including insert	

Code key collet chuck

System		Connection size (insert / shank) Example: 12mm		
335 .	14	- ER25	- 12	- 30
Disc Milling code		ER Collet chuck size		Access length including insert

Selection – heads



9.7 (10)		13.7 (14)		17.7 (20)		27.7 (28)	
6		8	8	9		14	
ZEFP=3	ZEFP=6	ZEFP=3	ZEFP=6	ZEFP=3	ZEFP=6	ZEFP=3	ZEFP=6
x		x		x	x	x	x
x		x		x	x	x	x
x		x		x	x	x	x
x		x		x	x	x	x
				x	x	x	x
				x		x	x
						x	x
						x	x





x						
x				x		
x				x		
x				x		
x					x	
					x	
					x	
					x	
					x	
					x	
					x	



					x	
					x	
	x			x		
					x	
					x	
					x	



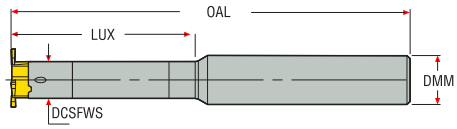
x						
		X		X		
				X		
					X	

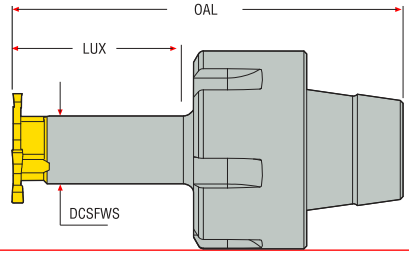


x		x	x		x	
x			x			
			x			

X Solution available - grade F32M

Selection – shanks





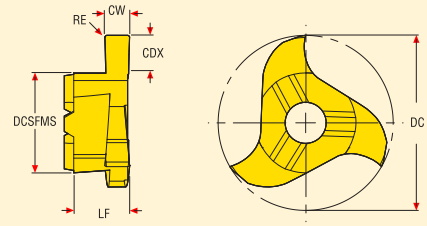
Connection size (DCSFWS)	Shank diameter						ER collect chuck size			
	DMM = 10		DMM = 12		DMM = 16		DMM = 20		ER11	ER16	ER25	ER32
6	60	15	80	21					16			
			90	30								
			100	42								
	60	17	95	29					16	22		
			110	42								
			120	56								
9					80	18			22	22	22	
					100	32						
					110	45						
					130	64						
					80	24			30	30	30	
					100	42						
					130	60						
					160	85						
14					100	42					19	19
					130	60					35	35
					160	85						
							100	35				
See page			200						201			

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



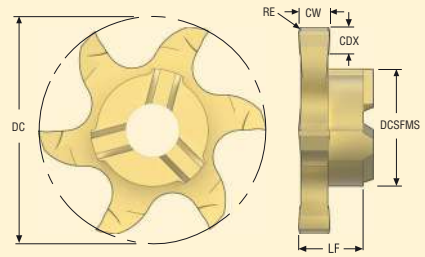


- Suitable shank, see page 200-201
- Cutting data, see page(s) 204 - 207
- Technical information, see page 202
- For ISO attribute explanation, see page 15

Designation	Dimensions in mm						ZEFP	Grades	
								Coated	
	CW	DC	CDX	DCSFMS	LF	RE		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	■	
R335.14-177400.09Z3-M02	4,0	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	■	
R335.14-217200.12Z3-M03	2,0	21,7	4,5	12,0	5,7	0,2	3	■	
R335.14-217250.12Z3-M03	2,5	21,7	4,5	12,0	5,7	0,2	3	■	
R335.14-217300.12Z3-M03	3,0	21,7	4,5	12,0	5,7	0,2	3	■	
R335.14-217400.12Z3-M03	4,0	21,7	4,5	12,0	5,7	0,2	3	■	
R335.14-217500.12Z3-M03	5,0	21,7	4,5	12,0	5,7	0,2	3	■	
R335.14-277150.14Z3-M03	1,5	27,7	6,5	14,0	6,5	0,2	3	■	
R335.14-277200.14Z3-M03	2,0	27,7	6,5	14,0	6,5	0,2	3	■	
R335.14-277250.14Z3-M03	2,5	27,7	6,5	14,0	6,5	0,2	3	■	
R335.14-277300.14Z3-M03	3,0	27,7	6,5	14,0	6,5	0,2	3	■	
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	■	
R335.14-277500.14Z3-M03	5,0	27,7	6,5	14,0	6,6	0,2	3	■	
R335.14-277600.14Z3-M03	6,0	27,7	6,5	14,0	6,6	0,2	3	■	

335.14 insert: general grooving



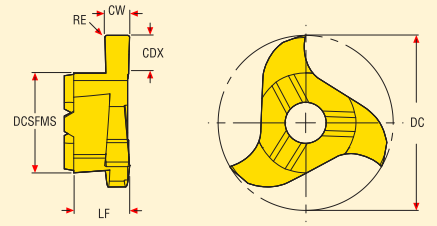


- Suitable shank, see page 200-201
- Cutting data, see page(s) 204 - 207
- Technical information, see page 202
- For ISO attribute explanation, see page 15

Designation	Dimensions in mm						ZEFP	Grades	
								Coated	
	CW	DC	CDX	DCSFMS	LF	RE		F32M	
R335.14-217150.12Z6-M03	1,5	21,7	4,5	12,0	6,25	0,1	6	■	
R335.14-217200.12Z6-M03	2,0	21,7	4,5	12,0	6,25	0,2	6	■	
R335.14-217250.12Z6-M03	2,5	21,7	4,5	12,0	6,25	0,2	6	■	
R335.14-217300.12Z6-M03	3,0	21,7	4,5	12,0	6,25	0,2	6	■	
R335.14-217400.12Z6-M03	4,0	21,7	4,5	12,0	6,25	0,2	6	■	
R335.14-277150.14Z6-M03	1,5	27,7	6,5	14,0	6,45	0,1	6	■	
R335.14-277200.14Z6-M03	2,0	27,7	6,5	14,0	6,4	0,2	6	■	
R335.14-277250.14Z6-M03	2,5	27,7	6,5	14,0	6,4	0,2	6	■	
R335.14-277300.14Z6-M03	3,0	27,7	6,5	14,0	6,4	0,2	6	■	
R335.14-277400.14Z6-M03	4,0	27,7	6,5	14,0	6,4	0,2	6	■	
R335.14-277500.14Z6-M03	5,0	27,7	6,5	14,0	6,35	0,2	6	■	
R335.14-277600.14Z6-M03	6,0	27,7	6,5	14,0	6,35	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



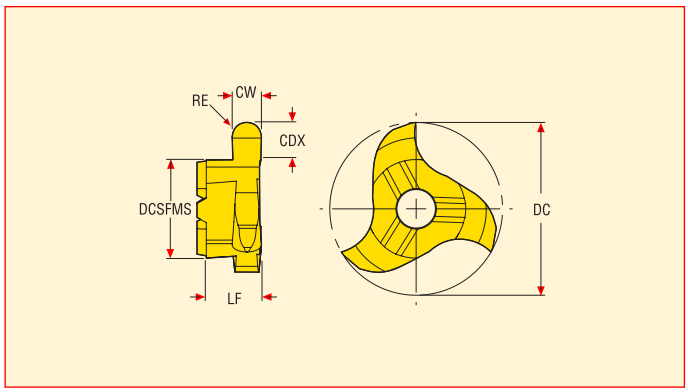


- Suitable shank, see page 200-201
- Cutting data, see page(s) 204 - 207
- Technical information, see page 202
- For ISO attribute explanation, see page 15

Designation	Dimensions in mm						ZEFP	Grades	
								Coated	
	CW	DC	CDX	DCSFMS	LF	RE		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	■	

335.14 insert: Full radius profile



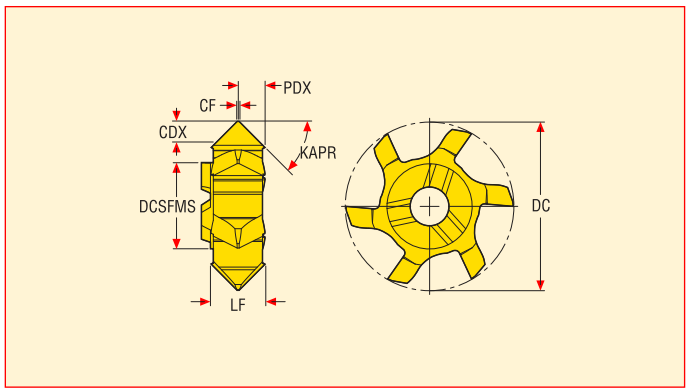


- Suitable shank, see page 200-201
- Cutting data, see page(s) 204 - 207
- Technical information, see page 202
- For ISO attribute explanation, see page 15

Designation	Dimensions in mm						ZEFP	Grades	
	CW	DC	CDX	DCSFMS	LF	RE		Coated	
								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	■	
R335.14-217R25.12Z3-M03	5,0	21,7	4,5	12,0	5,75	2,5	3	■	

335.14 insert: Top and Bottom chamfering



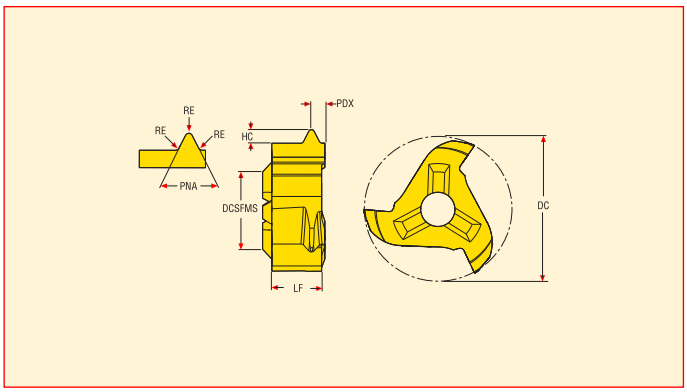


- Suitable shank, see page 200-201
- Cutting data, see page(s) 204 - 207
- Technical information, see page 202
- For ISO attribute explanation, see page 15

Designation	Dimensions in mm						KAPRS°	ZEFP	Grades	
	DC	CDX	DCSFMS	LF	PDX	CF			Coated	
									F32M	
R335.14-097C45.06Z6-M01	9,7	1,2	6,0	3,4	1,5	0,2	45,0	6	■	
R335.14-137C45.08Z6-M01	13,7	1,8	8,0	4,6	2,2	0,2	45,0	6	■	
R335.14-177C45.09Z6-M02	17,7	2,2	9,0	5,8	2,8	0,2	45,0	6	■	
R335.14-217C45.12Z6-M03	21,7	2,0	12,0	6,05	2,3	0,2	45,0	6	■	

335.14 Insert: Threading profile Whitworth



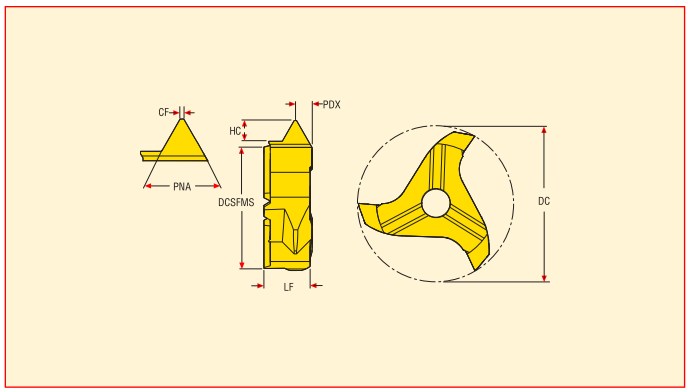


- Suitable shank, see page 200-201
- Cutting data, see page(s) 208
- Technical information, see page 203
- For ISO attribute explanation, see page 15

Designation	Pitch	Dimensions in mm								Grades	
										Coated	
	TPIX	DC	DCSFMS	HC	LF	PDX	PNA	RE	ZEFP	F32M	
R335.14-117WXF11.06Z3	11,0	11,7	6,0	1,48	3,6	1,6	55,0	0,31	3	■	
R335.14-117WXF14.06Z3	14,0	11,7	6,0	1,16	3,6	1,3	55,0	0,24	3	■	
R335.14-117WXF19.06Z3	19,0	11,7	6,0	0,86	3,6	1,1	55,0	0,18	3	■	
R335.14-157WXF14.08Z3	14,0	15,7	8,0	1,17	4,6	1,5	55,0	0,24	3	■	
R335.14-177WXF11.09Z3	11,0	17,7	9,0	1,48	5,85	1,45	55,0	0,31	3	■	
R335.14-177WXF14.09Z3	14,0	17,7	9,0	1,16	5,85	1,25	55,0	0,24	3	■	
R335.14-177WXF19.09Z3	19,0	17,7	9,0	0,856	5,85	0,95	55,0	0,18	3	■	

335.14 Insert: Threading Partial profile



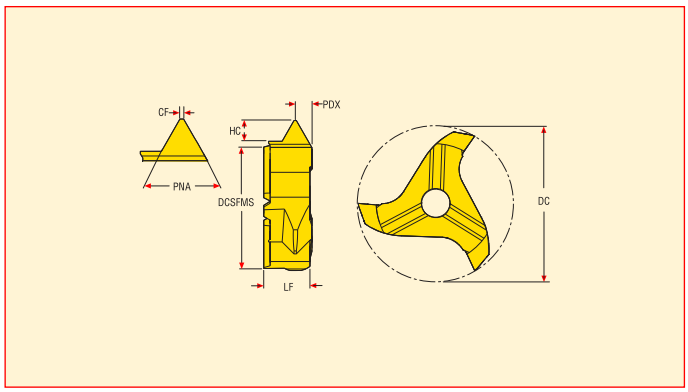


- Suitable shank, see page 200-201
- Cutting data, see page(s) 208
- Technical information, see page 203
- For ISO attribute explanation, see page 15

Designation	Pitch		Dimensions in mm								Grades	
											Coated	
	TPN	TPX	DC	DCSFMS	CF	HC	LF	PDX	PNA	ZEFP	F32M	
R335.14-117MNP100200.06Z3	1,0	2,0	11,7	6,0	0,13	1,25	3,6	0,8	60,0	3	■	
R335.14-117MNP200300.06Z3	2,0	3,0	11,7	6,0	0,25	1,78	3,6	1,2	60,0	3	■	
R335.14-157MNP150275.08Z3	1,5	2,75	15,7	8,0	0,19	1,67	4,6	1,1	60,0	3	■	
R335.14-157MNP250300.08Z3	2,5	3,0	15,7	8,0	0,31	1,78	4,6	1,2	60,0	3	■	
R335.14-177MNP100200.09Z3	1,0	2,0	17,7	9,0	0,12	1,19	5,85	1,15	60,0	3	■	
R335.14-177MNP150275.09Z3	1,5	2,75	17,7	9,0	0,19	1,62	5,85	1,25	60,0	3	■	
R335.14-177MNP200375.09Z3	2,0	3,75	17,7	9,0	0,25	2,22	5,85	1,65	60,0	3	■	
R335.14-177MNP300550.09Z3	3,0	5,5	17,7	9,0	0,38	3,25	5,85	2,25	60,0	3	■	
R335.14-217MNP100200.12Z3	1,0	2,0	21,7	12,0	0,12	1,19	5,85	1,25	60,0	3	■	
R335.14-217MNP200375.12Z3	2,0	3,75	21,7	12,0	0,25	2,22	5,85	1,65	60,0	3	■	
R335.14-217MNP250450.12Z3	2,5	4,5	21,7	12,0	0,25	2,7	5,85	2,15	60,0	3	■	
R335.14-217MNP350600.12Z3	3,5	6,0	21,7	12,0	0,44	3,84	5,85	2,65	60,0	3	■	
R335.14-277MNP250500.14Z3	2,5	5,0	27,7	14,0	0,37	2,93	6,6	2,6	60,0	3	■	
R335.14-277MNP400600.14Z3	4,0	6,0	27,7	14,0	0,5	4,6	6,6	3,0	60,0	3	■	

335.14 Insert: Threading profile UN





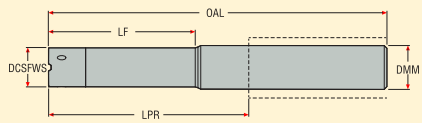
- Suitable shank, see page 200-201
- Cutting data, see page(s) 208
- Technical information, see page 203
- For ISO attribute explanation, see page 15

Designation	Pitch	Dimensions in mm								Grades	
										Coated	
	TPIX	DC	DCSFMS	HC	LF	PDX	PNA	CF	ZEFP	F32M	
R335.14-177UNNF10.09Z3	10,0	17,7	9,0	1,375	5,85	1,25	60,0	0,32	3	■	
R335.14-177UNNF11.09Z3	11,0	17,7	9,0	1,249	5,85	1,05	60,0	0,29	3	■	
R335.14-177UNNF12.09Z3	12,0	17,7	9,0	1,146	5,85	1,05	60,0	0,27	3	■	
R335.14-177UNNF14.09Z3	14,0	17,7	9,0	0,982	5,85	0,85	60,0	0,23	3	■	
R335.14-177UNNF16.09Z3	16,0	17,7	9,0	0,859	5,85	0,85	60,0	0,2	3	■	
R335.14-177UNNF18.09Z3	18,0	17,7	9,0	0,763	5,85	0,85	60,0	0,18	3	■	
R335.14-177UNNF20.09Z3	20,0	17,7	9,0	0,687	5,85	0,65	60,0	0,16	3	■	
R335.14-177UNNF24.09Z3	24,0	17,7	9,0	0,572	5,85	0,65	60,0	0,13	3	■	
R335.14-177UNNF6.09Z3	6,0	17,7	9,0	2,291	5,85	1,65	60,0	0,53	3	■	
R335.14-177UNNF8.09Z3	8,0	17,7	9,0	1,718	5,85	1,45	60,0	0,4	3	■	

Disc milling cutters, exchangeable heads

335.14 shank - Cylindrical version





Max RPM = 30 000 rev/min

- Cutting data, see page(s) 204 - 207
- Technical information, see page 203-202
- For ISO attribute explanation, see page 15

Designation	Dimensions in mm						KG	Insert
	DCSFWS	DMM	LF	OAL	LPR			
335.14-1006.0-015-060	6,0	10,0	11,5	56,5	16,5	–	0,1	R335.14...06Z..
335.14-1206.0-021-080-E	6,0	12,0	17,5	76,5	31,5	✓	0,1	R335.14...06Z..
335.14-1206.0-030-090-E	6,0	12,0	26,5	86,5	41,5	✓	0,1	R335.14...06Z..
335.14-1206.0-042-100-E	6,0	12,0	38,5	96,5	51,5	✓	0,1	R335.14...06Z..
335.14-1008.0-017-060	8,0	10,0	12,5	55,5	15,5	–	0,1	R335.14...08Z..
335.14-1208.0-029-095-E	8,0	12,0	24,5	90,5	45,5	✓	0,2	R335.14...08Z..
335.14-1208.0-042-110-E	8,0	12,0	37,5	105,5	60,5	✓	0,2	R335.14...08Z..
335.14-1208.0-056-120-E	8,0	12,0	51,5	115,5	70,5	✓	0,2	R335.14...08Z..
335.14-1609.0-018-080	9,0	16,0	12,2	74,2	26,2	✓	0,1	R335.14...09Z..
335.14-1609.0-032-100-E	9,0	16,0	26,2	94,2	46,2	✓	0,2	R335.14...09Z..
335.14-1609.0-045-110-E	9,0	16,0	39,2	104,2	56,2	✓	0,2	R335.14...09Z..
335.14-1609.0-064-130-E	9,0	16,0	58,2	124,2	76,2	✓	0,3	R335.14...09Z..
335.14-1612.0-024-080	12,0	16,0	18,3	74,3	26,3	✓	0,1	R335.14...12Z..
335.14-1612.0-042-100-E	12,0	16,0	36,3	94,3	46,3	✓	0,2	R335.14...12Z..
335.14-1612.0-060-130-E	12,0	16,0	54,3	124,3	76,3	✓	0,3	R335.14...12Z..
335.14-1612.0-085-160-E	12,0	16,0	76,3	154,3	106,3	✓	0,3	R335.14...12Z..
335.14-1614.0-042-100-E	14,3	16,0	35,5	93,5	45,5	✓	0,3	R335.14...14Z..
335.14-1614.0-060-130-E	14,3	16,0	53,5	123,5	75,5	✓	0,3	R335.14...14Z..
335.14-1614.0-085-160-E	14,3	16,0	78,5	153,5	105,5	✓	0,4	R335.14...14Z..
335.14-2014.0-036-100	14,0	20,0	29,2	93,5	43,5	✓	0,2	R335.14...14Z..

Spare Parts

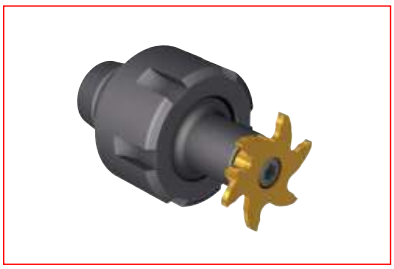
For shank	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
335.14-..06	DOUBLE-T	C92608-T08P	H4B-T08P	2
335.14-..08	DOUBLE-T	C93510-T10P	H4B-T10P	3,5
335.14-..09	DOUBLE-T	C94012-T15P	H4B-T15P	5
335.14-..12/14	DOUBLE-T	C95012-T20P	H6B-T20P	7

Accessories

Torque key
T00-08P20
T00-10P35
T00-15P50
–

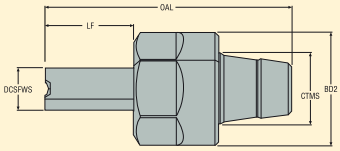
-E = Carbide shank with DMM tolerance = h6
Steel shank: DMM tolerance = g6

335.14 Shank with ER collet

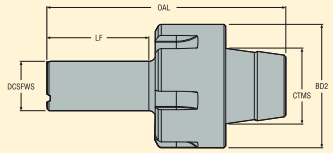


- Cutting data, see page(s) 204 - 207
- Technical information, see page 203-202
- For ISO attribute explanation, see page 15

Design 1



Design 2



Max RPM = 20 000 rev/min

Designation	Dimensions in mm						KG	Design	Insert
	DCSFWS	BD2	LF	OAL	CTMS				
335.14-ER11-06-016	6,0	16,0	12,5	34,9	ER 11	–	0,1	1	R335.14...06Z..
335.14-ER11-08-016	8,0	16,0	11,5	33,8	ER 11	–	0,1	1	R335.14...08Z..
335.14-ER16-08-022	8,0	32,0	17,5	49,6	ER 16	–	0,2	2	R335.14...08Z..
335.14-ER11-09-022	9,0	16,0	16,2	38,5	ER 11	–	0,1	1	R335.14...09Z..
335.14-ER16-09-022	9,0	32,0	16,2	48,3	ER 16	–	0,2	2	R335.14...09Z..
335.14-ER25-09-022	9,0	35,0	16,2	55,3	ER 25	–	0,2	2	R335.14...09Z..
335.14-ER16-12-030	12,0	32,0	24,3	56,4	ER 16	–	0,2	2	R335.14...12Z..
335.14-ER25-12-030	12,0	35,0	24,3	63,4	ER 25	–	0,2	2	R335.14...12Z..
335.14-ER32-12-030	12,0	50,0	24,3	69,4	ER 32	–	0,4	2	R335.14...12Z..
335.14-ER25-14-019	14,0	35,0	12,5	52,3	ER 25	–	0,2	2	R335.14...14Z..
335.14-ER25-14-035	14,0	35,0	28,5	67,6	ER 25	–	0,2	2	R335.14...14Z..
335.14-ER32-14-019	14,0	50,0	12,5	58,3	ER 32	–	0,4	2	R335.14...14Z..
335.14-ER32-14-035	14,0	50,0	28,5	73,6	ER 32	–	0,4	2	R335.14...14Z..

Spare Parts

For shank	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
335.14-ER..-06	DOUBLE-T	C92608-T08P	H4B-T08P	2
335.14-ER..-08	DOUBLE-T	C93510-T10P	H4B-T10P	3,5
335.14-ER..-09	DOUBLE-T	C94012-T15P	H4B-T15P	5
335.14-ER..-12/14	DOUBLE-T	C95012-T20P	H6B-T20P	7

Accessories

Torque key
T00-08P20
T00-10P35
T00-15P50
–

Technical information

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 703 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.

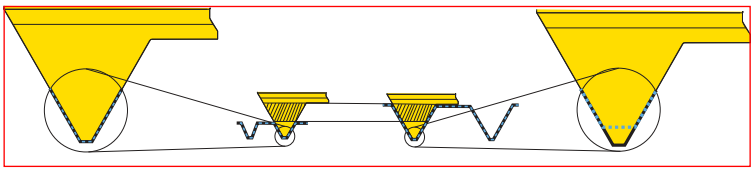
Holder recommendation

For best result in terms of stability, precision and reliability, it is recommended to use the following Seco Tooling holders
-High precision collet chucks ERHP 5672
-Shrink fit Holder SFD 5603, SFR 5600 and SFS 5801
-ER Collet chuck ER 5675
-Power Milling Chuck, PMC

Please see SECO Tooling System catalogue for more information.



Pitch (as of/up to)



Actual Thread

Standard thread form

Thread milling by circular interpolation can cause thread profi le 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.

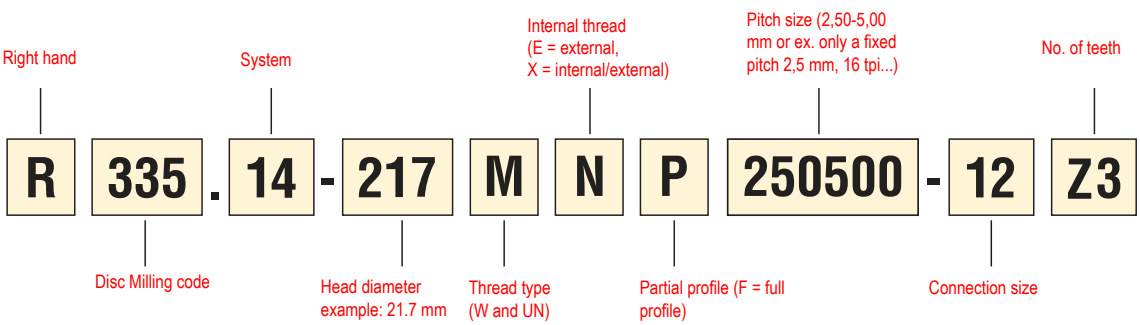
Insert with partial profile for Metric ISO-Threads are multi tools. That means that each insert could machine different pitches. The insert is designed to meet the minimum pitch size (TPN); Machining this pitch will result in a standard conform thread form.

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_e/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_e/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

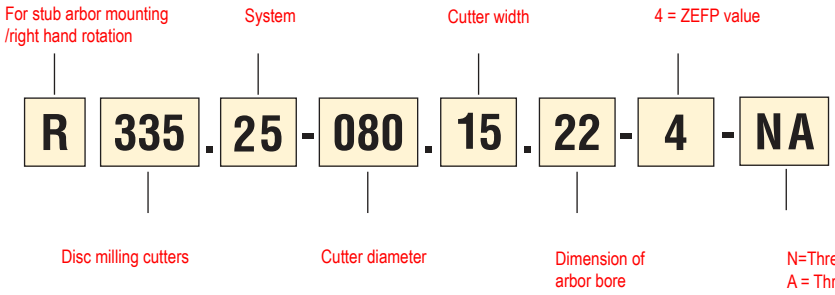
SMG	R335.14	
	f_z	v_c
P1	0,070	275
P2	0,070	270
P3	0,070	230
P4	0,065	205
P5	0,065	195
P6	0,065	220
P7	0,065	205
P8	0,070	195
P11	0,065	200
P12	0,044	120
M1	0,070	215
M2	0,065	175
M3	0,055	130
M4	0,046	100
M5	0,046	85
K1	0,070	210
K2	0,065	185
K3	0,065	155
K4	0,065	150
K5	0,060	90
K6	0,065	130
K7	0,060	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

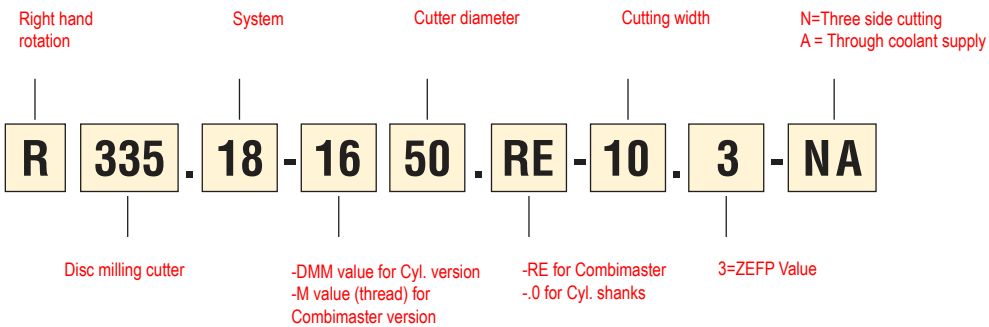
Code keys

For fixed pocket disc milling cutters

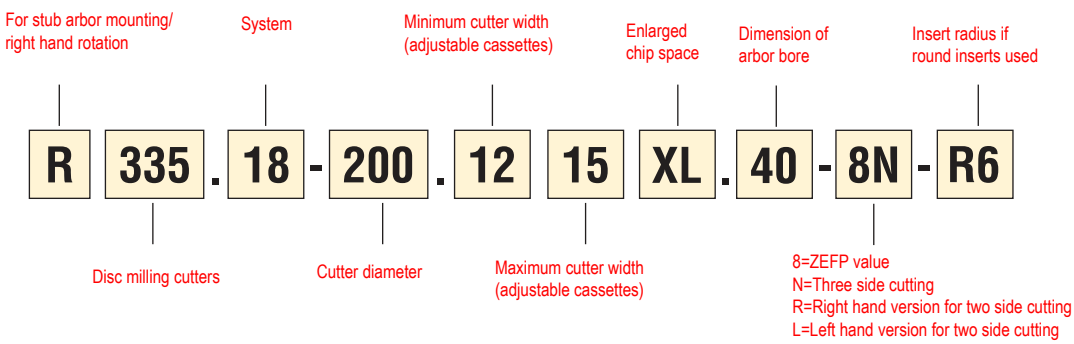
-Arbor type (A or B-type)



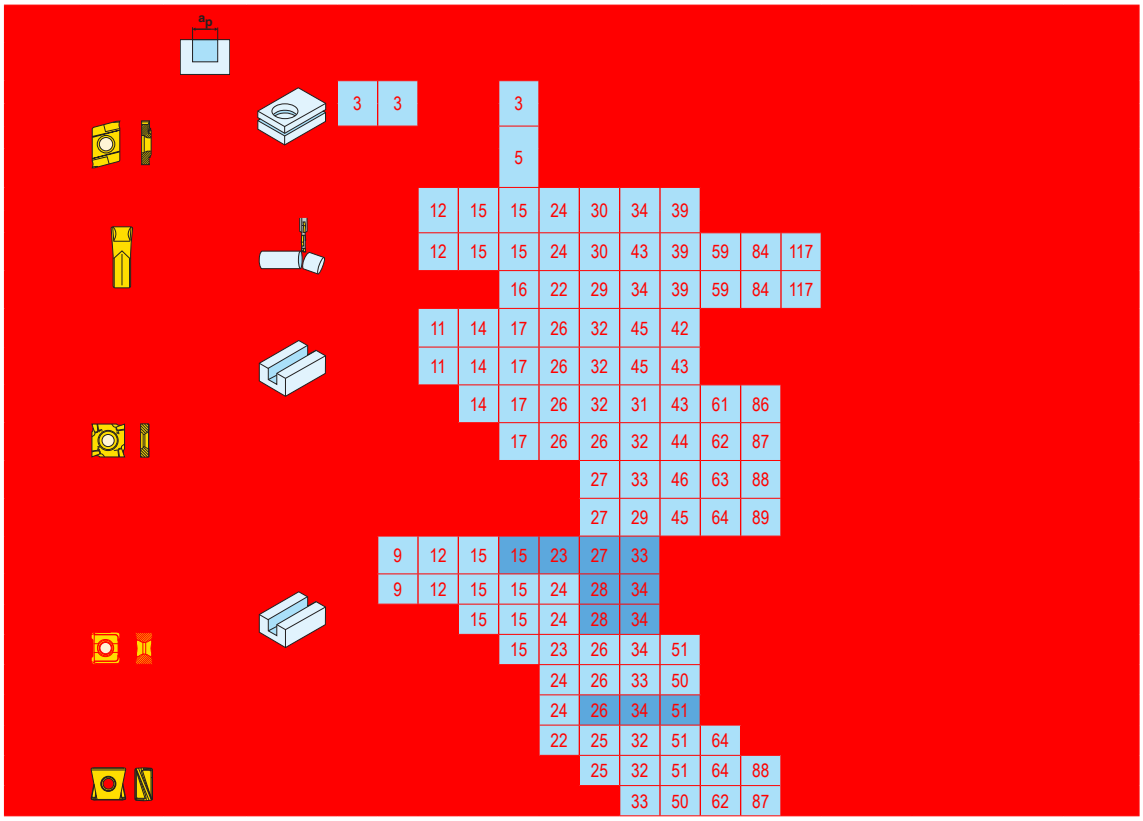
-Shank type (Cylindrical or Combimaster type)



For adjustable disc milling cutters



Full side and face - fixed pocket design

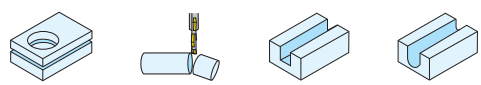


Full radius profile – fixed pocket design

System	Insert	ap	Applica-tion	Diameters (mm) available and max depth of cut (mm)												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	14	17	26	32	45	42				4	R2,0/R3,0/R3,5/ R4,0/R5,0/R6,0	226-230
		6					14	17	26	32	31	43	61	86				
		7/8						17	26	32	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	245
		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) X

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



Full side and and face - adjustable in width

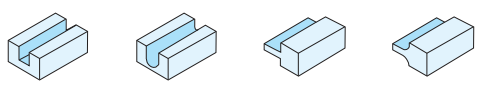
System	Insert	a_p	Application	Diameters (mm) available and max depth of cut (mm)							Max no. of cutting edges	Radii available (mm)	See page
				80	100	125	160	200	250	315			
335.18 LNK	LNK	8 - 10		14	27	32	50	63	88	121	4	R0,4/R0,8/R1,6/ R2,0/R2,4/R3,1/R4,0	240-241
		10 - 12		14	27	32	50	63	88	121			
		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/R4,0/R5,0/R6,0	243-244
		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	R4,0	246-248
		10 - 12		15	28	33	51	63	88	121		R5,0	
		12 - 15		15	28	33	51	63	88	121		R6,0	
		16 - 17			28	36	54	67	92	124		R8,0	
		20 - 21							92	124		R10,0	

Half side and face

System	Insert	a_p	Application	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	≤5		14	27	32	50	63	88	121	2+2	R0,4/R0,8/R1,6/ R2,0/R2,4/R3,1/R4,0	249-250, 255-256
		≤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/R4,0/R5,0/R6,0	251-252, 257-258
		≤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	R4,0	253-254, 259-260
		≤5		15	28	33	51	63	88	121		R5,0	
		≤6		15	28	33	51	63	88	121		R6,0	
		≤8			28	36	54	67	92	124		R8,0	
		≤10							92	124		R10,0	

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

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



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: 216
Insert page: 674
Cutting data: 217-218
Add. information: 216
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: 40-125 mm

Basic choice for grooving, sawing, full side and face
Dia 40-315 mm
Internal coolant up to dia 125mm
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: 219-221
Insert page: 667
Cutting data: 224-225
Add. information: 222-223
For ISO attribute explanation, see page 15

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

Applications







Width of cut 4 to 12 mm



Combimaster With internal coolant Ø 40-125



Cylindrical Ø 50/63/80 mm



A Type Ø 63-250 mm



B Type: Ø 63-160 mm

Basic choice for sawing and slotting

Can be used for full radius profile with radii inserts.
Dia 40-250 mm
Internal coolant up to dia 125mm
2 or 4 cutting edges per insert depending on radii.
a_p = 4-12 mm.

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

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



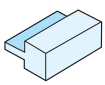
Product pages: 226-230
Insert page: 647-651, 672
Cutting data: 233-236
Add. information: 231-232
For ISO attribute explanation, see page 15

Edge form: Corner radii 0,2-6 mm

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

Applications







Width of cut 8 to 20 mm



Combimaster: with internal coolant Ø 32-63 mm Fixed pocket



Cylindrical: Ø 32-80 mm Fixed pocket



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



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

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

Ø 32-315 mm
Internal coolant up to Ø 63 mm
1 to 4 cutting edges per insert depending on radii.
a_p = 8-20 mm

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

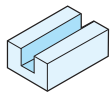


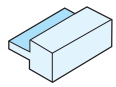
Product pages: 237-241, 249-250, 255-256
Insert page: 626-627
Cutting data: 268-269
Add. information: 261-267
For ISO attribute explanation, see page 15

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

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

Applications







A type dia 125-315 mm
Fixed pocket and adjustable



B type dia 80-315 mm
Fixed pocket and adjustable



Width of cut 13,5 to 32 mm

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

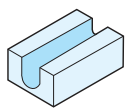


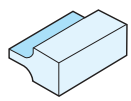
Product pages: 242-244, 251-252, 257-258
Insert page: 626, 660
Cutting data: 270-277
Add. information: 261-267
For ISO attribute explanation, see page 15

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

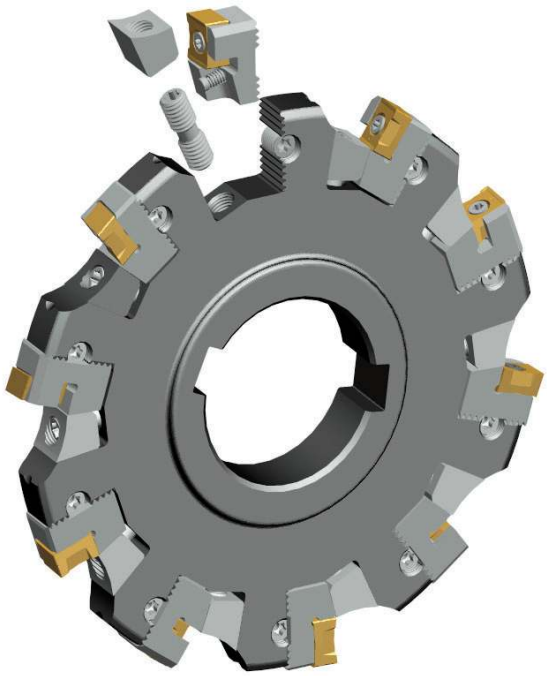
Insert designation:
RD..05/06/07/08/10
RP..12/16/20

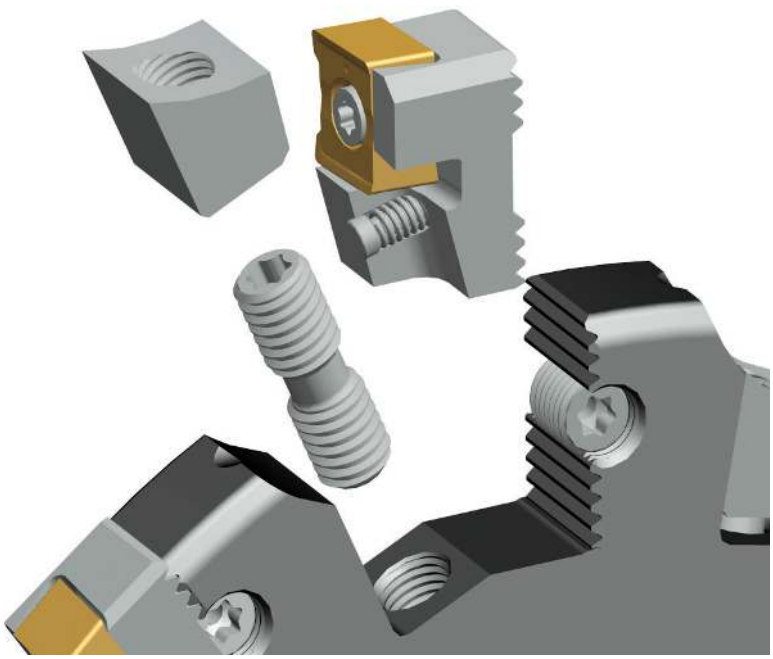


Product pages: 246-248, 253-254, 259-260
Insert page: 635, 637-638
Cutting data: 278-293
Add. information: 261-267
For ISO attribute explanation, see page 15

Edge form: Corner radii 2,5-10 mm

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

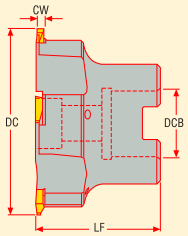




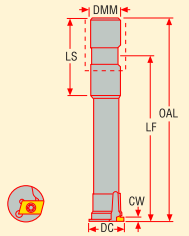
For circlip grooves milling cutter R335.15

Width 1,1-5,15 mm

ArborArbor



Weldon



- For insert selection and cutting data recommendations, see page(s) 217 - 218
- For complete insert programme, see page(s) 674
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm										Insert
		CW min-max	DC	DMM	DCB	LS	OAL	LF		KG		
R335.15-20024.3-03-1	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	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

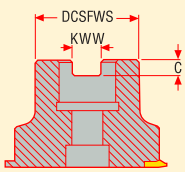
For groove depth (CDX), please see insert pages 674

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 710

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)

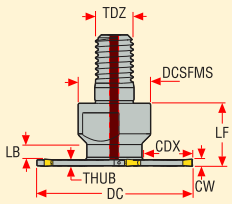
	F40M		
SMG	10%	5%	2%
P1	260	285	280
P2	255	275	275
P3	220	240	240
P4	195	215	210
P5	190	205	205
P6	210	230	230
P7	200	215	215
P8	185	200	200
P11	195	210	210
P12	125	135	135
M1	205	225	220
M2	170	185	185
M3	135	150	150
M4	105	115	115
M5	90	95	95
K1	200	220	220
K2	180	195	195
K3	150	165	165
K4	145	155	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



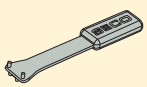
- For insert selection and cutting data recommendations, see page(s) 224-225
- For complete insert programme, see page(s) 667
- For ISO attribute explanation, see page 15

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



Designation	Type of mounting	Dimensions in mm													Insert 150.10
		CW min-max	DC	CDX	DCSFMS	LB	LF	TDZ	THUB			KG			
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	–	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	–	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	–	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	–	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	–	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	–	25,0	M20	2,4	✓	11	0,4	1580		-3N
R335.10-20125.RE-03-13A	Combimaster	3,1-3,1	125,0	43,1	36,5	0,0	25,0	M20	2,4	✓	13	0,7	1270		-3N

Spare Parts

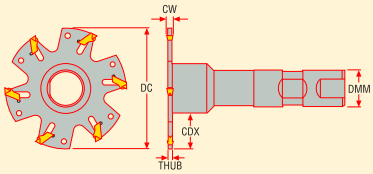
For cutter	Insert key
	
R335.10-..	335.10-155
R335.10-Ø125	150.10-150

Please check availability in current price and stock-list

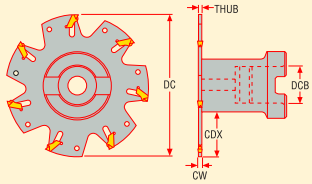
Cutter 335.10 - Insert 150.10

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

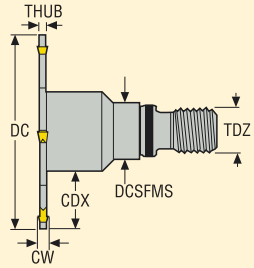
Type B_1 for Cylindrical/Weldon shank



Type B_2 for stub Arbor



Type B_4 for Combimaster



- For insert selection and cutting data recommendations, see page(s) 224-225
- For complete insert programme, see page(s) 667
- Spare parts, see page 222-223

Drawings for type A and B_3, see page 221

Designation	Type of mounting	Dimensions in mm											Insert 150.10
		CW min-max	DC	CDX	DCB	DCSFMS	DMM	TDZ	THUB		KG		
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	32,0	–	–	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	–	M16	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	40,0	–	–	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	–	M16	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	2,25-2,5	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	32,0	–	–	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	–	M16	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	40,0	–	–	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	–	M16	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

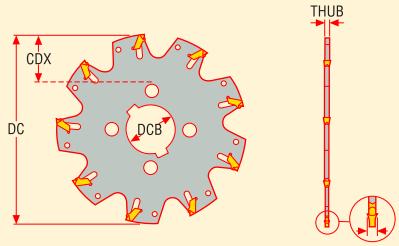
For type A cutters, no drive holes for cutter dia 80-100 mm. For cutter dia > 100 mm, please use Seco drive rings,see page 222

Note: For B_1, B_2, B_3 and B_4 types, the blade is assembled on the holder in the delivery

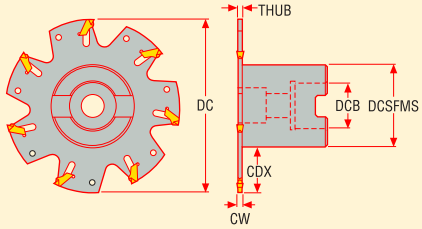
Cutter 335.10 - Insert 150.10

Width 4,1 mm – full side – HSS body

Type A for milling Arbor



Type B_3 for stub Arbor



- For insert selection and cutting data recommendations, see page(s) 224-225
- For complete insert programme, see page(s) 667
- Spare parts, see page 222-223

Drawings for Type B_1, B_2 and B_4, see page 220

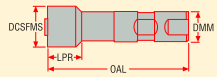
Designation	Type of mounting	Dimensions in mm											Insert 150.10
		CW	DC	CDX	DCB	DCSFMS	DMM	TDZ	THUB		KG		
R335.10-25063.3-04-5	B_1	4,1	63,0	15,0	–	–	25,0	–	3,4	5	0,5	4000	-4N
R335.10-063-04.22-5	B_2	4,1	63,0	15,0	22,0	32,0	–	–	3,4	5	0,4	4000	-4N
R335.10-1663.RE-04-5	B_4	4,1	63,0	16,0	–	30,0	–	M16	3,4	5	0,3	4000	-4N
R335.10-32080.3-04-6	B_1	4,1	80,0	19,5	–	–	32,0	–	3,4	6	1,1	3500	-4N
R335.10-080-04.22-6	B_2	4,1	80,0	19,5	22,0	40,0	–	–	3,4	6	0,5	3500	-4N
335.10-080-04.22-6	A	4,1	80,0	22,5	22,0	–	–	–	3,4	6	0,1	3500	-4N
R335.10-1680.RE-04-6	B_4	4,1	80,0	19,5	–	30,0	–	M16	3,4	6	0,5	3500	-4N
R335.10-100-04.27-7	B_3	4,1	100,0	25,5	27,0	48,0	–	–	3,4	7	0,7	3200	-4N
335.10-100-04.27-7	A	4,1	100,0	29,0	27,0	–	–	–	3,4	7	0,2	3200	-4N
R335.10-125-04.32-9	B_3	4,1	125,0	33,0	32,0	58,0	–	–	3,4	9	1,3	2800	-4N
335.10-125-04.32-9	A	4,1	125,0	34,5	32,0	–	–	–	3,4	9	0,4	2800	-4N
R335.10-160-04.40-12	B_3	4,1	160,0	39,5	40,0	80,0	–	–	3,4	12	2,5	2400	-4N
335.10-160-04.40-12	A	4,1	160,0	39,5	40,0	–	–	–	3,4	12	0,5	2400	-4N
335.10-200-04.40-14	A	4,1	200,0	59,5	40,0	–	–	–	3,4	14	0,9	2200	-4N
335.10-250-04.40-18	A	4,1	250,0	84,5	40,0	–	–	–	3,4	18	1,2	2000	-4N
335.10-315-04.40-24	A	4,1	315,0	117,0	40,0	–	–	–	3,4	24	1,9	1700	-4N

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 222
Note: For B_1, B_2, B_3 and B_4 types, the blade is assembled on the holder in the delivery

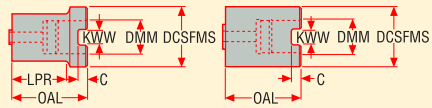
Disc milling cutters 335.10 – Spare parts

Holder for B_1



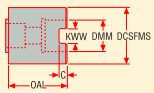
Designation	DMM	DCSFMS	OAL	LPR
335.10-25.3	25	32	106	25
335.10-32.3	32	40	150	30

Holder for B_2



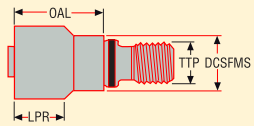
Designation	DMM	DCSFMS	OAL	LPR	KWW	C
335.10-2232	22	40	50	36	10,4	6,3
335.10-2240	22	40	50	–	10,4	6,3

Holder for B_3



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

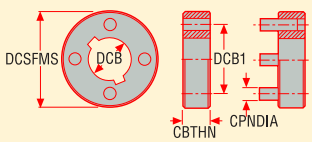
Holder for B_4



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

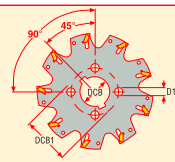
Note: assembly screws delivered with holder B_1 B_2 B_3 and B_4

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

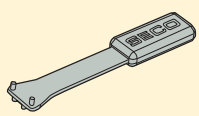
Dimension of mounting for type A



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

Drive ring to be ordered separately

Spare parts



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

Please check availability in current price and stock-list.

Assembly components/Standard parts for type B_1

Spare parts

Part No.	Standard parts: Cutter body Part No.	Standard parts: Holder Part no.	Assembly screw	Key (T-handle)	Key/Torque value
R335.10-25063.3-02-5	B-R335.10-063.10-02	335.10-25.3	3 x 335.10-0516-T15P	DOUBLE-T	H6B-T15P / 5 N.m
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			

Key to be ordered separately

Assembly components/Standard parts for type B_2

Spare parts

Part No.	Standard parts: Cutter body Part No.	Standard parts: Holder Part no.	Assembly screw	Key (T-handle)	Key/Torque value	Arbor screw
R335.10-063-02.22-5	B-R335.10-063.10-02	335.10-2232	3 x 335.10-0516-T15P	DOUBLE-T	H6B-T15P / 5 N.m	220.17-696
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				

Key to be ordered separately

Assembly components/Standard parts for type B_3

Spare parts

Part No.	Standard parts: Cutter body Part No.	Standard parts: Holder Part no.	Assembly screw	Key (T-handle)	Key/Torque value	Arbor screw
R335.10-100-02.27-7	B-R335.10-100.27-02	335.10-2748	4 x 335.10-0516-T15P	DOUBLE-T	H6B-T15P / 5 N.m	MC6S 12x40
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				220.17-694
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	4 x 335.10-1030-T30P	DOUBLE-T	H6B-T30PL / 8N.m	MC6S 20x40
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				

Key to be ordered separately

Assembly components/Standard parts for type B_4/Combimaster

Spare parts

Part No.	Standard parts: Cutter body Part No.	Standard parts: Holder Part no.	Assembly screw	Key (T-handle)	Key/Torque value
R335.10-1663.RE-02-5	B-R335.10-063.10-02	335.10-16RE-10	3 x 335.10-0516-T15P	DOUBLE-T	H6B-T15P / 5 N.m
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			

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

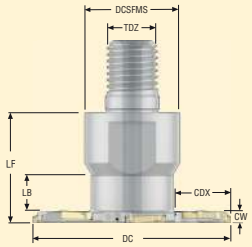
335.10 - Cutting data v_c = (m/min)

	TGP45			T350M			CP500			CP600		
SMG	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

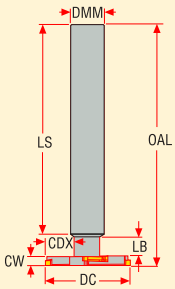
Cutter 335.19 - Insert SNHQ

Width 4 mm - full side

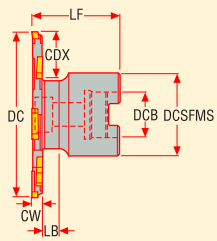
Combimaster (RE)



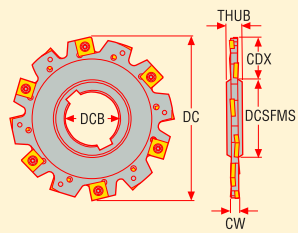
Cylindrical (Cyl)



Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 233-236
- For complete insert programme, see page(s) 647, 672
- For spare parts and technical information, see page 231-232

Designation	Type of mounting	Dimensions in mm													ZEFP	KG	Insert type	
		CW	DC	CDX	DMM	DCB	DCSFMS	TDZ	LF	OAL	LB	LS	THUB				SNHQ..R	SNHQ..L
R335.19-1040.RE-04.2NA	RE	4,0	40	11,6	–	–	18,5	M10	23,0	–	8,3	–	–	4	2	0,1	21500	1102	1102
R335.19-1250.RE-04.3NA	RE	4,0	50	14,9	–	–	23,0	M12	28,0	–	10,3	–	–	6	3	0,2	19100	1102	1102
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	1102
R335.19-1663.RE-04.4NA	RE	4,0	63	17,7	–	–	30,0	M16	35,0	–	11,3	–	–	8	4	0,3	17100	1102	1102
R335.19-3263.0-04.4	Cyl	4,0	63	13,9	32,0	–	–	–	–	170,0	–	148,6	–	8	4	1,2	17100	1102	1102
R335.19-063.04.16-4	B	4,0	63	13,9	–	16,0	33,0	–	35,0	–	–	–	–	8	4	0,3	17100	1102	1102
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	1102
335.19-063.04.22-4	A	4,0	63	13,6	–	22,0	33,0	–	–	–	–	–	8,0	8	4	0,1	17100	1102	1102
R335.19-1680.RE-04.5NA	RE	4,0	80	26,2	–	–	30,0	M16	35,0	–	11,3	–	–	10	5	0,3	15200	1102	1102
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	1102
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	1102
335.19-080.04.22-5	A	4,0	80	18,6	–	22,0	33,0	–	–	–	–	–	12,0	10	5	0,2	15200	1102	1102
R335.19-20100.RE-04.7NA	RE	4,0	100	32,7	–	–	36,5	M20	35,0	–	13,4	–	–	14	7	0,5	13500	1102	1102
R335.19-100.04.27-6	B	4,0	100	22,1	–	27,0	48,0	–	50,0	–	–	–	–	12	6	0,7	13500	1102	1102
335.19-100.04.27-6	A	4,0	100	24,6	–	27,0	41,0	–	–	–	–	–	12,0	12	6	0,3	13500	1102	1102
R335.19-20125.RE-04.8NA	RE	4,0	125	45,2	–	–	36,5	M20	35,0	–	13,4	–	–	16	8	0,6	12200	1102	1102
R335.19-125.04.32-7	B	4,0	125	29,6	–	32,0	58,0	–	50,0	–	–	–	–	14	7	1,1	12200	1102	1102
335.19-125.04.40-7	A	4,0	125	30,1	–	40,0	55,0	–	–	–	–	–	12,0	14	7	0,4	12200	1102	1102
R335.19-160.04.40-9	B	4,0	160	41,1	–	40,0	70,0	–	50,0	–	–	–	–	18	9	1,2	10700	1102	1102
335.19-160.04.40-9	A	4,0	160	42,6	–	40,0	65,0	–	–	–	–	–	12,0	18	9	0,6	10700	1102	1102

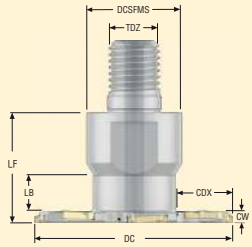
Please check availability in current price and stock-list

For Combimaster Shanks, see Machining Navigator Tooling System

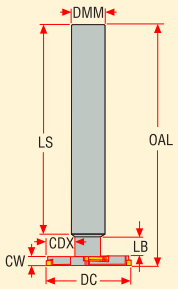
Cutter 335.19 - Insert SNHQ

Width 5 mm - full side

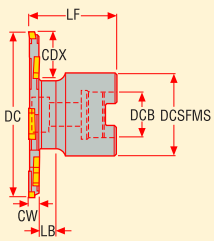
Combimaster (RE)



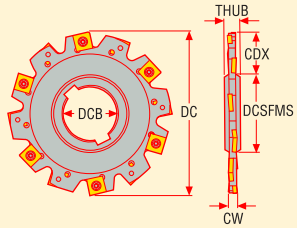
Cylindrical (Cyl)



Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 233-236
- For complete insert programme, see page(s) 647, 672
- For spare parts and technical information, see page 231-232

Designation	Type of mounting	Dimensions in mm													ZEFP	KG		Insert type	
		CW	DC	CDX	DMM	DCB	DCSFMS	TDZ	LF	OAL	LB	LS	THUB					SNHQ..R	SNHQ..L
R335.19-1040.RE-05.2NA	RE	5,0	40	11,6	–	–	18,5	M10	23,0	–	7,3	–	–	4	2	0,1	18700	1103	1103
R335.19-1250.RE-05.3NA	RE	5,0	50	14,9	–	–	23,0	M12	28,0	–	9,3	–	–	6	3	0,2	16800	1103	1103
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	1103
R335.19-1663.RE-05.4NA	RE	5,0	63	17,6	–	–	30,0	M16	35,0	–	10,3	–	–	8	4	0,3	14900	1103	1103
R335.19-063.05.16-4	B	5,0	63	13,9	–	16,0	33,0	–	35,0	–	–	–	–	8	4	0,3	14900	1103	1103
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	1103
R335.19-1680.RE-05.5NA	RE	5,0	80	26,1	–	–	30,0	M16	35,0	–	10,3	–	–	10	5	0,3	13200	1103	1103
R335.19-3280.0-05.5	Cyl	5,0	80	22,5	32,0	–	–	–	–	170,0	–	148,6	–	10	5	1,2	13200	1103	1103
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	1103
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	1103
335.19-080.05.22-5	A	5,0	80	19,6	–	22,0	33,0	–	–	–	–	–	12,0	10	5	0,2	13200	1103	1103
R335.19-20100.RE-05.7NA	RE	5,0	100	32,6	–	–	36,5	M20	35,0	–	12,4	–	–	14	7	0,5	11800	1103	1103
R335.19-100.05.27-6	B	5,0	100	22,1	–	27,0	48,0	–	50,0	–	–	–	–	12	6	0,7	11800	1103	1103
335.19-100.05.27-6	A	5,0	100	25,6	–	27,0	41,0	–	–	–	–	–	12,0	12	6	0,3	11800	1103	1103
R335.19-20125.RE-05.8NA	RE	5,0	125	45,1	–	–	36,5	M20	35,0	–	12,4	–	–	16	8	0,6	10700	1103	1103
R335.19-125.05.32-7	B	5,0	125	29,6	–	32,0	58,0	–	50,0	–	–	–	–	14	7	1,1	10700	1103	1103
335.19-125.05.40-7	A	5,0	125	31,1	–	40,0	55,0	–	–	–	–	–	12,0	14	7	0,4	10700	1103	1103
R335.19-160.05.40-9	B	5,0	160	41,1	–	40,0	70,0	–	50,0	–	–	–	–	18	9	1,3	9300	1103	1103
335.19-160.05.40-9	A	5,0	160	43,6	–	40,0	65,0	–	–	–	–	–	12,0	18	9	0,7	9300	1103	1103

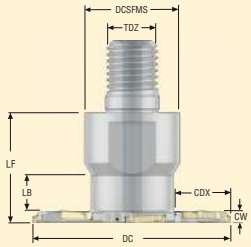
Please check availability in current price and stock-list

For Combimaster Shanks, see Machining Navigator Tooling System

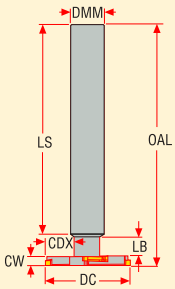
Cutter 335.19 - Insert SNHQ

Width 6 mm - full side

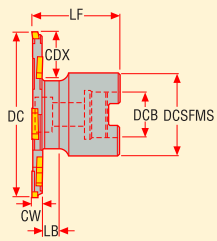
Combimaster (RE)



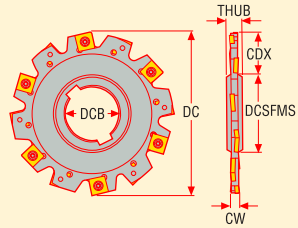
Cylindrical (Cyl)



Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 233-236
- For complete insert programme, see page(s) 647, 672
- For spare parts and technical information, see page 231-232

Designation	Type of mounting	Dimensions in mm												Insert type					
		CW	DC	CDX	DMM	DCB	DCSFMS	TDZ	LF	OAL	LB	LS	THUB		ZEFP	KG		SNHQ..R	SNHQ..L
R335.19-1250.RE-06.2NA	RE	6,0	50	14,9	–	–	23,0	M12	28,0	–	8,3	–	–	4	2	0,2	12300	1203	1203
R335.19-2550.0-06.2	Cyl	6,0	50	13,9	25,0	–	–	–	–	150,0	9,0	132,2	–	4	2	0,6	12300	1203	1203
R335.19-1663.RE-06.3NA	RE	6,0	63	17,6	–	–	30,0	M16	35,0	–	9,3	–	–	6	3	0,3	10900	1203	1203
R335.19-3263.0-06.3	Cyl	6,0	63	14,0	32,0	–	–	–	–	170,0	–	148,6	–	6	3	1,2	10900	1203	1203
R335.19-063.06.16-3	B	6,0	63	13,9	–	16,0	33,0	–	35,0	–	–	–	–	6	3	0,3	10900	1203	1203
R335.19-063.06.22-3	B	6,0	63	13,9	–	22,0	40,0	–	50,0	–	9,3	–	–	6	3	0,5	10900	1203	1203
335.19-063.06.22-3	A	6,0	63	13,6	–	22,0	33,0	–	–	–	–	–	12,0	6	3	0,1	10900	1203	1203
R335.19-1680.RE-06.4NA	RE	6,0	80	26,3	–	–	30,0	M16	35,0	–	9,3	–	–	8	4	0,3	9700	1203	1203
R335.19-3280.0-06.4	Cyl	6,0	80	22,5	32,0	–	–	–	–	170,0	–	148,6	–	8	4	1,2	9700	1203	1203
R335.19-080.06.22-4	B	6,0	80	22,4	–	22,0	40,0	–	50,0	–	9,3	–	–	8	4	0,5	9700	1203	1203
335.19-080.06.22-4	A	6,0	80	19,6	–	22,0	33,0	–	–	–	–	–	12,0	8	4	0,2	9700	1203	1203
R335.19-20100.RE-06.6NA	RE	6,0	100	32,8	–	–	36,5	M20	35,0	–	11,5	–	–	12	6	0,5	8700	1203	1203
R335.19-100.06.27-5	B	6,0	100	22,0	–	27,0	48,0	–	50,0	–	–	–	–	10	5	0,8	8700	1203	1203
335.19-100.06.27-5	A	6,0	100	25,6	–	27,0	41,0	–	–	–	–	–	12,0	10	5	0,3	8700	1203	1203
R335.19-125.06.32-6	B	6,0	125	29,0	–	32,0	58,0	–	50,0	–	–	–	–	12	6	1,1	7700	1203	1203
335.19-125.06.40-6	A	6,0	125	31,1	–	40,0	55,0	–	–	–	–	–	12,0	12	6	0,5	7700	1203	1203
R335.19-160.06.40-8	B	6,0	160	41,1	–	40,0	70,0	–	50,0	–	–	–	–	16	8	1,4	6800	1203	1203
335.19-160.06.40-8	A	6,0	160	43,6	–	40,0	65,0	–	–	–	–	–	12,0	16	8	0,8	6800	1203	1203
335.19-200.06.50-9	A	6,0	200	61,6	–	50,0	69,0	–	–	–	–	–	12,0	18	9	1,4	6300	1203	1203
335.19-250.06.50-12	A	6,0	250	86,6	–	50,0	69,0	–	–	–	–	–	12,0	24	12	1,9	5600	1203	1203

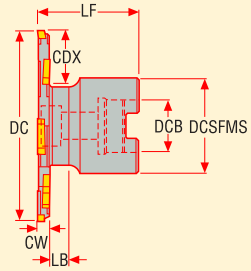
Please check availability in current price and stock-list

For Combimaster Shanks, see Machining Navigator Tooling System

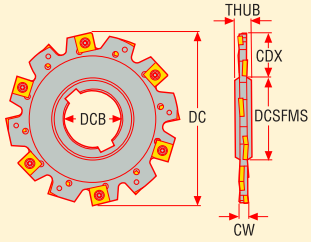
Cutter 335.19 - Insert SNHQ

Width 7/8/10 mm - full side

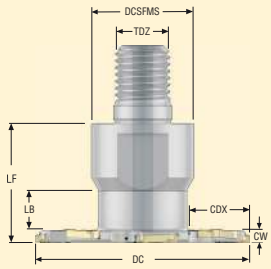
Type B



Type A



Combimaster (RE)



- For insert selection and cutting data recommendations, see page(s) 233-236
- For complete insert programme, see page(s) 647, 672
- For spare parts and technical information, see page 231-232

Designation	Type of mounting	Dimensions in mm										ZEFP	KG		Insert type	
		CW	DC	CDX	DCB	DCSFMS	TDZ	LF	LB	THUB					SNHQ..R	SNHQ..L
R335.19-1663.RE-07.3NA	RE	7,0	63	17,6	–	30,0	M16	35,0	8,3	–	6	3	0,3	9400	1204/12045*	1204/12045*
R335.19-063.07.16-3	B	7,0	63	13,8	16,0	33,0	–	35,0	–	–	6	3	0,3	9400	1204/12045*	1204/12045*
R335.19-063.07.22-3	B	7,0	63	13,8	22,0	40,0	–	50,0	8,3	–	6	3	0,4	9400	1204/12045*	1204/12045*
R335.19-1680.RE-07.4NA	RE	7,0	80	26,3	–	30,0	M16	35,0	8,3	–	8	4	0,4	8400	1204/12045*	1204/12045*
R335.19-080.07.22-4	B	7,0	80	22,0	22,0	40,0	–	50,0	8,3	–	8	4	0,5	8400	1204/12045*	1204/12045*
335.19-080.07.22-4	A	7,0	80	20,6	22,0	33,0	–	–	–	12,0	8	4	0,2	8400	1204/12045*	1204/12045*
R335.19-100.07.27-5	B	7,0	100	22,0	27,0	48,0	–	50,0	–	–	10	5	0,9	7500	1204/12045*	1204/12045*
335.19-100.07.27-5	A	7,0	100	26,6	27,0	41,0	–	–	–	12,0	10	5	0,3	7500	1204/12045*	1204/12045*
R335.19-125.07.32-6	B	7,0	125	29,5	32,0	58,0	–	50,0	–	–	12	6	1,2	6700	1204/12045*	1204/12045*
335.19-125.07.40-6	A	7,0	125	32,1	40,0	55,0	–	–	–	12,0	12	6	0,5	6700	1204/12045*	1204/12045*
R335.19-160.07.40-8	B	7,0	160	41,1	40,0	70,0	–	50,0	–	–	16	8	1,5	5900	1204/12045*	1204/12045*
335.19-160.07.40-8	A	7,0	160	44,6	40,0	65,0	–	–	–	12,0	16	8	0,9	5900	1204/12045*	1204/12045*
335.19-200.07.50-9	A	7,0	200	62,6	50,0	69,0	–	–	–	12,0	18	9	1,4	5200	1204/12045*	1204/12045*
335.19-250.07.50-12	A	7,0	250	87,6	50,0	69,0	–	–	–	12,0	24	12	2,1	4700	1204/12045*	1204/12045*
R335.19-100.10.27-5	B	10,0	100	22,0	27,0	48,0	–	50,0	–	–	10	5	0,9	6600	1205	1205
335.19-100.10.27-5	A	10,0	100	27,6	27,0	41,0	–	–	–	12,0	10	5	0,4	6600	1205	1205
R335.19-125.10.32-6	B	10,0	125	29,5	32,0	58,0	–	50,0	–	–	12	6	1,3	6000	1205	1205
335.19-125.10.40-6	A	10,0	125	33,1	40,0	55,0	–	–	–	12,0	12	6	0,6	6000	1205	1205
R335.19-160.10.40-8	B	10,0	160	41,1	40,0	70,0	–	50,0	–	–	16	8	1,8	5200	1205	1205
335.19-160.10.40-8	A	10,0	160	46,2	40,0	65,0	–	–	–	12,0	16	8	1,2	5200	1205	1205
335.19-200.10.50-9	A	10,0	200	63,6	50,0	69,0	–	–	–	12,0	18	9	1,9	4700	1205	1205
335.19-250.10.50-12	A	10,0	250	88,6	50,0	69,0	–	–	–	12,0	24	12	3,0	4200	1205	1205

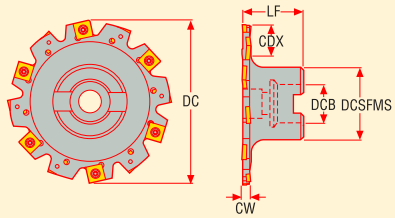
Please check availability in current price and stock-list

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

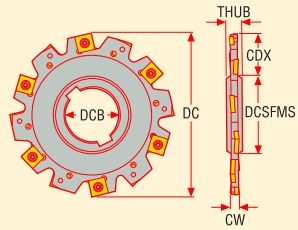
Cutter 335.19 - Insert SNHQ

Width 12 mm - full side

Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 233-236
- For complete insert programme, see page(s) 647, 672
- For spare parts and technical information, see page 231-232

Designation	Type of mounting	Dimensions in mm								ZEFP	KG		() = No of inserts	
		CW	DC	CDX	DCB	DCSFMS	LF	THUB					SNHQ..R	SNHQ..R
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)

Please check availability in current price and stock-list

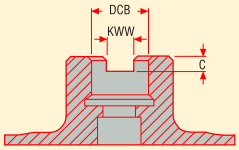
ZEFP = Effective number of teeth

Disc milling cutters 335.19 – Spare parts

Locking screw/Key

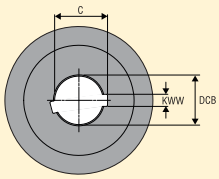
For CW	Insert screw	Key (T-handle)	Insert key	Torque value (Nm)
4	C93504-T09P	DOUBLE-T	H4B-T09P	2,0
5	C93505-T09P	DOUBLE-T	H4B-T09P	2,0
6	C94005-T15P	DOUBLE-T	H6B-T15PL	3,5
7/8	C94006-T15P	DOUBLE-T	H6B-T15PL	3,5
10	C94008-T15P	DOUBLE-T	H6B-T15PL	3,5
12	C94010-T15P	DOUBLE-T	H6B-T15PL	3,5

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	–

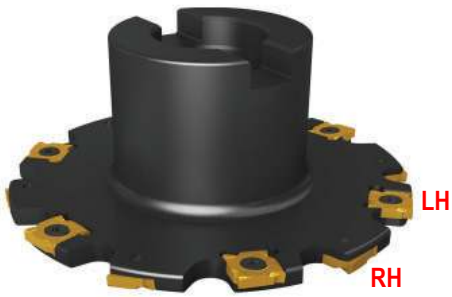
Dimensions of mounting – Keyway for Type A



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	R1,0	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 possibillities

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 MP2501	0,13	0,14	0,19
K2	SNHQ...-M07 MP2501	0,11	0,13	0,17
K3	SNHQ...-M07 MP2501	0,11	0,13	0,17
K4	SNHQ...-M07 MP2501	0,11	0,13	0,17
K5	SNHQ...-M07 MP2501	0,10	0,12	0,16
K6	SNHQ...-M07 MP2501	0,11	0,13	0,17
K7	SNHQ...-M07 MP2501	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_e/DC = %
All cutting data are start values

SNHQ - Cutting data v_c = (m/min)

	MP2501			F30M			F40M			H25		
SMG	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%
P1	245	260	285	195	205	230	185	195	215	—	—	—
P2	235	255	280	185	200	220	175	190	210	—	—	—
P3	205	220	245	165	175	195	155	165	185	—	—	—
P4	180	195	215	145	155	170	135	150	165	—	—	—
P5	175	185	210	140	150	165	135	140	155	—	—	—
P6	200	210	235	155	165	185	150	160	175	—	—	—
P7	185	200	220	150	160	175	140	150	165	—	—	—
P8	170	185	205	135	145	165	130	140	155	—	—	—
P11	180	190	215	145	155	170	135	145	160	—	—	—
P12	115	125	135	95	100	110	90	95	105	—	—	—
M1	170	185	200	150	165	180	140	155	170	—	—	—
M2	140	150	165	125	135	150	120	125	140	—	—	—
M3	115	120	135	100	110	120	95	105	115	—	—	—
M4	85	95	105	80	85	90	75	80	90	—	—	—
M5	75	80	85	65	70	75	60	65	75	—	—	—
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	42	46	50	36	39	43	35	37	41	—	—	—
S2	34	37	41	29	31	35	28	30	33	—	—	—
S3	30	32	36	26	27	30	24	26	29	—	—	—
S11	60	65	70	50	55	60	49	50	55	—	—	—
S12	50	55	60	36	38	42	41	44	48	—	—	—
S13	29	31	34	21	22	24	24	25	28	—	—	—
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

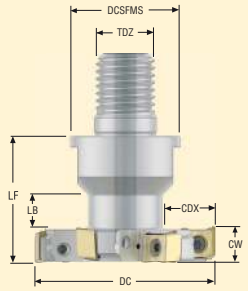
335.19 Cutting data v_c = (m/min)

	MP2501			F40M		
SMG	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

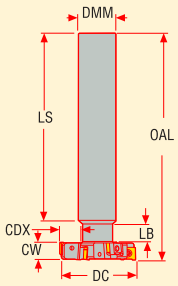
Cutter 335.18 - Insert LNK.

Width 8/10 mm - full side - Fixed pocket

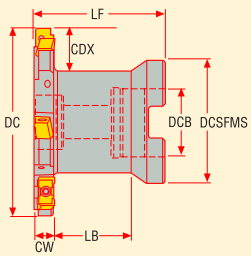
Combimaster (RE)



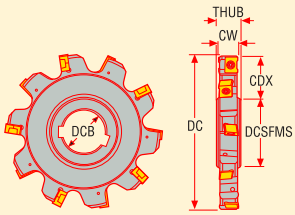
Cylindrical (Cyl)



Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 268-269
- For complete insert programme, see page(s) 626-627
- For spare parts and technical information, see page 261-267

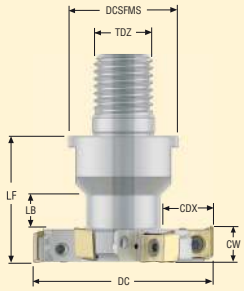
Designation	Type of mounting	Dimensions in mm												ZEFP	KG		Insert
		CW	DC	DCB	CDX	DMM	DCSFMS	TDZ	LF	OAL	LB	LS	THUB				
R335.18-1032.RE-08.2NA	RE	8,0	32,0	–	8,4	–	18,5	M10	28,0	–	8,89	–	–	4	2	0,1	17300	LNK.05..
R335.18-1632.0-08.1N	Cyl	8,0	32,0	–	9,0	16,0	–	–	–	140,0	23,0	108,0	–	2	1	0,3	17300	LNK.05..
R335.18-1240.RE-08.2NA	RE	8,0	40,0	–	11,2	–	23,0	M12	30,0	–	8,39	–	–	4	2	0,2	15400	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..
R335.18-1650.RE-08.3NA	RE	8,0	50,0	–	14,2	–	30,0	M16	35,0	–	10,59	–	–	6	3	0,2	13800	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..
R335.18-2063.RE-08.4NA	RE	8,0	63,0	–	15,0	–	36,5	M20	40,0	–	14,89	–	–	8	4	0,4	12300	LNK.05..
R335.18-3263.0-08.3N	Cyl	8,0	63,0	–	15,5	32,0	–	–	–	170,0	–	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..
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..
R335.18-1032.RE-10.2NA	RE	10,0	32,0	–	8,5	–	18,5	M10	28,0	–	6,89	–	–	4	2	0,1	17300	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..
R335.18-1240.RE-10.2NA	RE	10,0	40,0	–	11,5	–	23,0	M12	30,0	–	6,39	–	–	4	2	0,2	15400	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..
R335.18-1650.RE-10.3NA	RE	10,0	50,0	–	14,4	–	30,0	M16	35,0	–	8,59	–	–	6	3	0,3	13400	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..
R335.18-2063.RE-10.4NA	RE	10,0	63,0	–	15,1	–	36,5	M20	40,0	–	12,89	–	–	8	4	0,4	11900	LNK.06..
R335.18-3263.0-10.3N	Cyl	10,0	63,0	–	15,5	32,0	–	–	–	170,0	–	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	–	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	–	–	–	–	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

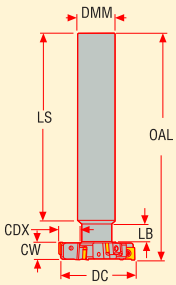
Cutter 335.18 - Insert LNK.

Width 12/14 mm - full side - Fixed pocket

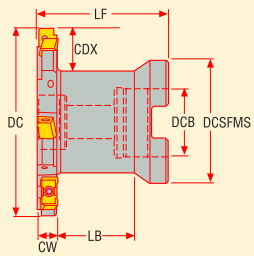
Combimaster (RE)



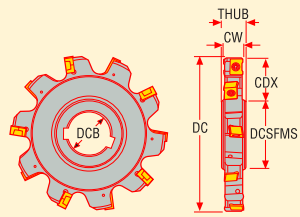
Cylindrical (Cyl)



Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 268-269
- For complete insert programme, see page(s) 627
- For spare parts and technical information, see page 261-267

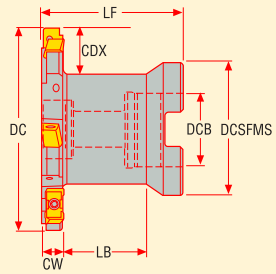
Designation	Type of mounting	Dimensions in mm													ZEFP	KG		Insert
		CW	DC	DCB	CDX	DMM	DCSFMS	TDZ	LF	OAL	LB	LS	THUB					
R335.18-1650.RE-12.3NA	RE	12,0	50,0	–	14,5	–	30,0	M16	35,0	–	6,59	–	–	6	3	0,3	13400	LNK.06..
R335.18-2550.0-12.3N	Cyl	12,0	50,0	–	15,0	25,0	–	–	–	150,0	25,5	110,0	–	6	3	0,6	13400	LNK.06..
R335.18-2063.RE-12.4NA	RE	12,0	63,0	–	14,9	–	36,5	M20	40,0	–	10,47	–	–	8	4	0,4	11900	LNK.06..
R335.18-3263.0-12.3N	Cyl	12,0	63,0	–	15,5	32,0	–	–	–	170,0	–	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	–	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..
335.18-125.12.40-6N	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..
335.18-160.14.40-7N	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

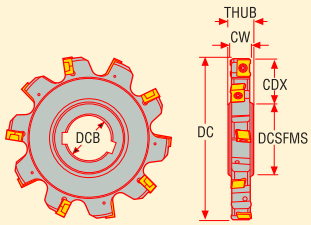
Cutter 335.18 - Insert LNK.

Width 17/20 mm - full side - Fixed pockets

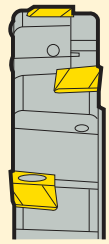
Type B



Type A



CW 17/20 mm



- For insert selection and cutting data recommendations, see page(s) 268-269
- For complete insert programme, see page(s) 627
- For spare parts and technical information, see page 261-267

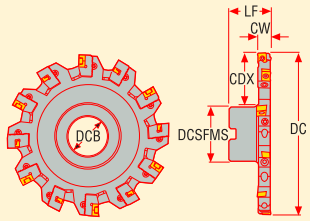
Designation	Type of mounting	Dimensions in mm										ZEFP	KG		Insert
		CW	DC	DCB	CDX	DCSFMS	DCB	LF	LB	THUB					
R335.18-080.17.22-3N	B	17,0	80,0	22	24,0	40,0	22,0	50,0	20,0	–	9	3	0,6	10500	LNK.06..
R335.18-100.17.27-3N	B	17,0	100,0	27	26,0	48,0	27,0	50,0	0,0	–	9	3	1,1	9400	LNK.06..
R335.18-125.17.32-4N	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..

Please check availability in current price and stock-list

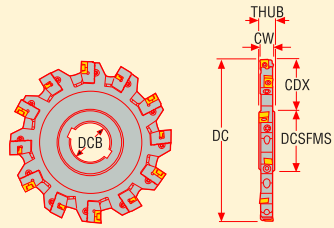
Cutter 335.18 - Insert LNK.

Width 8-10 mm - full side - Adjustable design

Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 268-269
- For complete insert programme, see page(s) 626-627
- For spare parts and technical information, see page 261-267

Designation	Type of mounting	Dimensions in mm									ZEFP	KG		Insert
		CW min-max	DC	DCB	CDX	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..

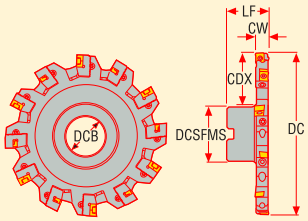
Please check availability in current price and stock-list

Adjustable cutter may be ordered with the cutting width set to any value within its range, see page 263 for more info.
All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

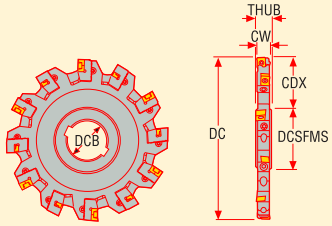
Cutter 335.18 - Insert LNK.

Width 12-15 mm - full side - Adjustable design

Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 268-269
- For complete insert programme, see page(s) 627
- For spare parts and technical information, see page 261-267

Designation	Type of mounting	Dimensions in mm								ZEFP	KG		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..

Please check availability in current price and stock-list

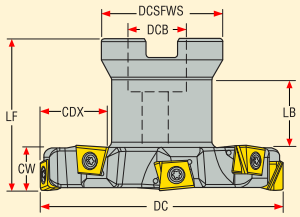
Adjustable cutter may be ordered with the cutting width set to any value within its range, see page 263 for more info.
All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

Cutter 335.25 - Insert XNHQ/LNHQ

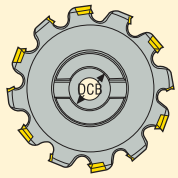
Width 15/20/25 mm - full side and face - Fixed pockets

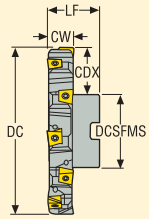
Type B

Dia = 80

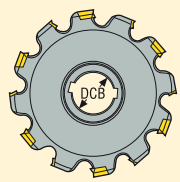


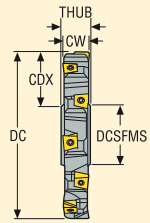
Dia > 80





Type A





- For insert selection and cutting data recommendations, see page(s) 270-277
- For complete insert programme, see page(s) 626, 660
- For spare parts and technical information, see page 261-267

Designation	Type of mounting	Dimensions in mm							ZEFP	KG		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	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	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	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	7	2,4	7200	XNHQ09…	–
335.25-160.15.40-7N	A	15,0	160,0	40,0	52,00	55,0	–	–	7	1,7	7200	XNHQ09…	–
R335.25-200.15.40-8N	B	15,0	200,0	40,0	54,31	90,0	50,0	–	8	3,6	6500	XNHQ09…	–
335.25-200.15.50-8N	A	15,0	200,0	50,0	64,45	69,0	–	–	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	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	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	6	2,9	5700	XNHQ12…	–
335.25-160.20.40-6N	A	20,0	160,0	40,0	51,45	55,0	–	–	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	7	4,3	5100	XNHQ12…	–
335.25-200.20.50-7N	A	20,0	200,0	50,0	64,34	69,0	–	–	7	3,5	5100	XNHQ12…	–
R335.25-250.20.60-9N	B	20,0	250,0	60,0	59,31	130,0	50,0	–	9	7,2	4600	XNHQ12…	–
335.25-250.20.50-9N	A	20,0	250,0	50,0	88,45	71,0	–	–	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	5	1,9	4900	XNHQ1407…	LNHQ1407…
R335.25-160.25.40-6NA	B	25,0	160,0	40,0	44,40	70,0	50,0	0,0	6	3,1	4400	XNHQ1407…	LNHQ1407…
335.25-160.25.40-6N	A	25,0	160,0	40,0	50,70	55,0	–	–	6	2,7	4400	XNHQ1407…	LNHQ1407…
R335.25-200.25.40-7N	B	25,0	200,0	40,0	54,50	90,0	50,0	–	7	5,0	3900	XNHQ1407…	LNHQ1407…
335.25-200.25.50-7N	A	25,0	200,0	50,0	62,70	71,0	–	–	7	4,3	3900	XNHQ1407…	LNHQ1407…
335.25-250.25.50-9N	A	25,0	250,0	50,0	87,70	71,0	–	–	9	7,3	3500	XNHQ1407…	LNHQ1407…
R335.25-250.25.60-9N	B	25,0	250,0	60,0	59,50	130,0	50,0	–	9	8,3	3500	XNHQ1407…	LNHQ1407…

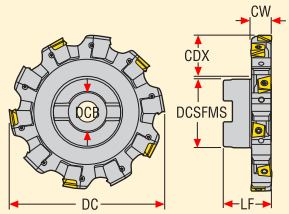
Please check availability in current price and stock-list

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

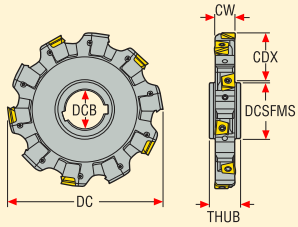
Cutter 335.25 - Insert XNHQ

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

Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 270-273
- For complete insert programme, see page(s) 660
- For spare parts and technical information, see page 261-267

Designation	Type of mounting	Dimensions in mm								ZEFP	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..

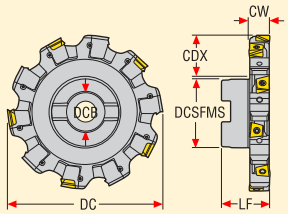
Please check availability in current price and stock-list

Adjustable cutter may be ordered with the cutting width set to any value within its range, see page 263 for more info.
All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

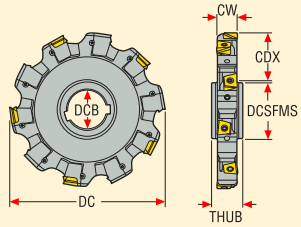
Cutter 335.25 - Insert XNHQ/LNHQ

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

Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 274-277
- For complete insert programme, see page(s) 626, 660
- For spare parts and technical information, see page 261-267

Designation	Type of mounting	Dimensions in mm								ZEFP	KG		Insert: First choice	Insert: Alternative choice
		CW min-max	DC	DCB	CDX	DCSFMS	LF	THUB						
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...

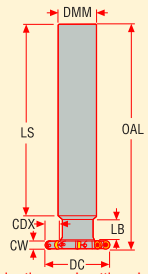
Please check availability in current price and stock-list

Adjustable cutter may be ordered with the cutting width set to any value within its range, see page 263 for more info.
All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

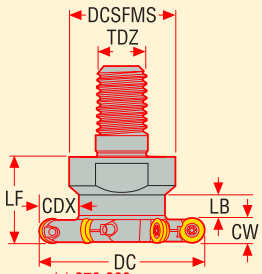
Cutter 335.29 - Round inserts

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

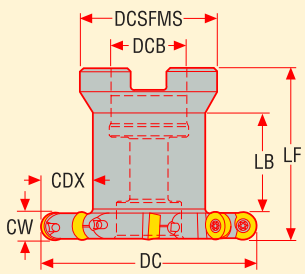
Cylindrical (Cyl)



Combimaster (RE)



Type B



- For insert selection and cutting data recommendations, see page(s) 278-289
- For complete insert programme, see page(s) 635-637
- For spare parts and technical information, see page 261-267

Designation	Type of mounting	Dimensions in mm												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..
R335.29I-1650.RE-10.6N-R5A	RE	10,0	50,0	–	12,34	–	30,0	M16	28,0	–	4,3	–	6	3	0,2		RD..10T3
R335.29I-063.10.22-6N-R5A	B	10,0	63,0	22	14,67	–	38,0	–	50,0	–	26,61	–	6	3	0,4		RD..10T3
R335.29I-080.10.27-8N-R5A	B	10,0	80,0	27	19,67	–	46,0	–	50,0	–	24,74	–	8	4	0,5		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

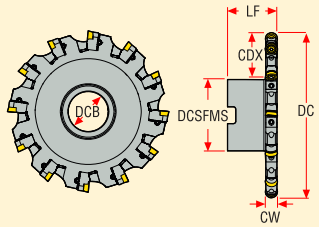
Please check availability in current price and stock-list

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

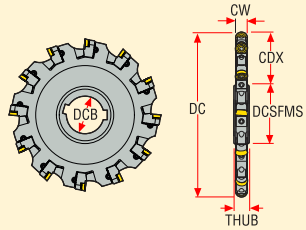
Cutter 335.18 - Round inserts diameter 8 and 10 mm

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

Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 284-287
- For complete insert programme, see page(s) 635
- For spare parts and technical information, see page 261-267

Designation	Type of mounting	Dimensions in mm								ZEFP	KG		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	14	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

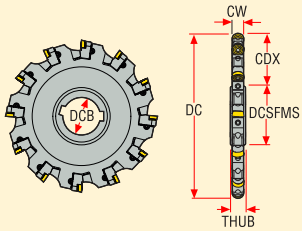
Please check availability in current price and stock-list

Adjustable cutter may be ordered with the cutting width set to any value within its range, see page 263 for more info.
All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

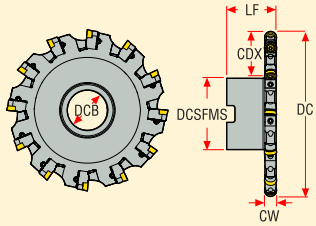
Cutter 335.18 - Round inserts diameter 12 mm

Width 12-15 mm - radius profile - Adjustable

Type A



Type B



- For insert selection and cutting data recommendations, see page(s) 288-289
- For complete insert programme, see page(s) 637
- For spare parts and technical information, see page 261-267

Designation	Type of mounting	Dimensions in mm							ZEFP	KG		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

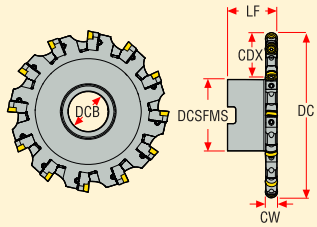
Please check availability in current price and stock-list

Adjustable cutter may be ordered with the cutting width set to any value within its range, see page 263 for more info.
All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

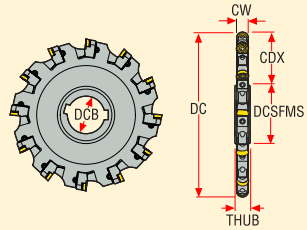
Cutter 335.25 - Round inserts diameter 16 and 20 mm

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

Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 290-293
- For complete insert programme, see page(s) 638
- For spare parts and technical information, see page 261-267

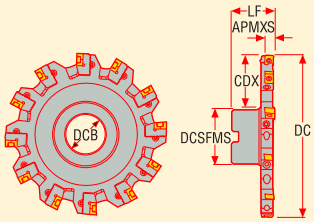
Designation	Type of mounting	Dimensions in mm								ZEFP	KG		Insert
		CW min-max	DC	CDX	DCB	DCSFMS	LF	THUB					
R335.25-100.1317.27-3N-R8	B	16,03-17,0	105	28	27	48	51,265	–	6	3	1,0	9200	RP..1605
R335.25-125.1317.32-4N-R8	B	16,03-17,0	130	36	32	58	51,265	–	8	4	1,4	8200	RP..1605
335.25-125.1317.40-4N-R8	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	3,9	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	6,6	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

Please check availability in current price and stock-list

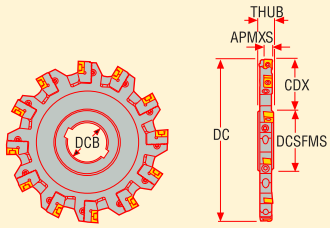
Cutter 335.18 - Insert LNK.

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

Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 268-269
- For complete insert programme, see page(s) 637
- For spare parts and technical information, see page 261-267

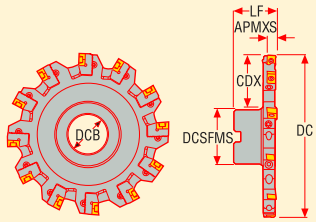
Designation	Type of mounting	Dimensions in mm								ZEFP	KG		Insert
		APMXS	DC	DCB	CDX	DCSFMS	LF	THUB					
R335.18-080.0810.27-6R	B	5,0	80,0	27,0	14,8	48,0	50,0	–	6	6	0,7	10500	LNK.05..
R335.18-100.0810.27-8R	B	5,0	100,0	27,0	24,8	48,0	50,0	–	8	8	0,8	9400	LNK.05..
335.18-100.0810.27-8R	A	5,0	100,0	27,0	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	3,1	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	2,8	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

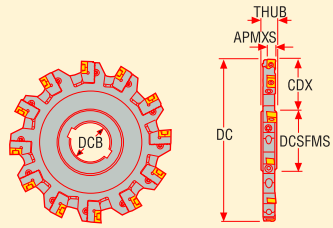
Cutter 335.18 - Insert LNK.

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) 268-269
- For complete insert programme, see page(s) 627
- For spare parts and technical information, see page 261-267

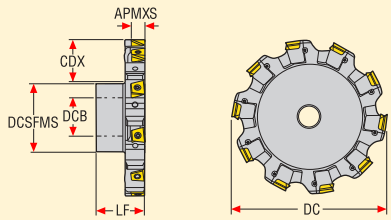
Designation	Type of mounting	Dimensions in mm								ZEFP	KG		Insert
		APMXS	DC	DCB	CDX	DCSFMS	LF	THUB					
R335.18-080.1215.27-6R	B	7,5	80,0	27,0	14,8	48,0	50,0	–	6	6	1,1	10500	LNK.08..
R335.18-100.1215.27-8R	B	7,5	100,0	27,0	24,8	48,0	50,0	–	8	8	0,9	9400	LNK.08..
335.18-100.1215.27-8R	A	7,5	100,0	27,0	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

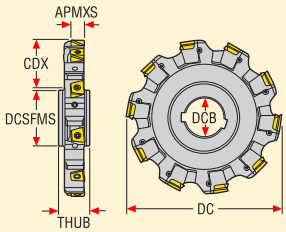
Cutter 335.25 - Insert XNHQ

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) 270-273
- For complete insert programme, see page(s) 660
- For spare parts and technical information, see page 261-267

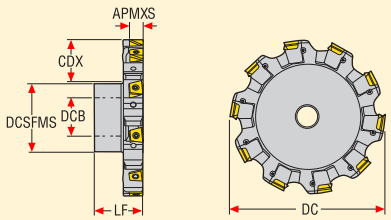
Designation	Type of mounting	Dimensions in mm								ZEFP	KG		Insert
		APMXS	DC	DCB	CDX	DCSFMS	LF	THUB					
R335.25-100.1317.27-6R	B	9,0	100,0	27,0	24,82	48,0	50,0	–	6	6	1,2	9200	XNHQ09..
R335.25-125.1317.32-8R	B	9,0	125,0	32,0	32,32	58,0	50,0	–	8	8	1,4	8200	XNHQ09..
335.25-125.1317.40-8R	A	9,0	125,0	40,0	32,92	55,0	–	17,0	8	8	0,9	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	8,5	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	8,5	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	3,8	5800	XNHQ09..
R335.25-315.1317XL.60-20R	B	9,0	315,0	60,0	91,48	130,0	50,0	–	20	20	8,5	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	9,9	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..

Please check availability in current price and stock-list

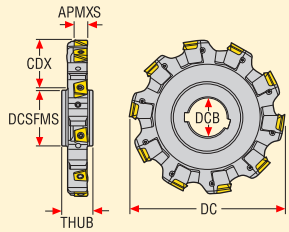
Cutter 335.25 - Insert XNHQ/LNHQ

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

Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 274-277
- For complete insert programme, see page(s) 626, 660
- For spare parts and technical information, see page 261-267

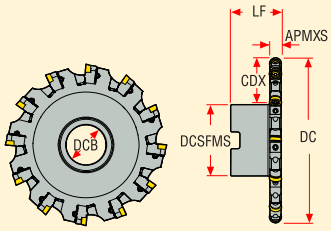
Designation	Type of mounting	Dimensions in mm								ZEFP	KG		Insert: First choice	Insert: Alternative choice
		APMXS	DC	DCB	CDX	DCSFMS	LF	THUB						
R335.25-125.2126.32-8R	B	13,0	125	32	32,3	58	50,0	–	8	8	1,7	4900	XNHQ1407...	LNHQ1407...
335.25-125.2126.40-8R	A	13,0	125	40	32,7	55	–	32	8	8	1,3	4900	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...

Please check availability in current price and stock-list

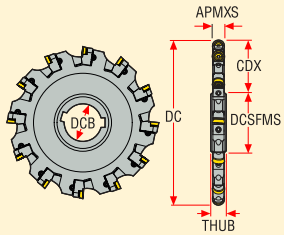
Cutter 335.18 - Round inserts diameter 10 and 12 mm

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) 286-289
- For complete insert programme, see page(s) 635-637
- For spare parts and technical information, see page 261-267

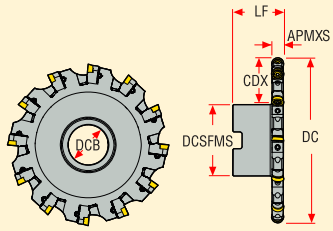
Designation	Type of mounting	Dimensions in mm							ZEFP	KG		Insert
		APMXS	DC	DCB	CDX	DCSFMS	LF	THUB				
R335.18-080.1012.27-6R-R5	B	5,0	82,0	27,0	15,8	48,0	50,0	–	6	6	0,8	10500	RD..10T3
R335.18-100.1012.27-8R-R5	B	5,0	102,0	27,0	25,8	48,0	50,0	–	8	8	1,0	9400	RD..10T3
335.18-100.1012.27-8R-R5	A	5,0	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	4,6	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

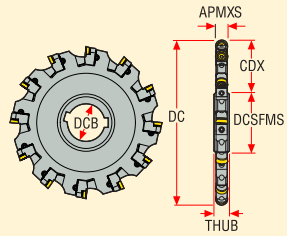
Cutter 335.25 - Round inserts diameter 16 and 20 mm

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) 290-293
- For complete insert programme, see page(s) 638
- For spare parts and technical information, see page 261-267

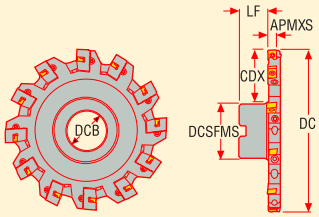
Designation	Type of mounting	Dimensions in mm								ZEFP	KG		Insert
		APMXS	DC	DCB	CDX	DCSFMS	LF	THUB					
R335.25-100.1317.27-6R-R8	B	8,0	105,0	27,0	28,0	48,0	51,265	–	6	6	1,0	9200	RP..1605
R335.25-125.1317.32-8R-R8	B	8,0	130,0	32,0	35,5	58,0	51,265	–	8	8	1,4	8200	RP..1605
335.25-125.1317.40-8R-R8	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	3,5	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	2,4	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	8,6	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

Please check availability in current price and stock-list

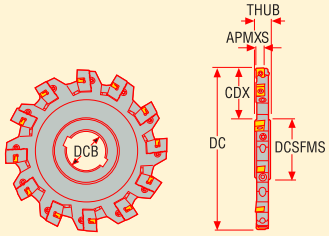
Cutter 335.18 - Insert LNK.

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

Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 268-269
- For complete insert programme, see page(s) 626-627
- For spare parts and technical information, see page 261-267

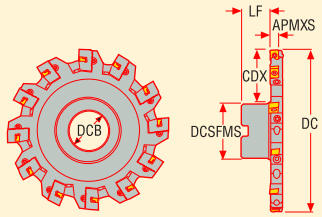
Designation	Type of mounting	Dimensions in mm								ZEFP	KG		Insert
		APMXS	DC	DCB	CDX	DCSFMS	LF	THUB					
R335.18-080.0810.27-6L	B	5,0	80,0	27,0	14,8	48,0	42,0	–	6	6	0,7	10500	LNK.05..
R335.18-100.0810.27-8L	B	5,0	100,0	27,0	24,8	48,0	42,0	–	8	8	0,8	9400	LNK.05..
335.18-100.0810.27-8L	A	5,0	100,0	27,0	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

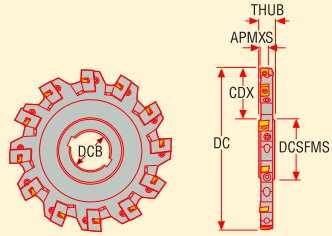
Cutter 335.18 - Insert LNK.

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) 268-269
- For complete insert programme, see page(s) 627
- For spare parts and technical information, see page 261-267

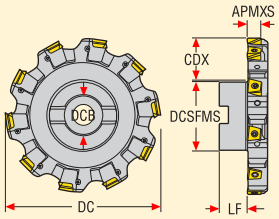
Designation	Type of mounting	Dimensions in mm								ZEFP	KG		Insert
		APMXS	DC	DCB	CDX	DCSFMS	LF	THUB					
R335.18-080.1215.27-6L	B	7,5	80,0	27,0	14,8	48,0	38,0	–	6	6	0,8	10500	LNK.08..
R335.18-100.1215.27-8L	B	7,5	100,0	27,0	24,8	48,0	38,0	–	8	8	1,1	9400	LNK.08..
335.18-100.1215.27-8L	A	7,5	100,0	27,0	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..

Please check availability in current price and stock-list

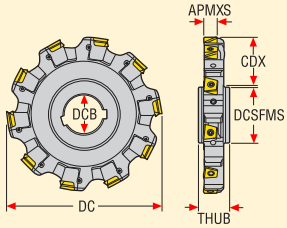
Cutter 335.25 - Insert XNHQ

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) 270-273
- For complete insert programme, see page(s) 660
- For spare parts and technical information, see page 261-267

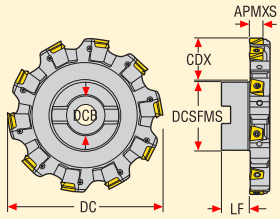
Designation	Type of mounting	Dimensions in mm								ZEFP	KG		Insert
		APMXS	DC	DCB	CDX	DCSFMS	LF	THUB					
R335.25-100.1317.27-6L	B	9,0	100,0	27,0	24,82	48,0	50,0	–	6	6	1,4	9200	XNHQ09..
R335.25-125.1317.32-8L	B	9,0	125,0	32,0	32,32	58,0	50,0	–	8	8	1,4	8200	XNHQ09..
335.25-125.1317.40-8L	A	9,0	125,0	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	9,0	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	9,0	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	5,9	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	8,5	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	3,2	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	8,1	4100	XNHQ12..

Please check availability in current price and stock-list

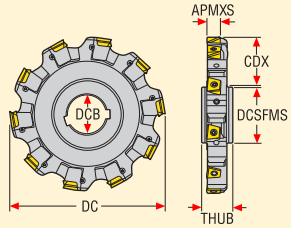
Cutter 335.25 - Insert XNHQ/LNHQ

Max depth of cut 16 mm – Half side – Left hand with cassette

Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 274-277
- For complete insert programme, see page(s) 626, 660
- For spare parts and technical information, see page 261-267

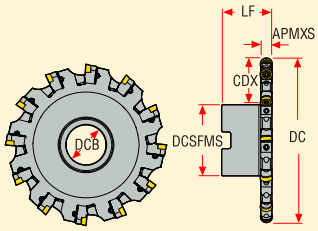
Designation	Type of mounting	Dimensions in mm											Insert: First choice	Insert: Alternative choice
		APMXS	DC	DCB	CDX	DCSFMS	LF	THUB		ZEFP	KG			
R335.25-125.2126.32-8L	B	13,0	125	32	32	58	29,0	–	8	8	1,7	4900	XNHQ1407...	LNHQ1407...
335.25-125.2126.40-8L	A	13,0	125	40	33	55	–	32	8	8	1,3	4900	XNHQ1407...	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	5,1	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...

Please check availability in current price and stock-list

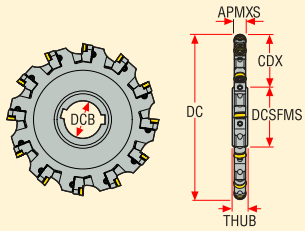
Cutter 335.18 - Round inserts

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) 286-289
- For complete insert programme, see page(s) 635, 637
- For spare parts and technical information, see page 261-267

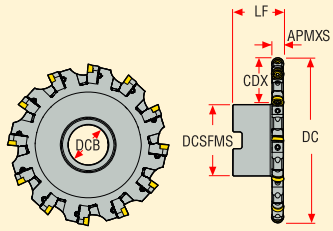
Designation	Type of mounting	Dimensions in mm								ZEFP	KG		Insert
		APMXS	DC	DCB	CDX	DCSFMS	LF	THUB					
R335.18-080.1012.27-6L-R5	B	5,0	82,0	27,0	15,8	48,0	40,0	–	6	6	0,8	10500	RD..10T3
R335.18-100.1012.27-8L-R5	B	5,0	102,0	27,0	25,8	48,0	40,0	–	8	8	1,0	9400	RD..10T3
335.18-100.1012.27-8L-R5	A	5,0	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

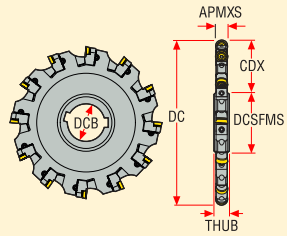
Cutter 335.25 - Round inserts diameter 16 and 20 mm

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

Type B



Type A



- For insert selection and cutting data recommendations, see page(s) 290-293
- For complete insert programme, see page(s) 638
- For spare parts and technical information, see page 261-267

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	3,5	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	8,6	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

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	DOUBLE-T	H4B-T08P	–	–
	10, 17	LNK.06...	C73007-T09P / 2.0Nm	DOUBLE-T	H4B-T09P	–	–
	12, 14, 20	LNK.08...	C73007-T09P / 2.0Nm	DOUBLE-T	H4B-T09P	–	–
(R)335.29	5	RD..05...	C02035-T06P / 0.5Nm	DOUBLE-T	H4B-T06P	–	–
	6	RD..06...	C02205-T07P / 0.9Nm	DOUBLE-T	H4B-T07P	–	–
	7	RD..07...	C02545-T07P / 0.9Nm	DOUBLE-T	H4B-T07P	–	–
	8	RD..08...	C02506-T08P / 1.2Nm	DOUBLE-T	H4B-T08P	–	–
	10	RD..10...	C03007-T09P / 2.0Nm	DOUBLE-T	H4B-T09P	–	–
	12	RP..12...	C03508-T15P / 3.0Nm	DOUBLE-T	H6B-T15PL	SX2035-T05P	T05P-2

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 R335.18-...	Left L335.18-...
0810	LN.K05...	DOUBLE-T	C02508-T08P/ 1,2Nm	H4B-T08P	335.18-607	LD5018F-T15P	H6B-T15PL	SH6004-T08P	H4B-T08P	...0810-05	...0810-05
0810XL					335.18-XL607					...0810XL-05	...0810XL-05
0810	RD..08..	DOUBLE-T	C02506-T08P/ 1,2Nm	H4B-T08P	335.18-607	LD5018F-T15P	H6B-T15PL	SH6004-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		...10-R5I	...10-R5I
1012XL					335.18-XL609					...10XL-R5I	...10XL-R5I
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		...12-R6	...12-R6
1215XL					335.18-XL611					...12XL-R6	...12XL-R6

Torque Key, see page 710

Disc milling cutters – Spare parts

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	XNHQ09	DOUBLE-T	C03509-T10P/3 Nm	H6B-T10P
20 mm	XNHQ12	DOUBLE-T	C03511-T10P/3 Nm	H6B-T10P
25 mm	XNHQ14/ 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 R335.25-...	Left L335.25-...
1317	XNHQ09	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	XNHQ12	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	XNHQ14 / 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	XNHQ17 / 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 R335.25-...	Left 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-R8I-D5*	...16-R8I-D5*
1317XL										...16XL-R8I-D5	...16XL-R8I-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

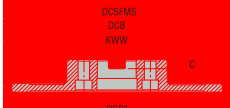
To order a standard adjustable disc mill 335.18/335.25 full side set to a specific width.

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 specifi ation 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.

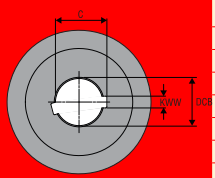
The delivery time is approx. 3 days for a set adjustable disc mill.

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

Technical information, disc mill 335.18 with LNK Inserts

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

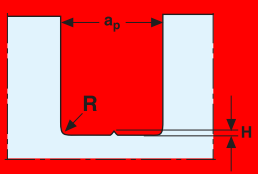




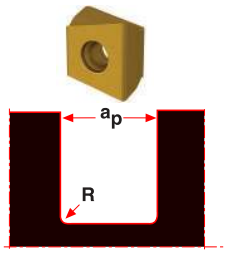


x = First choice o = Alternative choice

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

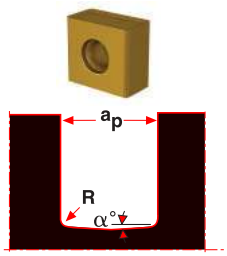


Width and profile generated by XNHQ insert with fixed pocket cutter for a_p = 15/20/25mm



Insert corner radius	a_p = 15mm	a_p = 20mm	a_p = 25mm
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

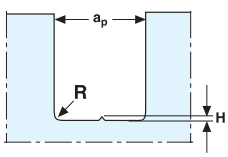
Width and profile generated by LNHQ* insert with fixed pocket cutter for a_p = 25mm



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

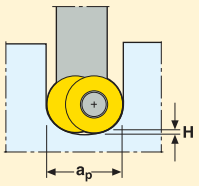
*LNHQ is an insert intended for roughing in difficult conditions (this will not generate a flat bottom).

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

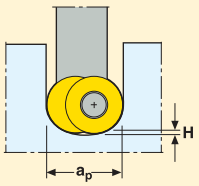


Width cutter	a_p mm	H (mm)	
		Radius 5	Radius 6
21-26	25,5	0	0
21-26	25,8	0	0,01
21-26	26,0	0,01	0,03
26-32	31,7	0	0
26-32	32,0	0	0,01

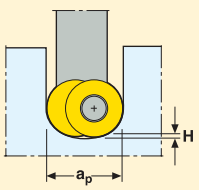
Profile machined with adjustable 335.18/335.25 cutter equipped with round inserts



	Round 8		Round 10	
	a_p mm	Profile height H mm	a_p mm	Profile height H mm
a_p min	8,03	0	10,03	0
	8,50	0	10,50	0
	9,00	0,03	11,00	0,025
	9,50	0,07	11,50	0,060
a_p max	10,00	0,13	12,00	0,100
	Recom. min setting width is 8,03 mm		Recom. min setting width is 10,03 mm	



	Round 12		Round 16	
	a_p mm	Profile height H mm	a_p mm	Profile height H mm
a_p min	12,03	0	16,03	0
	12,50	0,01	16,50	0
	13,00	0,02	17,00	0,02
	14,00	0,08		
a_p max	15,00	0,19		
	Recom. min setting width is 12,03 mm		Recom. min setting width is 16,03 mm	



	Round 20	
	a_p mm	Profile height H mm
a_p min	20,03	0
	20,5	0,01
	21	0,02
a_p max		
	Recom. min setting width is 20,03 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_e/DC = %
All cutting data are start values

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

	MP2501			MP3000			T350M			F40M			MK1500			MK2050		
SMG	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	170	185	205	150	160	180	280	305	335	265	285	315
K2	180	190	210	170	180	200	155	165	185	135	145	160	250	265	295	240	255	280
K3	150	160	180	140	150	170	130	140	155	115	120	135	215	225	250	200	215	240
K4	145	150	170	135	145	160	125	135	150	110	115	130	205	215	240	195	205	225
K5	90	95	100	85	90	95	75	80	90	65	70	80	125	130	145	115	125	135
K6	125	135	150	120	125	140	110	115	130	95	100	115	180	190	210	170	180	200
K7	110	120	130	105	110	125	100	105	115	85	90	100	160	170	185	150	160	175
N1	—	—	—	1400	1500	1650	—	—	—	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	70	70	80	38	41	45	—	—	—	—	—	—
H21	39	42	47	38	41	45	38	40	45	33	35	39	—	—	—	—	—	—

	MM4500			H25		
SMG	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 MP2501	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 MP2501	0,085	0,10	0,13
H8	XNHQ090508TN4-M08 MP2501	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 MP2501	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)

	F40M			MP2501			MK2050		
SMG	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	43	46	50	—	—	—
S2	28	30	33	34	37	41	—	—	—
S3	24	26	29	30	32	36	—	—	—
S11	49	50	55	60	65	70	—	—	—
S12	41	43	48	50	55	60	—	—	—
S13	24	26	28	29	31	34	—	—	—
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	0,25
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 MP2501	0,16	0,19	0,25
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 MP2501	0,11	0,12	0,16
H8	XNHQ120608TN4-M10 MP2501	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 MP2501	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)

	F40M			MP2501			MK2050		
SMG	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	230
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	195	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	1075	1175	—	—	—	—	—	—
N2	405	435	480	—	—	—	—	—	—
N3	270	290	320	—	—	—	—	—	—
N11	305	330	365	—	—	—	—	—	—
S1	34	36	40	41	44	49	—	—	—
S2	27	29	32	33	35	39	—	—	—
S3	24	25	28	29	31	34	—	—	—
S11	48	50	55	60	60	70	—	—	—
S12	40	43	47	49	50	60	—	—	—
S13	23	24	27	28	30	33	—	—	—
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 MP2501	XNHQ170708TN4-M13 MP2501	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	0,25
K6	XNHQ140708TN4-M11 MK2050	XNHQ170708TN4-M13 MK2050	0,18	0,22	0,28
K7	XNHQ140708TN4-M11 MK2050	XNHQ170708TN4-M13 MK2050	0,17	0,19	0,25
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 MP2501	XNHQ170708TN4-M13 MP2501	0,13	0,14	0,19
H8	XNHQ140708TN4-M11 MP2501	XNHQ170708TN4-M13 MP2501	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 MP2501	XNHQ170708TN4-M13 MP2501	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 XN14/17 - Cutting data v_c = (m/min)

	MP2501			F40M			MK2050			H25		
SMG	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	125	—	—	—
K6	110	115	130	85	90	100	150	155	175	—	—	—
K7	100	105	115	75	80	90	130	140	160	—	—	—
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	40	43	48	33	35	39	—	—	—	—	—	—
S2	33	35	39	26	28	31	—	—	—	—	—	—
S3	29	31	34	23	25	28	—	—	—	—	—	—
S11	55	60	65	46	49	55	—	—	—	—	—	—
S12	47	50	55	38	41	46	—	—	—	—	—	—
S13	28	29	33	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 MP2501	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 MP2501	LNHQ170708TN4-M13 F40M	0,20	0,24	0,32
K2	LNHQ140708TN4-M11 MP2501	LNHQ170708TN4-M13 F40M	0,18	0,22	0,28
K3	LNHQ140708TN4-M11 MP2501	LNHQ170708TN4-M13 F40M	0,18	0,22	0,28
K4	LNHQ140708TN4-M11 MP2501	LNHQ170708TN4-M13 F40M	0,18	0,22	0,28
K5	LNHQ140708TN4-M11 MP2501	LNHQ170708TN4-M13 F40M	0,17	0,19	0,25
K6	LNHQ140708TN4-M11 MP2501	LNHQ170708TN4-M13 F40M	0,18	0,22	0,28
K7	LNHQ140708TN4-M11 MP2501	LNHQ170708TN4-M13 F40M	0,17	0,19	0,25
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 MP2501	LNHQ170708TN4-M13 F40M	0,13	0,14	0,19
H8	LNHQ140708TN4-M11 MP2501	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 MP2501	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)

	MP2501			F40M		
SMG	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)

	MP3000			F40M		
SMG	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)

	MP3000			F15M			F30M			F40M			MK2050			H25		
SMG	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)

	MP3000			F15M			F40M			MK2050		
SMG	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 MP2501	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)

	MP2501			MP3000			T350M			F15M			F25M			F30M		
SMG	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	—	—	—	—	—	—	43	46	50
S13	—	—	—	33	35	38	37	39	43	—	—	—	—	—	—	25	26	29
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

	F40M			MK2050			MS2050			MS2500			H25		
SMG	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	RDKT10T3M0T-8-M05 F40M	0,085	0,095	0,13
P2	RDKT10T3M0T-8-M05 F40M	0,085	0,095	0,13
P3	RDKT10T3M0T-8-M05 F40M	0,080	0,090	0,12
P4	RDKT10T3M0T-8-M05 F40M	0,080	0,090	0,12
P5	RDKT10T3M0T-8-M05 F40M	0,075	0,090	0,12
P6	RDKT10T3M0T-8-M05 F40M	0,075	0,085	0,12
P7	RDKW10T3M0T-8-MD06 F40M	0,090	0,10	0,14
P8	RDKW10T3M0T-8-MD06 MP2501	0,095	0,11	0,15
P11	RDKT10T3M0T-8-M07 F40M	0,11	0,12	0,16
P12	RDKT10T3M0T-8-M07 F40M	0,075	0,085	0,11
M1	RDKT10T3M0T-8-M05 F40M	0,085	0,095	0,13
M2	RDKT10T3M0T-8-M05 F40M	0,075	0,090	0,12
M3	RDKT10T3M0T-8-M05 F40M	0,060	0,070	0,095
M4	RDKT10T3M0T-8-M05 F40M	0,055	0,060	0,080
M5	RDKT10T3M0T-8-M05 F40M	0,055	0,060	0,080
K1	RDKW10T3M0T-8-MD06 MK2050	0,10	0,12	0,16
K2	RDKW10T3M0T-8-MD06 MK2050	0,090	0,11	0,14
K3	RDKW10T3M0T-8-MD06 MK2050	0,090	0,11	0,14
K4	RDKW10T3M0T-8-MD06 MK2050	0,090	0,11	0,14
K5	RDKW10T3M0T-8-MD06 MK2050	0,085	0,095	0,13
K6	RDKW10T3M0T-8-MD06 MK2050	0,090	0,11	0,14
K7	RDKW10T3M0T-8-MD06 MK2050	0,085	0,095	0,13
N1	RDHT10T3M0-8-E04 H25	0,085	0,10	0,13
N2	RDHT10T3M0-8-E04 H25	0,085	0,10	0,13
N3	RDHT10T3M0-8-E04 H25	0,085	0,10	0,13
N11	RDHT10T3M0-8-E04 H25	0,085	0,10	0,13
S1	RDKT10T3M0T-8-M05 F40M	0,055	0,060	0,080
S2	RDKT10T3M0T-8-M05 F40M	0,055	0,060	0,080
S3	RDKT10T3M0T-8-M05 F40M	0,050	0,055	0,075
S11	RDKT10T3M0T-8-M05 F40M	0,060	0,070	0,095
S12	RDKT10T3M0T-8-M05 F40M	0,060	0,070	0,095
S13	RDKT10T3M0T-8-M05 F40M	0,055	0,060	0,080
H5	RDKW10T3M0T-8-MD06 F15M	0,065	0,070	0,095
H8	RDKW10T3M0T-8-MD06 F15M	0,048	0,055	0,075
H11	RDKW10T3M0T-8-MD06 F15M	0,065	0,070	0,095
H12	RDKW10T3M0T-8-MD06 F15M	0,048	0,055	0,075
H21	RDKW10T3M0T-8-MD06 F15M	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

335.18/335.29 Round 10 - Cutting data v_c = (m/min)

	MP1501			MP2501			T350M			F15M			F40M		
SMG	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%
P1	315	340	370	290	315	345	280	300	330	—	—	—	245	260	290
P2	305	325	360	280	300	335	275	295	325	—	—	—	240	255	280
P3	265	285	310	250	265	290	240	255	280	—	—	—	205	220	245
P4	235	250	280	220	230	255	210	225	250	—	—	—	185	195	215
P5	225	240	265	210	225	250	205	215	235	—	—	—	175	185	205
P6	255	275	300	235	250	280	230	245	265	—	—	—	200	210	230
P7	240	260	280	220	240	265	215	230	250	—	—	—	185	200	220
P8	225	240	260	210	220	245	200	215	235	—	—	—	175	185	205
P11	235	250	275	215	230	255	210	225	245	—	—	—	180	195	210
P12	145	155	175	135	145	160	130	140	155	—	—	—	115	120	135
M1	—	—	—	205	215	240	210	225	250	—	—	—	190	205	225
M2	—	—	—	170	180	200	175	185	205	—	—	—	160	170	185
M3	—	—	—	135	145	160	140	145	160	—	—	—	125	135	145
M4	—	—	—	105	110	120	105	115	125	—	—	—	95	105	115
M5	—	—	—	85	90	100	90	95	105	—	—	—	80	85	95
K1	245	255	285	225	240	265	215	235	255	195	205	230	190	200	220
K2	215	225	250	200	215	235	195	205	225	175	180	205	170	175	195
K3	180	190	215	165	180	200	165	170	190	145	155	170	140	150	165
K4	175	185	205	160	170	190	155	165	180	140	145	165	135	145	160
K5	105	110	125	100	105	115	95	100	110	85	90	100	80	85	95
K6	155	160	180	140	150	170	135	145	160	125	130	145	120	125	140
K7	135	145	160	125	135	145	120	130	140	110	115	125	105	110	120
N1	—	—	—	—	—	—	—	—	—	—	—	—	1425	1525	1675
N2	—	—	—	—	—	—	—	—	—	—	—	—	570	620	680
N3	—	—	—	—	—	—	—	—	—	—	—	—	380	410	455
N11	—	—	—	—	—	—	—	—	—	—	—	—	435	470	520
S1	—	—	—	—	—	—	49	55	60	—	—	—	45	48	55
S2	—	—	—	—	—	—	40	43	47	—	—	—	36	39	43
S3	—	—	—	—	—	—	35	37	41	—	—	—	32	34	37
S11	—	—	—	—	—	—	70	75	80	—	—	—	65	70	75
S12	—	—	—	—	—	—	60	65	70	—	—	—	55	55	65
S13	—	—	—	—	—	—	34	36	40	—	—	—	31	33	36
H5	49	50	55	41	44	49	44	46	50	39	42	46	38	40	44
H8	50	55	60	44	46	50	45	48	55	41	44	48	39	42	46
H11	60	65	75	55	55	60	55	60	65	50	55	60	49	50	55
H12	60	65	70	50	55	60	80	85	95	48	50	55	46	49	55
H21	50	55	60	44	46	50	45	48	55	41	44	48	39	42	46

	MK2050			MM4500			MS2050			MS2500			MH1000			H25		
SMG	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	—	—	—	270	290	315	—	—	—	—	—	—
P8	195	210	230	140	150	165	—	—	—	250	270	295	—	—	—	—	—	—
P11	205	220	240	145	155	170	—	—	—	260	280	305	—	—	—	—	—	—
P12	130	135	150	95	100	110	—	—	—	165	175	195	—	—	—	—	—	—
M1	—	—	—	165	180	195	—	—	—	245	265	290	—	—	—	—	—	—
M2	—	—	—	135	145	160	—	—	—	205	215	235	—	—	—	—	—	—
M3	—	—	—	110	115	125	—	—	—	160	170	190	—	—	—	—	—	—
M4	—	—	—	85	90	100	—	—	—	125	130	145	—	—	—	—	—	—
M5	—	—	—	70	75	80	—	—	—	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1450	1550	1725
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	590	620	690
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	390	415	460
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	450	475	530
S1	—	—	—	25	27	30	49	55	60	60	65	70	—	—	—	—	—	—
S2	—	—	—	20	22	24	40	43	47	48	50	55	—	—	—	—	—	—
S3	—	—	—	18	19	21	35	37	41	42	45	50	—	—	—	—	—	—
S11	—	—	—	36	38	42	70	75	80	85	90	100	—	—	—	—	—	—
S12	—	—	—	33	35	39	60	65	70	70	75	85	—	—	—	—	—	—
S13	—	—	—	19	20	22	34	36	40	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 MP2501	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)

	MP2501			MP3000			T350M			F40M		
SMG	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

	MK2050			MM4500			MS2050			H25		
SMG	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-8-ME11 F40M	0,19	0,22	0,28
P2	RPHT1605M0T-8-ME11 F40M	0,19	0,22	0,30
P3	RPHT1605M0T-8-ME11 F40M	0,18	0,20	0,28
P4	RPHT1605M0T-8-M12 F40M	0,19	0,22	0,30
P5	RPHT1605M0T-8-M12 F40M	0,19	0,22	0,28
P6	RPHT1605M0T-8-M12 F40M	0,19	0,22	0,28
P7	RPHT1605M0T-8-M12 F40M	0,19	0,22	0,28
P8	RPKT1605M0T-8-M12 MP2501	0,20	0,22	0,30
P11	RPHT1605M0T-8-M12 F40M	0,19	0,22	0,28
P12	RPHT1605M0T-8-M12 F40M	0,13	0,15	0,20
M1	RPHT1605M0T-8-ME11 F40M	0,19	0,22	0,30
M2	RPHT1605M0T-8-ME11 F40M	0,17	0,20	0,26
M3	RPHT1605M0T-8-M12 F40M	0,15	0,17	0,24
M4	RPHT1605M0T-8-M12 F40M	0,13	0,15	0,20
M5	RPHT1605M0T-8-M12 F40M	0,13	0,15	0,20
K1	RPKT1605M0T-8-M18 MK2050	0,32	0,36	0,48
K2	RPKT1605M0T-8-M18 MK2050	0,28	0,32	0,44
K3	RPKT1605M0T-8-M18 MK2050	0,28	0,32	0,44
K4	RPKT1605M0T-8-M18 MK2050	0,28	0,32	0,44
K5	RPKT1605M0T-8-M18 MK2050	0,25	0,30	0,38
K6	RPKT1605M0T-8-M18 MK2050	0,28	0,32	0,44
K7	RPKT1605M0T-8-M18 MK2050	0,25	0,30	0,38
N1	RPHT1605M0T-8-ME11 F40M	0,24	0,28	0,36
N2	RPHT1605M0T-8-ME11 F40M	0,24	0,28	0,36
N3	RPHT1605M0T-8-ME11 F40M	0,24	0,28	0,36
N11	RPHT1605M0T-8-ME11 F40M	0,24	0,28	0,36
S1	RPHT1605M0T-8-M12 F40M	0,13	0,15	0,20
S2	RPHT1605M0T-8-M12 F40M	0,13	0,15	0,20
S3	RPHT1605M0T-8-M12 F40M	0,12	0,14	0,19
S11	RPHT1605M0T-8-ME11 F40M	0,14	0,16	0,22
S12	RPHT1605M0T-8-ME11 F40M	0,14	0,16	0,22
H5	RPKW1605M0T-8-MD20 F15M	0,22	0,24	0,32
H8	RPKW1605M0T-8-MD20 F15M	0,16	0,19	0,25
H11	RPKW1605M0T-8-MD20 F15M	0,22	0,24	0,32
H12	RPKW1605M0T-8-MD20 F15M	0,16	0,19	0,25
H21	RPKW1605M0T-8-MD20 F15M	0,16	0,19	0,25

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

335.25 Round 16 - Cutting data v_c = (m/min)

	MP1501			MP2501			T350M			F15M			F40M		
SMG	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%
P1	245	265	295	245	260	290	215	225	250	—	—	—	185	195	220
P2	235	255	280	240	255	280	210	220	245	—	—	—	180	190	210
P3	205	220	250	205	225	245	180	195	215	—	—	—	155	170	185
P4	185	200	220	185	195	215	160	170	190	—	—	—	140	150	165
P5	175	190	210	175	185	210	155	165	185	—	—	—	135	140	160
P6	200	215	240	195	210	235	170	185	205	—	—	—	150	160	180
P7	190	200	225	185	200	220	160	175	195	—	—	—	140	150	170
P8	175	185	210	175	185	205	150	165	180	—	—	—	130	140	155
P11	180	195	220	180	195	215	155	170	190	—	—	—	135	145	165
P12	120	130	140	115	125	140	100	110	120	—	—	—	90	95	105
M1	—	—	—	170	180	200	160	170	190	—	—	—	145	155	170
M2	—	—	—	140	150	170	130	140	155	—	—	—	120	130	145
M3	—	—	—	115	120	135	105	115	125	—	—	—	95	105	115
M4	—	—	—	90	95	105	85	90	100	—	—	—	75	80	90
M5	—	—	—	75	80	85	70	75	80	—	—	—	65	65	75
K1	185	200	225	190	200	220	165	175	195	130	140	155	145	150	170
K2	170	180	200	165	180	200	145	155	175	115	125	140	125	135	150
K3	140	155	170	140	150	170	125	130	145	100	105	120	105	115	130
K4	135	145	160	135	145	160	115	125	140	95	100	110	100	110	120
K5	85	90	100	80	90	100	70	75	85	60	60	70	60	65	75
K6	120	130	140	120	125	140	105	110	125	85	90	100	90	95	105
K7	105	115	125	105	115	125	90	100	110	75	80	90	80	85	95
N1	—	—	—	—	—	—	—	—	—	—	—	—	1050	1125	1250
N2	—	—	—	—	—	—	—	—	—	—	—	—	425	455	500
N3	—	—	—	—	—	—	—	—	—	—	—	—	285	305	335
N11	—	—	—	—	—	—	—	—	—	—	—	—	325	345	385
S1	—	—	—	—	—	—	39	41	46	—	—	—	35	37	41
S2	—	—	—	—	—	—	31	33	37	—	—	—	28	30	33
S3	—	—	—	—	—	—	27	29	32	—	—	—	25	26	29
S11	—	—	—	—	—	—	55	60	65	—	—	—	49	50	55
S12	—	—	—	—	—	—	45	49	55	—	—	—	41	44	48
S13	—	—	—	—	—	—	26	28	31	—	—	—	24	26	28
H5	40	43	47	35	38	42	34	36	40	28	30	33	29	31	35
H8	42	45	50	37	40	44	36	39	43	30	32	35	31	34	37
H11	50	55	60	45	48	55	43	46	50	35	38	42	38	40	44
H12	49	55	60	44	47	50	65	70	75	35	37	41	36	39	43
H21	42	45	50	37	40	44	36	39	43	30	32	35	31	34	37

	MK2050			MM4500			MS2050			MS2500		
SMG	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%
P1	215	230	255	150	160	175	215	230	260	270	285	315
P2	205	220	245	145	155	170	210	225	245	260	275	305
P3	180	195	215	125	135	150	185	200	215	225	245	265
P4	160	175	190	115	120	130	160	175	195	200	215	235
P5	155	165	180	110	115	130	155	165	185	190	205	230
P6	175	185	210	120	130	145	175	185	210	215	230	255
P7	165	175	195	115	120	135	165	175	195	205	215	240
P8	150	165	180	105	115	125	155	165	180	190	205	225
P11	160	170	190	110	120	135	160	170	190	195	210	235
P12	105	110	125	70	75	85	105	110	125	130	135	150
M1	—	—	—	125	135	145	170	180	200	185	200	220
M2	—	—	—	105	110	125	140	150	165	155	165	185
M3	—	—	—	85	90	100	115	120	135	125	135	145
M4	—	—	—	65	70	75	90	95	105	95	105	115
M5	—	—	—	55	60	65	75	80	85	80	85	95
K1	220	240	265	—	—	—	—	—	—	—	—	—
K2	200	215	235	—	—	—	—	—	—	—	—	—
K3	170	180	200	—	—	—	—	—	—	—	—	—
K4	160	175	190	—	—	—	—	—	—	—	—	—
K5	100	105	120	—	—	—	—	—	—	—	—	—
K6	140	155	170	—	—	—	—	—	—	—	—	—
K7	125	135	150	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	20	21	23	41	44	49	47	50	55
S2	—	—	—	16	17	19	33	35	39	38	40	45
S3	—	—	—	14	15	16	29	31	34	33	35	39
S11	—	—	—	28	30	32	55	60	65	65	70	75
S12	—	—	—	26	27	30	48	50	55	55	60	65
S13	—	—	—	15	16	18	28	30	33	32	34	38
H5	—	—	—	—	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—	—	—	—	—
H11	—	—	—	—	—	—	—	—	—	—	—	—
H12	—	—	—	—	—	—	—	—	—	—	—	—
H21	—	—	—	—	—	—	—	—	—	—	—	—

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 F40M	0,24	0,26	0,36
P8	RPKT2006M0T-M15 MP2501	0,25	0,28	0,38
P11	RPHT2006M0T-ME12 F40M	0,19	0,22	0,28
P12	RPHT2006M0T-ME12 F40M	0,13	0,15	0,20
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	0,18	0,20	0,28
H21	RPKW2006M0T-MD22 F15M	0,18	0,20	0,28

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

335.25 Round 20 - Cutting data v_c = (m/min)

	MP1501			MP2501			T350M			F15M			F25M			F30M		
SMG	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%
P1	235	255	285	230	245	275	200	210	240	—	—	—	190	205	230	180	195	215
P2	230	245	270	220	235	265	195	205	230	—	—	—	185	200	220	175	190	210
P3	200	215	240	195	210	230	170	180	200	—	—	—	160	175	190	155	165	185
P4	180	190	210	170	185	205	150	160	180	—	—	—	145	155	170	135	145	160
P5	170	185	205	165	175	195	145	155	170	—	—	—	135	145	165	130	140	155
P6	190	205	230	185	200	220	160	175	190	—	—	—	155	165	185	145	155	175
P7	180	195	215	175	190	210	150	165	180	—	—	—	145	160	175	140	150	165
P8	170	180	200	160	175	195	140	155	170	—	—	—	135	145	160	130	140	155
P11	175	190	210	170	185	200	145	160	175	—	—	—	140	155	170	135	145	160
P12	115	125	140	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	85	65	70	75	—	—	—	—	—	—	60	65	70
K1	185	195	215	175	190	210	155	165	180	125	135	150	145	155	175	140	150	165
K2	160	175	195	155	165	185	135	145	160	115	120	135	130	140	155	125	135	145
K3	135	145	165	130	140	155	115	125	135	95	105	115	110	115	130	105	110	125
K4	130	140	155	125	135	150	110	115	130	90	100	110	105	110	125	100	105	120
K5	80	85	95	75	85	90	65	75	80	55	60	65	65	70	75	60	65	70
K6	115	125	140	110	120	130	95	105	115	80	85	95	90	100	110	90	95	105
K7	105	110	120	100	105	120	85	95	105	70	75	85	80	90	100	80	85	90
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1050	1125	1225
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	420	450	495
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	280	300	330
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	320	345	380
S1	—	—	—	—	—	—	37	39	43	—	—	—	37	39	43	34	36	40
S2	—	—	—	—	—	—	30	31	35	—	—	—	30	31	35	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	33	36	40
S13	—	—	—	—	—	—	25	27	29	—	—	—	25	27	29	19	21	23
H5	38	42	46	34	36	40	32	35	38	27	29	32	31	33	36	29	31	34
H8	42	44	49	36	38	42	35	37	40	29	31	34	33	35	39	31	32	36
H11	49	55	60	43	46	50	41	44	48	34	37	41	39	42	46	37	39	44
H12	49	50	55	42	45	49	60	65	75	34	37	40	38	41	45	36	38	42
H21	42	44	49	36	38	42	35	37	40	29	31	34	33	35	39	31	32	36

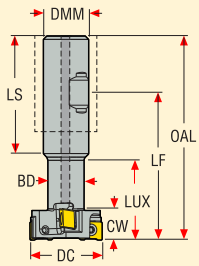
	F40M			MK2050			MM4500			MS2050			MS2500			T25M		
SMG	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%
P1	195	205	225	225	240	270	155	165	185	205	210	225	250	265	300	210	225	250
P2	190	200	220	220	235	260	150	160	180	200	205	220	240	260	285	205	220	240
P3	160	175	190	190	205	225	130	140	155	170	175	185	210	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	175	190	210	150	160	180
P11	140	150	170	165	180	200	115	120	135	145	150	160	185	200	220	155	165	185
P12	90	100	110	110	120	130	75	80	90	75	75	80	120	130	145	100	110	120
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	110	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	55	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Disc milling cutters,T-slot

R335.16

T-slot milling





- For insert selection and cutting data recommendations, see page(s) 295 - 298
- For complete insert programme, see page(s) 627, 656
- For ISO attribute explanation, see page 15

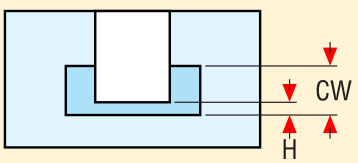
Designation	Type of mounting	Dimensions in mm										ZEFP	KG		Insert
		CW	DC	BD	DMM	LS	LF	OAL	LUX	LC					
R335.16-1625.3-11.2NA	Weldon	10,91	25,0	12,0	16,0	49,0	56,0	80,0	28,4	49,0	4	2	0,2	24500	SPMX07..
R335.16-2032.3-14.2NA	Weldon	13,91	32,0	16,0	20,0	52,0	65,0	90,0	35,4	52,0	4	2	0,2	17600	LNK.08..
R335.16-2540.3-18.2NA	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	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..

ZEFP = Effective number of teeth

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 x CW

Please check availability in current price and stock-list

Torque keys, see page 710

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_e/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_e/DC = %
All cutting data are start values

335.16 - LNK - Cutting data v_c = (m/min)

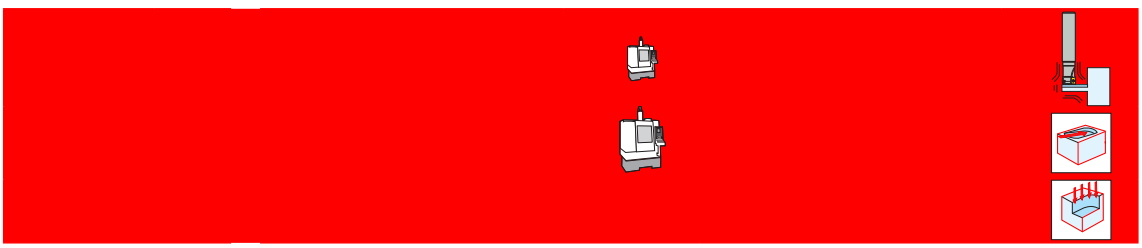
	MP2501			MP3000			T350M			F40M			MK1500			MK2050		
SMG	100%	20%	10%	100%	20%	10%	100%	20%	10%	100%	20%	10%	100%	20%	10%	100%	20%	10%
P1	200	285	315	190	270	300	175	250	275	155	215	240	—	—	—	200	280	310
P2	195	275	305	185	265	290	170	240	265	150	210	230	—	—	—	195	275	300
P3	170	240	265	160	225	255	150	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	55	75	85	30	42	47	—	—	—	—	—	—
H21	31	43	48	30	42	47	30	41	46	26	36	40	—	—	—	—	—	—

	MM4500			H25		
SMG	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	■	■	■	■	■	□	■	■	■



Plunge milling cutters

No. of cutting edges	Application	Cutter diameter (mm) available with effective number of teeth													See page
		12	16	18	20	25	32	40	50	63	80	100	125	160	
2		2	3												303
		3	4	4											
2					2										309-310
						3	4	5							
2							2	3	4						313-314
						2	3	4		5					
4							2	3	4	5	6	7	8		317-319
												4			
													4		
														4	
6								3	4	5	6	7			303-308
									5	6	7	9			

x — x indicates number of teeth (first choice)

x — x indicates number of teeth

 Troubleshooter for unstable fixturing and/or unstable conditions

 Basic choice

Milling cutters

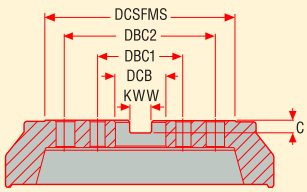
In milling Seco uses product specific designation systems, there is no ISO system available for cutters. See example below.



Code key for Plunge milling cutter 217.79

Right hand rotation Cx = For Seco-Capto		Cutter system		Cutter diameter			Insert size	
R	217	. 79	- 18	20	. 0	-	10	A
	217 = With shank 220 = For arbor		Shank diameter		Shank type			A = With through coolant supply

Dimensions of mounting

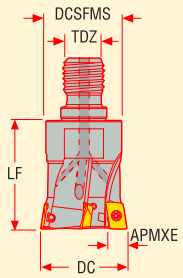


Dimensions in mm						Spindle-nose
DCSFMS	DCB	KWW	C	DBC1	DBC2	
30-35	16	8,4	5,6	–	–	–
42-47	22	10,4	6.3	–	–	–
48-62	27	12,4	7	–	–	–
60-90	32	14,4	8	–	–	–
90-130	40	16,4	9	66,7	–	(8xxx)
130-270	60	25,7	14	101,6	177,8	(8xxx)

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

R217.79-06AN





- For insert selection and cutting data recommendations, see page(s) 304-305
- For complete insert programme, see page(s) 661
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						KG		Insert
		APMXE	DC	DCSFMS	TDZ	LF				
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

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

Please check availability in current price and stock-list

Torque keys, see page 710

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	1,7	1,7	1,7	1,9
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	1,7	1,7	1,7	1,9
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	1,7	1,7	1,7	1,9
H8	XOMX060204R-M05 MP3000	0,034	1,5	1,5	1,5	1,7
H11	XOMX060204R-M05 MP3000	0,044	1,7	1,7	1,7	1,9
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

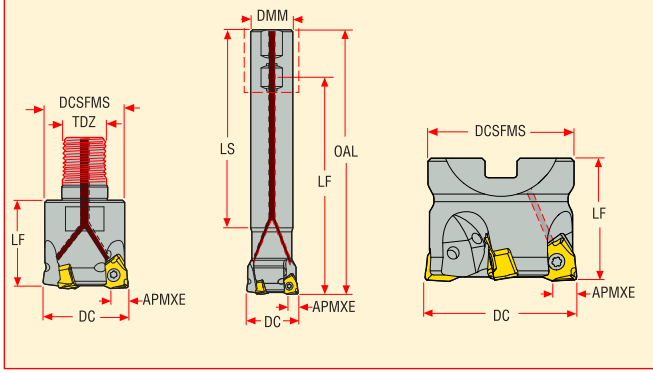
SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R217.79-06 – Cutting data v_c = (m/min)

	MP3000				F40M				MM4500				H15				MS2050			
SMG	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	—	—	—	—	205	225	240	260
P8	215	240	255	275	170	190	205	220	140	155	165	180	—	—	—	—	190	210	225	240
P11	225	250	265	290	180	200	215	230	145	165	175	185	—	—	—	—	195	220	235	255
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	150	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	1725	1925	2075	2225	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	49	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) 307-308
- For complete insert programme, see page(s) 661
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm										KG		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	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

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 710

R217.79-08 – Insert selection

SMG		f_z	a_{so}			
			100%	70%	50%	30%
P1	XNEX080608TL-M13 MP2501	0,18	5,0	5,0	5,0	6,0
P2	XNEX080608TL-M13 MP2501	0,19	5,0	5,0	5,0	6,0
P3	XNEX080608TL-M13 MP2501	0,18	5,0	5,0	5,0	6,0
P4	XNEX080608TL-M13 MP2501	0,17	5,0	5,0	5,0	6,0
P5	XNEX080608TL-M13 MP2501	0,17	5,0	5,0	5,0	6,0
P6	XNEX080608TL-M13 MP2501	0,17	5,0	5,0	5,0	6,0
P7	XNEX080608TL-M13 MP2501	0,17	5,0	5,0	5,0	6,0
P8	XNEX080608TL-M13 MP2501	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 MP2501	0,19	5,0	5,0	5,0	6,0
K2	XNEX080608TL-M13 MP2501	0,17	5,0	5,0	5,0	6,0
K3	XNEX080608TL-M13 MP2501	0,17	5,0	5,0	5,0	6,0
K4	XNEX080608TL-M13 MP2501	0,17	5,0	5,0	5,0	6,0
K5	XNEX080608TL-M13 MP2501	0,15	5,0	5,0	5,0	6,0
K6	XNEX080608TL-M13 MP2501	0,17	5,0	5,0	5,0	6,0
K7	XNEX080608TL-M13 MP2501	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 T350M	0,11	4,0	4,0	4,0	4,5
H8	XNEX080608TL-M13 T350M	0,090	3,5	3,5	3,5	4,0
H11	XNEX080608TL-M13 T350M	0,11	4,0	4,0	4,0	4,5
H12	XNEX080608TL-M13 T350M	0,090	3,5	3,5	3,5	4,0

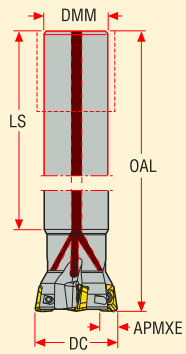
SMG = Seco material group
f_z = mm/tooth
v_c = m/min
a_e/DC = %
All cutting data are start values

R217.79-08 – Cutting data v_c = (m/min)

	MP2501				F40M				T350M				MS2050			
SMG	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	150	165	180	190
P8	165	185	195	215	125	140	150	160	145	160	170	185	140	155	165	180
P11	175	195	205	225	130	145	155	170	150	170	180	195	145	160	175	185
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	155	175	185	200	—	—	—	—
K2	160	180	190	205	120	135	145	155	140	155	165	180	—	—	—	—
K3	135	150	160	175	105	115	120	130	120	130	140	150	—	—	—	—
K4	130	145	155	165	100	110	115	125	115	125	135	145	—	—	—	—
K5	80	90	95	105	60	70	70	80	70	80	85	90	—	—	—	—
K6	115	130	135	145	85	95	105	110	100	110	120	130	—	—	—	—
K7	105	115	120	130	80	85	95	100	90	100	105	115	—	—	—	—
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	—	—	—	—	30	33	36	39	34	38	41	44	—	—	—	—
H8	—	—	—	—	32	36	38	41	37	41	44	47	—	—	—	—
H11	—	—	—	—	38	43	45	49	44	49	50	55	—	—	—	—
H12	—	—	—	—	55	65	70	75	65	75	80	85	—	—	—	—

R217.79-10





- For insert selection and cutting data recommendations, see page(s) 311-312
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						KG		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

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.79-..	DOUBLE-T	C02506-T07P	H4B-T07P	1,0

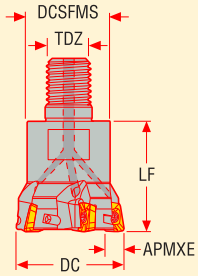
Please check availability in current price and stock-list

Torque keys, see page 710

Plunge milling cutters

R217.79-10





- For insert selection and cutting data recommendations, see page(s) 311-312
- For complete insert programme, see page(s) 662
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						KG		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

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 710

R217.79-10– Insert selection

SMG		f_z	a_{so}			
			100%	70%	50%	30%
P1	XOMX10T308TR-ME07 MP2501	0,10	4,0	4,0	4,0	4,5
P2	XOMX10T308TR-ME07 MP2501	0,10	4,0	4,0	4,0	4,5
P3	XOMX10T308TR-ME07 MP2501	0,095	4,0	4,0	4,0	4,5
P4	XOMX10T308TR-ME07 MP2501	0,095	4,0	4,0	4,0	4,5
P5	XOMX10T308TR-ME07 MP2501	0,090	4,0	4,0	4,0	4,5
P6	XOMX10T308TR-ME07 MP2501	0,090	4,0	4,0	4,0	4,5
P7	XOMX10T308TR-M09 MP2501	0,12	4,0	4,0	4,0	4,5
P8	XOMX10T308TR-M09 MP2501	0,12	4,0	4,0	4,0	4,5
P11	XOMX10T308TR-M09 MP2501	0,12	4,0	4,0	4,0	4,5
P12	XOMX10T308TR-M09 MP2501	0,080	3,5	3,5	3,5	4,0
M1	XOMX10T308TR-ME07 F40M	0,10	4,0	4,0	4,0	4,5
M2	XOMX10T308TR-ME07 F40M	0,090	4,0	4,0	4,0	4,5
M3	XOMX10T308TR-ME07 F40M	0,075	3,5	3,5	3,5	4,0
M4	XOMX10T308TR-M09 F40M	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 H15	0,090	4,0	4,0	4,0	4,5
N3	XOEX10T308FR-E05 H15	0,090	4,0	4,0	4,0	4,5
N11	XOEX10T308FR-E05 H15	0,090	4,0	4,0	4,0	4,5
S1	XOMX10T308TR-ME07 T350M	0,065	2,5	2,5	2,5	3,0
S2	XOMX10T308TR-ME07 T350M	0,065	2,5	2,5	2,5	3,0
S3	XOMX10T308TR-M09 T350M	0,075	2,5	2,5	2,5	3,0
S11	XOMX10T308TR-ME07 MS2050	0,075	3,0	3,0	3,0	3,5
S12	XOMX10T308TR-ME07 MS2050	0,075	3,0	3,0	3,0	3,5
S13	XOMX10T308TR-ME07 MS2050	0,065	2,5	2,5	2,5	3,0
H5	XOMX10T308TR-M09 MP1501	0,080	3,5	3,5	3,5	4,0
H8	XOMX10T308TR-M09 MP1501	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 MP1501	0,060	3,0	3,0	3,0	3,5

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

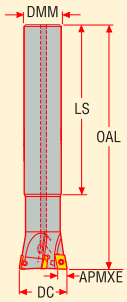
R217.79-10 – Cutting data v_c = (m/min)

	MP1501				MP2501				MP3000				T350M				F40M			
SMG	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	265	295	315	340	200	225	240	260
P2	295	325	350	375	260	290	310	335	245	275	290	315	255	285	305	330	195	220	235	255
P3	260	290	305	335	230	255	270	295	215	240	255	280	225	250	265	290	175	195	205	225
P4	225	255	270	295	200	225	240	260	190	215	225	245	195	220	235	255	150	170	180	195
P5	215	240	260	280	190	215	230	250	180	205	215	235	190	215	225	245	145	160	175	190
P6	245	270	290	315	215	240	255	280	205	230	245	265	215	240	255	275	165	180	195	210
P7	230	255	275	295	205	225	240	260	195	215	230	250	205	225	240	260	155	170	185	200
P8	215	240	260	280	190	215	230	250	180	205	215	235	190	210	225	245	145	160	175	190
P11	225	250	265	290	200	220	235	255	185	210	225	240	195	220	235	255	150	165	180	195
P12	150	165	175	190	130	145	155	170	125	140	150	160	130	145	155	165	100	110	120	130
M1	—	—	—	—	185	210	220	240	185	205	220	235	200	220	235	255	160	175	190	205
M2	—	—	—	—	155	175	185	200	150	170	180	195	165	185	195	210	130	145	155	170
M3	—	—	—	—	125	140	150	165	125	140	150	160	135	150	160	170	110	120	130	140
M4	—	—	—	—	100	115	120	130	100	110	120	130	105	115	125	135	85	95	105	110
M5	—	—	—	—	85	95	100	110	85	95	100	105	90	100	105	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	—	—	—	—	—	—	—	—	1450	1600	1725	1850	—	—	—	—	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	49	55	60	65	40	45	48	50
S2	—	—	—	—	—	—	—	—	38	42	45	48	39	44	47	50	32	36	39	42
S3	—	—	—	—	—	—	—	—	33	37	39	42	35	39	41	45	28	32	34	37
S11	—	—	—	—	—	—	—	—	65	70	75	80	70	75	80	85	55	60	65	70
S12	—	—	—	—	—	—	—	—	44	49	50	55	47	50	55	60	38	42	45	49
S13	—	—	—	—	—	—	—	—	26	29	31	34	28	31	33	35	23	25	27	29
H5	49	55	60	65	40	44	47	50	39	43	46	50	43	48	50	55	33	37	39	43
H8	55	60	65	70	43	48	50	55	42	47	50	55	46	50	55	60	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	100	105	65	70	75	85
H21	55	60	65	70	43	48	50	55	42	47	50	55	46	50	55	60	36	40	43	46

	MK1500				MK2050				MS2050				MS2500				H15			
SMG	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) 315-316
- For complete insert programme, see page(s) 663
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						KG		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

Spare Parts

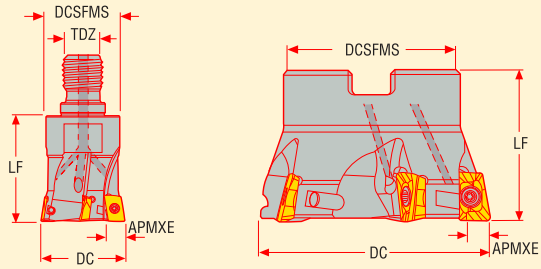
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.79-..	DOUBLE-T	C03507-T10P	H4B-T10P	2,0

Please check availability in current price and stock-list

Torque keys, see page 710

R217.79-XO12





- For insert selection and cutting data recommendations, see page(s) 315-316
- For complete insert programme, see page(s) 663
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXE	DC	DCSFMS	DCB	TDZ	LF				
R217.79-1225.RE-XO12-2AN	Combimaster	7,0	25,0	23,0	–	M12	30,0	2	0,1	20800	XO..1204
R217.79-1632.RE-XO12-3AN	Combimaster	7,0	32,0	30,0	–	M16	40,0	3	0,2	18400	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

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 710

R217.79-XO12 – Insert selection

SMG		f_z	a_{so}			
			100%	70%	50%	30%
P1	XOMX120408TR-ME08 MP2501	0,11	5,0	5,0	5,0	6,0
P2	XOMX120408TR-ME08 MP2501	0,11	5,0	5,0	5,0	6,0
P3	XOMX120408TR-ME08 MP2501	0,11	5,0	5,0	5,0	6,0
P4	XOMX120408TR-ME08 MP2501	0,11	5,0	5,0	5,0	6,0
P5	XOMX120408TR-ME08 MP2501	0,10	5,0	5,0	5,0	6,0
P6	XOMX120408TR-ME08 MP2501	0,10	5,0	5,0	5,0	6,0
P7	XOMX120408TR-M12 MP2501	0,15	5,0	5,0	5,0	6,0
P8	XOMX120408TR-M12 MP2501	0,16	5,0	5,0	5,0	6,0
P11	XOMX120408TR-M12 MP2501	0,15	5,0	5,0	5,0	6,0
P12	XOMX120408TR-M12 MP2501	0,11	4,0	4,0	4,0	4,5
M1	XOMX120408TR-ME08 F40M	0,14	5,0	5,0	5,0	6,0
M2	XOMX120408TR-ME08 F40M	0,13	5,0	5,0	5,0	6,0
M3	XOMX120408TR-ME08 F40M	0,10	4,0	4,0	4,0	4,5
M4	XOEX120408ZZR-M07 F40M	0,075	3,0	3,0	3,0	3,5
M5	XOEX120408ZZR-M07 F40M	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 MK1500	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 H15	0,13	5,0	5,0	5,0	6,0
N3	XOEX120408FR-E06 H15	0,13	5,0	5,0	5,0	6,0
N11	XOEX120408FR-E06 H15	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 MP1501	0,12	4,0	4,0	4,0	4,5
H8	XOMX120408TR-D14 MP1501	0,095	3,5	3,5	3,5	4,0
H11	XOMX120408TR-D14 MP1501	0,12	4,0	4,0	4,0	4,5
H12	XOMX120408TR-D14 MP1501	0,095	3,5	3,5	3,5	4,0
H21	XOMX120408TR-D14 MP1501	0,095	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

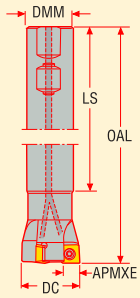
R217.79-XO12 – Cutting data v_c = (m/min)

	MP1501				MP2501				MP3000				T350M				F40M			
SMG	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	190	215	230	245	150	170	180	195
K2	180	200	210	230	155	175	185	200	150	165	175	190	170	190	205	220	135	150	160	175
K3	150	170	180	195	135	150	160	170	125	140	150	160	145	160	170	185	115	130	135	145
K4	145	160	170	185	125	140	150	165	120	135	145	155	140	155	165	175	110	120	130	140
K5	90	100	105	115	80	90	95	100	75	85	90	95	85	95	100	105	65	75	80	85
K6	125	140	150	160	110	125	135	145	105	120	125	135	120	135	145	155	95	110	115	125
K7	115	130	135	145	100	115	120	130	95	105	115	125	105	120	125	135	85	95	100	110
N1	—	—	—	—	—	—	—	—	1225	1375	1450	1575	—	—	—	—	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

	MK1500				MK2050				MS2050				MS2500				H15			
SMG	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) 320-321
- For complete insert programme, see page(s) 639
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						KG		Insert
		APMXE	DC	DMM	LS	OAL				
R217.79-2532.3-12A	Weldon	11,0	32,0	25,0	150,0	200,0	2	0,7	12100	SC..1206
R217.79-3240.3-12A	Weldon	11,0	40,0	32,0	150,0	200,0	3	1,1	10800	SC..1206

Spare Parts

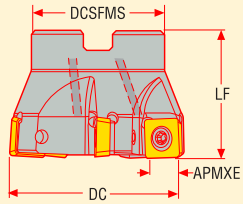
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.79-..	DOUBLE-T	C45011-T20P	H6B-T20P	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

R220.79-12





- For insert selection and cutting data recommendations, see page(s) 320-321
- For complete insert programme, see page(s) 639
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						KG		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

Spare Parts

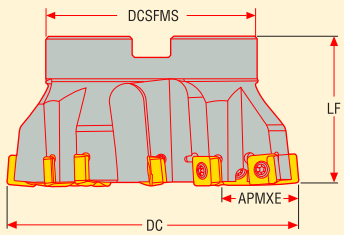
For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.79-0050-0063	DOUBLE-T	C45011-T20P	H6B-T20P	220.17-692	5,0
R220.79-0080	DOUBLE-T	C45011-T20P	H6B-T20P	–	5,0
R220.79-0100-0125	DOUBLE-T	C45011-T20P	H6B-T20PL	–	5,0

Please check availability in current price and stock-list

Torque keys, see page 710

R220.79-12





- For insert selection and cutting data recommendations, see page(s) 320-321
- For complete insert programme, see page(s) 639
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						KG		Insert
		APMXE	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
R220.79-0125-30	Arbor	30,0	125,0	90,0	40,0	63,0	12	2,6	6300	SC..1206
R220.79-8160-40	Arbor	40,0	160,0	90,0	40,0	64,0	16	4,0	5600	SC..1206

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.79-0100	DOUBLE-T	C45011-T20P	H6B-T20PL	–	5,0
R220.79-0125	DOUBLE-T	C45011-T20P	H6B-T20PL	MC6S20X40	5,0
R220.79-8160	DOUBLE-T	C45011-T20P	H6B-T20PL	–	5,0

Please check availability in current price and stock-list

R217.79-12– Insert selection

SMG		f_z	a_{so}			
			100%	70%	50%	30%
P1	SCET120612T-M11 MP2501	0,15	8,0	8,0	8,0	9,0
P2	SCET120612T-M11 MP2501	0,16	8,0	8,0	8,0	9,0
P3	SCET120612T-M11 MP2501	0,15	8,0	8,0	8,0	9,0
P4	SCET120612T-M11 MP2501	0,15	8,0	8,0	8,0	9,0
P5	SCET120612T-M11 MP2501	0,14	8,0	8,0	8,0	9,0
P6	SCET120612T-M11 MP2501	0,14	8,0	8,0	8,0	9,0
P7	SCET120612T-M11 MP2501	0,14	8,0	8,0	8,0	9,0
P8	SCET120612T-M11 MP2501	0,15	8,0	8,0	8,0	9,0
P11	SCET120612T-M11 MP2501	0,14	8,0	8,0	8,0	9,0
P12	SCET120612T-M11 MP2501	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-M14 MK1500	0,16	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 MP1501	0,13	6,0	6,0	6,0	7,0
H8	SCET120612T-MD15 MP1501	0,10	5,0	5,0	5,0	6,0
H11	SCET120612T-MD15 MP1501	0,13	6,0	6,0	6,0	7,0
H12	SCET120612T-MD15 MP1501	0,10	5,0	5,0	5,0	6,0
H21	SCET120612T-MD15 MP1501	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)

	MP1501				MP2501				T350M				F40M				MK1500			
SMG	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	155	175	185	200	135	150	160	175	250	280	300	325
K2	195	220	230	250	175	195	205	220	140	155	165	180	120	135	145	155	225	255	270	290
K3	165	185	195	210	145	165	175	190	120	130	140	150	105	115	120	130	190	215	230	245
K4	155	175	185	205	140	155	165	180	115	125	135	145	100	110	115	125	185	205	220	235
K5	95	105	115	125	85	95	100	110	70	80	85	90	60	70	70	80	115	125	135	145
K6	140	155	165	180	125	135	145	160	100	110	120	130	85	95	105	110	160	180	190	210
K7	125	135	145	160	110	120	130	140	90	100	105	115	80	85	90	100	145	160	175	185
N1	—	—	—	—	—	—	—	—	—	—	—	—	980	1100	1175	1275	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—	395	445	475	510	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—	265	295	315	340	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	305	340	360	390	—	—	—	—
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	Diameters (mm) available and max depth of cut (mm)								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								366-368
	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	

x

Ball nose cutters for copy milling - Selection Table

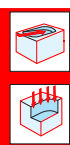
Cutter	Insert	Material suitability						Corner radius (mm)				No. of cutting edges	Diameters (mm) available and max depth of cut (mm)							See page
		P	M	K	N	S	H						16	20	25	30	32	40	50	
R218.19	218.19-080/SPMX06	■	◪	■	◪	■	◪	8.0	■	◪	■	3/4	17							391-392
	218.19-100/SPMX07	■	◪	■	◪	■	◪	10.0	■	■	■	3/4		16						
														21						
	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					393
	218.19-160	■	■	■	◪	■	◪	16.0	◪	■	■	3					18			
	218.19-200	■	■	■	◪	■	□	20.0	□	■	■	3						25		

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	■	■	■	□	■	◪	□	■	□	◪





Round insert cutters

Insert	Applica-tion	Cutter diameter available (mm)/number of teeth																										See 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																						331-332
Round 6			2		3	4		5	6		8																	335-336
Round 7					3	4		5																				339
Round 8						2		3						5														342-343
					2	3		4	5		6			7														
Round 10											3			4														346-347
								2	4		4/5	5																
					1	2		3	5	5	6	6		6														
Round 12										3	3		4	4	4	5		6		6			7		8			350-354
																6	6	7			7							
								2	3	4	4	5		5	5	7		8				9		11				
Round 16																4	5	5		5		6		6		7		357
									2		3			4	4	5/6	6	7				8		10		10		
Round 20																		4	4			5		5		6		361-363
									1		2			3		4		5				6		7			8	
Round 12 R217/220.28														5	5	6	7	8				10						328-330
									3		4			6		8						12						

x — x indicates number of teeth (first choice)

x — x indicates number of teeth

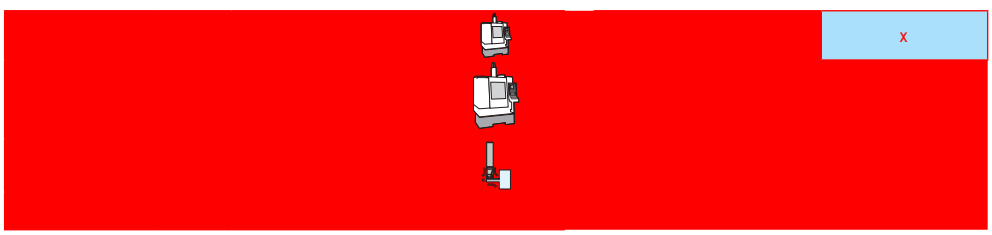
Coarse pitch-troubleshooter for unstable conditions and long overhang

Normal pitch-alternative choice

Close pitch-basic choice for productivity

Cavity milling in aluminum

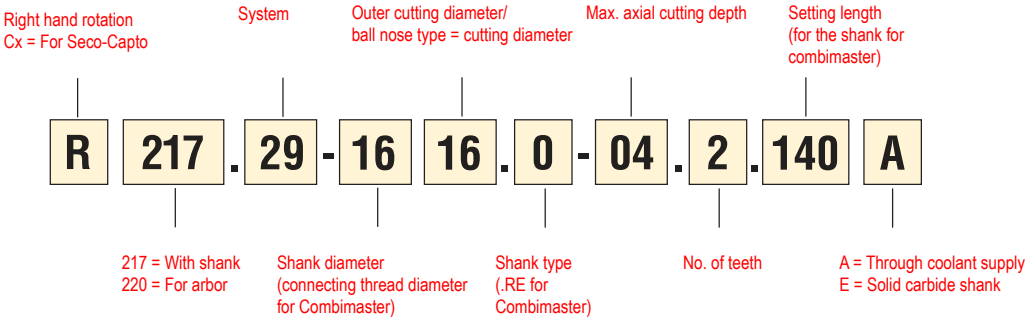
Cutter	Insert	Material suitability						Corner radius (mm)				No. of cutting edges	Diameters (mm) available and max depth of cut (mm)									See page
		P	M	K	N	S	H						16	20	25	30	32	40	50	63	80	100	
R217/220.97	R217/220.97-XP08 				■				■	■	■		2	2/3	3/4								412-413
	R217/220.97-XP12 				■				■	■	■				2	2/3	3						414-415
	R217/220.97-VP22 				■					■	■						2	2	2/3	3/4	8	5	416-417



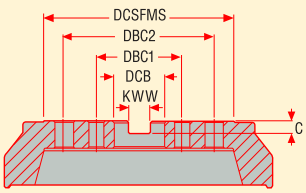
Milling cutters

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

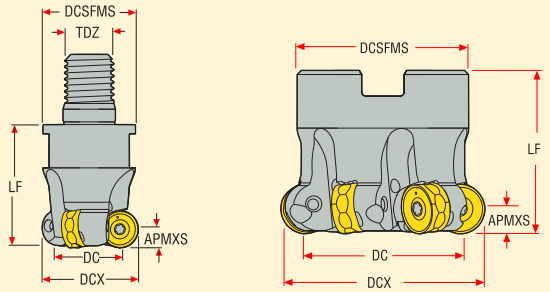


Dimensions in mm						Spindle-nose
DCSFMS	DCB	KWW	C	DBC1	DBC2	
30-35	16	8,4	5,6	–	–	–
42-47	22	10,4	6.3	–	–	–
48-62	27	12,4	7	–	–	–
60-90	32	14,4	8	–	–	–
90-130	40	16,4	9	66,7	–	(8xxx)
130-270	60	25,7	14	101,6	177,8	(8xxx)

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) 329-330
- For complete insert programme, see page(s) 636
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							RMPX°	C min	C max	n	KG		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	52,1	62,0	3	0,2	15600	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..
R220.28-0040-06.4A	Arbor	6,0	40,0	28,0	16,0	35,0	–	40,0	0,54	68,0	78,0	4	0,2	14000	RNMU12..
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	147,9	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 710

R217/220.28-06 – Insert selection

SMG		a_p	f_z			
			100%	70%	30%	10%
P1	RNMU1204M0-ME10 T350M	2,5	0,28	0,28	0,32	0,50
P2	RNMU1204M0-ME10 T350M	2,5	0,28	0,28	0,32	0,50
P3	RNMU1204M0-ME10 T350M	2,5	0,26	0,26	0,32	0,50
P4	RNMU1204M0T-M10 MP2501	2,5	0,26	0,26	0,30	0,48
P5	RNMU1204M0T-M10 MP2501	2,5	0,26	0,26	0,30	0,48
P6	RNMU1204M0T-M10 MP2501	2,5	0,25	0,25	0,30	0,46
P7	RNMU1204M0T-M10 MP2501	2,5	0,25	0,25	0,30	0,46
P8	RNMU1204M0T-M10 MP2050	2,5	0,26	0,26	0,32	0,50
P11	RNMU1204M0T-M10 MP2050	2,5	0,25	0,25	0,30	0,46
P12	RNMU1204M0T-M10 MS2500	1,9	0,18	0,18	0,20	0,32
M1	RNMU1204M0-ME10 T350M	2,5	0,28	0,28	0,32	0,50
M2	RNMU1204M0-ME10 T350M	2,5	0,26	0,26	0,30	0,48
M3	RNMU1204M0-ME10 T350M	1,9	0,20	0,20	0,24	0,38
M4	RNMU1204M0T-M10 T350M	1,4	0,18	0,18	0,20	0,34
M5	RNMU1204M0T-M10 T350M	1,4	0,18	0,18	0,20	0,34
K1	RNMU1204M0T-M10 MK2050	2,5	0,28	0,28	0,32	0,50
K2	RNMU1204M0T-M10 MK2050	2,5	0,26	0,26	0,30	0,48
K3	RNMU1204M0T-M10 MK2050	2,5	0,26	0,26	0,30	0,48
K4	RNMU1204M0T-M10 MK2050	2,5	0,26	0,26	0,30	0,48
K5	RNMU1204M0T-M10 MK2050	2,5	0,24	0,24	0,26	0,42
K6	RNMU1204M0T-M10 MK2050	2,5	0,26	0,26	0,30	0,48
K7	RNMU1204M0T-M10 MK2050	2,5	0,24	0,24	0,26	0,42
N1	RNMU1204M0-ME10 F40M	2,5	0,36	0,36	0,42	0,65
N2	RNMU1204M0-ME10 F40M	2,5	0,36	0,36	0,42	0,65
N3	RNMU1204M0-ME10 F40M	2,5	0,36	0,36	0,42	0,65
N11	RNMU1204M0-ME10 F40M	2,5	0,36	0,36	0,42	0,65
S1	RNMU1204M0T-M10 MS2500	1,4	0,18	0,18	0,20	0,34
S2	RNMU1204M0T-M10 MS2500	1,4	0,18	0,18	0,20	0,34
S3	RNMU1204M0T-M10 MS2500	1,4	0,17	0,17	0,19	0,30
S11	RNMU1204M0T-M10 MS2050	1,7	0,20	0,20	0,24	0,38
S12	RNMU1204M0T-M10 MS2050	1,7	0,20	0,20	0,24	0,38
S13	RNMU1204M0T-M10 MS2050	1,4	0,18	0,18	0,20	0,34
H5	RNMU1204M0T-M10 MP2501	1,9	0,18	0,18	0,20	0,32
H8	RNMU1204M0T-M10 MP2501	1,7	0,13	0,13	0,16	0,25
H11	RNMU1204M0T-M10 MP2501	1,9	0,18	0,18	0,20	0,32
H12	RNMU1204M0T-M10 MP2501	1,7	0,13	0,13	0,16	0,25
H21	RNMU1204M0T-M10 MP2501	1,7	0,13	0,13	0,16	0,25

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

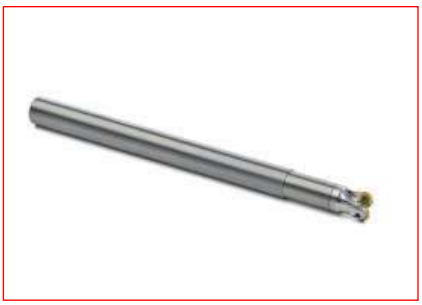
R217/220.28-06 – Cutting data v_c = (m/min)

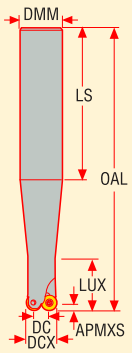
	MP2050				MP2501				T350M				F40M			
SMG	100%	70%	30%	10%	100%	70%	30%	10%	100%	70%	30%	10%	100%	70%	30%	10%
P1	285	330	385	440	295	335	395	450	255	295	345	390	235	265	315	355
P2	280	320	375	430	285	325	385	435	250	285	335	380	225	260	305	350
P3	245	280	325	370	250	285	330	375	220	250	290	330	200	230	265	300
P4	215	250	290	330	220	255	295	335	190	220	260	290	175	200	235	265
P5	205	235	280	315	210	240	285	320	185	210	245	280	165	190	225	255
P6	235	270	310	355	240	275	315	365	210	240	275	315	190	220	255	290
P7	220	255	295	335	225	260	300	345	195	225	260	300	180	205	240	275
P8	205	235	275	310	210	240	280	315	185	210	240	275	165	190	220	250
P11	215	245	285	325	220	250	290	335	190	220	255	290	175	200	230	265
P12	140	170	195	210	145	170	200	215	125	150	175	190	115	135	160	170
M1	200	230	270	305	205	235	275	315	190	220	260	295	185	210	245	280
M2	165	190	220	250	170	195	230	255	160	180	210	240	150	175	200	230
M3	140	165	190	205	145	170	195	210	135	155	180	195	125	150	170	185
M4	110	135	155	155	115	140	155	160	105	130	145	150	100	125	140	145
M5	90	110	125	130	95	115	130	135	90	105	120	125	85	100	115	120
K1	220	255	300	340	225	260	305	345	195	225	265	300	180	205	240	275
K2	195	225	265	300	200	230	270	305	175	200	235	265	160	180	215	240
K3	165	190	225	250	170	195	225	255	145	170	200	225	135	155	180	205
K4	160	180	215	240	160	185	215	245	140	160	190	215	130	145	170	195
K5	95	110	130	150	100	115	135	150	85	100	115	130	80	90	105	120
K6	140	160	190	210	140	165	190	215	125	140	165	190	115	130	150	170
K7	125	140	170	190	125	145	170	195	110	125	150	170	100	115	135	155
N1	—	—	—	—	—	—	—	—	—	—	—	—	1325	1525	1775	2025
N2	—	—	—	—	—	—	—	—	—	—	—	—	530	610	720	810
N3	—	—	—	—	—	—	—	—	—	—	—	—	355	410	475	540
N11	—	—	—	—	—	—	—	—	—	—	—	—	405	465	540	620
S1	55	65	75	75	—	—	—	—	49	60	70	70	47	55	65	65
S2	44	55	60	60	—	—	—	—	40	48	55	55	38	46	50	55
S3	38	46	50	55	—	—	—	—	35	42	48	50	33	40	46	48
S11	75	90	100	110	—	—	—	—	70	80	90	100	65	80	90	95
S12	50	60	70	75	—	—	—	—	47	55	65	70	45	55	60	65
S13	30	37	42	43	—	—	—	—	28	34	38	39	27	32	36	38
H5	43	50	60	65	44	50	60	65	42	50	60	60	38	45	55	55
H8	46	55	60	65	48	55	65	70	46	55	60	65	42	50	55	60
H11	55	65	75	80	55	65	75	85	55	65	75	80	49	60	65	75
H12	90	110	125	135	95	110	125	135	80	100	110	120	75	90	100	110
H21	46	55	60	65	48	55	65	70	46	55	60	65	42	50	55	60

	MK2050				MS2050				MS2500			
SMG	100%	70%	30%	10%	100%	70%	30%	10%	100%	70%	30%	10%
P1	285	325	385	435	—	—	—	—	315	365	425	485
P2	280	320	375	425	—	—	—	—	310	355	415	470
P3	245	280	320	365	—	—	—	—	270	310	355	405
P4	215	245	290	325	—	—	—	—	240	275	320	360
P5	205	235	275	310	—	—	—	—	225	260	305	345
P6	235	265	310	355	—	—	—	—	260	295	345	390
P7	220	250	290	335	185	215	245	285	245	280	325	370
P8	205	235	270	310	175	200	230	260	225	260	300	340
P11	215	245	285	325	180	205	240	275	235	270	315	360
P12	140	165	195	210	120	140	165	180	155	185	215	235
M1	—	—	—	—	190	215	255	290	220	255	295	340
M2	—	—	—	—	155	180	210	235	180	210	245	275
M3	—	—	—	—	130	155	180	195	155	180	205	225
M4	—	—	—	—	105	125	145	150	120	150	170	175
M5	—	—	—	—	85	105	120	125	100	125	140	145
K1	300	345	405	460	—	—	—	—	—	—	—	—
K2	265	305	355	405	—	—	—	—	—	—	—	—
K3	225	255	300	340	—	—	—	—	—	—	—	—
K4	215	245	290	325	—	—	—	—	—	—	—	—
K5	130	150	180	200	—	—	—	—	—	—	—	—
K6	190	215	255	285	—	—	—	—	—	—	—	—
K7	165	190	230	255	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	—	49	60	65	70	60	70	80	85
S2	—	—	—	—	39	48	55	55	48	60	65	70
S3	—	—	—	—	34	42	47	50	42	50	55	60
S11	—	—	—	—	70	80	90	95	80	100	110	120
S12	—	—	—	—	47	55	65	65	55	70	75	80
S13	—	—	—	—	28	33	38	39	34	41	46	47
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) 333-334
- For complete insert programme, see page(s) 635
- 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	15,0	18,0	2	0,2	75000	RDH.0501

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.29-..	DOUBLE-T	C02035-T06P	H4B-T06P	0,5

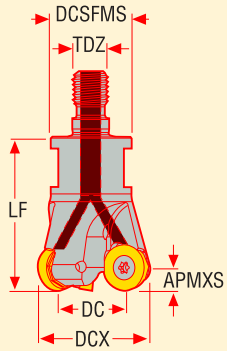
Please check availability in current price and stock-list

Torque keys, see page 710

R217.29-025



Cutters with round inserts, max. axial cutting depth 2,5 mm



- For insert selection and cutting data recommendations, see page(s) 333-334
- For complete insert programme, see page(s) 635
- 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	TDZ	LF							
R217.29-0610.RE-025.2A	Combimaster	2,5	10,0	5,0	11,0	M6	18,0	90,0	15,0	18,0	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	19,0	22,0	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	19,0	22,0	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	25,0	28,0	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	35,0	38,0	5	0,1	50000	RDH.0501

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 710

R217.29-025 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	RDHW0501M0-MD01 F40M	1,0	0,085	0,10	0,16	0,22
P2	RDHW0501M0-MD01 F40M	1,0	0,085	0,10	0,16	0,24
P3	RDHW0501M0-MD01 F40M	1,0	0,080	0,095	0,15	0,22
P4	RDHW0501M0-MD01 MP3000	1,0	0,080	0,095	0,15	0,22
P5	RDHW0501M0-MD01 MP3000	1,0	0,080	0,095	0,15	0,20
P6	RDHW0501M0-MD01 MP3000	1,0	0,075	0,090	0,15	0,20
P7	RDHW0501M0-MD01 MP3000	1,0	0,075	0,090	0,15	0,20
P8	RDHW0501M0-MD01 MP3000	1,0	0,080	0,095	0,15	0,22
P11	RDHW0501M0-MD01 MP3000	1,0	0,075	0,090	0,15	0,20
P12	RDHW0501M0-MD01 MP3000	0,80	0,055	0,065	0,10	0,14
M1	RDHW0501M0-MD01 F40M	1,0	0,085	0,10	0,16	0,24
M2	RDHW0501M0-MD01 F40M	1,0	0,080	0,095	0,15	0,20
M3	RDHW0501M0-MD01 F40M	0,80	0,060	0,075	0,12	0,17
M4	RDHW0501M0-MD01 F40M	0,60	0,055	0,065	0,10	0,15
M5	RDHW0501M0-MD01 F40M	0,60	0,055	0,065	0,10	0,15
K1	RDHW0501M0-MD01 MP3000	1,0	0,085	0,10	0,16	0,24
K2	RDHW0501M0-MD01 MP3000	1,0	0,080	0,095	0,15	0,20
K3	RDHW0501M0-MD01 MP3000	1,0	0,080	0,095	0,15	0,20
K4	RDHW0501M0-MD01 MP3000	1,0	0,080	0,095	0,15	0,20
K5	RDHW0501M0-MD01 MP3000	1,0	0,070	0,085	0,13	0,19
K6	RDHW0501M0-MD01 MP3000	1,0	0,080	0,095	0,15	0,20
K7	RDHW0501M0-MD01 MP3000	1,0	0,070	0,085	0,13	0,19
N1	RDHW0501M0-MD01 MP3000	1,0	0,11	0,13	0,20	0,30
N2	RDHW0501M0-MD01 MP3000	1,0	0,11	0,13	0,20	0,30
N3	RDHW0501M0-MD01 MP3000	1,0	0,11	0,13	0,20	0,30
N11	RDHW0501M0-MD01 MP3000	1,0	0,11	0,13	0,20	0,30
S1	RDHW0501M0-MD01 F40M	0,60	0,055	0,065	0,10	0,15
S2	RDHW0501M0-MD01 F40M	0,60	0,055	0,065	0,10	0,15
S3	RDHW0501M0-MD01 F40M	0,60	0,050	0,060	0,095	0,13
S11	RDHW0501M0-MD01 F40M	0,70	0,060	0,075	0,12	0,17
S12	RDHW0501M0-MD01 F40M	0,70	0,060	0,075	0,12	0,17
S13	RDHW0501M0-MD01 F40M	0,60	0,055	0,065	0,10	0,15
H5	RDHW0501M0-MD01 MP3000	0,80	0,055	0,065	0,10	0,14
H8	RDHW0501M0-MD01 MP3000	0,70	0,040	0,048	0,075	0,11
H11	RDHW0501M0-MD01 MP3000	0,80	0,055	0,065	0,10	0,14
H12	RDHW0501M0-MD01 F40M	0,70	0,040	0,048	0,075	0,11
H21	RDHW0501M0-MD01 MP3000	0,70	0,040	0,048	0,075	0,11

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

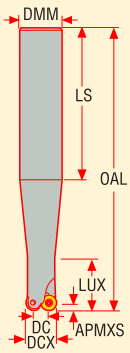
R217.29-025 – Cutting data v_c = (m/min)

	MP3000				F40M			
SMG	100%	30%	10%	5%	100%	30%	10%	5%
P1	360	485	550	580	285	385	440	460
P2	350	470	530	550	280	375	430	440
P3	305	410	465	480	245	325	370	385
P4	265	360	410	425	215	290	330	340
P5	255	345	390	410	205	275	315	330
P6	290	390	440	460	230	310	350	370
P7	275	370	415	435	220	295	330	350
P8	255	345	390	405	205	275	315	325
P11	265	355	405	425	210	285	320	340
P12	165	225	255	265	135	180	205	210
M1	260	355	400	410	225	305	345	355
M2	215	285	325	345	185	250	280	295
M3	175	230	260	270	150	200	225	230
M4	135	180	200	205	115	155	170	175
M5	110	150	165	170	95	130	145	150
K1	275	375	425	435	220	300	340	350
K2	240	325	370	390	195	260	295	315
K3	205	275	315	330	165	220	250	265
K4	195	265	300	315	155	210	240	255
K5	120	160	185	190	95	130	145	150
K6	170	230	265	280	140	185	210	225
K7	150	205	235	245	120	165	185	195
N1	2075	2825	3200	3300	1675	2250	2575	2650
N2	840	1125	1300	1325	670	910	1025	1075
N3	560	760	860	890	450	610	690	710
N11	640	870	990	1025	510	690	790	810
S1	60	85	95	95	55	75	80	85
S2	50	70	75	75	43	60	65	65
S3	44	60	65	70	38	50	55	60
S11	90	120	130	135	75	105	115	115
S12	60	80	90	95	55	70	80	80
S13	35	48	50	55	30	41	45	47
H5	50	70	80	80	44	60	65	70
H8	55	75	80	85	46	65	70	75
H11	65	90	100	105	55	75	85	90
H12	105	140	155	165	85	110	125	130
H21	55	75	80	85	46	65	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) 337-338
- For complete insert programme, see page(s) 635
- 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	18,0	22,0	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	18,0	22,0	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	26,0	30,0	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	26,0	30,0	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	34,0	38,0	4	0,5	25600	RD..06T1

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

Please check availability in current price and stock-list

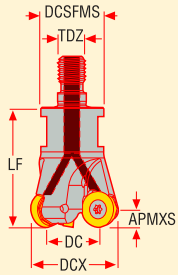
Torque keys, see page 710

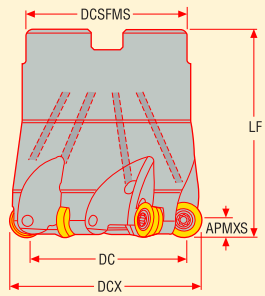
Copy milling cutters

R217/220.29-03

Cutters with round inserts, max. axial cutting depth 3 mm







- For insert selection and cutting data recommendations, see page(s) 337-338
- For complete insert programme, see page(s) 635
- 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							
R217.29-0816.RE-03.3	Combimaster	3,0	16,0	10,0	13,5	–	M8	23,0	15,62	26,0	30,0	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	34,0	38,0	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	44,0	48,0	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	58,0	62,0	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	64,0	68,0	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	74,0	78,0	8	0,2	17600	RD..06T1

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 710

R217/220.29-03 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	RDHT06T1M0-E02 F40M	1,2	0,055	0,070	0,11	0,15
P2	RDHT06T1M0-E02 F40M	1,2	0,055	0,070	0,11	0,16
P3	RDHT06T1M0-E02 F40M	1,2	0,055	0,065	0,11	0,15
P4	RDHW06T1M0-MD02 MP3000	1,2	0,080	0,095	0,16	0,22
P5	RDHW06T1M0-MD02 MP3000	1,2	0,080	0,095	0,15	0,22
P6	RDHW06T1M0-MD02 MP3000	1,2	0,075	0,095	0,15	0,22
P7	RDHW06T1M0-MD02 MP3000	1,2	0,075	0,095	0,15	0,22
P8	RDHW06T1M0-MD02 MP3000	1,2	0,080	0,10	0,16	0,22
P11	RDHW06T1M0-MD02 MP3000	1,2	0,075	0,095	0,15	0,22
P12	RDHW06T1M0-MD02 MP3000	0,95	0,055	0,065	0,10	0,15
M1	RDHT06T1M0-E02 F40M	1,2	0,055	0,070	0,11	0,16
M2	RDHT06T1M0-E02 F40M	1,2	0,050	0,065	0,10	0,14
M3	RDHT06T1M0-E02 F40M	0,95	0,042	0,050	0,080	0,11
M4	RDHW06T1M0-MD02 MP3000	0,70	0,055	0,065	0,11	0,15
M5	RDHW06T1M0-MD02 MP3000	0,70	0,055	0,065	0,11	0,15
K1	RDHW06T1M0-MD02 MK2050	1,2	0,085	0,10	0,17	0,24
K2	RDHW06T1M0-MD02 MK2050	1,2	0,080	0,095	0,15	0,22
K3	RDHW06T1M0-MD02 MK2050	1,2	0,080	0,095	0,15	0,22
K4	RDHW06T1M0-MD02 MK2050	1,2	0,080	0,095	0,15	0,22
K5	RDHW06T1M0-MD02 MK2050	1,2	0,070	0,085	0,14	0,19
K6	RDHW06T1M0-MD02 MK2050	1,2	0,080	0,095	0,15	0,22
K7	RDHW06T1M0-MD02 MK2050	1,2	0,070	0,085	0,14	0,19
N1	RDHT06T1M0-E02 H25	1,2	0,075	0,090	0,14	0,20
N2	RDHT06T1M0-E02 H25	1,2	0,075	0,090	0,14	0,20
N3	RDHT06T1M0-E02 H25	1,2	0,075	0,090	0,14	0,20
N11	RDHT06T1M0-E02 H25	1,2	0,075	0,090	0,14	0,20
S1	RDHW06T1M0-MD02 F40M	0,70	0,055	0,065	0,11	0,15
S2	RDHW06T1M0-MD02 F40M	0,70	0,055	0,065	0,11	0,15
S3	RDHW06T1M0-MD02 MP3000	0,70	0,050	0,060	0,10	0,14
S11	RDHW06T1M0-MD02 F40M	0,85	0,060	0,075	0,12	0,17
S12	RDHW06T1M0-MD02 F40M	0,85	0,060	0,075	0,12	0,17
S13	RDHW06T1M0-MD02 F40M	0,70	0,055	0,065	0,11	0,15
H5	RDHW06T1M0-MD02 F15M	0,95	0,055	0,065	0,10	0,15
H8	RDHW06T1M0-MD02 F15M	0,85	0,040	0,050	0,080	0,11
H11	RDHW06T1M0-MD02 F15M	0,95	0,055	0,065	0,10	0,15
H12	RDHW06T1M0-MD02 F40M	0,85	0,040	0,050	0,080	0,11
H21	RDHW06T1M0-MD02 F15M	0,85	0,040	0,050	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

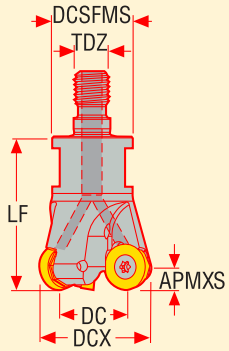
R217/220.29-03 – Cutting data v_c = (m/min)

	MP3000				F15M				F40M				MK2050				H25			
SMG	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%
P1	350	460	530	560	—	—	—	—	280	370	425	445	365	480	550	580	—	—	—	—
P2	340	450	510	540	—	—	—	—	270	360	410	435	355	470	530	560	—	—	—	—
P3	295	390	445	475	—	—	—	—	235	310	355	380	305	405	465	495	—	—	—	—
P4	260	345	395	420	—	—	—	—	210	280	315	335	270	360	410	435	—	—	—	—
P5	250	330	380	400	—	—	—	—	200	265	305	320	260	345	395	415	—	—	—	—
P6	280	370	425	450	—	—	—	—	225	300	340	360	295	385	445	465	—	—	—	—
P7	265	350	400	425	—	—	—	—	215	280	320	340	275	365	420	440	—	—	—	—
P8	250	330	375	400	—	—	—	—	200	265	300	320	260	340	390	415	—	—	—	—
P11	260	340	390	410	—	—	—	—	205	275	315	330	270	355	405	425	—	—	—	—
P12	160	220	245	260	—	—	—	—	130	175	195	205	170	230	255	270	—	—	—	—
M1	255	335	385	405	—	—	—	—	220	290	330	350	—	—	—	—	—	—	—	—
M2	205	275	315	335	—	—	—	—	180	240	275	285	—	—	—	—	—	—	—	—
M3	170	225	250	265	—	—	—	—	145	195	215	225	—	—	—	—	—	—	—	—
M4	130	175	190	200	—	—	—	—	110	150	165	175	—	—	—	—	—	—	—	—
M5	110	145	160	170	—	—	—	—	95	125	135	145	—	—	—	—	—	—	—	—
K1	270	355	405	430	260	340	390	410	215	285	325	345	380	500	580	610	—	—	—	—
K2	235	315	360	380	225	300	345	365	190	250	290	305	335	445	510	540	—	—	—	—
K3	200	265	305	320	190	255	295	310	160	215	245	255	280	375	430	455	—	—	—	—
K4	190	255	290	305	185	245	280	295	150	205	235	245	270	360	410	435	—	—	—	—
K5	115	155	175	185	110	150	170	180	95	125	140	150	165	220	250	265	—	—	—	—
K6	170	225	255	270	160	215	245	260	135	180	205	215	235	315	365	380	—	—	—	—
K7	150	195	225	235	140	190	215	230	120	160	180	190	210	280	320	335	—	—	—	—
N1	2025	2675	3075	3250	—	—	—	—	1625	2150	2450	2600	—	—	—	—	1875	2500	2875	3000
N2	820	1075	1250	1300	—	—	—	—	650	870	990	1050	—	—	—	—	760	1000	1150	1225
N3	550	720	830	870	—	—	—	—	435	580	660	700	—	—	—	—	510	670	770	810
N11	620	830	950	1000	—	—	—	—	500	660	760	800	—	—	—	—	580	770	880	930
S1	60	80	90	95	—	—	—	—	50	70	75	80	—	—	—	—	—	—	—	—
S2	49	65	70	75	—	—	—	—	42	55	60	65	—	—	—	—	—	—	—	—
S3	43	55	60	65	—	—	—	—	37	49	55	55	—	—	—	—	—	—	—	—
S11	85	115	125	135	—	—	—	—	75	100	110	115	—	—	—	—	—	—	—	—
S12	60	80	90	90	—	—	—	—	50	70	75	80	—	—	—	—	—	—	—	—
S13	34	46	50	55	—	—	—	—	29	39	43	46	—	—	—	—	—	—	—	—
H5	50	70	75	80	50	70	80	85	43	60	65	70	—	—	—	—	—	—	—	—
H8	55	70	80	85	55	70	80	85	45	60	65	70	—	—	—	—	—	—	—	—
H11	65	85	95	105	65	90	100	105	55	75	85	90	—	—	—	—	—	—	—	—
H12	100	135	150	160	95	130	145	155	80	110	120	130	—	—	—	—	—	—	—	—
H21	55	70	80	85	55	70	80	85	45	60	65	70	—	—	—	—	—	—	—	—

R217.29-035

Cutters with round inserts, max. axial cutting depth 3,5 mm





- For insert selection and cutting data recommendations, see page(s) 340-341
- For complete insert programme, see page(s) 635
- 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	TDZ	LF							
R217.29-0816.RE-035.3A	Combimaster	3,5	16,0	9,0	13,5	M8	20,0	17,8	25,0	30,0	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	33,0	38,0	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	43,0	48,0	5	0,1	35000	RDH.0702

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 710

R217.29-035 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	RDHW0702M0-MD03 F40M	1,4	0,11	0,14	0,22	0,32
P2	RDHW0702M0-MD03 F40M	1,4	0,11	0,14	0,24	0,34
P3	RDHW0702M0-MD03 F40M	1,4	0,11	0,14	0,22	0,32
P4	RDHW0702M0-MD03 MP3000	1,4	0,11	0,13	0,22	0,30
P5	RDHW0702M0-MD03 MP3000	1,4	0,10	0,13	0,22	0,30
P6	RDHW0702M0-MD03 MP3000	1,4	0,10	0,13	0,22	0,30
P7	RDHW0702M0-MD03 MP3000	1,4	0,10	0,13	0,22	0,30
P8	RDHW0702M0-MD03 MP3000	1,4	0,11	0,14	0,22	0,32
P11	RDHW0702M0-MD03 MP3000	1,4	0,10	0,13	0,22	0,30
P12	RDHW0702M0-MD03 MP3000	1,1	0,070	0,090	0,14	0,20
M1	RDHW0702M0-MD03 F40M	1,4	0,11	0,14	0,24	0,34
M2	RDHW0702M0-MD03 F40M	1,4	0,10	0,13	0,22	0,30
M3	RDHW0702M0-MD03 F40M	1,1	0,085	0,10	0,17	0,24
M4	RDHW0702M0-MD03 F40M	0,85	0,075	0,090	0,15	0,20
M5	RDHW0702M0-MD03 F40M	0,85	0,075	0,090	0,15	0,20
S1	RDHW0702M0-MD03 F40M	0,85	0,075	0,090	0,15	0,20
S2	RDHW0702M0-MD03 F40M	0,85	0,075	0,090	0,15	0,20
S3	RDHW0702M0-MD03 F40M	0,85	0,070	0,085	0,14	0,19
S11	RDHW0702M0-MD03 F40M	1,0	0,085	0,10	0,17	0,24
S12	RDHW0702M0-MD03 F40M	1,0	0,085	0,10	0,17	0,24
S13	RDHW0702M0-MD03 F40M	0,85	0,075	0,090	0,15	0,20
H5	RDHW0702M0T-MD04 F15M	1,1	0,070	0,090	0,14	0,20
H8	RDHW0702M0T-MD04 F15M	1,0	0,055	0,070	0,11	0,15
H11	RDHW0702M0T-MD04 F15M	1,1	0,070	0,090	0,14	0,20
H12	RDHW0702M0-MD03 F40M	1,0	0,055	0,070	0,11	0,15
H21	RDHW0702M0T-MD04 F15M	1,0	0,055	0,070	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

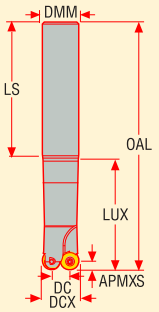
R217.29-035 – Cutting data v_c = (m/min)

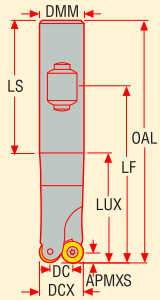
	MP3000				F15M				F40M			
SMG	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%
P1	340	465	530	540	—	—	—	—	270	370	420	430
P2	330	455	500	520	—	—	—	—	265	365	405	410
P3	285	390	440	450	—	—	—	—	225	310	355	360
P4	250	350	390	400	—	—	—	—	200	280	310	320
P5	245	335	370	385	—	—	—	—	195	265	295	305
P6	275	375	415	430	—	—	—	—	220	300	335	345
P7	260	350	395	405	—	—	—	—	205	280	315	325
P8	240	330	370	380	—	—	—	—	190	260	295	300
P11	250	340	380	395	—	—	—	—	200	275	305	315
P12	160	220	245	250	—	—	—	—	130	175	195	200
M1	245	340	375	385	—	—	—	—	215	290	325	330
M2	205	280	310	320	—	—	—	—	175	240	265	275
M3	165	230	250	255	—	—	—	—	140	195	215	220
M4	125	180	190	195	—	—	—	—	110	155	165	170
M5	105	150	160	165	—	—	—	—	90	130	135	140
K1	260	360	400	410	250	345	385	390	210	285	320	325
K2	230	315	350	365	220	305	340	350	185	255	280	290
K3	195	265	300	305	185	255	285	295	155	215	240	245
K4	185	255	285	295	180	245	275	280	150	205	230	235
K5	110	155	175	175	110	150	165	170	90	125	140	140
K6	165	225	250	260	160	215	240	250	130	180	200	205
K7	145	195	225	225	140	190	215	220	115	160	180	180
S1	60	85	90	90	—	—	—	—	50	70	75	80
S2	47	65	70	75	—	—	—	—	40	60	60	65
S3	41	60	60	65	—	—	—	—	35	50	55	55
S11	85	115	125	130	—	—	—	—	70	100	110	110
S12	55	80	85	90	—	—	—	—	49	70	75	75
S13	33	47	50	50	—	—	—	—	28	40	43	45
H5	50	70	75	80	50	70	80	80	43	60	65	65
H8	50	70	80	80	55	75	80	85	44	60	70	70
H11	65	85	95	100	65	90	100	100	55	75	85	85
H12	100	140	150	155	95	130	145	150	80	110	120	125
H21	50	70	80	80	55	75	80	85	44	60	70	70

R217.29-04

Cutters with round inserts, max. axial cutting depth 4 mm







- For insert selection and cutting data recommendations, see page(s) 344-345
- For complete insert programme, see page(s) 635
- 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							
R217.29-1616.0-04.2.050	Cylindrical	4,0	16,0	8,0	16,0	110,0	50,0	60,0	90,0	24,0	30,0	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	24,0	30,0	2	0,5	36200	RD..0803
R217.29-1616.3-04.2.040	Weldon	4,0	16,0	8,0	16,0	88,0	38,0	48,0	90,0	24,0	30,0	2	0,2	36200	RD..0803

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.69-..Ø16	DOUBLE-T	C02505-T08P	H4B-T08P	1,2

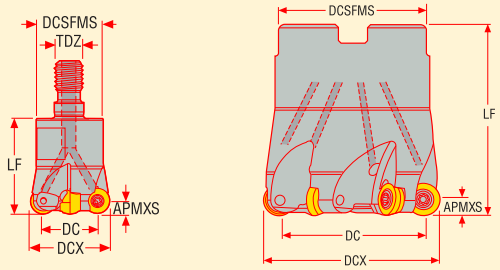
Please check availability in current price and stock-list

Torque keys, see page 710

R217/220.29-04

Cutters with round inserts, max. axial cutting depth 4 mm





- For insert selection and cutting data recommendations, see page(s) 344-345
- For complete insert programme, see page(s) 635
- 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							
R217.29-0816.RE-04.2	Combimaster	4,0	16,0	8,0	13,5	–	M8	23,0	90,0	24,0	30,0	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	32,0	38,0	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	32,0	38,0	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	42,0	48,0	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	56,0	62,0	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	72,0	78,0	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	72,0	78,0	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	92,0	98,0	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	92,0	98,0	7	0,4	17300	RD..0803

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-..Ø20-40	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 710

R217220.29-04 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	RDKW0803M0T-MD05 MP2501	1,6	0,14	0,16	0,25	0,36
P2	RDKW0803M0T-MD05 MP2501	1,6	0,14	0,16	0,26	0,36
P3	RDKW0803M0T-MD05 MP2501	1,6	0,14	0,16	0,24	0,34
P4	RDKW0803M0T-MD05 MP2501	1,6	0,13	0,15	0,24	0,34
P5	RDKW0803M0T-MD05 MP2501	1,6	0,13	0,15	0,24	0,32
P6	RDKW0803M0T-MD05 MS2500	1,6	0,13	0,15	0,24	0,32
P7	RDKW0803M0T-MD05 MS2500	1,6	0,13	0,15	0,24	0,32
P8	RDKW0803M0T-MD05 MS2500	1,6	0,14	0,16	0,24	0,34
P11	RDKW0803M0T-MD05 MS2500	1,6	0,13	0,15	0,24	0,32
P12	RDKW0803M0T-MD05 MS2500	1,3	0,090	0,10	0,16	0,22
M1	RDHW0803M0-MD03 F40M	1,6	0,11	0,13	0,20	0,28
M2	RDHW0803M0-MD03 F40M	1,6	0,10	0,12	0,19	0,26
M3	RDHW0803M0-MD03 F40M	1,3	0,085	0,095	0,15	0,20
M4	RDHW0803M0-MD03 F40M	0,95	0,075	0,085	0,13	0,18
M5	RDHW0803M0-MD03 F40M	0,95	0,075	0,085	0,13	0,18
K1	RDKW0803M0T-MD05 MK2050	1,6	0,14	0,16	0,26	0,36
K2	RDKW0803M0T-MD05 MK2050	1,6	0,13	0,15	0,24	0,32
K3	RDKW0803M0T-MD05 MK2050	1,6	0,13	0,15	0,24	0,32
K4	RDKW0803M0T-MD05 MK2050	1,6	0,13	0,15	0,24	0,32
K5	RDKW0803M0T-MD05 MK2050	1,6	0,12	0,13	0,22	0,30
K6	RDKW0803M0T-MD05 MK2050	1,6	0,13	0,15	0,24	0,32
K7	RDKW0803M0T-MD05 MK2050	1,6	0,12	0,13	0,22	0,30
N1	RDHT0803M0-E03 H25	1,6	0,11	0,13	0,20	0,28
N2	RDHT0803M0-E03 H25	1,6	0,11	0,13	0,20	0,28
N3	RDHT0803M0-E03 H25	1,6	0,11	0,13	0,20	0,28
N11	RDHT0803M0-E03 H25	1,6	0,11	0,13	0,20	0,28
S1	RDHW0803M0-MD03 F40M	0,95	0,075	0,085	0,13	0,18
S2	RDHW0803M0-MD03 F40M	0,95	0,075	0,085	0,13	0,18
S3	RDHW0803M0-MD03 F40M	0,95	0,070	0,080	0,12	0,17
S11	RDHW0803M0-MD03 MS2050	1,1	0,085	0,095	0,15	0,20
S12	RDHW0803M0-MD03 MS2050	1,1	0,085	0,095	0,15	0,20
S13	RDHW0803M0-MD03 MS2050	0,95	0,075	0,085	0,13	0,18
H5	RDKW0803M0T-MD05 F15M	1,3	0,090	0,10	0,16	0,22
H8	RDKW0803M0T-MD05 F15M	1,1	0,070	0,080	0,12	0,17
H11	RDKW0803M0T-MD05 F15M	1,3	0,090	0,10	0,16	0,22
H12	RDHW0803M0-MD03 F40M	1,1	0,055	0,060	0,095	0,13
H21	RDKW0803M0T-MD05 F15M	1,1	0,070	0,080	0,12	0,17

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R217/220.29-04 – Cutting data v_c = (m/min)

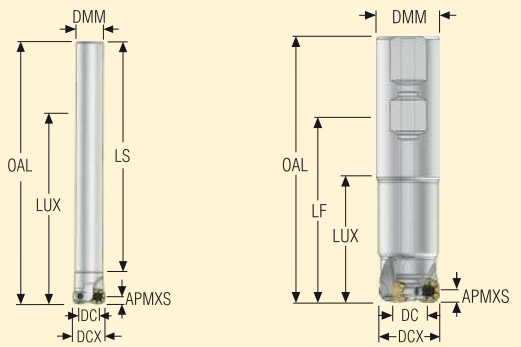
	MP2501				MP3000				T350M				F15M				F25M			
SMG	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%
P1	340	450	510	540	335	445	510	540	375	495	570	600	—	—	—	—	280	375	430	450
P2	330	435	495	530	330	430	495	530	365	480	560	580	—	—	—	—	275	365	415	440
P3	285	375	435	460	280	375	430	455	315	415	480	510	—	—	—	—	235	315	360	385
P4	255	335	385	405	250	330	380	405	280	370	425	450	—	—	—	—	210	280	320	335
P5	240	320	365	390	240	315	365	385	265	355	405	430	—	—	—	—	200	265	305	325
P6	270	360	410	440	270	355	410	435	300	395	455	485	—	—	—	—	225	300	340	365
P7	255	340	385	415	255	335	385	410	285	375	430	460	—	—	—	—	215	280	325	345
P8	240	315	365	385	235	315	360	380	265	350	400	430	—	—	—	—	200	265	305	320
P11	250	330	375	405	250	325	375	400	275	365	420	445	—	—	—	—	205	275	315	335
P12	160	215	240	255	160	210	235	250	175	235	260	280	—	—	—	—	135	180	200	215
M1	235	315	360	380	245	325	370	395	280	370	430	450	—	—	—	—	—	—	—	—
M2	195	255	295	315	200	265	305	325	230	305	350	370	—	—	—	—	—	—	—	—
M3	160	210	235	250	160	215	240	260	185	245	275	290	—	—	—	—	—	—	—	—
M4	125	170	180	195	125	170	185	195	145	190	210	225	—	—	—	—	—	—	—	—
M5	105	140	150	160	105	140	155	165	120	160	175	185	—	—	—	—	—	—	—	—
K1	260	345	395	415	260	340	395	415	—	—	—	—	235	315	360	380	215	290	330	350
K2	230	305	345	370	230	300	345	365	—	—	—	—	210	275	315	340	190	255	290	310
K3	195	255	295	315	195	255	290	310	—	—	—	—	175	235	265	285	160	215	245	260
K4	185	245	280	300	185	245	280	295	—	—	—	—	170	225	255	275	155	205	235	250
K5	110	150	170	180	110	145	170	180	—	—	—	—	100	135	155	165	95	125	140	150
K6	165	215	245	265	165	215	245	260	—	—	—	—	150	195	225	240	135	180	205	220
K7	145	190	220	230	145	190	215	230	—	—	—	—	130	175	200	210	120	160	180	195
N1	—	—	—	—	1925	2550	2950	3125	—	—	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	780	1025	1200	1275	—	—	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	520	690	790	840	—	—	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	590	790	910	960	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	—	60	80	85	90	65	90	100	105	—	—	—	—	—	—	—	—
S2	—	—	—	—	48	65	70	75	55	70	80	85	—	—	—	—	—	—	—	—
S3	—	—	—	—	41	55	60	65	47	65	70	75	—	—	—	—	—	—	—	—
S11	—	—	—	—	85	110	120	130	95	125	140	150	—	—	—	—	—	—	—	—
S12	—	—	—	—	55	75	85	90	65	90	95	100	—	—	—	—	—	—	—	—
S13	—	—	—	—	33	45	49	50	38	50	55	60	—	—	—	—	—	—	—	—
H5	—	—	—	—	49	65	75	80	60	75	85	95	49	65	75	75	—	—	—	—
H8	—	—	—	—	50	70	75	80	60	80	90	95	50	70	75	80	—	—	—	—
H11	—	—	—	—	65	85	95	100	75	100	110	120	60	85	95	100	—	—	—	—
H12	—	—	—	—	100	135	150	155	110	145	160	170	90	125	135	145	—	—	—	—
H21	—	—	—	—	50	70	75	80	60	80	90	95	50	70	75	80	—	—	—	—

	F40M				MK2050				MS2050				MS2500				H25			
SMG	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%
P1	270	355	410	435	335	440	510	530	—	—	—	—	370	490	560	590	—	—	—	—
P2	260	345	400	420	325	430	490	520	—	—	—	—	360	475	540	570	—	—	—	—
P3	225	300	340	360	280	370	430	450	—	—	—	—	310	410	475	500	—	—	—	—
P4	200	265	305	325	250	330	375	400	—	—	—	—	275	365	420	440	—	—	—	—
P5	195	255	290	310	240	315	360	385	—	—	—	—	265	350	400	425	—	—	—	—
P6	215	285	325	345	265	355	405	435	—	—	—	—	295	390	450	480	—	—	—	—
P7	205	270	310	330	250	335	380	410	—	—	—	—	280	370	425	450	—	—	—	—
P8	190	255	290	305	235	310	360	380	—	—	—	—	260	345	400	420	—	—	—	—
P11	200	260	300	320	245	325	370	395	—	—	—	—	270	360	410	440	—	—	—	—
P12	125	170	190	200	160	215	235	250	—	—	—	—	175	235	265	280	—	—	—	—
M1	210	280	320	340	—	—	—	—	—	—	—	—	255	340	390	410	—	—	—	—
M2	175	230	260	280	—	—	—	—	—	—	—	—	210	280	320	340	—	—	—	—
M3	140	185	210	225	—	—	—	—	—	—	—	—	175	230	255	270	—	—	—	—
M4	110	145	160	170	—	—	—	—	—	—	—	—	135	185	200	210	—	—	—	—
M5	90	120	135	140	—	—	—	—	—	—	—	—	115	155	165	175	—	—	—	—
K1	210	275	315	335	350	465	530	560	—	—	—	—	—	—	—	—	—	—	—	—
K2	185	240	275	295	310	405	465	500	—	—	—	—	—	—	—	—	—	—	—	—
K3	155	205	235	250	260	345	395	420	—	—	—	—	—	—	—	—	—	—	—	—
K4	150	195	225	235	250	330	375	400	—	—	—	—	—	—	—	—	—	—	—	—
K5	90	120	135	145	150	200	230	245	—	—	—	—	—	—	—	—	—	—	—	—
K6	130	170	195	210	220	290	330	355	—	—	—	—	—	—	—	—	—	—	—	—
K7	115	150	175	185	195	260	290	310	—	—	—	—	—	—	—	—	—	—	—	—
N1	1550	2050	2350	2500	—	—	—	—	—	—	—	—	—	—	—	—	1800	2350	2725	2875
N2	620	820	950	1000	—	—	—	—	—	—	—	—	—	—	—	—	720	950	1100	1175
N3	415	550	630	670	—	—	—	—	—	—	—	—	—	—	—	—	485	640	730	780
N11	475	630	730	770	—	—	—	—	—	—	—	—	—	—	—	—	550	730	840	890
S1	50	70	75	80	—	—	—	—	55	75	80	85	65	90	95	105	—	—	—	—
S2	41	55	60	65	—	—	—	—	45	60	65	70	55	70	80	85	—	—	—	—
S3	36	48	55	55	—	—	—	—	39	55	60	60	46	65	70	70	—	—	—	—
S11	70	95	105	115	—	—	—	—	80	105	115	125	95	125	135	145	—	—	—	—
S12	49	65	75	80	—	—	—	—	55	75	80	85	65	85	95	100	—	—	—	—
S13	29	39	42	45	—	—	—	—	31	42	46	49	37	50	55	60	—	—	—	—
H5	42	55	65	65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H8	44	60	65	70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H11	55	70	80	85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H12	80	105	120	125	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H21	44	60	65	70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

R217.29I-05

Cutters with round inserts, max. axial cutting depth 5 mm





- For insert selection and cutting data recommendations, see page(s) 348-349
- For complete insert programme, see page(s) 635
- 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	LF							
R217.29I-2016.0-05.1.100A	Cylindrical	5,0	16,0	5,9	20,0	150,0	60,0	90,0	–	6,9	21,8	30,0	1	0,3	29900	RD..10T3
R217.29I-1620.0-05.2.112E	Cylindrical	5,0	20,0	10,0	16,0	160,0	112,0	140,0	–	90,0	30,0	38,0	2	0,5	27400	RD..10T3
R217.29I-2025.0-05.2.120A	Cylindrical	5,0	25,0	15,0	20,0	170,0	120,0	140,0	–	14,5	40,0	48,0	2	0,4	24400	RD..10T3
R217.29I-2525.0-05.3.124A	Cylindrical	5,0	25,0	15,0	25,0	180,0	50,1	130,0	–	13,8	40,0	48,0	3	0,7	24400	RD..10T3
R217.29I-2527.0-05.3.124A	Cylindrical	5,0	27,0	17,0	25,0	180,0	124,0	25,0	–	11,6	44,0	52,0	3	0,7	24400	RD..10T3
R217.29I-2520.3-05.2.070A	Weldon	5,0	20,0	10,0	25,0	125,5	70,0	55,5	94,0	90,0	30,0	38,0	2	0,4	27400	RD..10T3
R217.29I-2525.3-05.3.050A	Weldon	5,0	25,0	15,0	25,0	105,5	50,0	55,5	74,0	14,4	40,0	48,0	3	0,4	24400	RD..10T3
R217.29I-3232.3-05.4.060A	Weldon	5,0	32,0	22,0	32,0	119,5	60,0	59,5	84,0	8,7	54,0	62,0	4	0,7	21600	RD..10T3

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.29I-2016-2520	DOUBLE-T	C03006-T09P	H4B-T09P	2,0
R217.29I-2025-3232	DOUBLE-T	C03007-T09P	H4B-T09P	2,0

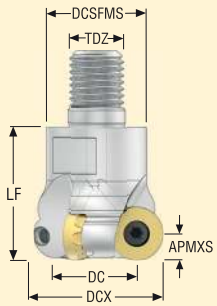
Please check availability in current price and stock-list

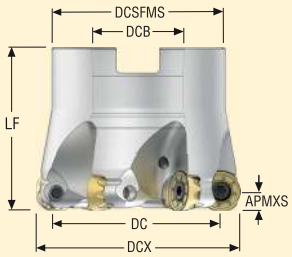
Torque keys, see page 710

R217/220.29I-05

Cutters with round inserts, max. axial cutting depth 5 mm







- For insert selection and cutting data recommendations, see page(s) 348-349
- For complete insert programme, see page(s) 635
- 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							
R217.29I-1020.RE-05.2A	Combimaster	5,0	20,0	10,0	18,5	–	M10	28,0	90,0	30,0	38,0	2	0,1	27400	RD..10T3
R217.29I-1225.RE-05.3A	Combimaster	5,0	25,0	15,0	23,0	–	M12	30,0	13,8	40,0	48,0	3	0,1	24400	RD..10T3
R217.29I-1232.RE-05.4A	Combimaster	5,0	32,0	22,0	23,0	–	M12	30,0	8,0	54,0	62,0	4	0,1	21600	RD..10T3
R217.29I-1632.RE-05.4A	Combimaster	5,0	32,0	22,0	30,0	–	M16	40,0	8,8	54,0	62,0	4	0,2	21600	RD..10T3
R217.29I-1632.RE-05.5A	Combimaster	5,0	32,0	22,2	30,0	–	M16	40,0	4,1	54,4	62,0	5	0,2	21600	RD..10T3
R217.29I-1635.RE-05.5A	Combimaster	5,0	35,0	25,1	30,0	–	M16	40,0	7,5	60,2	68,0	5	0,2	15600	RD..10T3
R217.29I-1640.RE-05.4A	Combimaster	5,0	40,0	30,0	30,0	–	M16	40,0	5,5	70,0	78,0	4	0,3	19300	RD..10T3
R217.29I-1640.RE-05.5A	Combimaster	5,0	40,0	30,0	30,0	–	M16	40,0	5,5	70,0	78,0	5	0,3	19300	RD..10T3
R217.29I-1642.RE-05.5A	Combimaster	5,0	42,0	32,0	30,0	–	M16	40,0	5,6	74,0	82,0	5	0,3	18800	RD..10T3
R217.29I-2040.RE-05.6A	Combimaster	5,0	40,0	30,2	36,5	–	M20	40,0	5,9	70,4	78,0	6	0,3	19300	RD..10T3
R217.29I-1642.RE-05.6A	Combimaster	5,0	42,0	32,0	30,0	–	M16	40,0	6,0	74,0	82,0	6	0,3	18800	RD..10T3
R217.29I-2042.RE-05.6A	Combimaster	5,0	42,0	32,2	36,5	–	M20	40,0	5,5	74,4	82,0	6	0,3	18800	RD..10T3
R220.29I-0040-05.5A	Arbor	5,0	40,0	30,0	33,0	16,0	–	40,0	7,3	70,0	78,0	5	0,2	19300	RD..10T3
R220.29I-0050-05.4A	Arbor	5,0	50,0	40,0	41,0	22,0	–	40,0	4,3	90,0	98,0	4	0,3	17300	RD..10T3
R220.29I-0050-05.6A	Arbor	5,0	50,0	40,0	41,0	22,0	–	40,0	4,3	90,0	98,0	6	0,3	17300	RD..10T3
R220.29I-0052-05.7A	Arbor	5,0	52,0	42,1	41,0	22,0	–	40,0	4,3	94,2	102,0	7	0,3	17000	RD..10T3
R220.29I-0063-05.6A	Arbor	5,0	63,0	53,0	49,0	22,0	–	40,0	3,1	116,0	124,0	6	0,5	15800	RD..10T3
R220.29I-0063-05.8A	Arbor	5,0	63,0	53,0	49,0	22,0	–	40,0	3,9	116,0	124,0	8	0,5	15800	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)
R217.29I-1020	DOUBLE-T	C03006-T09P	H4B-T09P	–	2,0
R217.29I-1225-2042	DOUBLE-T	C03007-T09P	H4B-T09P	–	2,0
R220.29I-0040	DOUBLE-T	C03007-T09P	H4B-T09P	220.17-689	2,0
R220.29I-0050-0063	DOUBLE-T	C03007-T09P	H4B-T09P	220.17-692	2,0

Please check availability in current price and stock-list

Torque keys, see page 710

R217/220.29-05 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	RDKT10T3M0T-6-M05 MP2501	2,0	0,14	0,16	0,26	0,36
P2	RDKT10T3M0T-6-M05 MP2501	2,0	0,14	0,17	0,26	0,36
P3	RDKT10T3M0T-6-M05 MP2501	2,0	0,14	0,16	0,25	0,34
P4	RDKT10T3M0T-6-M05 MP2501	2,0	0,13	0,15	0,24	0,34
P5	RDKT10T3M0T-6-M05 MP2501	2,0	0,13	0,15	0,24	0,34
P6	RDKT10T3M0T-6-M05 MP2501	2,0	0,13	0,15	0,24	0,34
P7	RDKW10T3M0T-6-MD06 MS2500	2,0	0,15	0,18	0,28	0,40
P8	RDKW10T3M0T-6-MD06 MS2500	2,0	0,16	0,19	0,30	0,42
P11	RDKW10T3M0T-6-MD06 MS2500	2,0	0,15	0,18	0,28	0,40
P12	RDKW10T3M0T-6-MD06 MS2500	1,6	0,11	0,12	0,20	0,28
M1	RDHT10T3M0T-8-M11 MP2050	2,0	0,32	0,36	0,60	0,85
M2	RDHT10T3M0T-8-M11 MP2050	2,0	0,28	0,34	0,55	0,75
M3	RDHT10T3M0T-8-M11 MP2050	1,6	0,22	0,26	0,42	0,60
M4	RDHT10T3M0T-8-M11 MP2050	1,2	0,20	0,24	0,38	0,50
M5	RDHT10T3M0T-8-M11 MP2050	1,2	0,20	0,24	0,38	0,50
K1	RDKW10T3M0T-8-MD06 MK2050	2,0	0,17	0,20	0,32	0,44
K2	RDKW10T3M0T-8-MD06 MK2050	2,0	0,16	0,18	0,28	0,40
K3	RDKW10T3M0T-8-MD06 MK2050	2,0	0,16	0,18	0,28	0,40
K4	RDKW10T3M0T-8-MD06 MK2050	2,0	0,16	0,18	0,28	0,40
K5	RDKW10T3M0T-8-MD06 MK2050	2,0	0,14	0,16	0,26	0,36
K6	RDKW10T3M0T-8-MD06 MK2050	2,0	0,16	0,18	0,28	0,40
K7	RDKW10T3M0T-8-MD06 MK2050	2,0	0,14	0,16	0,26	0,36
N1	RDHT10T3M0-8-E04 H25	2,0	0,15	0,17	0,26	0,38
N2	RDHT10T3M0-8-E04 H25	2,0	0,15	0,17	0,26	0,38
N3	RDHT10T3M0-8-E04 H25	2,0	0,15	0,17	0,26	0,38
N11	RDHT10T3M0-8-E04 H25	2,0	0,15	0,17	0,26	0,38
S1	RDKT10T3M0T-8-M07 MS2500	1,2	0,13	0,15	0,24	0,32
S2	RDKT10T3M0T-8-M07 MS2500	1,2	0,13	0,15	0,24	0,32
S3	RDKT10T3M0T-6-M05 MS2500	1,2	0,085	0,10	0,16	0,22
S11	RDHT10T3M0T-8-M11 MS2050	1,4	0,22	0,26	0,42	0,60
S12	RDHT10T3M0T-8-M11 MS2050	1,4	0,22	0,26	0,42	0,60
S13	RDHT10T3M0T-8-M11 MS2050	1,2	0,20	0,24	0,38	0,50
H5	RDHW10T3M0T-8-MD06 MH1000	1,6	0,11	0,12	0,20	0,28
H8	RDHW10T3M0T-8-MD06 MH1000	1,4	0,080	0,095	0,15	0,20
H11	RDHW10T3M0T-8-MD06 MH1000	1,6	0,11	0,12	0,20	0,28
H12	RDHW10T3M0T-8-MD06 MH1000	1,4	0,080	0,095	0,15	0,20
H21	RDHW10T3M0T-8-MD06 MH1000	1,4	0,080	0,095	0,15	0,20

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R217/220.29-05 – Cutting data v_c = (m/min)

	MP1501				MP2050				MP2501				T350M				F40M				MK2050			
SMG	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%
P1	360	480	540	570	370	495	560	590	335	450	510	530	325	440	495	520	285	380	430	455	315	420	475	500
P2	350	470	530	560	360	475	540	570	325	430	485	520	320	420	480	510	275	365	420	440	305	410	460	490
P3	305	410	465	485	310	415	470	500	285	380	425	445	275	365	415	440	240	320	360	385	270	355	405	425
P4	270	360	405	430	275	370	415	440	250	335	380	400	245	325	370	390	215	285	320	340	235	315	355	375
P5	260	350	395	415	265	350	400	420	240	320	360	380	235	315	355	370	205	270	305	325	225	305	345	360
P6	295	390	445	465	295	395	445	470	270	355	405	430	260	350	395	415	230	305	345	360	255	340	385	405
P7	280	370	420	440	280	375	420	445	255	335	385	405	250	330	375	395	215	290	325	340	240	320	365	385
P8	260	345	390	410	260	345	395	420	240	320	355	375	230	310	350	370	200	270	305	325	225	300	340	355
P11	270	360	405	425	270	365	410	430	250	325	370	395	240	320	365	380	210	280	315	330	235	310	355	370
P12	175	240	260	270	175	240	265	280	165	220	245	255	155	210	235	245	135	185	205	215	150	205	225	235
M1	—	—	—	—	255	340	390	410	235	310	350	375	245	325	370	390	225	295	335	355	—	—	—	—
M2	—	—	—	—	210	280	320	335	195	255	290	305	200	270	305	320	185	245	275	290	—	—	—	—
M3	—	—	—	—	175	230	255	270	160	215	235	245	165	220	245	260	150	200	220	235	—	—	—	—
M4	—	—	—	—	135	185	195	205	125	170	180	190	130	175	185	195	120	160	170	180	—	—	—	—
M5	—	—	—	—	115	150	165	170	105	145	150	160	110	145	155	165	100	130	140	150	—	—	—	—
K1	280	370	420	445	285	375	430	450	255	340	385	410	250	335	380	400	220	290	330	350	330	440	500	530
K2	245	330	375	395	250	335	380	395	230	300	345	360	220	295	335	350	195	260	290	305	290	390	445	465
K3	205	280	315	335	210	285	320	335	195	255	290	305	190	250	285	300	165	220	245	260	245	330	375	395
K4	200	265	305	315	200	270	305	320	185	245	275	290	180	240	270	285	155	210	235	245	235	315	360	375
K5	120	165	185	195	120	165	185	195	115	150	170	180	110	145	165	175	95	125	145	150	145	195	220	230
K6	175	235	265	280	180	240	270	285	165	215	245	255	160	210	240	250	135	185	210	220	205	280	315	330
K7	155	210	235	250	155	210	235	250	145	190	220	230	140	185	210	225	120	160	185	195	185	250	280	295
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1625	2150	2450	2575	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	660	870	990	1050	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	440	580	660	690	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	500	660	760	790	—	—	—	—
S1	—	—	—	—	65	90	95	100	—	—	—	—	60	80	85	90	55	75	80	85	—	—	—	—
S2	—	—	—	—	55	70	75	80	—	—	—	—	49	65	70	75	44	60	65	65	—	—	—	—
S3	—	—	—	—	46	65	65	70	—	—	—	—	42	55	60	65	38	50	55	60	—	—	—	—
S11	—	—	—	—	95	125	135	145	—	—	—	—	85	115	125	130	75	105	110	120	—	—	—	—
S12	—	—	—	—	65	85	95	100	—	—	—	—	60	80	85	90	55	70	80	80	—	—	—	—
S13	—	—	—	—	37	50	55	55	—	—	—	—	34	46	49	50	31	42	45	47	—	—	—	—
H5	60	80	85	90	55	70	80	85	49	65	75	75	50	70	75	80	45	60	65	70	—	—	—	—
H8	60	85	90	95	55	75	85	85	50	70	75	80	55	75	80	85	47	65	70	75	—	—	—	—
H11	75	100	110	115	65	90	100	105	65	85	95	95	65	90	100	105	55	80	85	90	—	—	—	—
H12	110	150	165	175	110	150	165	175	105	140	155	160	100	130	145	155	85	115	125	135	—	—	—	—
H21	60	85	90	95	55	75	85	85	50	70	75	80	55	75	80	85	47	65	70	75	—	—	—	—

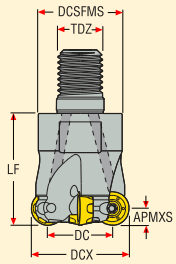
	MM4500				MS2050				MS2500				MH1000				H25			
SMG	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%
P1	205	275	310	330	—	—	—	—	410	550	620	650	—	—	—	—	—	—	—	—
P2	200	265	300	320	—	—	—	—	400	530	600	630	—	—	—	—	—	—	—	—
P3	175	230	260	275	—	—	—	—	345	460	520	550	—	—	—	—	—	—	—	—
P4	155	205	230	245	—	—	—	—	305	410	465	485	—	—	—	—	—	—	—	—
P5	150	195	220	235	—	—	—	—	295	390	445	465	—	—	—	—	—	—	—	—
P6	165	220	250	265	—	—	—	—	330	440	495	520	—	—	—	—	—	—	—	—
P7	155	205	235	250	235	315	360	375	310	415	470	495	—	—	—	—	—	—	—	—
P8	145	195	220	230	220	295	335	355	290	385	440	465	—	—	—	—	—	—	—	—
P11	150	200	230	240	230	310	350	365	300	405	455	480	—	—	—	—	—	—	—	—
P12	100	135	150	155	150	205	225	235	195	265	290	310	—	—	—	—	—	—	—	—
M1	170	225	255	275	245	325	370	390	285	375	430	455	—	—	—	—	—	—	—	—
M2	140	185	215	225	200	270	305	320	235	315	355	370	—	—	—	—	—	—	—	—
M3	115	155	175	180	165	220	245	260	190	260	285	300	—	—	—	—	—	—	—	—
M4	90	125	130	140	130	175	185	195	150	205	215	230	—	—	—	—	—	—	—	—
M5	75	105	110	115	110	145	155	165	125	170	180	190	—	—	—	—	—	—	—	—
K1	—	—	—	—	—	—	—	—	—	—	—	—	270	360	410	430	—	—	—	—
K2	—	—	—	—	—	—	—	—	—	—	—	—	240	320	365	385	—	—	—	—
K3	—	—	—	—	—	—	—	—	—	—	—	—	200	270	310	325	—	—	—	—
K4	—	—	—	—	—	—	—	—	—	—	—	—	195	260	295	310	—	—	—	—
K5	—	—	—	—	—	—	—	—	—	—	—	—	120	160	180	190	—	—	—	—
K6	—	—	—	—	—	—	—	—	—	—	—	—	170	230	260	270	—	—	—	—
K7	—	—	—	—	—	—	—	—	—	—	—	—	150	205	230	240	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1675	2225	2550	2650
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	670	900	1025	1075
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	450	600	690	720
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	510	690	790	820
S1	28	38	40	43	60	80	85	90	75	100	105	110	—	—	—	—	—	—	—	—
S2	23	31	32	35	49	65	70	75	60	80	85	90	—	—	—	—	—	—	—	—
S3	20	27	29	30	42	55	60	65	50	70	75	80	—	—	—	—	—	—	—	—
S11	39	55	55	60	85	115	125	130	105	140	150	160	—	—	—	—	—	—	—	—
S12	36	49	55	55	60	80	85	90	70	95	105	110	—	—	—	—	—	—	—	—
S13	21	29	30	32	34	46	49	50	41	55	60	65	—	—	—	—	—	—	—	—
H5	—	—	—	—	—	—	—	—	—	—	—	—	55	75	85	90	—	—	—	—
H8	—	—	—	—	—	—	—	—	—	—	—	—	60	80	90	95	—	—	—	—
H11	—	—	—	—	—	—	—	—	—	—	—	—	70	100	105	110	—	—	—	—
H12	—	—	—	—	—	—	—	—	—	—	—	—	110	145	160	170	—	—	—	—
H21	—	—	—	—	—	—	—	—	—	—	—	—	60	80	90	95	—	—	—	—

R217.29I-06



- For insert selection and cutting data recommendations, see page(s) 355-356
- For complete insert programme, see page(s) 637
- For ISO attribute explanation, see page 15

Cutters with round inserts, max. axial cutting depth 6 mm



Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max		KG		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	38,0	48,0	2	1,0	17700	RP..1204
R217.29I-1232.RE-06.3A	Combimaster	6,0	32,0	20,0	23,0	M12	40,0	7,0	52,0	62,0	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	52,0	62,0	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	58,0	68,0	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	58,0	68,0	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	68,0	78,0	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	68,0	78,0	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	68,0	78,0	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	72,0	82,0	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	72,0	82,0	5	0,4	13600	RP..1204

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

Please check availability in current price and stock-list

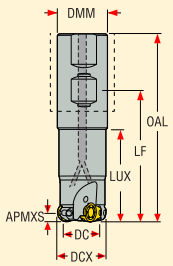
Torque keys, see page 710

Copy milling cutters

R217.29I-06

Cutters with round inserts, max. axial cutting depth 6 mm





- For insert selection and cutting data recommendations, see page(s) 355-356
- For complete insert programme, see page(s) 637
- 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	Weldon	6,0	25,0	13,0	25,0	106,0	21,6	46,0	13,0	38,0	48,0	2	0,4	17700	RP..1204
R217.29I-3232.3-06.3.060A	Weldon	6,0	32,0	20,0	32,0	120,0	26,6	60,0	7,0	52,0	62,0	3	0,7	15600	RP..1204
R217.29I-3240.3-06-055.4A	Weldon	6,0	40,0	28,0	32,0	115,0	55,0	60,0	8,0	68,0	78,0	4	0,6	14000	RP..1204
R217.29I-3240.3-06.4.075A	Weldon	6,0	40,0	28,0	32,0	135,0	72,0	60,0	8,0	68,0	78,0	4	0,8	14000	RP..1204

Centre coolant hole possibility by removning 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

Please check availability in current price and stock-list

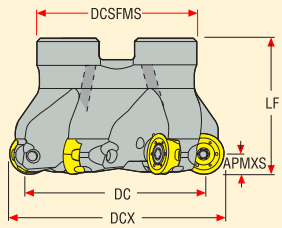
Torque keys, see page 710

Copy milling cutters

R220.29I-06

Cutters with round inserts, max. axial cutting depth 6 mm





- For insert selection and cutting data recommendations, see page(s) 355-356
- For complete insert programme, see page(s) 637
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max	n	KG		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	68,0	78,0	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	88,0	98,0	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	88,0	98,0	5	0,3	12500	RP..1204
R220.29I-0050-06.6A	Arbor	6,0	50,0	38,0	42,0	22,0	40,0	5,0	88,0	98,0	6	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	92,0	102,0	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	92,0	102,0	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	114,0	124,0	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	114,0	124,0	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	114,0	124,0	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
R220.29I-.. Ø50-63	SX2035-T05P	DOUBLE-T	T05P-2	C03508-T15P	H4B-T15P	220.17-692	3,5

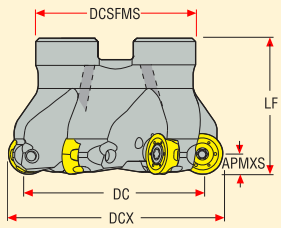
Please check availability in current price and stock-list

Torque keys, see page 710

R220.29I-06

Cutters with round inserts, max. axial cutting depth 6 mm





- For insert selection and cutting data recommendations, see page(s) 355-356
- For complete insert programme, see page(s) 637
- 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	LF							
R220.29I-0066-06.6A	Arbor	6,0	66,0	54,0	50,0	27,0	50,0	3,5	120,0	130,0	6	0,6	10900	RP..1204
R220.29I-0080-06.6A	Arbor	6,0	80,0	68,0	62,0	27,0	50,0	3,0	148,0	158,0	6	1,0	10000	RP..1204
R220.29I-0080-06.7A	Arbor	6,0	80,0	68,0	62,0	27,0	50,0	3,0	148,0	158,0	7	1,0	10000	RP..1204
R220.29I-0080-06.8A	Arbor	6,0	80,0	68,0	62,0	27,0	50,0	2,0	148,0	158,0	8	1,0	10000	RP..1204
R220.29I-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
R220.29I-0092-06.7A	Arbor	6,0	92,0	80,0	77,0	32,0	50,0	2,5	172,0	182,0	7	1,4	9200	RP..1204
R220.29I-0100-06.9A	Arbor	6,0	100,0	88,0	77,0	32,0	50,0	2,0	188,0	198,0	9	1,6	8800	RP..1204
R220.29I-0112-06.7A	Arbor	6,0	112,0	100,0	77,0	32,0	63,0	1,5	212,0	222,0	7	1,8	8400	RP..1204
R220.29I-0125-06.11A	Arbor	6,0	125,0	113,0	90,0	40,0	63,0	1,5	238,0	248,0	11	3,1	8000	RP..1204
R220.29I-0137-06.8A	Arbor	6,0	137,0	125,0	90,0	40,0	63,0	1,5	262,0	272,0	8	3,3	7600	RP..1204

Spare Parts

For cutter	Screw	Key (T-handle)	Key	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.29I-.. 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
R220.29I-.. Ø92-112	SX2035-T05P	DOUBLE-T	T05P-2	C03509-T15P	H4B-T15PL	950E1645	3,5
R220.29I-.. Ø125-137	SX2035-T05P	DOUBLE-T	T05P-2	C03509-T15P	H4B-T15PL	MC6S20X50	3,5

Please check availability in current price and stock-list

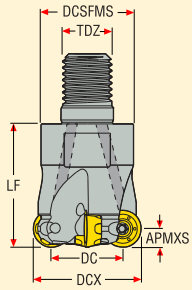
Torque keys, see page 710

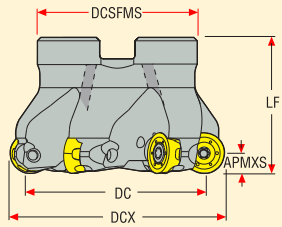
R217/220.29B-06 – For blade machining



- For insert selection and cutting data recommendations, see page(s) 355-356
- For complete insert programme, see page(s) 637
- For ISO attribute explanation, see page 15

Cutters with round inserts, max. axial cutting depth 6 mm





Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max		KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF							
R217.29B-1632.RE-06.3A	Combimaster	6,0	32,0	20,0	30,0	–	40,0	4,5	52,0	62,0	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	68,0	78,0	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	88,0	98,0	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	90,0	102,0	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	114,0	124,0	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	114,0	124,0	7	0,5	11200	RP..12

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 710

R217/220.29-06 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	RPHT1204M0T-6-M08 T350M	2,5	0,22	0,26	0,42	0,60
P2	RPHT1204M0T-6-M08 T350M	2,5	0,22	0,28	0,44	0,60
P3	RPHT1204M0T-6-M08 T350M	2,5	0,22	0,26	0,42	0,60
P4	RPHT1204M0T-6-M08 T350M	2,5	0,22	0,25	0,40	0,55
P5	RPKT1204M0T-6-M15 MP2501	2,5	0,38	0,46	0,75	1,1
P6	RPKT1204M0T-6-M15 MP2501	2,5	0,38	0,46	0,75	1,1
P7	RPKT1204M0T-6-M15 MP2501	2,5	0,38	0,46	0,75	1,1
P8	RPHT1204M0T-6-M13 MS2500	2,5	0,36	0,42	0,65	0,95
P11	RPHT1204M0T-6-M13 MS2500	2,5	0,34	0,40	0,65	0,90
P12	RPHT1204M0T-4-M13 MS2500	1,9	0,22	0,28	0,44	0,60
M1	RPHT1204M0T-6-ME07 T350M	2,5	0,20	0,24	0,38	0,55
M2	RPHT1204M0T-6-ME07 T350M	2,5	0,18	0,22	0,34	0,48
M3	RPHT1204M0T-6-ME07 T350M	1,9	0,15	0,17	0,28	0,38
M4	RPHT1204M0T-6-M08 T350M	1,4	0,15	0,17	0,28	0,38
M5	RPHT1204M0T-6-M08 T350M	1,4	0,15	0,17	0,28	0,38
K1	RPKT1204M0T-6-M15 MK2050	2,5	0,42	0,50	0,80	1,2
K2	RPKT1204M0T-6-M15 MK2050	2,5	0,38	0,46	0,75	1,1
K3	RPKT1204M0T-6-M15 MK2050	2,5	0,38	0,46	0,75	1,1
K4	RPKT1204M0T-6-M15 MK2050	2,5	0,38	0,46	0,75	1,1
K5	RPKT1204M0T-6-M15 MK2050	2,5	0,36	0,42	0,65	0,95
K6	RPKT1204M0T-6-M15 MK2050	2,5	0,38	0,46	0,75	1,1
K7	RPKT1204M0T-6-M15 MK2050	2,5	0,36	0,42	0,65	0,95
N1	RPHT1204M0-6-E05 H25	2,5	0,18	0,22	0,34	0,48
N2	RPHT1204M0-6-E05 H25	2,5	0,18	0,22	0,34	0,48
N3	RPHT1204M0-6-E05 H25	2,5	0,18	0,22	0,34	0,48
N11	RPHT1204M0-6-E05 H25	2,5	0,18	0,22	0,34	0,48
S1	RPHT1204M0T-6-M13 MS2500	1,4	0,24	0,28	0,44	0,65
S2	RPHT1204M0T-6-M13 MS2500	1,4	0,24	0,28	0,44	0,65
S3	RPHT1204M0T-6-M13 MS2500	1,4	0,22	0,26	0,42	0,60
S11	RPHT1204M0T-6-M13 MS2050	1,7	0,28	0,32	0,50	0,75
S12	RPHT1204M0T-6-M13 MS2050	1,7	0,28	0,32	0,50	0,75
S13	RPHT1204M0T-6-M13 MS2050	1,4	0,24	0,28	0,44	0,65
H5	RPHW1204M0T-6-MD12 MH1000	1,9	0,22	0,25	0,40	0,55
H8	RPHW1204M0T-6-MD12 MH1000	1,7	0,16	0,19	0,30	0,42
H11	RPHW1204M0T-6-MD12 MH1000	1,9	0,22	0,25	0,40	0,55
H12	RPHT1204M0T-6-M13 T350M	1,7	0,18	0,20	0,34	0,46
H21	RPHW1204M0T-6-MD12 MH1000	1,7	0,16	0,19	0,30	0,42

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R217/220.29-06 – Cutting data v_c = (m/min)

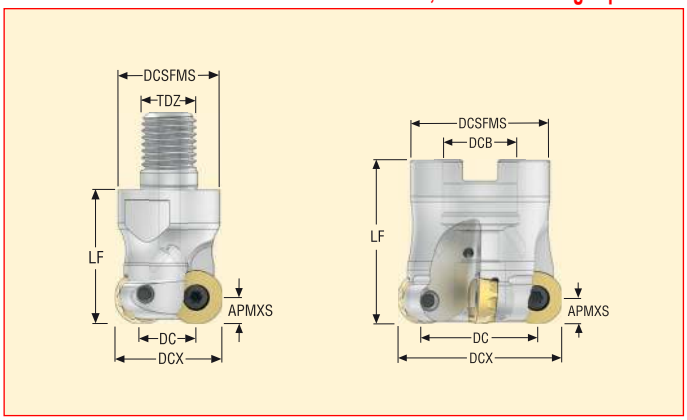
	MP1501				MP2050				MP2501				MP3000				T350M				F40M			
SMG	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%
P1	310	425	475	490	285	385	435	450	335	455	510	530	315	425	485	500	290	395	445	465	255	345	390	405
P2	305	410	465	475	275	375	425	440	325	435	495	520	310	415	465	490	285	380	430	455	245	330	375	395
P3	265	360	400	420	240	325	375	385	280	380	430	445	265	360	410	430	245	330	375	390	215	290	325	340
P4	235	315	360	370	215	290	330	340	245	340	385	405	235	315	365	380	215	295	335	350	185	255	290	305
P5	225	305	340	355	205	280	315	330	240	325	365	385	225	305	345	365	210	280	320	335	185	245	275	290
P6	255	345	385	395	230	315	350	370	270	365	410	430	255	345	390	410	235	320	360	375	205	275	310	325
P7	240	325	365	375	215	295	330	350	255	345	390	405	240	325	370	385	225	300	340	355	195	260	295	310
P8	225	300	335	355	200	275	315	325	235	320	360	375	225	305	345	360	205	280	315	325	180	240	275	285
P11	235	315	350	365	210	285	320	340	250	335	375	395	235	315	360	375	215	295	330	345	190	255	285	300
P12	160	215	235	245	145	195	215	225	165	225	245	255	150	210	230	240	145	195	215	225	125	170	185	195
M1	—	—	—	—	195	270	305	315	235	310	355	375	230	310	350	370	220	290	330	350	200	265	300	315
M2	—	—	—	—	165	225	250	265	195	260	295	310	190	255	290	305	180	240	275	290	165	220	250	260
M3	—	—	—	—	135	190	205	210	160	220	235	250	155	210	230	240	150	205	220	230	135	185	200	210
M4	—	—	—	—	110	155	160	165	125	175	185	195	120	165	180	185	120	165	170	180	105	150	155	165
M5	—	—	—	—	95	130	135	140	105	145	155	160	100	140	150	155	100	135	145	150	90	125	130	135
K1	240	325	365	375	215	295	335	350	260	345	390	410	245	330	370	390	225	300	340	360	195	260	295	310
K2	215	290	325	335	195	265	295	310	230	305	345	365	215	290	330	345	200	265	300	320	175	230	265	275
K3	180	245	275	285	165	225	250	265	195	260	295	310	180	245	280	295	170	225	255	270	145	195	225	235
K4	175	235	260	270	155	215	240	250	185	250	280	295	175	235	265	280	160	215	245	255	140	190	210	225
K5	105	145	165	170	95	130	145	155	110	150	170	180	105	140	160	170	95	135	150	155	85	115	130	135
K6	155	205	230	240	140	190	210	220	165	220	245	260	155	210	235	245	140	190	215	225	125	165	185	195
K7	135	185	210	215	125	170	185	200	145	195	220	230	135	180	210	220	125	170	190	200	110	150	165	175
N1	—	—	—	—	—	—	—	—	—	—	—	—	1825	2450	2800	2925	—	—	—	—	1425	1950	2200	2275
N2	—	—	—	—	—	—	—	—	—	—	—	—	730	990	1125	1175	—	—	—	—	570	790	890	920
N3	—	—	—	—	—	—	—	—	—	—	—	—	490	660	750	780	—	—	—	—	385	530	590	610
N11	—	—	—	—	—	—	—	—	—	—	—	—	560	750	860	900	—	—	—	—	440	600	680	700
S1	—	—	—	—	55	75	80	80	—	—	—	—	55	75	85	85	55	75	80	85	50	70	75	75
S2	—	—	—	—	44	60	65	65	—	—	—	—	46	60	65	70	44	60	65	70	40	55	60	60
S3	—	—	—	—	39	55	55	55	—	—	—	—	40	55	60	60	39	55	55	60	35	49	50	55
S11	—	—	—	—	75	105	110	110	—	—	—	—	80	110	115	120	75	105	110	115	70	95	100	105
S12	—	—	—	—	50	70	75	75	—	—	—	—	55	75	80	85	55	70	75	80	48	65	70	75
S13	—	—	—	—	31	42	44	45	—	—	—	—	32	44	47	49	31	43	45	47	28	39	41	43
H5	55	70	80	80	44	60	65	65	50	70	75	75	47	65	70	75	48	65	70	75	41	55	60	65
H8	55	80	85	85	46	65	70	70	55	70	80	80	50	70	75	80	50	70	75	80	44	60	65	70
H11	65	90	100	105	55	75	80	85	65	85	95	100	60	80	90	95	60	80	90	95	55	70	80	80
H12	105	140	150	155	90	130	135	145	105	145	155	165	95	130	140	150	90	125	135	140	80	110	120	125
H21	55	80	85	85	46	65	70	70	55	70	80	80	50	70	75	80	50	70	75	80	44	60	65	70

	MK2050				MS2050				MS2500				H25			
SMG	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%
P1	270	370	415	425	—	—	—	—	365	495	560	580	—	—	—	—
P2	265	360	405	415	—	—	—	—	355	475	540	570	—	—	—	—
P3	230	315	350	365	—	—	—	—	305	415	470	490	—	—	—	—
P4	205	275	315	325	—	—	—	—	270	370	420	440	—	—	—	—
P5	200	265	300	310	—	—	—	—	265	350	400	420	—	—	—	—
P6	220	300	335	345	—	—	—	—	295	400	450	470	—	—	—	—
P7	210	280	315	325	185	250	280	295	280	375	425	445	—	—	—	—
P8	195	265	295	310	170	235	265	275	255	350	395	410	—	—	—	—
P11	205	275	305	315	180	245	275	285	270	365	410	430	—	—	—	—
P12	140	190	205	215	125	165	180	190	180	245	270	280	—	—	—	—
M1	—	—	—	—	190	255	290	300	255	340	385	405	—	—	—	—
M2	—	—	—	—	155	215	240	250	210	280	320	335	—	—	—	—
M3	—	—	—	—	130	180	195	200	175	235	255	270	—	—	—	—
M4	—	—	—	—	105	145	155	160	135	190	200	210	—	—	—	—
M5	—	—	—	—	90	125	125	130	115	160	165	175	—	—	—	—
K1	285	385	435	445	—	—	—	—	—	—	—	—	—	—	—	—
K2	255	345	385	400	—	—	—	—	—	—	—	—	—	—	—	—
K3	215	290	325	335	—	—	—	—	—	—	—	—	—	—	—	—
K4	205	280	310	320	—	—	—	—	—	—	—	—	—	—	—	—
K5	125	170	195	200	—	—	—	—	—	—	—	—	—	—	—	—
K6	180	245	275	285	—	—	—	—	—	—	—	—	—	—	—	—
K7	160	220	250	255	—	—	—	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—	1600	2125	2450	2550
N2	—	—	—	—	—	—	—	—	—	—	—	—	640	860	990	1025
N3	—	—	—	—	—	—	—	—	—	—	—	—	430	570	660	690
N11	—	—	—	—	—	—	—	—	—	—	—	—	490	660	750	780
S1	—	—	—	—	50	70	70	75	65	95	95	100	—	—	—	—
S2	—	—	—	—	40	55	55	60	55	75	80	85	—	—	—	—
S3	—	—	—	—	35	48	50	50	47	65	70	70	—	—	—	—
S11	—	—	—	—	65	95	100	100	90	125	135	145	—	—	—	—
S12	—	—	—	—	47	65	70	70	65	90	95	100	—	—	—	—
S13	—	—	—	—	28	39	40	41	38	50	55	60	—	—	—	—
H5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

R217/220.29I-08

Cutters with round inserts, max. axial cutting depth 8 mm





- For insert selection and cutting data recommendations, see page(s) 359-360
- For complete insert programme, see page(s) 637
- 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							
R217.29I-1632.RE-08.2A	Combimaster	8,0	32,0	15,9	30,0	–	M16	40,0	17,8	47,8	62,0	2	0,2	12200	RP..1605
R217.29I-1640.RE-08.3A	Combimaster	8,0	40,0	24,2	30,0	–	M16	40,0	2,4	64,4	78,0	3	0,2	10900	RP..1605
R217.29I-2040.RE-08.3A	Combimaster	8,0	40,0	24,2	36,5	–	M20	40,0	2,4	64,4	78,0	3	0,3	10900	RP..1605
R220.29I-0050-08.4A	Arbor	8,0	50,0	34,2	41,0	22,0	–	50,0	4,8	84,4	98,0	4	0,4	9700	RP..1605
R220.29I-0052-08.4A	Arbor	8,0	52,0	36,2	41,0	22,0	–	50,0	5,7	88,4	102,0	4	0,4	9600	RP..1605
R220.29I-0063-08.4A	Arbor	8,0	63,0	47,1	49,0	22,0	–	50,0	7,5	110,2	124,0	4	0,6	8700	RP..1605
R220.29I-0063-08.5A	Arbor	8,0	63,0	47,1	49,0	22,0	–	50,0	7,1	110,2	124,0	5	0,6	8700	RP..1605
R220.29I-0063-08.6A	Arbor	8,0	63,0	47,1	49,0	22,0	–	50,0	7,1	110,2	124,0	6	0,6	8700	RP..1605
R220.29I-0066-08.5A	Arbor	8,0	66,0	50,1	61,0	27,0	–	50,0	6,9	116,2	130,0	5	0,7	8400	RP..1605
R220.29I-0066-08.6A	Arbor	8,0	66,0	50,0	61,0	27,0	–	50,0	6,7	116,0	130,0	6	0,7	8400	RP..1605
R220.29I-0080-08.5A	Arbor	8,0	80,0	64,1	61,0	27,0	–	50,0	5,0	144,2	158,0	5	1,0	7700	RP..1605
R220.29I-0080-08.7A	Arbor	8,0	80,0	64,1	61,0	27,0	–	50,0	5,0	144,2	158,0	7	1,0	7700	RP..1605
R220.29I-0084-08.5A	Arbor	8,0	84,0	68,1	79,0	32,0	–	50,0	4,6	152,2	166,0	5	1,2	7500	RP..1605
R220.29I-0100-08.8A	Arbor	8,0	100,0	84,1	79,0	32,0	–	50,0	3,7	184,2	198,0	8	1,6	6800	RP..1605
R220.29I-0125-08.10A	Arbor	8,0	125,0	109,1	90,0	40,0	–	63,0	2,8	234,2	248,0	10	2,9	6100	RP..1605
R220.29I-8160-08.10A	Arbor	8,0	160,0	144,1	90,0	40,0	–	63,0	2,1	304,2	318,0	10	4,1	5400	RP..1605

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

For cutter	Stop screw	Key (T-handle)	Key	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R217.29I-1632-2040	SX2035-T05P	DOUBLE-T	T05P-2	C05010-T20P	H6B-T20P	–	5,0
R220.29I-0050-0052	SX2035-T05P	DOUBLE-T	T05P-2	C05013-T20P	H6B-T20P	220.17-692M	5,0
R220.29I-0063-0080	SX2035-T05P	DOUBLE-T	T05P-2	C05013-T20P	H6B-T20P	MC6S10X40	5,0
R220.29I-0084	SX2035-T05P	DOUBLE-T	T05P-2	C05013-T20P	H6B-T20P	950E1645	5,0
R220.29I-0100	SX2035-T05P	DOUBLE-T	T05P-2	C05013-T20P	H6B-T20P	–	5,0
R220.29I-0125	SX2035-T05P	DOUBLE-T	T05P-2	C05013-T20P	H6B-T20P	950E1645	5,0
R220.29I-8160	SX2035-T05P	DOUBLE-T	T05P-2	C05013-T20P	H6B-T20P	MC6S20X50	5,0

Please check availability in current price and stock-list

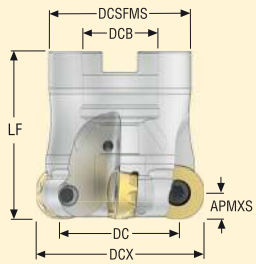
Torque keys, see page 710

R217/220.29I-08



- For insert selection and cutting data recommendations, see page(s) 359-360
- For complete insert programme, see page(s) 637
- For ISO attribute explanation, see page 15

Cutters with round inserts, max. axial cutting depth 8 mm



Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max		KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF							
R220.29I-0100-08.6MA	Arbor	8,0	100,0	84,1	79,0	32,0	50,0	3,8	184,2	198,0	6	1,6	6800	RP..1605
R220.29I-0125-08.6MA	Arbor	8,0	125,0	109,1	90,0	40,0	63,0	2,8	234,2	248,0	6	2,9	6100	RP..1605
R220.29I-8160-08.7MA	Arbor	8,0	160,0	143,1	90,0	40,0	63,0	2,2	302,2	318,0	7	4,2	5400	RP..1605

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

For cutter	Stop screw	Shim screw	Key (T-handle)	Key	Insert shim	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.29I-0100MA	SX2035-T05P	CA5010	DOUBLE-T	T05P-2	SRP1604IM0	C05013-T20P	H6B-T20P	950E1645	5,0
R220.29I-0125MA	SX2035-T05P	CA5010	DOUBLE-T	T05P-2	SRP1604IM0	C05013-T20P	H6B-T20P	MC6S20X50	5,0
R220.29I-8160MA	SX2035-T05P	CA5010	DOUBLE-T	T05P-2	SRP1604IM0	C05013-T20P	H6B-T20P	–	5,0

Please check availability in current price and stock-list

Torque keys, see page 710

R217/220.29-08 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	RPKT1605M0T-8-M12 MP2501	3,0	0,34	0,42	0,65	0,95
P2	RPKT1605M0T-8-M12 MP2501	3,0	0,34	0,42	0,70	1,0
P3	RPKT1605M0T-8-M12 MP2501	3,0	0,32	0,40	0,65	0,90
P4	RPKT1605M0T-8-M12 MP2501	3,0	0,32	0,40	0,65	0,90
P5	RPKT1605M0T-8-M12 MP2501	3,0	0,32	0,38	0,60	0,90
P6	RPKT1605M0T-8-M18 MS2500	3,0	0,46	0,55	0,95	1,4
P7	RPKT1605M0T-6-M18 MS2500	3,0	0,46	0,55	0,95	1,4
P8	RPKT1605M0T-6-M18 MS2500	3,0	0,48	0,60	1,0	1,4
P11	RPKT1605M0T-6-M18 MS2500	3,0	0,46	0,55	0,95	1,4
P12	RPKT1605M0T-6-M18 MS2500	2,5	0,32	0,40	0,65	0,90
M1	RPKT1605M0T-8-M12 T350M	3,0	0,34	0,42	0,70	1,0
M2	RPKT1605M0T-8-M12 T350M	3,0	0,32	0,38	0,60	0,90
M3	RPKT1605M0T-8-M12 T350M	2,5	0,25	0,30	0,50	0,70
M4	RPKT1605M0T-8-M12 T350M	1,9	0,22	0,26	0,44	0,60
M5	RPKT1605M0T-8-M12 T350M	1,9	0,22	0,26	0,44	0,60
K1	RPKT1605M0T-8-M18 MK2050	3,0	0,50	0,65	1,0	1,5
K2	RPKT1605M0T-8-M18 MK2050	3,0	0,46	0,60	0,95	1,4
K3	RPKT1605M0T-8-M18 MK2050	3,0	0,46	0,60	0,95	1,4
K4	RPKT1605M0T-8-M18 MK2050	3,0	0,46	0,60	0,95	1,4
K5	RPKT1605M0T-8-M18 MK2050	3,0	0,42	0,50	0,85	1,2
K6	RPKT1605M0T-8-M18 MK2050	3,0	0,46	0,60	0,95	1,4
K7	RPKT1605M0T-8-M18 MK2050	3,0	0,42	0,50	0,85	1,2
N1	RPHT1605M0T-8-ME11 F40M	3,0	0,40	0,50	0,80	1,2
N2	RPHT1605M0T-8-ME11 F40M	3,0	0,40	0,50	0,80	1,2
N3	RPHT1605M0T-8-ME11 F40M	3,0	0,40	0,50	0,80	1,2
N11	RPHT1605M0T-8-ME11 F40M	3,0	0,40	0,50	0,80	1,2
S1	RPKT1605M0T-8-M12 MS2500	1,9	0,22	0,26	0,44	0,60
S2	RPKT1605M0T-8-M12 MS2500	1,9	0,22	0,26	0,44	0,60
S3	RPKT1605M0T-8-M12 MS2500	1,9	0,20	0,25	0,40	0,55
S11	RPHT1605M0T-8-M12 MS2050	2,5	0,25	0,30	0,50	0,70
S12	RPHT1605M0T-8-M12 MS2050	2,5	0,25	0,30	0,50	0,70
S13	RPHT1605M0T-8-M12 MS2050	1,9	0,22	0,26	0,44	0,60
H5	RPKW1605M0T-8-MD20 F15M	2,5	0,36	0,44	0,70	1,0
H8	RPKW1605M0T-8-MD20 F15M	2,5	0,26	0,34	0,55	0,75
H11	RPKW1605M0T-8-MD20 F15M	2,5	0,36	0,44	0,70	1,0
H12	RPKW1605M0T-8-MD20 F15M	2,5	0,26	0,34	0,55	0,75
H21	RPKW1605M0T-8-MD20 F15M	2,5	0,26	0,34	0,55	0,75

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R217/220.29-08 – Cutting data v_c = (m/min)

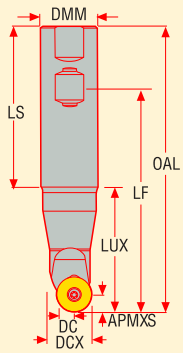
	MP1501				MP2050				MP2501				T350M				F40M			
SMG	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%
P1	300	405	450	470	295	400	450	470	265	355	400	420	260	355	400	420	230	305	350	365
P2	295	395	440	460	285	380	440	450	260	350	390	405	255	340	390	400	220	295	340	350
P3	255	340	385	405	250	340	385	395	225	300	340	360	225	300	345	350	195	260	300	305
P4	225	305	345	355	220	300	340	355	200	270	305	315	195	265	300	315	170	230	265	275
P5	220	290	330	340	210	285	325	340	195	260	290	300	190	250	290	300	165	220	250	260
P6	245	330	370	380	240	325	365	380	215	290	330	340	215	290	325	335	185	250	280	295
P7	230	310	350	360	230	305	345	360	205	275	310	320	205	270	305	320	175	235	265	275
P8	215	285	325	340	210	285	325	330	190	250	285	300	190	250	290	295	165	220	250	255
P11	225	300	340	350	220	295	335	350	200	265	300	310	195	265	295	310	170	230	260	270
P12	150	205	225	235	145	200	220	230	135	185	200	210	130	175	195	205	110	155	170	180
M1	—	—	—	—	205	275	315	325	185	250	280	295	195	260	300	310	180	235	275	280
M2	—	—	—	—	170	225	260	270	155	210	235	245	160	215	250	260	145	195	225	235
M3	—	—	—	—	140	190	210	220	130	175	195	200	135	185	200	210	125	165	185	195
M4	—	—	—	—	115	160	165	170	105	145	150	155	110	150	155	165	100	135	140	150
M5	—	—	—	—	95	130	135	140	90	120	125	130	90	125	130	135	80	115	120	125
K1	230	310	350	365	230	300	350	360	205	275	310	320	200	270	310	320	175	235	270	275
K2	205	275	315	325	200	270	310	320	185	245	275	285	180	240	275	285	155	210	240	250
K3	175	235	265	275	170	230	260	270	155	210	235	240	150	205	230	240	130	175	200	210
K4	165	225	255	260	160	220	250	260	150	200	225	230	145	195	220	230	125	170	190	200
K5	100	135	155	160	100	135	150	160	90	120	140	140	90	120	135	140	75	105	115	125
K6	145	195	225	230	145	190	220	230	130	175	195	205	125	170	195	205	110	150	170	175
K7	130	175	200	205	130	170	195	205	115	155	175	180	115	150	175	180	100	130	150	160
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1275	1750	1950	2025
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	520	710	790	820
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	345	470	530	550
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	395	540	600	630
S1	—	—	—	—	55	75	80	85	—	—	—	—	50	70	75	75	46	65	65	70
S2	—	—	—	—	45	60	65	65	—	—	—	—	41	55	60	60	37	50	55	55
S3	—	—	—	—	39	55	55	60	—	—	—	—	36	50	50	55	33	45	47	49
S11	—	—	—	—	75	105	110	120	—	—	—	—	70	95	100	105	60	85	95	100
S12	—	—	—	—	50	70	75	80	—	—	—	—	47	65	70	75	43	60	65	70
S13	—	—	—	—	31	43	45	47	—	—	—	—	28	40	41	43	26	36	37	39
H5	50	70	75	80	44	60	65	70	41	55	60	65	43	60	65	70	37	50	55	60
H8	55	75	80	85	47	65	70	75	44	60	65	70	46	65	70	70	40	55	60	65
H11	65	85	95	100	55	75	85	90	50	70	75	80	55	75	85	85	48	65	70	75
H12	100	135	145	150	95	130	140	145	85	120	130	135	85	115	125	130	70	100	110	110
H21	55	75	80	85	47	65	70	75	44	60	65	70	46	65	70	70	40	55	60	65

	MK2050				MM4500				MS2050				MS2500			
SMG	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%
P1	265	350	395	410	185	250	280	295	—	—	—	—	330	440	500	520
P2	255	345	385	400	180	240	275	285	—	—	—	—	320	425	490	500
P3	225	295	335	355	155	210	240	245	—	—	—	—	280	375	430	440
P4	195	265	300	310	140	185	215	220	—	—	—	—	245	330	380	395
P5	190	255	290	295	130	180	205	210	—	—	—	—	235	315	360	375
P6	215	285	325	335	150	205	230	235	—	—	—	—	270	360	405	420
P7	200	270	305	315	145	190	215	225	195	260	290	305	255	340	385	400
P8	190	250	285	295	130	180	205	210	180	240	275	280	235	315	360	370
P11	195	260	295	305	140	185	210	220	190	250	285	295	245	330	370	385
P12	130	180	200	205	90	125	140	145	125	170	185	195	160	220	245	255
M1	—	—	—	—	155	205	235	245	195	260	300	310	230	305	350	360
M2	—	—	—	—	125	170	195	205	160	215	250	260	190	255	290	300
M3	—	—	—	—	105	145	160	165	135	185	200	210	155	215	235	245
M4	—	—	—	—	85	120	125	130	110	150	155	165	125	175	180	190
M5	—	—	—	—	70	100	100	105	90	125	130	135	105	145	150	160
K1	275	370	415	435	—	—	—	—	—	—	—	—	—	—	—	—
K2	245	330	370	385	—	—	—	—	—	—	—	—	—	—	—	—
K3	210	280	315	325	—	—	—	—	—	—	—	—	—	—	—	—
K4	200	265	300	310	—	—	—	—	—	—	—	—	—	—	—	—
K5	120	165	185	190	—	—	—	—	—	—	—	—	—	—	—	—
K6	175	235	265	275	—	—	—	—	—	—	—	—	—	—	—	—
K7	155	210	240	245	—	—	—	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	—	26	36	38	39	50	70	75	75	60	85	90	90
S2	—	—	—	—	21	29	30	31	41	55	60	60	50	70	70	75
S3	—	—	—	—	18	26	27	28	36	50	50	55	44	60	65	65
S11	—	—	—	—	35	49	50	55	70	95	100	105	85	115	125	130
S12	—	—	—	—	32	45	48	50	47	65	70	75	60	80	85	90
S13	—	—	—	—	19	27	28	29	28	40	41	43	35	48	50	50
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) 364-365
- For complete insert programme, see page(s) 638
- 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							
R217.29-3250.3-10.3.080	Weldon	10,0	50,0	30,0	32,0	140,0	79,0	87,0	9,5	80,0	98,0	3	1,0	6500	RP..2006

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

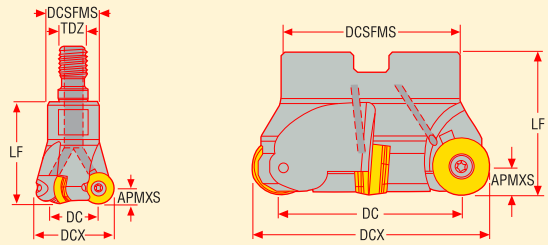
Torque keys, see page 710

Copy milling cutters

R220.29-10

Cutters with round inserts, max. axial cutting depth 10 mm





- For insert selection and cutting data recommendations, see page(s) 364-365
- For complete insert programme, see page(s) 638
- 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							
R217.29-1640.RE-10.2A	Combimaster	10,0	40,0	20,0	30,0	–	M16	40,0	40,0	60,0	78,0	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	60,0	78,0	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	106,0	124,0	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	140,0	158,0	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	140,0	158,0	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	146,0	164,0	4	0,9	5000	RP..2006

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

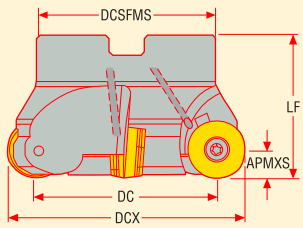
Please check availability in current price and stock-list

Torque keys, see page 710

R220.29-10

Cutters with round inserts, max. axial cutting depth 10 mm





- For insert selection and cutting data recommendations, see page(s) 364-365
- For complete insert programme, see page(s) 638
- 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	LF							
R220.29-0100-10.5MA	Arbor	10,0	100,0	80,0	77,0	32,0	50,0	4,7	180,0	198,0	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	180,0	198,0	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	230,0	248,0	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	230,0	248,0	7	2,7	4000	RP..2006
R220.29-8160-10.6M	Arbor	10,0	160,0	140,0	90,0	40,0	63,0	–	300,0	318,0	6	4,1	3600	RP..2006
R220.29-8200-10.8M	Arbor	10,0	200,0	180,0	130,0	60,0	63,0	–	380,0	398,0	8	6,0	3200	RP..2006
R220.29-8250-10.9M	Arbor	10,0	250,0	230,0	130,0	60,0	63,0	–	480,0	498,0	9	11,1	2900	RP..2006

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 710

R217/220.29-10 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	RPHT2006M0T-ME12 T350M	4,0	0,34	0,42	0,65	0,95
P2	RPHT2006M0T-ME12 T350M	4,0	0,34	0,42	0,70	0,95
P3	RPHT2006M0T-ME12 T350M	4,0	0,32	0,40	0,65	0,90
P4	RPKT2006M0T-M20 MS2500	4,0	0,40	0,50	0,80	1,1
P5	RPKT2006M0T-M20 MS2500	4,0	0,38	0,48	0,80	1,1
P6	RPKT2006M0T-M20 MS2500	4,0	0,38	0,48	0,75	1,1
P7	RPKT2006M0T-M20 MS2500	4,0	0,38	0,48	0,75	1,1
P8	RPKT2006M0T-M20 MS2500	4,0	0,40	0,50	0,80	1,2
P11	RPKT2006M0T-M20 MS2500	4,0	0,38	0,48	0,75	1,1
P12	RPKT2006M0T-M20 MS2500	3,0	0,26	0,32	0,55	0,75
M1	RPHT2006M0T-ME12 T350M	4,0	0,34	0,42	0,70	0,95
M2	RPHT2006M0T-ME12 T350M	4,0	0,32	0,38	0,60	0,90
M3	RPHT2006M0T-ME12 T350M	3,0	0,25	0,30	0,50	0,70
M4	RPHT2006M0T-ME12 T350M	2,5	0,22	0,26	0,44	0,60
M5	RPHT2006M0T-ME12 T350M	2,5	0,22	0,26	0,44	0,60
K1	RPKT2006M0T-M20 MK2050	4,0	0,42	0,55	0,85	1,2
K2	RPKT2006M0T-M20 MK2050	4,0	0,38	0,48	0,80	1,1
K3	RPKT2006M0T-M20 MK2050	4,0	0,38	0,48	0,80	1,1
K4	RPKT2006M0T-M20 MK2050	4,0	0,38	0,48	0,80	1,1
K5	RPKT2006M0T-M20 MK2050	4,0	0,36	0,44	0,70	1,0
K6	RPKT2006M0T-M20 MK2050	4,0	0,38	0,48	0,80	1,1
K7	RPKT2006M0T-M20 MK2050	4,0	0,36	0,44	0,70	1,0
S1	RPHT2006M0T-ME12 MS2500	2,5	0,22	0,26	0,44	0,60
S2	RPHT2006M0T-ME12 MS2500	2,5	0,22	0,26	0,44	0,60
S3	RPKT2006M0T-M15 MS2500	2,5	0,25	0,32	0,50	0,70
S11	RPHT2006M0T-ME12 MS2050	3,0	0,25	0,30	0,50	0,70
S12	RPHT2006M0T-ME12 MS2050	3,0	0,25	0,30	0,50	0,70
S13	RPHT2006M0T-ME12 MS2050	2,5	0,22	0,26	0,44	0,60
H5	RPKW2006M0T-MD22 F15M	3,0	0,38	0,48	0,80	1,1
H8	RPKW2006M0T-MD22 F15M	3,0	0,30	0,36	0,60	0,85
H11	RPKW2006M0T-MD22 F15M	3,0	0,38	0,48	0,80	1,1
H12	RPKT2006M0T-M15 T350M	3,0	0,20	0,25	0,40	0,55
H21	RPKW2006M0T-MD22 F15M	3,0	0,30	0,36	0,60	0,85

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R217/220.29-10 – Cutting data v_c = (m/min)

	MP1501				MP2050				MP2501				T350M				F15M				F30M			
SMG	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%
P1	290	395	440	450	295	400	455	465	255	350	390	400	270	370	420	425	—	—	—	—	225	310	350	355
P2	280	385	420	430	285	390	435	455	250	340	370	380	260	360	400	415	—	—	—	—	220	300	340	345
P3	240	340	370	380	250	340	380	395	215	300	330	335	230	315	350	365	—	—	—	—	190	260	290	305
P4	215	300	325	340	220	300	335	350	190	265	290	300	200	275	310	320	—	—	—	—	170	235	255	265
P5	210	285	320	325	210	290	330	335	185	250	285	290	195	270	300	305	—	—	—	—	160	225	250	255
P6	235	320	360	365	240	325	370	380	210	285	320	325	220	300	340	350	—	—	—	—	180	250	285	290
P7	225	300	340	345	225	310	350	360	200	265	300	305	210	285	320	330	—	—	—	—	170	235	265	275
P8	205	285	310	320	210	285	320	335	180	250	275	280	195	265	295	305	—	—	—	—	160	220	245	255
P11	215	290	330	335	220	300	340	350	190	260	295	295	200	275	310	320	—	—	—	—	165	230	260	270
P12	150	205	220	225	145	205	220	225	130	180	195	200	135	190	200	210	—	—	—	—	110	155	165	175
M1	—	—	—	—	205	280	310	325	180	245	265	275	200	275	305	320	—	—	—	—	175	240	275	280
M2	—	—	—	—	170	235	265	265	150	205	230	230	165	230	260	265	—	—	—	—	145	200	225	230
M3	—	—	—	—	145	200	210	220	125	175	185	190	140	195	210	215	—	—	—	—	125	170	180	185
M4	—	—	—	—	115	160	165	170	100	145	145	150	110	160	160	170	—	—	—	—	95	135	140	145
M5	—	—	—	—	95	135	135	140	85	120	120	125	95	130	135	140	—	—	—	—	80	115	120	120
K1	225	305	330	340	225	310	345	360	200	270	295	300	—	—	—	—	150	210	235	240	175	235	270	275
K2	200	270	305	310	200	275	310	315	175	240	270	275	—	—	—	—	140	190	210	215	155	210	240	240
K3	170	230	260	260	170	235	265	265	150	200	230	230	—	—	—	—	120	160	175	180	130	180	200	205
K4	160	220	245	250	160	225	250	255	145	195	220	220	—	—	—	—	115	155	170	170	125	170	195	195
K5	100	135	150	155	100	135	155	155	85	120	130	140	—	—	—	—	70	95	105	105	75	105	120	120
K6	140	190	215	220	140	195	220	225	125	170	195	195	—	—	—	—	100	135	150	150	110	150	170	170
K7	125	170	190	200	130	175	195	200	110	150	170	175	—	—	—	—	90	120	135	135	95	135	150	155
S1	—	—	—	—	55	80	80	85	—	—	—	—	50	75	75	80	—	—	—	—	45	65	65	70
S2	—	—	—	—	44	65	65	65	—	—	—	—	42	60	60	65	—	—	—	—	36	50	55	55
S3	—	—	—	—	39	55	55	60	—	—	—	—	37	50	55	55	—	—	—	—	32	45	46	48
S11	—	—	—	—	75	105	110	115	—	—	—	—	70	100	105	110	—	—	—	—	60	85	90	95
S12	—	—	—	—	50	75	75	80	—	—	—	—	49	70	75	75	—	—	—	—	36	50	55	55
S13	—	—	—	—	31	44	45	47	—	—	—	—	29	41	43	44	—	—	—	—	21	30	31	32
H5	49	70	75	75	44	60	65	70	40	55	60	60	45	60	65	70	35	48	50	50	37	50	55	55
H8	55	75	80	80	47	65	70	75	42	60	65	65	48	65	70	75	37	55	55	55	39	55	60	60
H11	60	85	95	95	55	80	85	85	50	70	75	75	55	80	85	90	44	60	65	65	47	65	70	75
H12	95	135	140	145	95	130	140	145	85	120	125	130	85	120	130	135	65	95	100	100	70	100	110	110
H21	55	75	80	80	47	65	70	75	42	60	65	65	48	65	70	75	37	55	55	55	39	55	60	60

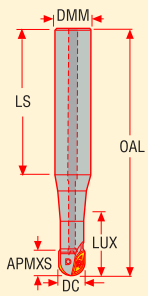
	F40M				MK2050				MM4500				MS2050				MS2500			
SMG	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%	100%	30%	10%	5%
P1	235	320	365	370	275	385	420	435	190	260	295	300	255	355	400	410	335	460	520	530
P2	230	315	345	360	270	360	410	420	185	255	280	295	250	345	380	395	330	450	500	520
P3	200	275	305	315	235	320	360	365	160	220	245	255	220	300	335	345	285	395	440	455
P4	175	240	270	280	205	280	315	330	140	195	215	225	195	265	295	305	255	345	385	400
P5	170	235	260	265	200	275	300	315	135	190	215	215	185	255	290	290	240	335	380	380
P6	190	260	295	305	225	305	345	350	155	210	240	245	210	285	325	335	275	375	425	435
P7	180	245	280	285	210	290	325	330	145	200	225	230	200	270	305	315	260	355	400	410
P8	170	230	255	265	195	270	300	305	135	185	210	215	185	250	280	290	240	330	370	380
P11	175	240	270	280	205	280	315	325	145	195	220	225	195	265	295	305	255	345	390	400
P12	115	165	175	180	140	195	205	215	95	130	145	145	130	180	195	200	170	235	255	260
M1	185	250	280	290	—	—	—	—	160	215	240	250	200	275	305	320	235	320	355	370
M2	150	210	235	240	—	—	—	—	130	180	205	205	165	230	260	265	195	270	300	305
M3	130	180	190	195	—	—	—	—	110	155	165	170	140	195	210	215	165	230	245	250
M4	100	145	145	155	—	—	—	—	85	125	125	130	110	160	160	170	130	185	190	195
M5	85	120	125	130	—	—	—	—	75	105	105	110	95	130	135	140	110	155	155	165
K1	180	250	275	285	290	390	440	455	—	—	—	—	—	—	—	—	—	—	—	—
K2	160	220	250	250	260	355	390	405	—	—	—	—	—	—	—	—	—	—	—	—
K3	135	185	210	215	220	300	330	345	—	—	—	—	—	—	—	—	—	—	—	—
K4	130	180	200	205	210	285	315	330	—	—	—	—	—	—	—	—	—	—	—	—
K5	80	110	125	125	125	175	195	200	—	—	—	—	—	—	—	—	—	—	—	—
K6	115	155	175	180	185	250	280	290	—	—	—	—	—	—	—	—	—	—	—	—
K7	100	140	155	160	160	225	250	255	—	—	—	—	—	—	—	—	—	—	—	—
S1	47	65	70	70	—	—	—	—	27	38	39	40	50	75	75	80	65	90	90	95
S2	38	55	55	60	—	—	—	—	22	30	31	33	42	60	60	65	50	70	75	75
S3	34	47	49	50	—	—	—	—	19	27	28	29	37	50	55	55	45	65	65	70
S11	65	90	95	100	—	—	—	—	37	50	55	55	70	100	105	110	85	125	130	135
S12	45	65	65	70	—	—	—	—	34	48	50	50	49	70	75	75	60	85	90	90
S13	27	38	39	40	—	—	—	—	20	28	29	30	29	41	43	44	36	50	50	55
H5	39	55	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H8	42	60	65	65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H11	50	70	75	75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H12	75	105	110	115	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H21	42	60	65	65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

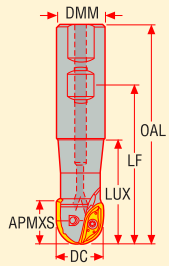
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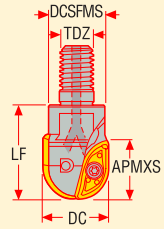
R218.20

90° ball nose cutters dia 12-32









- For insert selection and cutting data recommendations, see page(s) 369-390
- For complete insert programme, see page(s) 656, 669
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						RMPX°				() = No of inserts	
		APMXS	DC	DMM	LF	OAL	LUX			KG		218.20	SPMT
R218.20-1612.0-10.112A	Cylindrical	10,0	12,0	16,0	–	160,0	25,0	45,0	2	0,3	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)	–
R218.20-2520.0-18.120A	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)	–
R218.20-3230.0-26.160A	Cylindrical	27,0	30,0	32,0	–	220,0	73,0	45,0	2	1,1	12500	-150(2)	–
R218.20-3232.0-28.160A	Cylindrical	28,0	32,0	32,0	–	220,0	90,0	45,0	2	1,2	10900	-160(2)	–
R218.20-2520.3-18.070A	Weldon	18,0	20,0	25,0	93,94	126,0	54,0	45,0	2	0,4	20200	-100(2)	–
R218.20-2525.3-22.060A	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	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	Weldon	44,0	30,0	32,0	123,93	160,0	71,0	45,0	4	0,8	12500	-150(2)	SPMT10(2)
R218.20-3232.3-28.070A	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	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	Weldon	54,0	32,0	32,0	123,92	160,0	89,0	45,0	5	0,8	10900	-160(2)	SPMT10(3)

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.. Ø25-30	DOUBLE-T	–	C04009-T15P	H4B-T15P	3,5
R218.20.. Ø32	DOUBLE-T	–	C04011-T15P	H4B-T15P	3,5
R218.20.. Ø30-100A	DOUBLE-T	C03508-T15P	C04009-T15P	H4B-T15P	3,5
R218.20.. Ø32-100A	DOUBLE-T	C03508-T15P	C04011-T15P	H4B-T15P	3,5

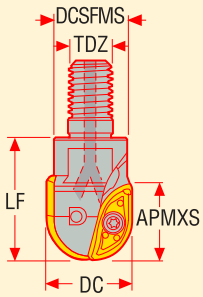
Please check availability in current price and stock-list

Torque keys, see page 710

R218.20

90° ball nose cutters dia 12-50





- For insert selection and cutting data recommendations, see page(s) 369-390
- For complete insert programme, see page(s) 669
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm					RMPX°		KG		() = No of inserts
		APMXS	DC	DCSFMS	TDZ	LF					218.20
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-T20P	5,0
R218.20-..2040	DOUBLE-T	C05013-T20P	H6B-T20P	5,0

Please check availability in current price and stock-list

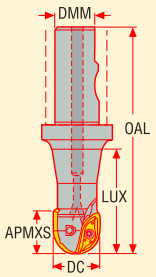
Torque keys, see page 710

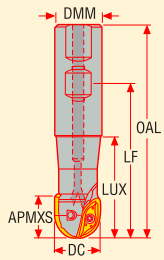
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R218.20

90° ball nose cutters dia 40-50







- For insert selection and cutting data recommendations, see page(s) 369-390
- For complete insert programme, see page(s) 656, 639
- 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	SCE.
R218.20-5050.3-70.150	Weldon	70,0	50,0	50,0	184,87	229,87	149,0	45,0	5	2,9	3700	-250(2)	3
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

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.. Ø50	H6B-T20P	DOUBLE-T	C45011-T20P	C06018-T25P	H6B-T25P	8,0	5,0
R218.20.. Ø40	–	DOUBLE-T	C45011-T20P	C05013-T20P	H6B-T20P	5,0	5,0

Please check availability in current price and stock-list

Torque keys, see page 710

R218.20-060 – Insert selection

SMG		a_p	f_z		
			100%	50%	30%
P1	218.20-060ER-ME03 F40M	6,0	0,042	0,042	0,046
P2	218.20-060ER-ME03 F40M	6,0	0,042	0,042	0,046
P3	218.20-060ER-ME03 F40M	6,0	0,040	0,040	0,044
P4	218.20-060ER-ME03 F40M	6,0	0,040	0,040	0,042
P5	218.20-060ER-ME03 F40M	6,0	0,040	0,040	0,042
P6	218.20-060ER-ME03 F40M	6,0	0,038	0,038	0,042
P7	218.20-060ER-ME03 F40M	6,0	0,038	0,038	0,042
P8	218.20-060ER-ME03 F40M	6,0	0,040	0,040	0,044
P11	218.20-060ER-ME03 F40M	6,0	0,038	0,038	0,042
P12	218.20-060ER-ME03 F40M	6,0	0,026	0,028	0,028
M1	218.20-060ER-ME03 F40M	6,0	0,042	0,042	0,046
M2	218.20-060ER-ME03 F40M	6,0	0,040	0,040	0,042
M3	218.20-060ER-ME03 F40M	6,0	0,032	0,032	0,034
M4	218.20-060ER-ME03 F40M	6,0	0,028	0,028	0,030
M5	218.20-060ER-ME03 F40M	6,0	0,028	0,028	0,030
K1	218.20-060ER-ME03 F40M	6,0	0,042	0,042	0,046
K2	218.20-060ER-ME03 F40M	6,0	0,040	0,040	0,042
K3	218.20-060ER-ME03 F40M	6,0	0,040	0,040	0,042
K4	218.20-060ER-ME03 F40M	6,0	0,040	0,040	0,042
K5	218.20-060ER-ME03 F40M	6,0	0,036	0,036	0,038
K6	218.20-060ER-ME03 F40M	6,0	0,040	0,040	0,042
K7	218.20-060ER-ME03 F40M	6,0	0,036	0,036	0,038
N1	218.20-060ER-ME03 F40M	6,0	0,055	0,055	0,060
N2	218.20-060ER-ME03 F40M	6,0	0,055	0,055	0,060
N3	218.20-060ER-ME03 F40M	6,0	0,055	0,055	0,060
N11	218.20-060ER-ME03 F40M	6,0	0,055	0,055	0,060
S1	218.20-060ER-ME03 F40M	6,0	0,028	0,028	0,030
S2	218.20-060ER-ME03 F40M	6,0	0,028	0,028	0,030
S3	218.20-060ER-ME03 F40M	6,0	0,026	0,026	0,028
S11	218.20-060ER-ME03 MS2050	6,0	0,032	0,032	0,034
S12	218.20-060ER-ME03 MS2050	6,0	0,032	0,032	0,034
S13	218.20-060ER-ME03 MS2050	6,0	0,028	0,028	0,030
H5	218.20-060ER-ME03 F40M	6,0	0,026	0,028	0,028
H8	218.20-060ER-ME03 F40M	6,0	0,020	0,022	0,022
H11	218.20-060ER-ME03 F40M	6,0	0,026	0,028	0,028
H12	218.20-060ER-ME03 F40M	6,0	0,020	0,022	0,022
H21	218.20-060ER-ME03 F40M	6,0	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

R218.20-060 – Insert selection

SMG		a_p	f_z		
			30%	10%	5%
P1	218.20-060ER-ME03 F40M	6,0	0,046	0,070	0,095
P2	218.20-060ER-ME03 F40M	6,0	0,046	0,070	0,095
P3	218.20-060ER-ME03 F40M	6,0	0,044	0,065	0,090
P4	218.20-060ER-ME03 F40M	6,0	0,042	0,065	0,090
P5	218.20-060ER-ME03 F40M	6,0	0,042	0,065	0,090
P6	218.20-060ER-ME03 F40M	6,0	0,042	0,065	0,085
P7	218.20-060ER-ME03 F40M	6,0	0,042	0,065	0,085
P8	218.20-060ER-ME03 F40M	6,0	0,044	0,065	0,090
P11	218.20-060ER-ME03 F40M	6,0	0,042	0,065	0,085
P12	218.20-060ER-ME03 F40M	5,0	0,028	0,044	0,060
M1	218.20-060ER-ME03 F40M	6,0	0,046	0,070	0,095
M2	218.20-060ER-ME03 F40M	6,0	0,042	0,065	0,090
M3	218.20-060ER-ME03 F40M	5,0	0,034	0,050	0,070
M4	218.20-060ER-ME03 F40M	3,5	0,030	0,044	0,060
M5	218.20-060ER-ME03 F40M	3,5	0,030	0,044	0,060
K1	218.20-060ER-ME03 F40M	6,0	0,046	0,070	0,095
K2	218.20-060ER-ME03 F40M	6,0	0,042	0,065	0,090
K3	218.20-060ER-ME03 F40M	6,0	0,042	0,065	0,090
K4	218.20-060ER-ME03 F40M	6,0	0,042	0,065	0,090
K5	218.20-060ER-ME03 F40M	6,0	0,038	0,055	0,080
K6	218.20-060ER-ME03 F40M	6,0	0,042	0,065	0,090
K7	218.20-060ER-ME03 F40M	6,0	0,038	0,055	0,080
N1	218.20-060ER-ME03 F40M	6,0	0,060	0,090	0,12
N2	218.20-060ER-ME03 F40M	6,0	0,060	0,090	0,12
N3	218.20-060ER-ME03 F40M	6,0	0,060	0,090	0,12
N11	218.20-060ER-ME03 F40M	6,0	0,060	0,090	0,12
S1	218.20-060ER-ME03 F40M	3,5	0,030	0,044	0,060
S2	218.20-060ER-ME03 F40M	3,5	0,030	0,044	0,060
S3	218.20-060ER-ME03 F40M	3,5	0,028	0,042	0,055
S11	218.20-060ER-ME03 MS2050	4,0	0,034	0,050	0,070
S12	218.20-060ER-ME03 MS2050	4,0	0,034	0,050	0,070
S13	218.20-060ER-ME03 MS2050	3,5	0,030	0,044	0,060
H5	218.20-060ER-ME03 F40M	5,0	0,028	0,044	0,060
H8	218.20-060ER-ME03 F40M	4,0	0,022	0,034	0,046
H11	218.20-060ER-ME03 F40M	5,0	0,028	0,044	0,060
H12	218.20-060ER-ME03 F40M	4,0	0,022	0,034	0,046
H21	218.20-060ER-ME03 F40M	4,0	0,022	0,034	0,046

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R218.20-060 – Cutting data v_c = (m/min)

	F40M					MS2050				
SMG	100%	50%	30%	10%	5%	100%	50%	30%	10%	5%
P1	310	360	400	465	510	340	400	440	510	560
P2	300	355	390	455	500	330	390	425	500	550
P3	260	305	335	395	430	285	335	370	435	475
P4	230	270	300	350	380	250	295	325	385	420
P5	220	255	285	330	365	240	285	310	365	400
P6	250	290	320	375	410	270	320	350	410	450
P7	235	275	300	350	385	255	300	330	390	425
P8	220	255	280	330	365	240	285	310	365	400
P11	225	265	290	340	375	250	295	320	375	415
P12	140	165	185	210	230	155	185	200	230	255
M1	240	285	310	365	400	265	315	345	405	440
M2	195	230	255	300	325	215	255	280	330	360
M3	155	185	205	235	255	170	205	225	260	280
M4	120	145	155	180	195	135	160	170	195	215
M5	100	120	130	150	165	110	130	145	165	180
K1	240	280	305	360	395	—	—	—	—	—
K2	210	245	270	315	345	—	—	—	—	—
K3	175	205	230	265	290	—	—	—	—	—
K4	170	195	220	255	280	—	—	—	—	—
K5	100	120	130	155	170	—	—	—	—	—
K6	150	175	190	225	245	—	—	—	—	—
K7	130	155	170	200	215	—	—	—	—	—
N1	1800	2125	2325	2750	3025	—	—	—	—	—
N2	730	850	940	1100	1225	—	—	—	—	—
N3	485	570	630	740	810	—	—	—	—	—
N11	550	650	720	850	930	—	—	—	—	—
S1	55	65	75	85	90	60	75	80	90	100
S2	46	55	60	65	75	50	60	65	75	80
S3	40	47	50	60	65	43	50	55	65	70
S11	80	95	105	120	130	90	105	115	130	145
S12	55	65	70	80	90	60	70	80	90	100
S13	32	38	41	47	50	35	42	45	50	55
H5	47	55	60	70	75	—	—	—	—	—
H8	49	55	60	70	80	—	—	—	—	—
H11	60	70	75	90	100	—	—	—	—	—
H12	85	100	110	130	140	—	—	—	—	—
H21	49	55	60	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	0,12	0,14
P2	218.20-080ER-ME04 F40M	0,10	0,11	0,12	0,14
P3	218.20-080ER-ME04 F40M	0,095	0,10	0,12	0,13
P4	218.20-080ER-M04 F25M	0,095	0,10	0,11	0,13
P5	218.20-080ER-M04 F25M	0,090	0,10	0,11	0,13
P6	218.20-080ER-M04 F25M	0,090	0,095	0,11	0,12
P7	218.20-080ER-M04 F25M	0,090	0,095	0,11	0,12
P8	218.20-080ER-M04 F25M	0,095	0,10	0,12	0,13
P11	218.20-080ER-M04 F25M	0,090	0,095	0,11	0,12
P12	218.20-080ER-M04 F25M	0,060	0,065	0,075	0,085
M1	218.20-080ER-ME04 F40M	0,10	0,11	0,12	0,14
M2	218.20-080ER-ME04 F40M	0,090	0,10	0,11	0,13
M3	218.20-080ER-ME04 F40M	0,075	0,080	0,090	0,10
M4	218.20-080ER-ME04 F40M	0,065	0,070	0,080	0,085
M5	218.20-080ER-M04 F40M	0,065	0,070	0,080	0,085
K1	218.20-080ER-M04 F25M	0,10	0,11	0,12	0,14
K2	218.20-080ER-M04 F25M	0,090	0,10	0,11	0,13
K3	218.20-080ER-M04 F25M	0,090	0,10	0,11	0,13
K4	218.20-080ER-M04 F25M	0,090	0,10	0,11	0,13
K5	218.20-080ER-M04 F25M	0,080	0,090	0,10	0,11
K6	218.20-080ER-M04 F25M	0,090	0,10	0,11	0,13
K7	218.20-080ER-M04 F25M	0,080	0,090	0,10	0,11
N1	218.20-080ER-ME04 F40M	0,13	0,14	0,16	0,18
N2	218.20-080ER-ME04 F40M	0,13	0,14	0,16	0,18
N3	218.20-080ER-ME04 F40M	0,13	0,14	0,16	0,18
N11	218.20-080ER-ME04 F40M	0,13	0,14	0,16	0,18
S1	218.20-080ER-ME04 T350M	0,065	0,070	0,080	0,085
S2	218.20-080ER-ME04 T350M	0,065	0,070	0,080	0,085
S3	218.20-080ER-ME04 T350M	0,060	0,065	0,075	0,080
S11	218.20-080ER-ME04 MS2050	0,042	0,046	0,050	0,055
S12	218.20-080ER-ME04 MS2050	0,042	0,046	0,050	0,055
S13	218.20-080ER-ME04 MS2050	0,038	0,040	0,044	0,050
H5	218.20-080ER-M04 F25M	0,060	0,065	0,075	0,085
H8	218.20-080ER-M04 F25M	0,048	0,050	0,060	0,065
H11	218.20-080ER-M04 F25M	0,060	0,065	0,075	0,085
H12	218.20-080ER-M04 F25M	0,048	0,050	0,060	0,065
H21	218.20-080ER-M04 F25M	0,048	0,050	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	0,18
P2	218.20-080ER-ME04 F40M	0,14	0,15	0,16	0,18
P3	218.20-080ER-ME04 F40M	0,13	0,14	0,16	0,17
P4	218.20-080ER-M04 F25M	0,13	0,14	0,15	0,17
P5	218.20-080ER-M04 F25M	0,13	0,14	0,15	0,17
P6	218.20-080ER-M04 F25M	0,12	0,14	0,15	0,16
P7	218.20-080ER-M04 F25M	0,12	0,14	0,15	0,16
P8	218.20-080ER-M04 F25M	0,13	0,14	0,16	0,17
P11	218.20-080ER-M04 F25M	0,12	0,14	0,15	0,16
P12	218.20-080ER-M04 F25M	0,085	0,095	0,10	0,11
M1	218.20-080ER-ME04 F40M	0,14	0,15	0,16	0,18
M2	218.20-080ER-ME04 F40M	0,13	0,14	0,15	0,17
M3	218.20-080ER-ME04 F40M	0,10	0,11	0,12	0,13
M4	218.20-080ER-ME04 F40M	0,085	0,095	0,10	0,12
M5	218.20-080ER-ME04 F40M	0,085	0,095	0,10	0,12
K1	218.20-080ER-M04 F25M	0,14	0,15	0,16	0,18
K2	218.20-080ER-M04 F25M	0,13	0,14	0,15	0,17
K3	218.20-080ER-M04 F25M	0,13	0,14	0,15	0,17
K4	218.20-080ER-M04 F25M	0,13	0,14	0,15	0,17
K5	218.20-080ER-M04 F25M	0,11	0,12	0,13	0,15
K6	218.20-080ER-M04 F25M	0,13	0,14	0,15	0,17
K7	218.20-080ER-M04 F25M	0,11	0,12	0,13	0,15
N1	218.20-080ER-ME04 F40M	0,18	0,19	0,22	0,24
N2	218.20-080ER-ME04 F40M	0,18	0,19	0,22	0,24
N3	218.20-080ER-ME04 F40M	0,18	0,19	0,22	0,24
N11	218.20-080ER-ME04 F40M	0,18	0,19	0,22	0,24
S1	218.20-080ER-ME04 T350M	0,085	0,095	0,10	0,12
S2	218.20-080ER-ME04 T350M	0,085	0,095	0,10	0,12
S3	218.20-080ER-ME04 T350M	0,080	0,090	0,095	0,11
S11	218.20-080ER-ME04 MS2050	0,055	0,065	0,070	0,075
S12	218.20-080ER-ME04 MS2050	0,055	0,065	0,070	0,075
S13	218.20-080ER-ME04 MS2050	0,050	0,055	0,060	0,065
H5	218.20-080ER-M04 F25M	0,085	0,095	0,10	0,11
H8	218.20-080ER-M04 F25M	0,065	0,070	0,075	0,085
H11	218.20-080ER-M04 F25M	0,085	0,095	0,10	0,11
H12	218.20-080ER-M04 F25M	0,065	0,070	0,075	0,085
H21	218.20-080ER-M04 F25M	0,065	0,070	0,075	0,085

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R218.20-080 – Cutting data v_c = (m/min)

	T350M					F25M					F40M					MM4500					MS2050				
SMG	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	400	440	485	265	345	370	410	450	250	320	350	385	420	195	255	275	305	330	310	400	425	470	510
P2	280	360	390	430	470	260	335	360	400	435	240	315	340	375	410	190	245	265	295	320	300	390	415	455	495
P3	240	315	335	370	405	225	295	310	345	375	210	275	290	320	350	165	215	230	255	275	260	335	360	395	435
P4	215	280	300	330	355	200	260	280	305	330	185	245	260	285	310	145	190	205	225	245	230	300	315	350	380
P5	205	265	285	315	345	190	245	265	295	320	180	230	250	275	300	140	180	195	215	240	220	285	300	335	365
P6	230	305	320	355	390	215	280	300	330	360	200	265	280	310	340	160	205	220	240	265	250	320	340	375	410
P7	220	285	305	335	370	205	265	280	310	340	190	250	265	290	320	150	195	210	230	250	235	300	320	355	385
P8	205	265	280	310	340	190	245	260	290	315	175	230	245	270	295	140	180	195	215	235	215	280	300	330	365
P11	210	275	295	325	355	195	255	275	300	330	185	240	255	285	310	145	190	200	220	245	225	295	310	345	375
P12	135	180	190	205	225	125	165	175	190	210	120	155	165	180	195	95	125	130	140	155	140	185	195	215	235
M1	215	280	300	330	365	—	—	—	—	—	195	255	275	300	330	165	210	230	255	275	240	315	335	365	400
M2	175	230	245	270	300	—	—	—	—	—	160	210	225	245	270	135	175	190	205	230	200	255	270	300	330
M3	140	185	195	215	235	—	—	—	—	—	130	170	180	195	215	110	140	150	165	180	155	205	215	235	260
M4	110	145	150	170	185	—	—	—	—	—	100	135	135	150	165	85	110	115	130	140	120	160	165	180	200
M5	95	120	125	140	150	—	—	—	—	—	85	110	115	125	140	70	95	95	105	115	100	130	135	150	165
K1	—	—	—	—	—	205	265	285	315	345	190	250	270	295	325	—	—	—	—	—	—	—	—	—	—
K2	—	—	—	—	—	180	235	255	280	305	170	220	235	260	285	—	—	—	—	—	—	—	—	—	—
K3	—	—	—	—	—	155	200	215	235	260	145	185	200	220	245	—	—	—	—	—	—	—	—	—	—
K4	—	—	—	—	—	145	190	205	225	245	135	180	190	210	230	—	—	—	—	—	—	—	—	—	—
K5	—	—	—	—	—	90	115	125	140	150	85	110	115	130	140	—	—	—	—	—	—	—	—	—	—
K6	—	—	—	—	—	130	165	180	200	220	120	155	170	185	205	—	—	—	—	—	—	—	—	—	—
K7	—	—	—	—	—	115	150	160	175	190	105	140	150	165	180	—	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	1425	1850	2000	2175	2400	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	570	750	800	880	970	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	385	500	540	590	640	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	440	570	610	670	740	—	—	—	—	—	—	—	—	—	—
S1	50	70	70	80	85	50	65	70	75	85	48	60	65	70	75	26	34	35	39	42	55	75	75	85	90
S2	42	55	55	65	70	41	55	55	60	65	38	50	50	55	60	21	27	28	31	34	46	60	60	70	75
S3	37	48	49	55	60	36	47	48	55	60	34	44	45	50	55	18	24	25	27	30	40	50	55	60	65
S11	75	95	100	110	120	70	95	95	105	115	65	85	90	100	110	36	48	49	55	60	80	105	110	120	130
S12	50	65	70	75	80	49	65	65	75	80	46	60	60	70	75	33	44	46	50	55	55	70	75	85	90
S13	29	38	39	44	48	29	37	38	43	47	27	35	36	40	44	20	26	26	29	32	32	42	43	47	50
H5	46	60	60	70	75	42	55	60	65	70	40	50	55	60	65	—	—	—	—	—	—	—	—	—	—
H8	48	65	65	70	80	44	60	60	65	70	42	55	55	65	70	—	—	—	—	—	—	—	—	—	—
H11	60	75	80	85	95	55	70	75	80	90	50	65	70	75	85	—	—	—	—	—	—	—	—	—	—
H12	85	115	115	130	140	80	105	110	120	130	75	100	100	110	120	—	—	—	—	—	—	—	—	—	—
H21	48	65	65	70	80	44	60	60	65	70	42	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	0,15
P3	218.20-100ER-ME05 F40M	0,10	0,11	0,12	0,14
P4	218.20-100ER-M05 F25M	0,095	0,11	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	0,12	0,13
P7	218.20-100ER-M05 F25M	0,095	0,10	0,12	0,13
P8	218.20-100ER-M05 F25M	0,10	0,11	0,12	0,14
P11	218.20-100ER-M05 F25M	0,095	0,10	0,12	0,13
P12	218.20-100ER-M05 F25M	0,060	0,065	0,080	0,090
M1	218.20-100ER-ME05 F40M	0,10	0,11	0,13	0,15
M2	218.20-100ER-ME05 F40M	0,095	0,10	0,12	0,13
M3	218.20-100ER-ME05 F40M	0,075	0,080	0,095	0,11
M4	218.20-100ER-ME05 F40M	0,065	0,070	0,080	0,090
M5	218.20-100ER-M05 F40M	0,065	0,070	0,080	0,090
K1	218.20-100ER-M05 F25M	0,10	0,11	0,13	0,15
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	0,095	0,11	0,12
K6	218.20-100ER-M05 F25M	0,095	0,10	0,12	0,13
K7	218.20-100ER-M05 F25M	0,085	0,095	0,11	0,12
N1	218.20-100ER-ME05 F40M	0,13	0,14	0,17	0,19
N2	218.20-100ER-ME05 F40M	0,13	0,14	0,17	0,19
N3	218.20-100ER-ME05 F40M	0,13	0,14	0,17	0,19
N11	218.20-100ER-ME05 F40M	0,13	0,14	0,17	0,19
S1	218.20-100ER-ME05 F40M	0,065	0,070	0,080	0,090
S2	218.20-100ER-ME05 F40M	0,065	0,070	0,080	0,090
S3	218.20-100ER-ME05 F40M	0,060	0,065	0,075	0,085
S11	218.20-100ER-ME05 MS2050	0,050	0,055	0,065	0,075
S12	218.20-100ER-ME05 MS2050	0,050	0,055	0,065	0,075
S13	218.20-100ER-ME05 MS2050	0,048	0,050	0,060	0,065
H5	218.20-100ER-M05 F25M	0,060	0,065	0,080	0,090
H8	218.20-100ER-M05 F25M	0,048	0,050	0,060	0,070
H11	218.20-100ER-M05 F25M	0,060	0,065	0,080	0,090
H12	218.20-100ER-M05 F25M	0,048	0,050	0,060	0,070
H21	218.20-100ER-M05 F25M	0,048	0,050	0,060	0,070

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/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	0,16	0,17	0,19
P2	218.20-100ER-ME05 F40M	0,15	0,16	0,17	0,19
P3	218.20-100ER-ME05 F40M	0,14	0,15	0,16	0,18
P4	218.20-100ER-M05 F25M	0,13	0,15	0,16	0,18
P5	218.20-100ER-M05 F25M	0,13	0,15	0,16	0,17
P6	218.20-100ER-M05 F25M	0,13	0,14	0,16	0,17
P7	218.20-100ER-M05 F25M	0,13	0,14	0,16	0,17
P8	218.20-100ER-M05 F25M	0,14	0,15	0,16	0,18
P11	218.20-100ER-M05 F25M	0,13	0,14	0,16	0,17
P12	218.20-100ER-M05 F25M	0,090	0,10	0,11	0,12
M1	218.20-100ER-ME05 F40M	0,15	0,16	0,17	0,19
M2	218.20-100ER-ME05 F40M	0,13	0,15	0,16	0,17
M3	218.20-100ER-ME05 F40M	0,11	0,12	0,13	0,14
M4	218.20-100ER-ME05 F40M	0,090	0,10	0,11	0,12
M5	218.20-100ER-ME05 F40M	0,090	0,10	0,11	0,12
K1	218.20-100ER-M05 F25M	0,15	0,16	0,17	0,19
K2	218.20-100ER-M05 F25M	0,13	0,15	0,16	0,17
K3	218.20-100ER-M05 F25M	0,13	0,15	0,16	0,17
K4	218.20-100ER-M05 F25M	0,13	0,15	0,16	0,17
K5	218.20-100ER-M05 F25M	0,12	0,13	0,14	0,16
K6	218.20-100ER-M05 F25M	0,13	0,15	0,16	0,17
K7	218.20-100ER-M05 F25M	0,12	0,13	0,14	0,16
N1	218.20-100ER-ME05 F40M	0,19	0,20	0,22	0,25
N2	218.20-100ER-ME05 F40M	0,19	0,20	0,22	0,25
N3	218.20-100ER-ME05 F40M	0,19	0,20	0,22	0,25
N11	218.20-100ER-ME05 F40M	0,19	0,20	0,22	0,25
S1	218.20-100ER-ME05 F40M	0,090	0,10	0,11	0,12
S2	218.20-100ER-ME05 F40M	0,090	0,10	0,11	0,12
S3	218.20-100ER-ME05 F40M	0,085	0,095	0,10	0,11
S11	218.20-100ER-ME05 MS2050	0,075	0,085	0,090	0,10
S12	218.20-100ER-ME05 MS2050	0,075	0,085	0,090	0,10
S13	218.20-100ER-ME05 MS2050	0,065	0,070	0,080	0,085
H5	218.20-100ER-M05 F25M	0,090	0,10	0,11	0,12
H8	218.20-100ER-M05 F25M	0,070	0,075	0,080	0,090
H11	218.20-100ER-M05 F25M	0,090	0,10	0,11	0,12
H12	218.20-100ER-M05 F25M	0,070	0,075	0,080	0,090
H21	218.20-100ER-M05 F25M	0,070	0,075	0,080	0,090

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R218.20-100 – Cutting data v_c = (m/min)

	F25M					F40M					MM4500					MS2050				
SMG	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%
P1	260	340	360	400	430	240	310	330	365	395	195	250	265	295	320	280	365	390	430	465
P2	255	330	350	390	420	230	300	320	355	385	185	245	260	290	310	270	355	375	420	455
P3	215	285	305	340	370	200	260	280	310	340	160	210	225	250	275	235	310	330	360	395
P4	195	250	270	300	325	175	230	245	275	300	145	185	200	220	240	210	270	290	325	350
P5	185	245	255	285	310	170	225	235	260	285	135	180	190	210	230	200	260	280	310	335
P6	205	275	290	320	350	190	250	265	290	320	155	205	215	235	260	225	290	310	345	380
P7	195	260	275	300	330	180	235	250	275	300	145	190	200	225	245	215	275	295	325	355
P8	185	240	255	285	310	165	220	235	260	285	135	175	190	210	230	200	260	280	305	335
P11	190	250	265	295	320	175	230	245	270	290	140	185	195	215	235	210	270	285	320	345
P12	130	165	170	185	205	115	155	155	170	185	95	125	125	140	150	135	175	180	200	215
M1	—	—	—	—	—	185	245	260	285	310	160	210	225	245	270	220	285	305	340	365
M2	—	—	—	—	—	150	200	210	235	255	130	175	185	200	220	180	235	250	280	300
M3	—	—	—	—	—	125	165	170	185	205	110	145	145	160	175	150	195	200	220	240
M4	—	—	—	—	—	100	130	130	145	155	85	115	115	125	135	115	150	150	165	180
M5	—	—	—	—	—	85	110	110	120	130	70	95	95	105	115	95	125	125	140	150
K1	200	260	275	305	335	185	240	255	280	305	—	—	—	—	—	—	—	—	—	—
K2	175	230	245	270	295	160	210	225	245	270	—	—	—	—	—	—	—	—	—	—
K3	150	195	205	230	250	135	180	190	210	230	—	—	—	—	—	—	—	—	—	—
K4	140	185	195	220	240	130	170	180	200	220	—	—	—	—	—	—	—	—	—	—
K5	85	110	120	135	145	80	105	110	120	130	—	—	—	—	—	—	—	—	—	—
K6	125	165	175	190	210	115	150	160	175	190	—	—	—	—	—	—	—	—	—	—
K7	110	145	155	170	185	100	130	140	155	170	—	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	1350	1800	1875	2100	2250	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	550	720	760	850	910	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	365	480	510	570	610	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	420	550	580	650	700	—	—	—	—	—	—	—	—	—	—
S1	50	65	65	75	80	47	60	60	65	75	27	34	35	38	42	55	70	70	80	85
S2	41	55	55	60	65	38	49	49	55	60	21	28	28	31	33	44	55	55	65	70
S3	36	47	47	50	55	33	43	43	48	50	19	24	24	27	29	38	50	50	55	60
S11	70	95	95	105	115	65	85	85	95	105	37	48	48	55	60	75	100	100	110	120
S12	49	65	65	70	80	45	60	60	65	70	34	44	45	49	55	55	70	70	75	85
S13	29	37	38	41	45	26	34	34	38	41	20	26	26	29	31	31	40	40	44	48
H5	42	55	55	60	65	39	50	50	55	60	—	—	—	—	—	—	—	—	—	—
H8	44	60	60	65	70	41	55	55	60	65	—	—	—	—	—	—	—	—	—	—
H11	55	70	70	80	85	50	65	65	70	80	—	—	—	—	—	—	—	—	—	—
H12	80	105	105	115	125	75	95	95	105	115	—	—	—	—	—	—	—	—	—	—
H21	44	60	60	65	70	41	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	0,13	0,14
P2	218.20-125ER-ME07 F40M	0,11	0,11	0,13	0,15
P3	218.20-125ER-ME07 F40M	0,10	0,11	0,12	0,14
P4	218.20-125ER-M07 F25M	0,10	0,11	0,12	0,14
P5	218.20-125ER-M07 F25M	0,095	0,10	0,12	0,13
P6	218.20-125ER-M07 F25M	0,095	0,10	0,12	0,13
P7	218.20-125ER-M07 F25M	0,095	0,10	0,12	0,13
P8	218.20-125ER-M07 F25M	0,10	0,11	0,12	0,14
P11	218.20-125ER-M07 F25M	0,095	0,10	0,12	0,13
P12	218.20-125ER-M07 F25M	0,060	0,065	0,080	0,090
M1	218.20-125ER-ME07 F40M	0,11	0,11	0,13	0,15
M2	218.20-125ER-ME07 F40M	0,095	0,10	0,12	0,13
M3	218.20-125ER-ME07 F40M	0,075	0,080	0,095	0,11
M4	218.20-125ER-ME07 F40M	0,065	0,070	0,085	0,095
M5	218.20-125ER-M07 F40M	0,065	0,070	0,085	0,095
K1	218.20-125ER-M07 F25M	0,11	0,11	0,13	0,15
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	0,11	0,12
K6	218.20-125ER-M07 F25M	0,095	0,10	0,12	0,13
K7	218.20-125ER-M07 F25M	0,085	0,095	0,11	0,12
N1	218.20-125ER-ME07 F40M	0,13	0,15	0,17	0,19
N2	218.20-125ER-ME07 F40M	0,13	0,15	0,17	0,19
N3	218.20-125ER-ME07 F40M	0,13	0,15	0,17	0,19
N11	218.20-125ER-ME07 F40M	0,13	0,15	0,17	0,19
S1	218.20-125ER-ME07 F40M	0,065	0,070	0,085	0,095
S2	218.20-125ER-ME07 F40M	0,065	0,070	0,085	0,095
S3	218.20-125ER-ME07 F40M	0,060	0,065	0,075	0,085
S11	218.20-125ER-ME07 MS2050	0,075	0,080	0,095	0,11
S12	218.20-125ER-ME07 MS2050	0,075	0,080	0,095	0,11
S13	218.20-125ER-ME07 MS2050	0,065	0,070	0,085	0,095
H5	218.20-125ER-M07 F25M	0,060	0,065	0,080	0,090
H8	218.20-125ER-M07 F25M	0,048	0,050	0,060	0,070
H11	218.20-125ER-M07 F25M	0,060	0,065	0,080	0,090
H12	218.20-125ER-M07 F25M	0,048	0,050	0,060	0,070
H21	218.20-125ER-M07 F25M	0,048	0,050	0,060	0,070

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	0,16	0,17	0,19
P2	218.20-125ER-ME07 F40M	0,15	0,16	0,17	0,19
P3	218.20-125ER-ME07 F40M	0,14	0,15	0,16	0,18
P4	218.20-125ER-M07 F25M	0,14	0,15	0,16	0,18
P5	218.20-125ER-M07 F25M	0,13	0,15	0,16	0,18
P6	218.20-125ER-M07 F25M	0,13	0,14	0,16	0,17
P7	218.20-125ER-M07 F25M	0,13	0,14	0,16	0,17
P8	218.20-125ER-M07 F25M	0,14	0,15	0,16	0,18
P11	218.20-125ER-M07 F25M	0,13	0,14	0,16	0,17
P12	218.20-125ER-M07 F25M	0,090	0,10	0,11	0,12
M1	218.20-125ER-ME07 F40M	0,15	0,16	0,17	0,19
M2	218.20-125ER-ME07 F40M	0,13	0,15	0,16	0,18
M3	218.20-125ER-ME07 F40M	0,11	0,12	0,13	0,14
M4	218.20-125ER-ME07 F40M	0,095	0,10	0,11	0,12
M5	218.20-125ER-ME07 F40M	0,095	0,10	0,11	0,12
K1	218.20-125ER-M07 F25M	0,15	0,16	0,17	0,19
K2	218.20-125ER-M07 F25M	0,13	0,15	0,16	0,18
K3	218.20-125ER-M07 F25M	0,13	0,15	0,16	0,18
K4	218.20-125ER-M07 F25M	0,13	0,15	0,16	0,18
K5	218.20-125ER-M07 F25M	0,12	0,13	0,14	0,16
K6	218.20-125ER-M07 F25M	0,13	0,15	0,16	0,18
K7	218.20-125ER-M07 F25M	0,12	0,13	0,14	0,16
N1	218.20-125ER-ME07 F40M	0,19	0,20	0,22	0,25
N2	218.20-125ER-ME07 F40M	0,19	0,20	0,22	0,25
N3	218.20-125ER-ME07 F40M	0,19	0,20	0,22	0,25
N11	218.20-125ER-ME07 F40M	0,19	0,20	0,22	0,25
S1	218.20-125ER-ME07 F40M	0,095	0,10	0,11	0,12
S2	218.20-125ER-ME07 F40M	0,095	0,10	0,11	0,12
S3	218.20-125ER-ME07 F40M	0,085	0,095	0,10	0,11
S11	218.20-125ER-ME07 MS2050	0,11	0,12	0,13	0,14
S12	218.20-125ER-ME07 MS2050	0,11	0,12	0,13	0,14
S13	218.20-125ER-ME07 MS2050	0,095	0,10	0,11	0,12
H5	218.20-125ER-M07 F25M	0,090	0,10	0,11	0,12
H8	218.20-125ER-M07 F25M	0,070	0,075	0,080	0,090
H11	218.20-125ER-M07 F25M	0,090	0,10	0,11	0,12
H12	218.20-125ER-M07 F25M	0,070	0,075	0,080	0,090
H21	218.20-125ER-M07 F25M	0,070	0,075	0,080	0,090

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R218.20-125 – Cutting data v_c = (m/min)

	F25M					F40M					MM4500					MS2050				
SMG	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%
P1	260	340	360	400	435	255	335	355	390	425	205	270	285	320	345	280	365	390	430	470
P2	250	330	350	390	425	245	325	345	380	415	200	265	280	310	335	270	355	380	420	455
P3	220	285	310	340	370	215	280	300	335	365	175	225	245	270	295	235	305	330	365	400
P4	195	250	270	300	325	190	245	265	295	320	155	200	215	240	260	210	270	290	320	350
P5	185	245	260	285	315	180	240	255	280	305	150	195	205	225	250	200	265	280	310	335
P6	210	275	290	320	350	205	270	285	315	345	165	220	230	255	280	225	295	315	345	375
P7	200	260	275	305	330	195	255	270	295	325	155	205	215	240	260	215	280	295	325	355
P8	185	240	260	285	315	180	235	255	280	305	145	190	205	225	250	200	260	280	310	335
P11	190	250	265	295	320	190	245	260	290	315	150	200	210	235	255	205	270	285	315	345
P12	125	165	170	185	205	125	160	165	185	200	100	130	135	150	160	135	180	185	200	220
M1	—	—	—	—	—	195	260	275	310	335	170	225	240	265	290	215	285	305	340	370
M2	—	—	—	—	—	165	215	230	250	275	140	185	195	215	235	180	235	250	275	305
M3	—	—	—	—	—	135	175	180	200	220	115	150	155	175	190	150	195	200	220	245
M4	—	—	—	—	—	105	140	140	155	170	90	120	120	135	145	115	155	155	170	185
M5	—	—	—	—	—	90	115	115	130	140	75	100	100	110	120	95	130	130	140	155
K1	195	265	280	310	335	195	255	275	305	330	—	—	—	—	—	—	—	—	—	—
K2	175	230	245	270	295	175	225	240	265	290	—	—	—	—	—	—	—	—	—	—
K3	150	195	210	230	250	145	190	205	225	245	—	—	—	—	—	—	—	—	—	—
K4	145	190	200	220	240	140	185	195	215	235	—	—	—	—	—	—	—	—	—	—
K5	85	115	120	135	145	85	110	120	130	140	—	—	—	—	—	—	—	—	—	—
K6	125	165	175	195	210	125	160	170	190	205	—	—	—	—	—	—	—	—	—	—
K7	110	145	155	170	185	110	140	150	170	180	—	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	1475	1900	2025	2250	2475	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	590	760	820	910	1000	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	395	510	550	610	670	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	450	580	620	690	760	—	—	—	—	—	—	—	—	—	—
S1	50	65	65	75	80	50	65	65	70	80	28	37	37	41	45	55	70	70	80	85
S2	41	55	55	60	65	40	50	50	60	65	23	30	30	33	36	44	60	60	65	70
S3	36	47	47	50	55	35	46	46	50	55	20	26	26	29	31	38	50	50	55	60
S11	70	90	95	105	115	70	90	90	100	110	39	50	50	55	65	75	100	100	110	125
S12	49	65	65	70	80	48	60	65	70	75	36	47	48	55	60	55	70	70	75	85
S13	29	37	37	42	45	28	37	37	41	44	21	28	28	31	34	31	40	40	45	49
H5	42	55	55	60	70	41	55	55	60	65	—	—	—	—	—	—	—	—	—	—
H8	44	60	60	65	70	43	55	60	65	70	—	—	—	—	—	—	—	—	—	—
H11	55	70	70	80	85	55	70	70	75	85	—	—	—	—	—	—	—	—	—	—
H12	80	105	105	120	130	80	100	105	115	125	—	—	—	—	—	—	—	—	—	—
H21	44	60	60	65	70	43	55	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	0,15	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	0,14	0,16	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	0,090	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	0,14	0,16	0,18
M3	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,10	0,12	0,13	0,15
M4	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,090	0,10	0,11	0,13
M5	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,090	0,10	0,11	0,13
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	0,14	0,16	0,18
K3	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,13	0,14	0,16	0,18
K4	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,13	0,14	0,16	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	0,14	0,16	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	0,22	0,26
N2	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,19	0,20	0,22	0,26
N3	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,19	0,20	0,22	0,26
N11	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,19	0,20	0,22	0,26
S1	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,090	0,10	0,11	0,13
S2	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,090	0,10	0,11	0,13
S3	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,085	0,090	0,11	0,12
S11	218.20-150ER-ME07 MS2050	SPMT100408T-M08 F40M	0,075	0,080	0,090	0,10
S12	218.20-150ER-ME07 MS2050	SPMT100408T-M08 F40M	0,075	0,080	0,090	0,10
S13	218.20-150ER-ME07 MS2050	SPMT100408T-M08 F40M	0,065	0,070	0,080	0,090

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	0,22	0,22	0,25
P4	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,19	0,20	0,22	0,25
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	0,22	0,22	0,25
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	0,14	0,15	0,16
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	0,18	0,19
M4	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,13	0,14	0,15	0,17
M5	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,13	0,14	0,15	0,17
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	0,20	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	0,20	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	0,13	0,14	0,15	0,17
S2	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,13	0,14	0,15	0,17
S3	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,12	0,13	0,14	0,16
S11	218.20-150ER-ME07 MS2050	SPMT100408T-M08 F40M	0,10	0,11	0,12	0,14
S12	218.20-150ER-ME07 MS2050	SPMT100408T-M08 F40M	0,10	0,11	0,12	0,14
S13	218.20-150ER-ME07 MS2050	SPMT100408T-M08 F40M	0,090	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

R218.20-150 – Cutting data v_c = (m/min)

	F40M					MM4500					MS2050				
SMG	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%
P1	220	290	315	345	375	170	225	240	265	285	270	350	375	415	450
P2	215	285	300	335	365	165	215	230	255	280	255	340	365	405	435
P3	190	250	265	290	320	145	190	200	220	245	225	295	320	350	385
P4	165	220	235	255	280	125	165	180	195	215	200	260	280	310	335
P5	160	210	225	250	270	120	160	170	190	205	190	255	265	295	320
P6	180	235	250	280	300	135	180	190	215	230	215	285	300	330	360
P7	170	220	235	265	285	130	170	180	200	215	205	270	285	315	340
P8	160	210	220	245	270	120	160	170	185	205	190	245	265	295	320
P11	165	215	230	255	275	125	165	175	195	210	200	260	275	305	330
P12	110	145	150	165	180	85	110	115	125	135	130	170	175	195	210
M1	175	230	245	270	295	140	185	195	220	240	205	275	290	325	350
M2	145	190	200	225	240	115	155	165	185	195	175	225	240	265	290
M3	120	160	165	180	195	100	130	135	145	160	145	185	190	210	235
M4	95	125	125	140	150	75	100	100	110	120	110	145	145	165	180
M5	80	105	105	115	125	65	85	85	95	100	95	120	125	135	150
K1	170	225	240	265	290	—	—	—	—	—	—	—	—	—	—
K2	150	200	215	235	255	—	—	—	—	—	—	—	—	—	—
K3	130	170	180	200	215	—	—	—	—	—	—	—	—	—	—
K4	120	160	170	190	205	—	—	—	—	—	—	—	—	—	—
K5	75	100	105	115	125	—	—	—	—	—	—	—	—	—	—
K6	105	140	150	170	180	—	—	—	—	—	—	—	—	—	—
K7	95	125	135	150	160	—	—	—	—	—	—	—	—	—	—
N1	1275	1675	1775	1975	2150	—	—	—	—	—	—	—	—	—	—
N2	510	680	720	790	870	—	—	—	—	—	—	—	—	—	—
N3	340	450	480	530	580	—	—	—	—	—	—	—	—	—	—
N11	390	520	550	600	660	—	—	—	—	—	—	—	—	—	—
S1	44	60	60	65	70	24	31	31	34	37	50	70	70	75	85
S2	36	47	47	50	55	19	25	25	28	30	42	55	55	60	65
S3	31	41	41	45	50	17	22	22	24	26	37	48	49	55	60
S11	60	80	85	90	100	33	44	44	48	55	75	95	95	105	120
S12	43	55	55	65	70	30	40	41	45	49	50	65	65	75	80
S13	25	33	33	36	40	18	23	23	26	28	30	39	39	43	47

R218.20-160 – Insert selection – Roughing

SMG			f_z			
			100%	30%	20%	15%
P1	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,14	0,15	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	0,14	0,17	0,19
P5	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,13	0,14	0,16	0,18
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	0,095	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	0,16	0,18
M3	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,11	0,11	0,13	0,15
M4	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,090	0,10	0,11	0,13
M5	218.20-160ER-M08 F40M	SPMT100408T-M08 F40M	0,090	0,10	0,11	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	0,16	0,18
K3	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,13	0,14	0,16	0,18
K4	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,13	0,14	0,16	0,18
K5	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,12	0,13	0,15	0,16
K6	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,13	0,14	0,16	0,18
K7	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,12	0,13	0,15	0,16
N1	218.20-160ER-ME08 F40M	SPMT100408T-M08 F25M	0,18	0,20	0,22	0,26
N2	218.20-160ER-ME08 F40M	SPMT100408T-M08 F25M	0,18	0,20	0,22	0,26
N3	218.20-160ER-ME08 F40M	SPMT100408T-M08 F25M	0,18	0,20	0,22	0,26
N11	218.20-160ER-ME08 F40M	SPMT100408T-M08 F25M	0,18	0,20	0,22	0,26
S1	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,090	0,10	0,11	0,13
S2	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,090	0,10	0,11	0,13
S3	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,085	0,095	0,11	0,12
S11	218.20-160ER-ME08 MS2050	SPMT100408T-M08 F40M	0,085	0,095	0,10	0,12
S12	218.20-160ER-ME08 MS2050	SPMT100408T-M08 F40M	0,085	0,095	0,10	0,12
S13	218.20-160ER-ME08 MS2050	SPMT100408T-M08 F40M	0,075	0,080	0,090	0,10
H5	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,090	0,095	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	0,095	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_e/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	0,20	0,22	0,25
P4	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,19	0,20	0,22	0,25
P5	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,18	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	0,20	0,22	0,25
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	0,18	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	0,14	0,15	0,17
M5	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,13	0,14	0,15	0,17
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	0,18	0,20	0,22	0,24
K3	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,18	0,20	0,22	0,24
K4	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,18	0,20	0,22	0,24
K5	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,16	0,18	0,20	0,22
K6	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,18	0,20	0,22	0,24
K7	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,16	0,18	0,20	0,22
N1	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,26	0,28	0,30	0,34
N2	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,26	0,28	0,30	0,34
N3	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,26	0,28	0,30	0,34
N11	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,26	0,28	0,30	0,34
S1	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,13	0,14	0,15	0,17
S2	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,13	0,14	0,15	0,17
S3	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,12	0,13	0,14	0,16
S11	218.20-160ER-ME08 MS2050	SPMT100408T-M08 F40M	0,12	0,13	0,14	0,15
S12	218.20-160ER-ME08 MS2050	SPMT100408T-M08 F40M	0,12	0,13	0,14	0,15
S13	218.20-160ER-ME08 MS2050	SPMT100408T-M08 F40M	0,10	0,11	0,12	0,13
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	0,13
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	0,13
H21	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,095	0,10	0,11	0,13

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)

	F25M					F40M					MM4500					MS2050				
SMG	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%
P1	230	300	325	360	390	220	290	315	345	375	180	235	255	280	305	260	340	360	405	435
P2	225	295	310	345	380	215	285	300	335	365	175	230	245	270	295	250	330	350	390	425
P3	195	260	270	300	330	190	250	265	290	320	155	200	215	235	260	220	290	305	340	370
P4	170	225	245	265	290	165	220	235	255	280	135	175	190	210	230	195	255	270	300	330
P5	165	215	230	260	280	160	210	225	250	270	130	170	180	205	220	185	245	265	290	315
P6	185	245	260	290	315	180	235	250	280	300	145	190	205	225	245	210	270	295	325	350
P7	175	230	245	275	295	170	220	240	265	285	135	180	195	215	230	195	255	280	305	330
P8	165	215	230	255	280	160	210	220	245	270	130	170	180	200	220	185	245	260	285	310
P11	170	225	240	265	285	165	215	230	255	275	135	175	185	210	225	190	250	270	295	325
P12	115	150	155	170	185	110	145	150	165	180	90	120	120	135	145	130	170	170	190	205
M1	—	—	—	—	—	175	230	245	270	295	150	200	210	235	255	205	265	285	315	340
M2	—	—	—	—	—	145	190	200	225	240	125	160	175	195	210	165	220	235	260	280
M3	—	—	—	—	—	125	160	165	180	195	105	140	140	155	170	140	185	185	210	225
M4	—	—	—	—	—	95	125	125	140	150	80	110	110	120	130	110	145	145	160	175
M5	—	—	—	—	—	80	105	105	115	125	70	90	90	100	110	90	120	120	130	145
K1	175	235	245	275	300	170	225	240	265	290	—	—	—	—	—	—	—	—	—	—
K2	155	205	220	245	265	150	200	215	235	255	—	—	—	—	—	—	—	—	—	—
K3	130	175	185	210	225	130	170	180	200	215	—	—	—	—	—	—	—	—	—	—
K4	125	165	180	200	215	120	160	170	190	205	—	—	—	—	—	—	—	—	—	—
K5	80	100	110	120	130	75	100	105	115	125	—	—	—	—	—	—	—	—	—	—
K6	110	145	155	175	190	105	140	150	170	180	—	—	—	—	—	—	—	—	—	—
K7	100	130	140	155	170	95	125	135	150	160	—	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	1275	1675	1775	1975	2150	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	510	680	720	790	870	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	340	450	480	530	580	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	390	520	550	610	660	—	—	—	—	—	—	—	—	—	—
S1	46	60	60	65	75	45	60	60	65	70	25	33	33	36	40	50	65	65	75	80
S2	37	49	49	55	60	36	47	47	50	55	20	27	27	29	32	41	55	55	60	65
S3	33	43	43	47	50	32	41	41	45	50	18	23	23	26	28	36	47	47	50	55
S11	65	85	85	95	100	60	80	85	90	100	35	46	47	50	55	70	95	95	105	115
S12	44	60	60	65	70	42	55	55	65	70	32	43	43	47	50	49	65	65	75	80
S13	26	34	34	38	41	25	33	33	36	40	19	25	25	27	30	29	38	38	42	46
H5	38	50	50	55	60	37	48	50	55	60	—	—	—	—	—	—	—	—	—	—
H8	41	55	55	60	65	39	50	50	55	65	—	—	—	—	—	—	—	—	—	—
H11	49	65	65	70	80	47	60	65	70	75	—	—	—	—	—	—	—	—	—	—
H12	75	95	95	105	115	70	90	95	105	115	—	—	—	—	—	—	—	—	—	—
H21	41	55	55	60	65	39	50	50	55	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	0,25	0,28
P2	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,20	0,22	0,25	0,28
P3	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,19	0,20	0,24	0,26
P4	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,19	0,20	0,24	0,26
P5	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,19	0,20	0,22	0,26
P6	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,19	0,20	0,22	0,25
P7	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,19	0,20	0,22	0,25
P8	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,19	0,20	0,24	0,26
P11	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,19	0,20	0,22	0,25
P12	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,12	0,14	0,16	0,17
M1	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,20	0,22	0,25	0,28
M2	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,19	0,20	0,22	0,26
M3	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,15	0,16	0,18	0,20
M4	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,13	0,14	0,16	0,18
M5	218.20-200ER-M10 F40M	SCET120612T-M14 T350M	0,13	0,14	0,16	0,18
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	0,13	0,14	0,16	0,18
S2	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,13	0,14	0,16	0,18
S3	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,12	0,13	0,15	0,17
S11	218.20-200ER-ME10 MS2050	SCET120612T-M14 MS2050	0,10	0,12	0,13	0,15
S12	218.20-200ER-ME10 MS2050	SCET120612T-M14 MS2050	0,10	0,12	0,13	0,15
S13	218.20-200ER-ME10 MS2050	SCET120612T-M14 MS2050	0,090	0,10	0,11	0,13

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	0,36
P4	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,26	0,28	0,32	0,34
P5	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,26	0,28	0,30	0,34
P6	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,25	0,28	0,30	0,34
P7	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,25	0,28	0,30	0,34
P8	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,26	0,30	0,32	0,36
P11	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,25	0,28	0,30	0,34
P12	218.20-200ER-M10 F40M	SCET120612T-M11 MP2501	0,17	0,19	0,20	0,24
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	0,28
M4	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,18	0,20	0,22	0,24
M5	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,18	0,20	0,22	0,24
N1	218.20-200ER-ME10 F40M	SCET120612T-M14 F40M	0,36	0,40	0,44	0,48
N2	218.20-200ER-ME10 F40M	SCET120612T-M14 F40M	0,36	0,40	0,44	0,48
N3	218.20-200ER-ME10 F40M	SCET120612T-M14 F40M	0,36	0,40	0,44	0,48
N11	218.20-200ER-ME10 F40M	SCET120612T-M14 F40M	0,36	0,40	0,44	0,48
S1	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,18	0,20	0,22	0,24
S2	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,18	0,20	0,22	0,24
S3	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,17	0,18	0,20	0,22
S11	218.20-200ER-ME10 MS2050	SCET120612T-M14 MS2050	0,15	0,16	0,17	0,19
S12	218.20-200ER-ME10 MS2050	SCET120612T-M14 MS2050	0,15	0,16	0,17	0,19
S13	218.20-200ER-ME10 MS2050	SCET120612T-M14 MS2050	0,13	0,14	0,15	0,17

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R218.20-200 – 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	285	320	345	165	220	230	260	280	245	320	345	385	415
P2	195	260	280	310	335	160	210	225	250	270	240	315	335	370	405
P3	170	225	240	270	290	140	180	195	220	235	210	275	290	320	355
P4	150	200	215	240	260	125	160	175	195	210	185	240	260	290	310
P5	145	195	205	230	250	120	160	165	185	200	175	230	245	275	295
P6	165	220	230	255	280	135	175	185	205	225	195	260	280	310	340
P7	155	205	220	240	265	125	165	175	195	215	185	245	260	290	320
P8	145	190	205	230	245	115	155	165	185	200	175	230	245	270	295
P11	150	200	210	235	255	120	160	170	190	210	180	235	255	285	310
P12	105	135	140	150	165	85	110	110	125	135	120	160	165	180	195
M1	155	210	225	250	270	135	180	195	215	235	190	255	270	300	325
M2	130	175	185	205	225	115	150	160	175	195	160	210	225	250	265
M3	110	145	150	165	180	95	125	130	145	155	135	175	180	200	215
M4	90	120	115	130	140	75	100	100	110	120	105	140	140	150	165
M5	75	100	95	105	120	65	85	85	95	100	85	115	115	125	140
N1	1150	1525	1600	1800	1975	—	—	—	—	—	—	—	—	—	—
N2	470	620	650	730	800	—	—	—	—	—	—	—	—	—	—
N3	310	410	435	485	530	—	—	—	—	—	—	—	—	—	—
N11	355	470	495	550	610	—	—	—	—	—	—	—	—	—	—
S1	41	55	55	60	65	23	31	31	34	37	49	65	65	70	80
S2	33	44	43	48	55	19	25	25	27	30	39	50	50	55	65
S3	29	39	39	43	46	17	22	22	24	26	35	45	46	50	55
S11	55	75	75	85	90	32	42	43	48	50	65	90	90	100	110
S12	39	50	50	60	65	30	39	40	44	47	47	60	60	70	75
S13	23	31	30	34	37	18	23	23	26	28	27	36	36	40	44

R218.20-250 – Insert selection – Roughing

SMG			f_z			
			100%	30%	20%	15%
P1	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,18	0,18	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 MP2501	0,19	0,20	0,24	0,26
P5	218.20-250TR-M14 F40M	SCET120612T-M11 MP2501	0,19	0,20	0,22	0,26
P6	218.20-250TR-M14 F40M	SCET120612T-M11 MP2501	0,19	0,20	0,22	0,25
P7	218.20-250TR-M14 F40M	SCET120612T-M11 MP2501	0,19	0,20	0,22	0,25
P8	218.20-250TR-M14 F40M	SCET120612T-M11 MP2501	0,20	0,20	0,24	0,26
P11	218.20-250TR-M14 F40M	SCET120612T-M11 MP2501	0,19	0,20	0,22	0,25
P12	218.20-250TR-M14 F40M	SCET120612T-M11 MP2501	0,12	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	0,12	0,14	0,16	0,18
M4	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,11	0,12	0,14	0,15
M5	218.20-250TR-M14 F40M	SCET120612T-M14 T350M	0,13	0,14	0,16	0,18
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	0,11	0,12	0,14	0,15
S2	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,11	0,12	0,14	0,15
S3	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,10	0,11	0,13	0,14
S11	218.20-250ER-ME12 MS2050	SCET120612T-M14 MS2050	0,13	0,14	0,16	0,18
S12	218.20-250ER-ME12 MS2050	SCET120612T-M14 MS2050	0,13	0,14	0,16	0,18
S13	218.20-250ER-ME12 MS2050	SCET120612T-M14 MS2050	0,11	0,12	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	0,32
P2	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,24	0,26	0,28	0,32
P3	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,22	0,25	0,28	0,30
P4	218.20-250TR-M14 F40M	SCET120612T-M11 MP2501	0,26	0,28	0,32	0,34
P5	218.20-250TR-M14 F40M	SCET120612T-M11 MP2501	0,26	0,28	0,30	0,34
P6	218.20-250TR-M14 F40M	SCET120612T-M11 MP2501	0,25	0,28	0,30	0,34
P7	218.20-250TR-M14 F40M	SCET120612T-M11 MP2501	0,25	0,28	0,30	0,34
P8	218.20-250TR-M14 F40M	SCET120612T-M11 MP2501	0,26	0,30	0,32	0,36
P11	218.20-250TR-M14 F40M	SCET120612T-M11 MP2501	0,25	0,28	0,30	0,34
P12	218.20-250TR-M14 F40M	SCET120612T-M11 MP2501	0,17	0,19	0,20	0,24
M1	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,24	0,26	0,28	0,32
M2	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,22	0,24	0,26	0,30
M3	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,18	0,19	0,22	0,24
M4	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,15	0,17	0,18	0,20
M5	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,15	0,17	0,18	0,20
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	0,17	0,18	0,20
S2	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,15	0,17	0,18	0,20
S3	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,14	0,16	0,17	0,19
S11	218.20-250ER-ME12 MS2050	SCET120612T-M14 MS2050	0,18	0,19	0,22	0,24
S12	218.20-250ER-ME12 MS2050	SCET120612T-M14 MS2050	0,18	0,19	0,22	0,24
S13	218.20-250ER-ME12 MS2050	SCET120612T-M14 MS2050	0,15	0,17	0,18	0,20

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

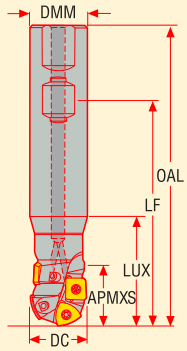
R218.20-250 – Cutting data v_c = (m/min)

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	100	125	130	145	155	85	100	105	115	125	110	140	145	160	170
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	115	135	140	155	170	95	115	120	135	145	125	150	155	170	185
M4	90	115	110	125	135	75	95	95	105	115	95	125	120	135	145
M5	75	95	90	100	110	65	80	80	90	95	80	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	41	55	50	55	60	23	30	29	32	35	45	60	55	65	70
S2	33	42	41	46	50	19	24	23	26	28	37	47	45	50	55
S3	29	37	36	40	43	17	21	20	23	25	32	41	40	44	48
S11	55	70	70	80	85	32	40	41	44	48	60	80	80	85	95
S12	39	49	50	55	60	30	37	37	41	45	43	55	55	60	65
S13	23	30	29	32	35	18	22	22	24	26	26	33	32	35	38

R218.19

90° ball nose cutters dia 16-32





- For insert selection and cutting data recommendations, see page(s) 394-411
- For complete insert programme, see page(s) 656-656, 668
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							ZEFP	KG		() = No of inserts		
		APMXS	DC	DMM	LF	OAL	LUX					218.19	SPMX	SPMT
R218.19-2016.3-17.050A	Weldon	17,5	16,0	20,0	75,0	100,0	31,0	4	1	0,2	41600	-080(2)	-0602(2)	–
R218.19-2520.3-21.069A	Weldon	21,6	20,0	25,0	93,0	125,0	31,0	4	1	0,4	26200	-100(2)	-0703(2)	–
R218.19-2525.3-26.074HA	Weldon	26,6	25,0	25,0	98,0	130,0	46,0	4	1	0,4	21700	-125(2)	-0903(2)	–
R218.19-3232.3-30.070HA	Weldon	31,2	32,0	32,0	94,0	130,0	46,0	4	1	0,7	14800	-160(2)	–	1004(2)

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

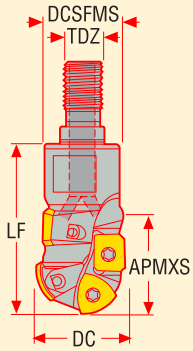
Please check availability in current price and stock-list

Torque keys, see page 710

R218.19

90° ball nose cutters dia 16-32





- For insert selection and cutting data recommendations, see page(s) 394-411
- For complete insert programme, see page(s) 656-656, 668
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						ZEFP	KG		() = 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	1	0,1	41600	-080(2)	-0602	–
R218.19-1020.RE-16A	Combimaster	16,0	20,0	18,0	28,0	M10	3	1	0,1	26200	-100(2)	-0703	–
R218.19-1220.RE-21A	Combimaster	21,6	20,0	21,0	45,0	M12	4	1	0,1	26200	-100(2)	-0703(2)	–
R218.19-1225.RE-26HA	Combimaster	26,6	25,0	21,0	45,0	M12	4	1	0,1	21700	-125(2)	-0903(2)	–
R218.19-1632.RE-36HA	Combimaster	38,6	32,0	28,0	55,0	M16	5	1	0,2	14800	-160(2)	–	-1004(3)

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

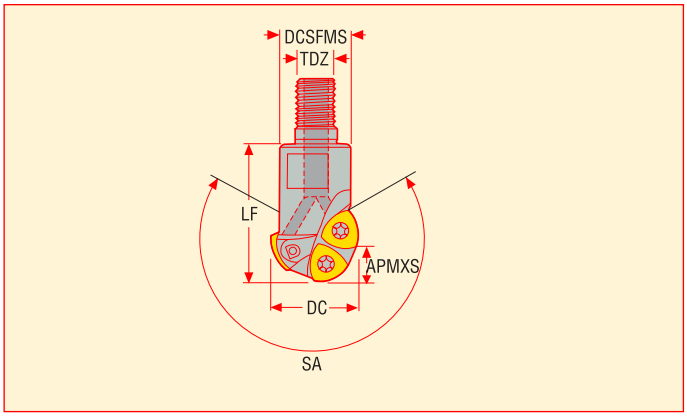
Please check availability in current price and stock-list

Torque keys, see page 710

R218.19

90° ball nose cutters dia 25-40





- For insert selection and cutting data recommendations, see page(s) 394-411
- For complete insert programme, see page(s) 668
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm					SA°		ZEFP	KG		() = No of inserts
		APMXS	DC	DCSFMS	LF	TDZ						218.19
R218.19-1225.RE-14HFA	Combimaster	12,5	25,0	21,0	40,0	M12	245.0	3	1	0,1	21700	-125(3)
R218.19-1632.RE-18HFA	Combimaster	16,0	32,0	28,0	40,0	M16	237.0	3	1	0,2	14800	-160(3)
R218.19-1640.RE-25HFA	Combimaster	20,0	40,0	28,0	50,0	M16	222.0	3	1	0,2	10400	-200(3)

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 710

R218.19-080 – Insert selection – Roughing

SMG			a_p	f_z		
				100%	30%	15%
P1	218.19-080T-M04 F40M	SPMX060204-75 F40M	8,0	0,15	0,16	0,22
P2	218.19-080T-M04 F40M	SPMX060204-75 F40M	8,0	0,15	0,17	0,22
P3	218.19-080T-M04 F40M	SPMX060204-75 F40M	8,0	0,14	0,16	0,20
P4	218.19-080T-M04 MP2501	SPMX060204-75 F40M	8,0	0,14	0,15	0,20
P5	218.19-080T-M04 MP2501	SPMX060204-75 F40M	8,0	0,14	0,15	0,20
P6	218.19-080T-M04 MP2501	SPMX060204-75 F40M	8,0	0,13	0,15	0,19
P7	218.19-080T-M04 MP2501	SPMX060204-75 F40M	8,0	0,13	0,15	0,19
P8	218.19-080T-M04 MP2501	SPMX060204-75 F40M	8,0	0,14	0,16	0,20
P11	218.19-080T-MD04 MS2500	SPMX060204-75 F40M	8,0	0,13	0,15	0,19
P12	218.19-080T-MD04 MS2500	SPMX060204-75 F40M	6,0	0,095	0,10	0,13
M1	218.19-080T-M04 F40M	SPMX060204-75 F40M	8,0	0,15	0,17	0,22
M2	218.19-080T-M04 F40M	SPMX060204-75 F40M	8,0	0,14	0,15	0,20
M3	218.19-080T-M04 F40M	SPMX060204-75 F40M	6,0	0,11	0,12	0,15
M4	218.19-080T-M04 F40M	SPMX060204-75 F40M	4,5	0,10	0,11	0,13
M5	218.19-080T-M04 F40M	SPMX060204-75 F40M	4,5	0,10	0,11	0,13
K1	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,15	0,17	0,22
K2	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,14	0,15	0,20
K3	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,14	0,15	0,20
K4	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,14	0,15	0,20
K5	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,12	0,14	0,18
K6	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,14	0,15	0,20
K7	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,12	0,14	0,18
S1	218.19-080T-M04 F40M	SPMX060204-75 F40M	4,5	0,10	0,11	0,13
S2	218.19-080T-M04 F40M	SPMX060204-75 F40M	4,5	0,10	0,11	0,13
S3	218.19-080T-M04 F40M	SPMX060204-75 F40M	4,5	0,090	0,10	0,12
S11	218.19-080T-M04 F40M	SPMX060204-75 F40M	5,0	0,11	0,12	0,15
S12	218.19-080T-M04 F40M	SPMX060204-75 F40M	5,0	0,11	0,12	0,15
S13	218.19-080T-M04 F40M	SPMX060204-75 F40M	4,5	0,10	0,11	0,13
H5	218.19-080T-MD04 F15M	SPMX060204-75 F40M	4,5	0,085	0,085	0,11
H8	218.19-080T-MD04 F15M	SPMX060204-75 F40M	4,0	0,060	0,065	0,085
H11	218.19-080T-MD04 F15M	SPMX060204-75 F40M	4,5	0,085	0,085	0,11
H12	218.19-080T-M04 F30M	SPMX060204-75 F40M	4,0	0,060	0,065	0,085
H21	218.19-080T-MD04 F15M	SPMX060204-75 F40M	4,0	0,060	0,065	0,085

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/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	0,22	0,24	0,25	0,28
P2	218.19-080T-M04 F40M	SPMX060204-75 F40M	8,0	0,22	0,24	0,26	0,28
P3	218.19-080T-M04 F40M	SPMX060204-75 F40M	8,0	0,20	0,22	0,24	0,28
P4	218.19-080T-M04 MP2501	SPMX060204-75 F40M	8,0	0,20	0,22	0,24	0,26
P5	218.19-080T-M04 MP2501	SPMX060204-75 F40M	8,0	0,20	0,22	0,24	0,26
P6	218.19-080T-M04 MP2501	SPMX060204-75 F40M	8,0	0,19	0,22	0,24	0,26
P7	218.19-080T-M04 MP2501	SPMX060204-75 F40M	8,0	0,19	0,22	0,24	0,26
P8	218.19-080T-M04 MP2501	SPMX060204-75 F40M	8,0	0,20	0,22	0,24	0,28
P11	218.19-080T-M04 MP2501	SPMX060204-75 F40M	8,0	0,19	0,22	0,24	0,26
P12	218.19-080T-M04 MP2501	SPMX060204-75 F40M	6,0	0,13	0,14	0,15	0,17
M1	218.19-080T-M04 F30M	SPMX060204-75 F40M	8,0	0,22	0,24	0,26	0,28
M2	218.19-080T-M04 F30M	SPMX060204-75 F40M	8,0	0,20	0,22	0,24	0,26
M3	218.19-080T-M04 F30M	SPMX060204-75 F40M	6,0	0,15	0,17	0,18	0,20
M4	218.19-080T-M04 F30M	SPMX060204-75 F40M	4,5	0,13	0,15	0,16	0,18
M5	218.19-080T-M04 F30M	SPMX060204-75 F40M	4,5	0,13	0,15	0,16	0,18
K1	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,22	0,24	0,26	0,28
K2	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,20	0,22	0,24	0,26
K3	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,20	0,22	0,24	0,26
K4	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,20	0,22	0,24	0,26
K5	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,18	0,19	0,22	0,24
K6	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,20	0,22	0,24	0,26
K7	218.19-080T-MD04 F15M	SPMX060204-75 F40M	8,0	0,18	0,19	0,22	0,24
S1	218.19-080T-M04 F40M	SPMX060204-75 F40M	4,5	0,13	0,15	0,16	0,18
S2	218.19-080T-M04 F40M	SPMX060204-75 F40M	4,5	0,13	0,15	0,16	0,18
S3	218.19-080T-M04 F40M	SPMX060204-75 F40M	4,5	0,12	0,14	0,15	0,16
S11	218.19-080T-M04 F40M	SPMX060204-75 F40M	5,0	0,15	0,17	0,18	0,20
S12	218.19-080T-M04 F40M	SPMX060204-75 F40M	5,0	0,15	0,17	0,18	0,20
S13	218.19-080T-M04 F40M	SPMX060204-75 F40M	4,5	0,13	0,15	0,16	0,18
H5	218.19-080T-MD04 F15M	SPMX060204-75 F40M	4,5	0,11	0,12	0,13	0,15
H8	218.19-080T-MD04 F15M	SPMX060204-75 F40M	4,0	0,085	0,095	0,10	0,11
H11	218.19-080T-MD04 F15M	SPMX060204-75 F40M	4,5	0,11	0,12	0,13	0,15
H12	218.19-080T-M04 F30M	SPMX060204-75 F40M	4,0	0,085	0,095	0,10	0,11
H21	218.19-080T-MD04 F15M	SPMX060204-75 F40M	4,0	0,085	0,095	0,10	0,11

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)

	MP2501			F15M			F40M			MS2500		
SMG	100%	30%	15%	100%	30%	15%	100%	30%	15%	100%	30%	15%
P1	300	365	400	—	—	—	225	275	305	310	380	415
P2	290	350	390	—	—	—	220	265	295	300	360	405
P3	255	305	345	—	—	—	195	230	260	265	315	355
P4	225	275	305	—	—	—	170	210	230	230	285	315
P5	215	260	290	—	—	—	160	200	220	220	270	300
P6	245	295	330	—	—	—	185	225	250	255	305	340
P7	230	275	310	—	—	—	175	210	235	240	285	320
P8	215	255	290	—	—	—	160	195	220	220	265	300
P11	225	270	300	—	—	—	170	205	230	230	280	315
P12	145	185	210	—	—	—	110	140	155	150	195	215
M1	210	250	280	—	—	—	175	215	240	215	260	290
M2	170	210	235	—	—	—	145	180	195	175	215	240
M3	145	180	205	—	—	—	120	155	170	145	185	210
M4	110	145	160	—	—	—	95	120	135	115	150	165
M5	95	120	135	—	—	—	80	100	115	95	125	140
K1	230	275	310	200	240	265	175	210	235	—	—	—
K2	205	250	275	175	215	235	155	190	210	—	—	—
K3	170	210	235	150	180	200	130	160	175	—	—	—
K4	165	200	220	140	175	190	125	150	170	—	—	—
K5	100	120	135	85	105	115	75	90	105	—	—	—
K6	145	175	195	125	150	170	110	135	150	—	—	—
K7	130	155	175	110	135	150	100	120	130	—	—	—
N1	—	—	—	—	—	—	1300	1550	1725	—	—	—
N2	—	—	—	—	—	—	520	620	700	—	—	—
N3	—	—	—	—	—	—	350	415	470	—	—	—
N11	—	—	—	—	—	—	395	475	530	—	—	—
S1	—	—	—	—	—	—	44	55	65	55	75	80
S2	—	—	—	—	—	—	36	46	50	46	60	65
S3	—	—	—	—	—	—	32	40	45	40	50	55
S11	—	—	—	—	—	—	60	80	90	80	100	110
S12	—	—	—	—	—	—	43	55	60	55	70	75
S13	—	—	—	—	—	—	25	32	36	32	41	45
H5	46	60	65	44	55	60	39	49	55	—	—	—
H8	50	65	70	47	60	65	41	50	60	—	—	—
H11	60	75	85	55	70	80	49	60	70	—	—	—
H12	100	125	135	85	105	120	75	95	105	—	—	—
H21	50	65	70	47	60	65	41	50	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	0,22	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 MP2501	SPMX070304-75 F40M	14,0	0,26	0,28	0,38
P5	218.19-100T-MD08 MP2501	SPMX070304-75 F40M	14,0	0,26	0,28	0,36
P6	218.19-100T-MD08 MP2501	SPMX070304-75 F40M	14,0	0,26	0,28	0,36
P7	218.19-100T-MD08 MP2501	SPMX070304-75 F40M	14,0	0,26	0,28	0,36
P8	218.19-100T-MD08 MP2501	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	0,19	0,25
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	0,14	0,15	0,19
M5	218.19-100T-M06 T350M	SPMX070304-75 F40M	8,0	0,14	0,15	0,19
K1	218.19-100T-MD08 F15M	SPMX070304-75 F40M	14,0	0,28	0,30	0,40
K2	218.19-100T-MD08 F15M	SPMX070304-75 F40M	14,0	0,26	0,28	0,36
K3	218.19-100T-MD08 F15M	SPMX070304-75 F40M	14,0	0,26	0,28	0,36
K4	218.19-100T-MD08 F15M	SPMX070304-75 F40M	14,0	0,26	0,28	0,36
K5	218.19-100T-MD08 F15M	SPMX070304-75 F40M	14,0	0,24	0,25	0,32
K6	218.19-100T-MD08 F15M	SPMX070304-75 F40M	14,0	0,26	0,28	0,36
K7	218.19-100T-MD08 F15M	SPMX070304-75 F40M	14,0	0,24	0,25	0,32
S1	218.19-100T-M06 MS2500	SPMX070304-75 F40M	8,0	0,14	0,15	0,19
S2	218.19-100T-M06 MS2500	SPMX070304-75 F40M	8,0	0,14	0,15	0,19
S3	218.19-100T-M06 MS2500	SPMX070304-75 F40M	8,0	0,13	0,14	0,17
S11	218.19-100T-M06 MS2050	SPMX070304-75 F40M	9,0	0,15	0,17	0,22
S12	218.19-100T-M06 MS2050	SPMX070304-75 F40M	9,0	0,15	0,17	0,22
S13	218.19-100T-M06 MS2050	SPMX070304-75 F40M	8,0	0,14	0,15	0,19
H5	218.19-100T-MD08 F15M	SPMX070304-75 F40M	8,0	0,15	0,17	0,22
H8	218.19-100T-MD08 F15M	SPMX070304-75 F40M	7,0	0,12	0,12	0,16
H11	218.19-100T-MD08 F15M	SPMX070304-75 F40M	8,0	0,15	0,17	0,22
H12	218.19-100T-M06 MP3000	SPMX070304-75 F40M	7,0	0,090	0,095	0,12
H21	218.19-100T-MD08 F15M	SPMX070304-75 F40M	7,0	0,12	0,12	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	0,32	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-M06 MP2501	SPMX070304-75 F40M	14,0	0,28	0,30	0,34	0,38
P5	218.19-100T-M06 MP2501	SPMX070304-75 F40M	14,0	0,28	0,30	0,32	0,36
P6	218.19-100T-M06 MP2501	SPMX070304-75 F40M	14,0	0,28	0,30	0,32	0,36
P7	218.19-100T-M06 MP2501	SPMX070304-75 F40M	14,0	0,28	0,30	0,32	0,36
P8	218.19-100T-M06 MP2501	SPMX070304-75 F40M	14,0	0,28	0,32	0,34	0,38
P11	218.19-100T-M06 MP2501	SPMX070304-75 F40M	14,0	0,28	0,30	0,32	0,36
P12	218.19-100T-M06 MP2501	SPMX070304-75 F40M	11,0	0,19	0,20	0,22	0,25
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	0,32	0,36
M3	218.19-100T-M06 F40M	SPMX070304-75 F40M	11,0	0,22	0,24	0,26	0,30
M4	218.19-100T-M06 F40M	SPMX070304-75 F40M	8,0	0,19	0,22	0,24	0,26
M5	218.19-100T-M06 F40M	SPMX070304-75 F40M	8,0	0,19	0,22	0,24	0,26
K1	218.19-100T-MD08 F25M	SPMX070304-75 F40M	14,0	0,40	0,44	0,48	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	0,32	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	0,32	0,36	0,40	0,44
S1	218.19-100T-M06 F40M	SPMX070304-75 F40M	8,0	0,19	0,22	0,24	0,26
S2	218.19-100T-M06 F40M	SPMX070304-75 F40M	8,0	0,19	0,22	0,24	0,26
S3	218.19-100T-M06 F40M	SPMX070304-75 F40M	8,0	0,17	0,20	0,22	0,24
S11	218.19-100T-M06 MS2050	SPMX070304-75 F40M	9,0	0,22	0,25	0,26	0,30
S12	218.19-100T-M06 MS2050	SPMX070304-75 F40M	9,0	0,22	0,25	0,26	0,30
S13	218.19-100T-M06 MS2050	SPMX070304-75 F40M	8,0	0,19	0,22	0,24	0,26
H5	218.19-100T-MD08 F15M	SPMX070304-75 F40M	8,0	0,22	0,24	0,26	0,30
H8	218.19-100T-MD08 F15M	SPMX070304-75 F40M	7,0	0,16	0,17	0,19	0,22
H11	218.19-100T-MD08 F15M	SPMX070304-75 F40M	8,0	0,22	0,24	0,26	0,30
H12	218.19-100T-M06 MP3000	SPMX070304-75 F40M	7,0	0,12	0,13	0,14	0,16
H21	218.19-100T-MD08 F15M	SPMX070304-75 F40M	7,0	0,16	0,17	0,19	0,22

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)

	MP2501			T350M			F15M			F40M		
SMG	100%	30%	15%	100%	30%	15%	100%	30%	15%	100%	30%	15%
P1	235	290	320	240	285	320	—	—	—	210	245	280
P2	230	275	310	225	275	310	—	—	—	195	240	270
P3	200	240	270	200	245	275	—	—	—	175	210	240
P4	180	215	240	175	215	240	—	—	—	155	185	210
P5	170	210	230	170	205	230	—	—	—	150	180	200
P6	195	235	260	190	230	260	—	—	—	165	200	225
P7	180	220	245	180	215	245	—	—	—	160	190	210
P8	170	205	230	170	205	230	—	—	—	145	180	200
P11	175	215	240	175	210	235	—	—	—	155	185	205
P12	120	150	165	120	150	160	—	—	—	100	130	140
M1	165	200	225	175	215	240	—	—	—	160	195	220
M2	135	165	185	145	175	200	—	—	—	135	160	180
M3	115	145	160	120	155	170	—	—	—	110	140	155
M4	90	120	130	95	125	135	—	—	—	90	115	125
M5	75	100	110	80	105	115	—	—	—	75	95	105
K1	180	220	245	180	220	245	165	200	225	155	190	215
K2	160	195	215	165	195	220	145	180	195	140	170	190
K3	135	165	185	140	165	185	125	150	165	120	145	160
K4	130	160	175	130	155	175	120	145	160	115	135	155
K5	80	95	110	80	95	110	70	90	100	70	85	95
K6	115	140	155	115	140	155	105	125	140	100	120	135
K7	100	125	140	105	125	140	95	115	125	90	110	120
N1	—	—	—	—	—	—	—	—	—	1150	1400	1550
N2	—	—	—	—	—	—	—	—	—	465	570	630
N3	—	—	—	—	—	—	—	—	—	310	380	420
N11	—	—	—	—	—	—	—	—	—	355	430	480
S1	—	—	—	45	60	65	—	—	—	41	55	60
S2	—	—	—	36	47	50	—	—	—	33	42	47
S3	—	—	—	32	41	46	—	—	—	29	37	41
S11	—	—	—	60	80	90	—	—	—	55	70	80
S12	—	—	—	43	55	60	—	—	—	39	50	55
S13	—	—	—	25	33	36	—	—	—	23	30	33
H5	—	—	—	41	50	60	38	48	55	36	46	50
H8	—	—	—	44	55	60	41	50	60	38	49	55
H11	—	—	—	50	65	75	48	60	70	45	60	65
H12	—	—	—	80	100	110	75	95	105	70	90	95
H21	—	—	—	44	55	60	41	50	60	38	49	55

R218.19-100 – Cutting data v_c = (m/min)

	MS2050			MS2500			MP3000		
SMG	100%	30%	15%	100%	30%	15%	100%	30%	15%
P1	—	—	—	300	355	400	260	310	350
P2	—	—	—	285	345	390	245	300	340
P3	—	—	—	250	305	340	220	265	295
P4	—	—	—	220	270	300	190	235	260
P5	—	—	—	215	255	290	185	225	250
P6	—	—	—	240	290	325	210	250	280
P7	175	210	235	225	270	305	195	235	265
P8	160	195	220	210	255	290	185	225	250
P11	170	200	225	220	265	295	190	230	255
P12	115	145	155	145	190	205	130	165	175
M1	175	215	240	205	250	280	185	225	255
M2	145	175	200	170	205	230	155	185	210
M3	120	155	170	140	180	195	125	165	180
M4	95	125	135	110	145	160	100	130	145
M5	80	105	115	95	120	135	85	110	120
K1	—	—	—	—	—	—	195	240	270
K2	—	—	—	—	—	—	175	210	235
K3	—	—	—	—	—	—	150	180	200
K4	—	—	—	—	—	—	145	170	190
K5	—	—	—	—	—	—	90	105	120
K6	—	—	—	—	—	—	125	150	170
K7	—	—	—	—	—	—	110	135	150
N1	—	—	—	—	—	—	1425	1750	1950
N2	—	—	—	—	—	—	580	710	790
N3	—	—	—	—	—	—	385	475	520
N11	—	—	—	—	—	—	—	—	—
S1	45	60	65	55	70	80	47	60	70
S2	36	47	50	44	55	65	38	49	55
S3	32	41	46	39	50	55	34	43	48
S11	60	80	90	75	95	105	65	85	95
S12	43	55	60	50	65	75	45	60	65
S13	25	33	36	31	40	44	27	34	38
H5	—	—	—	—	—	—	42	55	60
H8	—	—	—	—	—	—	44	55	65
H11	—	—	—	—	—	—	55	70	75
H12	—	—	—	—	—	—	85	110	120
H21	—	—	—	—	—	—	44	55	65

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	0,25	0,32
P2	218.19-125T-T3-M07 T350M	SPMX090304-75 F40M	17,0	0,24	0,25	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 MP2501	SPMX090304-75 F40M	17,0	0,30	0,34	0,42
P5	218.19-125T-T3-MD10 MP2501	SPMX090304-75 F40M	17,0	0,30	0,32	0,42
P6	218.19-125T-T3-MD10 MP2501	SPMX090304-75 F40M	17,0	0,30	0,32	0,42
P7	218.19-125T-T3-MD10 MP2501	SPMX090304-75 F40M	17,0	0,30	0,32	0,42
P8	218.19-125T-T3-MD10 MP2501	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	0,25	0,32
M2	218.19-125T-T3-M07 T350M	SPMX090304-75 F40M	17,0	0,22	0,22	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	0,15	0,16	0,22
M5	218.19-125T-T3-M07 T350M	SPMX090304-75 F40M	10,0	0,15	0,16	0,22
K1	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	17,0	0,34	0,36	0,46
K2	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	17,0	0,30	0,32	0,42
K3	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	17,0	0,30	0,32	0,42
K4	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	17,0	0,30	0,32	0,42
K5	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	17,0	0,28	0,30	0,38
K6	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	17,0	0,30	0,32	0,42
K7	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	17,0	0,28	0,30	0,38
S1	218.19-125T-T3-M07 MS2500	SPMX090304-75 F40M	10,0	0,15	0,16	0,22
S2	218.19-125T-T3-M07 MS2500	SPMX090304-75 F40M	10,0	0,15	0,16	0,22
S3	218.19-125T-T3-M07 MS2500	SPMX090304-75 F40M	10,0	0,14	0,15	0,20
S11	218.19-125T-T3-M07 MS2050	SPMX090304-75 F40M	12,0	0,17	0,19	0,24
S12	218.19-125T-T3-M07 MS2050	SPMX090304-75 F40M	12,0	0,17	0,19	0,24
S13	218.19-125T-T3-M07 MS2050	SPMX090304-75 F40M	10,0	0,15	0,16	0,22
H5	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	10,0	0,18	0,20	0,25
H8	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	9,0	0,14	0,14	0,19
H11	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	10,0	0,18	0,20	0,25
H12	218.19-125T-T3-MD08 MP3000	SPMX090304-75 F40M	9,0	0,11	0,11	0,16
H21	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	9,0	0,14	0,14	0,19

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	0,38	0,44
P3	218.19-125T-T3-M07 F40M	SPMX090304-75 F40M	17,0	0,30	0,34	0,36	0,40
P4	218.19-125T-T3-M07 MP2501	SPMX090304-75 F40M	17,0	0,30	0,34	0,36	0,40
P5	218.19-125T-T3-M07 MP2501	SPMX090304-75 F40M	17,0	0,30	0,32	0,36	0,40
P6	218.19-125T-T3-M07 MP2501	SPMX090304-75 F40M	17,0	0,30	0,32	0,34	0,38
P7	218.19-125T-T3-M07 MP2501	SPMX090304-75 F40M	17,0	0,30	0,32	0,34	0,38
P8	218.19-125T-T3-M07 MP2501	SPMX090304-75 F40M	17,0	0,30	0,34	0,36	0,40
P11	218.19-125T-T3-M07 MP2501	SPMX090304-75 F40M	17,0	0,30	0,32	0,34	0,38
P12	218.19-125T-T3-M07 MP2501	SPMX090304-75 F40M	13,0	0,20	0,22	0,24	0,26
M1	218.19-125T-T3-M07 MP3000	SPMX090304-75 F40M	17,0	0,32	0,36	0,38	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	0,28	0,32
M4	218.19-125T-T3-M07 MP3000	SPMX090304-75 F40M	10,0	0,22	0,24	0,25	0,28
M5	218.19-125T-T3-M07 MP3000	SPMX090304-75 F40M	10,0	0,22	0,24	0,25	0,28
K1	218.19-125T-T3-MD10 F25M	SPMX090304-75 F40M	17,0	0,46	0,50	0,55	0,60
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
S1	218.19-125T-T3-M07 F40M	SPMX090304-75 F40M	10,0	0,22	0,24	0,25	0,28
S2	218.19-125T-T3-M07 F40M	SPMX090304-75 F40M	10,0	0,22	0,24	0,25	0,28
S3	218.19-125T-T3-M07 F40M	SPMX090304-75 F40M	10,0	0,20	0,22	0,24	0,26
S11	218.19-125T-T3-M07 MS2050	SPMX090304-75 F40M	12,0	0,24	0,26	0,28	0,32
S12	218.19-125T-T3-M07 MS2050	SPMX090304-75 F40M	12,0	0,24	0,26	0,28	0,32
S13	218.19-125T-T3-M07 MS2050	SPMX090304-75 F40M	10,0	0,22	0,24	0,25	0,28
H5	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	10,0	0,25	0,28	0,30	0,34
H8	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	9,0	0,19	0,22	0,24	0,26
H11	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	10,0	0,25	0,28	0,30	0,34
H12	218.19-125T-T3-M07 MP3000	SPMX090304-75 F40M	9,0	0,14	0,15	0,16	0,18
H21	218.19-125T-T3-MD10 F15M	SPMX090304-75 F40M	9,0	0,19	0,22	0,24	0,26

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R218.19-125 – Cutting data v_c = (m/min)

	MP2501			T350M			F15M			F40M		
SMG	100%	30%	15%	100%	30%	15%	100%	30%	15%	100%	30%	15%
P1	205	260	295	215	275	310	—	—	—	190	240	270
P2	195	255	285	205	270	300	—	—	—	180	235	260
P3	170	225	250	180	235	265	—	—	—	160	205	230
P4	155	195	225	160	205	235	—	—	—	140	180	200
P5	145	190	215	155	200	220	—	—	—	135	175	195
P6	165	215	240	175	225	250	—	—	—	155	195	215
P7	155	205	225	165	215	235	—	—	—	145	185	205
P8	145	190	210	155	195	220	—	—	—	135	170	195
P11	150	195	220	160	210	230	—	—	—	140	180	200
P12	105	135	150	110	140	155	—	—	—	95	120	135
M1	140	185	205	160	205	230	—	—	—	145	190	210
M2	120	155	170	130	175	190	—	—	—	120	160	175
M3	105	130	145	115	140	160	—	—	—	105	130	145
M4	85	110	120	95	120	130	—	—	—	85	110	120
M5	70	90	100	80	100	110	—	—	—	70	90	100
K1	155	200	225	165	215	240	140	185	205	140	185	210
K2	140	180	205	145	190	210	125	165	185	125	165	185
K3	120	155	170	125	160	180	110	140	155	105	140	155
K4	115	145	165	115	155	170	105	135	150	100	135	150
K5	70	90	100	75	95	105	65	80	90	65	80	90
K6	100	130	145	105	135	150	90	120	130	90	120	130
K7	90	115	130	95	120	135	80	105	115	80	105	120
N1	—	—	—	—	—	—	—	—	—	1050	1350	1500
N2	—	—	—	—	—	—	—	—	—	420	550	610
N3	—	—	—	—	—	—	—	—	—	280	365	405
N11	—	—	—	—	—	—	—	—	—	320	415	465
S1	—	—	—	43	55	60	—	—	—	39	50	55
S2	—	—	—	35	45	49	—	—	—	32	41	44
S3	—	—	—	31	40	43	—	—	—	28	36	39
S11	—	—	—	60	75	85	—	—	—	55	70	75
S12	—	—	—	41	50	55	—	—	—	37	47	50
S13	—	—	—	24	32	34	—	—	—	22	29	31
H5	—	—	—	40	48	55	35	43	48	35	42	47
H8	—	—	—	43	55	60	38	49	55	37	48	50
H11	—	—	—	50	60	70	45	55	60	45	55	60
H12	—	—	—	75	100	105	70	90	95	65	85	90
H21	—	—	—	43	55	60	38	49	55	37	48	50

R218.19-125 – Cutting data v_c = (m/min)

	MS2050			MS2500			MP3000			F25M		
SMG	100%	30%	15%	100%	30%	15%	100%	30%	15%	100%	30%	15%
P1	—	—	—	270	345	390	235	300	335	170	220	245
P2	—	—	—	255	335	375	225	290	330	165	210	240
P3	—	—	—	225	295	330	195	255	285	145	185	210
P4	—	—	—	200	260	290	175	225	255	130	165	185
P5	—	—	—	190	255	280	165	220	240	125	160	180
P6	—	—	—	220	285	310	190	245	270	140	180	200
P7	160	205	225	210	270	295	180	235	255	130	170	190
P8	145	190	215	190	245	280	165	215	240	120	155	175
P11	155	200	220	200	260	285	175	225	250	125	165	185
P12	105	130	145	140	175	195	120	150	170	90	110	125
M1	160	205	230	185	240	270	165	220	245	—	—	—
M2	130	175	190	155	200	225	140	185	200	—	—	—
M3	115	140	160	135	165	185	120	150	165	—	—	—
M4	95	120	130	110	140	150	100	125	135	—	—	—
M5	80	100	110	90	115	125	80	105	115	—	—	—
K1	—	—	—	—	—	—	175	230	260	130	170	190
K2	—	—	—	—	—	—	155	210	230	115	150	170
K3	—	—	—	—	—	—	135	175	195	100	130	145
K4	—	—	—	—	—	—	125	170	185	95	120	135
K5	—	—	—	—	—	—	80	105	115	55	75	85
K6	—	—	—	—	—	—	110	150	165	85	110	120
K7	—	—	—	—	—	—	100	130	145	75	95	105
N1	—	—	—	—	—	—	1300	1700	1875	—	—	—
N2	—	—	—	—	—	—	530	680	760	—	—	—
N3	—	—	—	—	—	—	350	455	510	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—
S1	43	55	60	55	70	75	46	60	65	—	—	—
S2	35	45	49	43	55	60	37	48	50	—	—	—
S3	31	40	43	37	48	50	32	42	45	—	—	—
S11	60	75	85	75	90	100	65	80	85	—	—	—
S12	41	50	55	50	65	70	43	55	60	—	—	—
S13	24	32	34	30	39	41	26	33	36	—	—	—
H5	—	—	—	—	—	—	41	49	55	—	—	—
H8	—	—	—	—	—	—	44	55	60	—	—	—
H11	—	—	—	—	—	—	50	65	70	—	—	—
H12	—	—	—	—	—	—	85	105	115	—	—	—
H21	—	—	—	—	—	—	44	55	60	—	—	—

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	0,25	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 MP2501	SPMT100408T-M08 F40M	20,0	0,30	0,32	0,42
P5	218.19-160T-04-MD11 MP2501	SPMT100408T-M08 F40M	20,0	0,30	0,32	0,42
P6	218.19-160T-04-MD11 MP2501	SPMT100408T-M08 F40M	20,0	0,30	0,32	0,40
P7	218.19-160T-04-MD11 MP2501	SPMT100408T-M08 F40M	20,0	0,30	0,32	0,40
P8	218.19-160T-04-MD11 MP2501	SPMT100408T-M08 F40M	20,0	0,32	0,34	0,42
P11	218.19-160T-04-MD11 MS2500	SPMT100408T-M08 F40M	20,0	0,30	0,32	0,40
P12	218.19-160T-04-MD11 MS2500	SPMT100408T-M08 F40M	16,0	0,20	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	0,17	0,19	0,24
M4	218.19-160T-04-M08 T350M	SPMT100408T-M08 F40M	12,0	0,15	0,16	0,20
M5	218.19-160T-04-M08 T350M	SPMT100408T-M08 F40M	12,0	0,15	0,16	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	0,28	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	0,28	0,38
N1	218.19-160-04-E07 H25	SPMT100408T-M08 F40M	20,0	0,26	0,28	0,36
N2	218.19-160-04-E07 H25	SPMT100408T-M08 F40M	20,0	0,26	0,28	0,36
N3	218.19-160-04-E07 H25	SPMT100408T-M08 F40M	20,0	0,26	0,28	0,36
N11	218.19-160-04-E07 H25	SPMT100408T-M08 F40M	20,0	0,26	0,28	0,36
S1	218.19-160T-04-M08 MS2500	SPMT100408T-M08 F40M	12,0	0,15	0,16	0,20
S2	218.19-160T-04-M08 MS2500	SPMT100408T-M08 F40M	12,0	0,15	0,16	0,20
S3	218.19-160T-04-M08 MS2500	SPMT100408T-M08 F40M	12,0	0,14	0,15	0,19
S11	218.19-160T-04-M08 MS2050	SPMT100408T-M08 F40M	14,0	0,17	0,19	0,25
S12	218.19-160T-04-M08 MS2050	SPMT100408T-M08 F40M	14,0	0,17	0,19	0,25
S13	218.19-160T-04-M08 MS2050	SPMT100408T-M08 F40M	12,0	0,15	0,16	0,20
H5	218.19-160T-04-MD11 F15M	SPMT100408T-M08 F40M	12,0	0,17	0,19	0,25
H8	218.19-160T-04-MD11 F15M	SPMT100408T-M08 F40M	11,0	0,13	0,14	0,18
H11	218.19-160T-04-MD11 F15M	SPMT100408T-M08 F40M	12,0	0,17	0,19	0,25
H12	218.19-160T-04-MD09 MP3000	SPMT100408T-M08 F40M	11,0	0,11	0,12	0,15
H21	218.19-160T-04-MD11 F15M	SPMT100408T-M08 F40M	11,0	0,13	0,14	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	0,38	0,42
P2	218.19-160T-04-M08 F40M	SPMT100408T-M08 F40M	24,0	0,32	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 MP1501	SPMT100408T-M08 F40M	24,0	0,42	0,46	0,50	0,55
P5	218.19-160T-04-MD11 MP1501	SPMT100408T-M08 F40M	24,0	0,42	0,46	0,50	0,55
P6	218.19-160T-04-MD11 MP1501	SPMT100408T-M08 F40M	24,0	0,40	0,44	0,48	0,55
P7	218.19-160T-04-MD11 MP1501	SPMT100408T-M08 F40M	24,0	0,40	0,44	0,48	0,55
P8	218.19-160T-04-MD11 MP1501	SPMT100408T-M08 F40M	24,0	0,42	0,48	0,50	0,55
P11	218.19-160T-04-MD11 MP1501	SPMT100408T-M08 F40M	24,0	0,40	0,44	0,48	0,55
P12	218.19-160T-04-MD11 MP1501	SPMT100408T-M08 F40M	19,0	0,28	0,30	0,34	0,38
M1	218.19-160T-04-M08 MP3000	SPMT100408T-M08 F40M	24,0	0,32	0,36	0,40	0,44
M2	218.19-160T-04-M08 MP3000	SPMT100408T-M08 F40M	24,0	0,30	0,32	0,36	0,40
M3	218.19-160T-04-M08 MP3000	SPMT100408T-M08 F40M	19,0	0,24	0,26	0,28	0,32
M4	218.19-160T-04-M08 MP3000	SPMT100408T-M08 F40M	15,0	0,22	0,24	0,26	0,28
M5	218.19-160T-04-M08 MP3000	SPMT100408T-M08 F40M	15,0	0,22	0,24	0,26	0,28
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	0,40	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	0,40	0,44	0,50
N1	218.19-160-04-E07 H25	SPMT100408T-M08 F40M	24,0	0,36	0,40	0,44	0,48
N2	218.19-160-04-E07 H25	SPMT100408T-M08 F40M	24,0	0,36	0,40	0,44	0,48
N3	218.19-160-04-E07 H25	SPMT100408T-M08 F40M	24,0	0,36	0,40	0,44	0,48
N11	218.19-160-04-E07 H25	SPMT100408T-M08 F40M	24,0	0,36	0,40	0,44	0,48
S1	218.19-160T-04-M08 F40M	SPMT100408T-M08 F40M	15,0	0,22	0,24	0,26	0,28
S2	218.19-160T-04-M08 F40M	SPMT100408T-M08 F40M	15,0	0,22	0,24	0,26	0,28
S3	218.19-160T-04-M08 F40M	SPMT100408T-M08 F40M	15,0	0,20	0,22	0,24	0,26
S11	218.19-160T-04-M08 MS2050	SPMT100408T-M08 F40M	17,0	0,24	0,26	0,28	0,32
S12	218.19-160T-04-M08 MS2050	SPMT100408T-M08 F40M	17,0	0,24	0,26	0,28	0,32
S13	218.19-160T-04-M08 MS2050	SPMT100408T-M08 F40M	15,0	0,22	0,24	0,26	0,28
H5	218.19-160T-04-MD11 F15M	SPMT100408T-M08 F40M	15,0	0,25	0,28	0,30	0,32
H8	218.19-160T-04-MD11 F15M	SPMT100408T-M08 F40M	13,0	0,19	0,20	0,22	0,25
H11	218.19-160T-04-MD11 F15M	SPMT100408T-M08 F40M	15,0	0,25	0,28	0,30	0,32
H12	218.19-160T-04-M08 MP3000	SPMT100408T-M08 F40M	13,0	0,14	0,15	0,16	0,18
H21	218.19-160T-04-MD11 F15M	SPMT100408T-M08 F40M	13,0	0,19	0,20	0,22	0,25

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R218.19-160 – Cutting data v_c = (m/min)

	MP1501			MP2050			MP2501			MP3000			F15M			F40M		
SMG	100%	30%	15%	100%	30%	15%	100%	30%	15%	100%	30%	15%	100%	30%	15%	100%	30%	15%
P1	225	295	330	230	305	340	200	260	295	225	295	330	—	—	—	180	235	265
P2	220	280	315	225	295	335	195	250	280	220	285	320	—	—	—	175	230	255
P3	195	245	280	200	260	285	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	215	240	140	180	200	165	215	240	—	—	—	140	185	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	130	85	105	115	95	120	135	—	—	—	80	105	115
M5	—	—	—	80	100	110	70	85	95	80	100	110	—	—	—	70	85	95
K1	175	225	250	180	235	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	—	—	—	45	55	60	—	—	—	38	49	55
S2	—	—	—	37	47	50	—	—	—	36	45	50	—	—	—	31	39	43
S3	—	—	—	33	41	46	—	—	—	32	40	44	—	—	—	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	36	—	—	—	25	32	35	—	—	—	22	27	30
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	50	37	45	50
H11	55	65	75	50	60	70	—	—	—	50	60	70	44	55	60	44	50	60
H12	85	105	115	85	105	115	—	—	—	80	100	110	70	85	95	65	80	90
H21	47	55	65	43	50	60	—	—	—	43	50	60	38	46	50	37	45	50

R218.19-160 – Cutting data v_c = (m/min)

	MK2050			MS2050			MS2500			MH1000			H25		
SMG	100%	30%	15%	100%	30%	15%	100%	30%	15%	100%	30%	15%	100%	30%	15%
P1	195	255	290	—	—	—	260	340	380	—	—	—	—	—	—
P2	190	245	275	—	—	—	250	330	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	205	230	180	235	265	—	—	—	—	—	—
M2	—	—	—	130	165	190	150	195	220	—	—	—	—	—	—
M3	—	—	—	110	140	155	125	160	180	—	—	—	—	—	—
M4	—	—	—	90	115	125	105	135	145	—	—	—	—	—	—
M5	—	—	—	75	95	105	90	110	120	—	—	—	—	—	—
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	70	—	—	—	—	—	—
S2	—	—	—	34	43	47	42	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	33	29	37	40	—	—	—	—	—	—
H5	—	—	—	—	—	—	—	—	—	42	50	55	—	—	—
H8	—	—	—	—	—	—	—	—	—	46	55	65	—	—	—
H11	—	—	—	—	—	—	—	—	—	55	65	70	—	—	—
H12	—	—	—	—	—	—	—	—	—	80	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	0,26	0,28	0,34
P2	218.19-200T-05-M10 F40M	13,0	0,26	0,28	0,36
P3	218.19-200T-05-M10 F40M	13,0	0,25	0,26	0,34
P4	218.19-200T-05-M10 F25M	13,0	0,24	0,26	0,32
P5	218.19-200T-05-M10 F25M	13,0	0,24	0,25	0,32
P6	218.19-200T-05-M10 F25M	13,0	0,24	0,25	0,32
P7	218.19-200T-05-M10 F25M	13,0	0,24	0,25	0,32
P8	218.19-200T-05-M10 F25M	13,0	0,25	0,26	0,34
P11	218.19-200T-05-M10 F25M	13,0	0,24	0,25	0,32
P12	218.19-200T-05-M10 F25M	10,0	0,16	0,17	0,22
M1	218.19-200T-05-M10 F40M	13,0	0,26	0,28	0,36
M2	218.19-200T-05-M10 F40M	13,0	0,24	0,25	0,32
M3	218.19-200T-05-M10 F40M	10,0	0,19	0,20	0,26
M4	218.19-200T-05-M10 F40M	8,0	0,17	0,18	0,22
M5	218.19-200T-05-M10 F40M	8,0	0,17	0,18	0,22
K1	218.19-200T-05-M10 F25M	13,0	0,26	0,28	0,36
K2	218.19-200T-05-M10 F25M	13,0	0,24	0,25	0,32
K3	218.19-200T-05-M10 F25M	13,0	0,24	0,25	0,32
K4	218.19-200T-05-M10 F25M	13,0	0,24	0,25	0,32
K5	218.19-200T-05-M10 F25M	13,0	0,22	0,22	0,28
K6	218.19-200T-05-M10 F25M	13,0	0,24	0,25	0,32
K7	218.19-200T-05-M10 F25M	13,0	0,22	0,22	0,28
N1	218.19-200T-05-ME10 F40M	13,0	0,34	0,36	0,44
N2	218.19-200T-05-ME10 F40M	13,0	0,34	0,36	0,44
N3	218.19-200T-05-ME10 F40M	13,0	0,34	0,36	0,44
N11	218.19-200T-05-ME10 F40M	13,0	0,34	0,36	0,44
S1	218.19-200T-05-M10 F40M	8,0	0,17	0,18	0,22
S2	218.19-200T-05-M10 F40M	8,0	0,17	0,18	0,22
S3	218.19-200T-05-M10 F40M	8,0	0,16	0,17	0,20
S11	218.19-200T-05-M10 F40M	9,0	0,19	0,20	0,26
S12	218.19-200T-05-M10 F40M	9,0	0,19	0,20	0,26
S13	218.19-200T-05-M10 F40M	8,0	0,17	0,18	0,22
H5	218.19-200T-05-M10 F25M	8,0	0,14	0,15	0,20
H8	218.19-200T-05-M10 F25M	7,0	0,11	0,11	0,15
H11	218.19-200T-05-M10 F25M	8,0	0,14	0,15	0,20
H12	218.19-200T-05-M10 F25M	7,0	0,11	0,11	0,15
H21	218.19-200T-05-M10 F25M	7,0	0,11	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

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	0,38	0,42	0,46
P2	218.19-200T-05-M10 F40M	13,0	0,36	0,38	0,42	0,46
P3	218.19-200T-05-M10 F40M	13,0	0,34	0,36	0,40	0,44
P4	218.19-200T-05-M10 F25M	13,0	0,32	0,36	0,40	0,44
P5	218.19-200T-05-M10 F25M	13,0	0,32	0,36	0,38	0,42
P6	218.19-200T-05-M10 F25M	13,0	0,32	0,34	0,38	0,42
P7	218.19-200T-05-M10 F25M	13,0	0,32	0,34	0,38	0,42
P8	218.19-200T-05-M10 F25M	13,0	0,34	0,36	0,40	0,44
P11	218.19-200T-05-M10 F25M	13,0	0,32	0,34	0,38	0,42
P12	218.19-200T-05-M10 F25M	10,0	0,22	0,24	0,26	0,30
M1	218.19-200T-05-M10 F40M	13,0	0,36	0,38	0,42	0,46
M2	218.19-200T-05-M10 F40M	13,0	0,32	0,36	0,38	0,42
M3	218.19-200T-05-M10 F40M	10,0	0,26	0,28	0,30	0,34
M4	218.19-200T-05-M10 F40M	8,0	0,22	0,25	0,26	0,30
M5	218.19-200T-05-M10 F40M	8,0	0,22	0,25	0,26	0,30
K1	218.19-200T-05-M10 F25M	13,0	0,36	0,38	0,42	0,46
K2	218.19-200T-05-M10 F25M	13,0	0,32	0,36	0,38	0,42
K3	218.19-200T-05-M10 F25M	13,0	0,32	0,36	0,38	0,42
K4	218.19-200T-05-M10 F25M	13,0	0,32	0,36	0,38	0,42
K5	218.19-200T-05-M10 F25M	13,0	0,28	0,32	0,34	0,38
K6	218.19-200T-05-M10 F25M	13,0	0,32	0,36	0,38	0,42
K7	218.19-200T-05-M10 F25M	13,0	0,28	0,32	0,34	0,38
N1	218.19-200T-05-ME10 F40M	13,0	0,44	0,50	0,55	0,60
N2	218.19-200T-05-ME10 F40M	13,0	0,44	0,50	0,55	0,60
N3	218.19-200T-05-ME10 F40M	13,0	0,44	0,50	0,55	0,60
N11	218.19-200T-05-ME10 F40M	13,0	0,44	0,50	0,55	0,60
S1	218.19-200T-05-M10 F40M	8,0	0,22	0,25	0,26	0,30
S2	218.19-200T-05-M10 F40M	8,0	0,22	0,25	0,26	0,30
S3	218.19-200T-05-M10 F40M	8,0	0,20	0,22	0,25	0,28
S11	218.19-200T-05-M10 F40M	9,0	0,26	0,30	0,32	0,34
S12	218.19-200T-05-M10 F40M	9,0	0,26	0,30	0,32	0,34
S13	218.19-200T-05-M10 F40M	8,0	0,22	0,25	0,26	0,30
H5	218.19-200T-05-M10 F25M	8,0	0,20	0,22	0,24	0,26
H8	218.19-200T-05-M10 F25M	7,0	0,15	0,16	0,17	0,19
H11	218.19-200T-05-M10 F25M	8,0	0,20	0,22	0,24	0,26
H12	218.19-200T-05-M10 F25M	7,0	0,15	0,16	0,17	0,19
H21	218.19-200T-05-M10 F25M	7,0	0,15	0,16	0,17	0,19

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R218.19-200 – Cutting data v_c = (m/min)

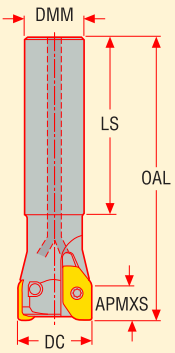
SMG	F25M			F40M		
	100%	30%	15%	100%	30%	15%
P1	230	290	330	205	260	300
P2	220	280	315	200	255	285
P3	195	245	275	175	225	250
P4	170	215	245	155	195	225
P5	165	210	235	150	190	215
P6	185	235	265	170	215	240
P7	175	220	250	160	200	225
P8	165	205	230	150	190	210
P11	170	215	240	155	195	220
P12	115	145	160	105	135	145
M1	—	—	—	165	205	230
M2	—	—	—	135	170	190
M3	—	—	—	115	145	160
M4	—	—	—	90	115	130
M5	—	—	—	75	95	110
K1	175	220	250	160	200	225
K2	155	200	225	140	180	205
K3	130	170	190	120	155	170
K4	125	160	180	115	145	165
K5	75	100	110	70	90	100
K6	110	140	160	100	130	145
K7	100	125	145	90	115	130
N1	—	—	—	1175	1475	1675
N2	—	—	—	470	600	680
N3	—	—	—	315	400	455
N11	—	—	—	360	455	520
S1	46	60	65	42	55	60
S2	37	48	55	34	43	49
S3	32	42	47	29	38	43
S11	65	80	90	60	75	80
S12	44	55	60	40	50	55
S13	26	33	37	23	30	34
H5	40	50	55	37	46	50
H8	43	55	60	39	50	55
H11	50	65	70	47	60	65
H12	75	100	110	70	90	100
H21	43	55	60	39	50	55

Copy milling cutters

R217.97-X08

Cavity milling in aluminium





- For insert selection and cutting data recommendations, see page(s) 418
- For complete insert programme, see page(s) 665
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm					RMPX°	C min	C max		KG		Insert
		APMXS	DC	DMM	OAL	LS							
R217.97-1616.0-X08.2A	Cylindrical	8,0	16,0	16,0	100,0	67,0	11,0	26,4	30,0	2	0,2	40000	XP..08..
R217.97-2020.0-X08.2A	Cylindrical	8,0	20,0	20,0	120,0	79,0	7,2	34,4	38,0	2	0,3	40000	XP..08..
R217.97-2525.0-X08.3A	Cylindrical	8,0	25,0	25,0	150,0	99,0	5,0	44,4	48,0	3	0,6	40000	XP..08..

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.97-1616	DOUBLE-T	C02505-T07P	H4B-T07P	1,2
R217.97-2020-2525	DOUBLE-T	C02505-T07P	H4B-T07P	1,2
R217.97-2020-2525	DOUBLE-T	C02506-T07P	H4B-T07P	1,2

Please check availability in current price and stock-list

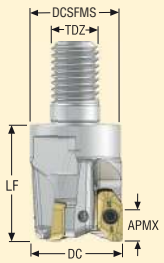
Torque keys, see page 710

R217/220.97-X08



- For insert selection and cutting data recommendations, see page(s) 418
- For complete insert programme, see page(s) 665
- For ISO attribute explanation, see page 15

Cavity milling in aluminium



Designation	Type of mounting	Dimensions in mm					RMPX°	C min	C max		KG		Insert
		APMXS	DC	DCSFMS	TDZ	LF							
R217.97-0816.RE-X08.2A	Combimaster	8,0	16,0	13,5	M8	23,0	11,0	26,4	30,0	2	0,1	40000	XP..08..
R217.97-1020.RE-X08.2A	Combimaster	8,0	20,0	18,5	M10	28,0	7,2	34,4	38,0	2	0,1	40000	XP..08..
R217.97-1020.RE-X08.3A	Combimaster	8,0	20,0	18,5	M10	28,0	7,2	34,4	38,0	3	0,1	40000	XP..08..
R217.97-1225.RE-X08.3A	Combimaster	8,0	25,0	23,0	M12	30,0	5,0	44,4	48,0	3	0,1	40000	XP..08..
R217.97-1225.RE-X08.4A	Combimaster	8,0	25,0	23,0	M12	30,0	5,0	44,4	48,0	4	0,1	40000	XP..08..

For Combimaster Shanks, see Machining Navigator Tooling System

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.97-0816-1020	DOUBLE-T	C02505-T07P	H4B-T07P	1,2
R217.97-1225	DOUBLE-T	C02506-T07P	H4B-T07P	1,2

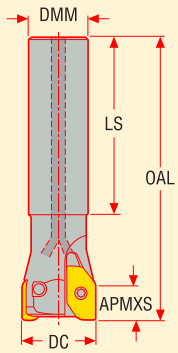
Please check availability in current price and stock-list

Torque keys, see page 710

R217.97-X12

Cavity milling in aluminium





- For insert selection and cutting data recommendations, see page(s) 419
- For complete insert programme, see page(s) 665
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm					RMPX°	C min	C max		KG		Insert
		APMXS	DC	DMM	OAL	LS							
R217.97-2525.0-X12.2A	Cylindrical	12,0	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	12,0	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	12,0	32,0	32,0	150,0	85,0	8,0	54,0	63,0	3	0,8	40000	XP..12

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

Please check availability in current price and stock-list

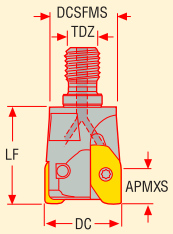
Torque keys, see page 710

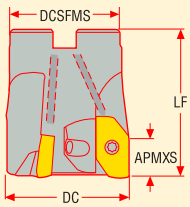
R217/220.97-X12



- For insert selection and cutting data recommendations, see page(s) 419
- For complete insert programme, see page(s) 665
- For ISO attribute explanation, see page 15

Cavity milling in aluminium





Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max		KG		Insert
		APMXS	DC	DCSFMS	DCB	TDZ	LF							
R217.97-1225.RE-X12.2A	Combimaster	12,0	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	12,0	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	12,0	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	12,0	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	12,0	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	12,0	50,0	47,0	22,0	–	45,0	5,0	90,0	99,0	4	0,4	30000	XP..12

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	DOUBLE-T	C03508-T10P	H4B-T10P	–	3,0
R217.97-.. Ø32-40	DOUBLE-T	C03509-T10P	H4B-T10P	–	3,0
R220.97-0050	DOUBLE-T	C03509-T10P	H4B-T10P	220.17-692	3,0

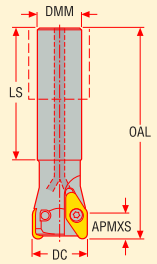
Please check availability in current price and stock-list

Torque keys, see page 710

R217.97-V22

Cavity milling in aluminium





- For insert selection and cutting data recommendations, see page(s) 420
- 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		KG		Insert
		APMXS	DC	DMM	OAL	LS							
R217.97-2532.0-V22.2A	Cylindrical	14,0	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	14,0	40,0	32,0	150,0	105,0	10,0	72,0	78,0	2	0,9	35000	VPGX2206

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.97-..	DOUBLE-T	C05010-T20P	H6B-T20P	5,0

Please check availability in current price and stock-list

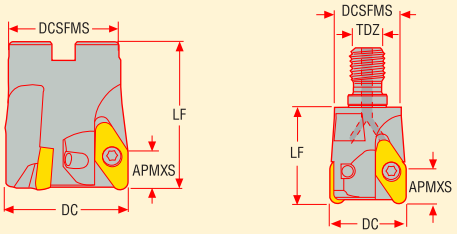
Torque keys, see page 710

R217/220.97-V22



- For insert selection and cutting data recommendations, see page(s) 420
- For complete insert programme, see page(s) 658
- For ISO attribute explanation, see page 15

Cavity milling in aluminium



Designation	Type of mounting	Dimensions in mm						RMPX°	C min	C max		KG		Insert
		APMXS	DC	DCSFMS	DCB	TDZ	LF							
R217.97-1632.RE-V22.2A	Combimaster	14,0	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	14,0	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	14,0	40,0	36,5	–	M20	45,0	10,0	72,0	78,0	2	0,3	35000	VPGX2206
R220.97-0050-V22.2A	Arbor	14,0	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	14,0	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	14,0	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	14,0	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	14,0	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	14,0	100,0	77,0	32,0	–	57,0	4,0	192,0	198,0	5	1,7	22000	VPGX2206

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 710

R217/220.97-X08 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
N1	XPKX080304PDER-E06 H25	4,0	0,11	0,12	0,18	0,26
N2	XPKX080304PDER-E06 H25	4,0	0,11	0,12	0,18	0,26
N3	XPKX080304PDER-E06 H25	4,0	0,11	0,12	0,18	0,26
N11	XPKX080304PDER-E06 H25	4,0	0,11	0,12	0,18	0,26

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R217/220.97-X08 – Cutting data v_c = (m/min)

SMG	H25			
	100%	30%	10%	5%
N1	2350	3100	3675	3925
N2	590	780	920	990
N3	395	520	620	660
N11	450	590	700	760

R217/220.97-X12 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
N1	XPKX12T304PDER-E08 H25	6,0	0,13	0,14	0,22	0,30
N2	XPKX12T304PDER-E08 H25	6,0	0,13	0,14	0,22	0,30
N3	XPKX12T304PDER-E08 H25	6,0	0,13	0,14	0,22	0,30
N11	XPKX12T304PDER-E08 H25	6,0	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	2175	2900	3400	3700
N2	550	730	860	940
N3	365	485	570	620
N11	420	560	650	710

R217/220.97-V22 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
N1	VPGX220605ER-E10 H25	7,0	0,18	0,20	0,30	0,42
N2	VPGX220605ER-E10 H25	7,0	0,18	0,20	0,30	0,42
N3	VPGX220605ER-E10 H25	7,0	0,18	0,20	0,30	0,42
N11	VPGX220605ER-E10 H25	7,0	0,18	0,20	0,30	0,42

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

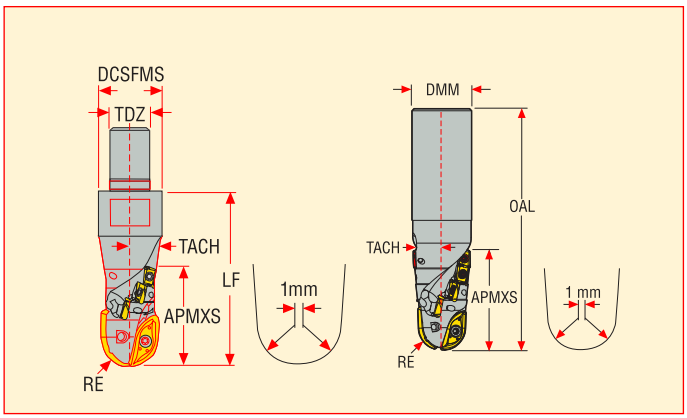
R217/220.97-V22 – Cutting data v_c = (m/min)

SMG	H15				H25			
	100%	30%	10%	5%	100%	30%	10%	5%
N1	2375	3125	3725	4025	2050	2700	3225	3500
N2	600	790	940	1025	520	680	810	880
N3	400	530	630	680	345	455	540	590
N11	455	600	710	770	395	520	620	670

R218.24



- For insert selection and cutting data recommendations, see page(s) 422-429
- For complete insert programme, see page(s) 661-662, 669
- 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
R218.24-20R063.0-025-06.2A	Cylindrical	24,0	–	20,0	–	40,0	90,0	–	6,35	4,0	8	0,2	20000	0.250 (2)	06 (6)
R218.24-25R080.0-038-06.2A	Cylindrical	38,0	–	25,0	–	54,0	110,0	–	8,0	4,0	12	0,3	18000	R080 (2)	06 (12)
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)
R218.24-32R125.0-052-10.2A	Cylindrical	52,0	–	32,0	–	70,0	130,0	–	12,5	4,0	10	0,6	14000	R125 (2)	10 (10)
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)
R218.24-12R080.RE-028-06.2A	Combimaster	28,0	23,0	–	50,0	–	–	M12	8,0	4,0	8	0,1	18000	R080 (2)	06 (8)
R218.24-16R100.RE-032-10.2A	Combimaster	32,6	30,0	–	55,0	–	–	M16	10,0	4,0	6	0,2	16000	R100 (2)	10 (6)
R218.24-20R125.RE-043-10.2A	Combimaster	43,0	36,5	–	65,0	–	–	M20	12,5	4,0	8	0,3	15000	R125 (2)	10 (8)

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

Please check availability in current price and stock-list

Torque keys, see page 710

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	0,075	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	0,10
P4	218.20-0.250ER-ME03 F40M	XOMX060204R-M05 F40M	0,040	0,048	0,070	0,095
P5	218.20-0.250ER-M03 F40M	XOMX060204R-M05 F40M	0,040	0,046	0,070	0,095
P6	218.20-0.250ER-M03 F40M	XOMX060204R-M05 F40M	0,040	0,046	0,070	0,095
P7	218.20-0.250ER-M03 F40M	XOMX060204R-M05 F40M	0,040	0,046	0,070	0,095
P8	218.20-0.250ER-M03 F40M	XOMX060204R-M05 F40M	0,042	0,048	0,070	0,10
P11	218.20-0.250ER-M03 F40M	XOMX060204R-M05 MP3000	0,040	0,046	0,070	0,095
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	0,070	0,095
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	0,070	0,095
K3	218.20-0.250ER-M03 F40M	XOMX060204R-M05 MP3000	0,040	0,046	0,070	0,095
K4	218.20-0.250ER-M03 F40M	XOMX060204R-M05 MP3000	0,040	0,046	0,070	0,095
K5	218.20-0.250ER-M03 F40M	XOMX060204R-M05 MP3000	0,036	0,042	0,060	0,085
K6	218.20-0.250ER-M03 F40M	XOMX060204R-M05 MP3000	0,040	0,046	0,070	0,095
K7	218.20-0.250ER-M03 F40M	XOMX060204R-M05 MP3000	0,036	0,042	0,060	0,085
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	0,044	0,060
S11	218.20-0.250ER-ME03 MS2050	XOMX060204R-M05 F40M	0,034	0,038	0,055	0,075
S12	218.20-0.250ER-ME03 MS2050	XOMX060204R-M05 F40M	0,034	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_e/DC = %
All cutting data are start values

R218.24-063 – Cutting data v_c = (m/min)

	F40M				MS2050			
SMG	100%	25%	10%	5%	100%	25%	10%	5%
P1	275	375	425	460	305	415	470	500
P2	265	365	415	445	290	405	455	490
P3	230	315	360	385	255	350	395	425
P4	205	280	320	340	225	305	350	375
P5	195	270	305	325	215	295	335	360
P6	220	300	340	365	240	330	375	400
P7	205	285	320	345	230	315	355	380
P8	195	265	305	325	215	295	335	355
P11	200	275	310	335	220	305	345	370
P12	125	170	195	210	140	185	215	230
M1	215	295	335	360	235	325	370	395
M2	175	240	275	295	195	265	300	320
M3	140	190	215	230	155	205	235	255
M4	110	145	165	175	120	160	180	195
M5	90	120	135	145	100	130	150	160
K1	210	290	330	355	—	—	—	—
K2	185	255	290	310	—	—	—	—
K3	155	215	245	260	—	—	—	—
K4	150	205	235	250	—	—	—	—
K5	90	125	140	150	—	—	—	—
K6	130	180	205	220	—	—	—	—
K7	115	160	180	195	—	—	—	—
N1	1600	2200	2500	2675	—	—	—	—
N2	650	890	1000	1075	—	—	—	—
N3	430	590	670	720	—	—	—	—
N11	490	680	770	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	115	80	105	120	130
S12	49	65	75	80	55	70	85	90
S13	29	38	43	46	32	41	47	50
H11	55	70	80	90	—	—	—	—
H12	80	105	120	125	—	—	—	—

R218.24-080 – Insert selection

SMG			f_z			
			100%	25%	10%	5%
P1	218.20-080ER-ME04 F40M	XOMX060204R-M05 F40M	0,10	0,12	0,18	0,25
P2	218.20-080ER-ME04 F40M	XOMX060204R-M05 F40M	0,10	0,12	0,18	0,25
P3	218.20-080ER-ME04 F40M	XOMX060204R-M05 F40M	0,095	0,11	0,17	0,24
P4	218.20-080ER-ME04 F40M	XOMX060204R-M05 F40M	0,095	0,11	0,17	0,24
P5	218.20-080ER-M04 F25M	XOMX060204R-M05 F40M	0,090	0,11	0,16	0,22
P6	218.20-080ER-M04 F25M	XOMX060204R-M05 F40M	0,090	0,11	0,16	0,22
P7	218.20-080ER-M04 F25M	XOMX060204R-M05 MP3000	0,090	0,11	0,16	0,22
P8	218.20-080ER-M04 F25M	XOMX060204R-M05 MP3000	0,095	0,11	0,17	0,24
P11	218.20-080ER-M04 F25M	XOMX060204R-M05 MP3000	0,090	0,11	0,16	0,22
P12	218.20-080ER-M04 F25M	XOMX060204R-M05 MP3000	0,065	0,075	0,11	0,15
M1	218.20-080ER-ME04 F40M	XOMX060204R-M05 F40M	0,10	0,12	0,18	0,25
M2	218.20-080ER-ME04 F40M	XOMX060204R-M05 F40M	0,090	0,11	0,16	0,22
M3	218.20-080ER-ME04 F40M	XOMX060204R-M05 F40M	0,075	0,085	0,13	0,18
M4	218.20-080ER-M04 F40M	XOMX060204R-M05 F40M	0,065	0,075	0,11	0,16
M5	218.20-080ER-M04 F40M	XOMX060204R-M05 F40M	0,065	0,075	0,11	0,16
K1	218.20-080ER-M04 F25M	XOMX060204R-M05 MP3000	0,10	0,12	0,18	0,25
K2	218.20-080ER-M04 F25M	XOMX060204R-M05 MP3000	0,090	0,11	0,16	0,22
K3	218.20-080ER-M04 F25M	XOMX060204R-M05 MP3000	0,090	0,11	0,16	0,22
K4	218.20-080ER-M04 F25M	XOMX060204R-M05 MP3000	0,090	0,11	0,16	0,22
K5	218.20-080ER-M04 F25M	XOMX060204R-M05 MP3000	0,080	0,10	0,15	0,20
K6	218.20-080ER-M04 F25M	XOMX060204R-M05 MP3000	0,090	0,11	0,16	0,22
K7	218.20-080ER-M04 F25M	XOMX060204R-M05 MP3000	0,080	0,10	0,15	0,20
N1	218.20-080ER-ME04 F40M	XOMX060204R-M05 F40M	0,13	0,15	0,22	0,32
N2	218.20-080ER-ME04 F40M	XOMX060204R-M05 F40M	0,13	0,15	0,22	0,32
N3	218.20-080ER-ME04 F40M	XOMX060204R-M05 F40M	0,13	0,15	0,22	0,32
N11	218.20-080ER-ME04 F40M	XOMX060204R-M05 F40M	0,13	0,15	0,22	0,32
S1	218.20-080ER-ME04 T350M	XOMX060204R-M05 F40M	0,065	0,075	0,11	0,16
S2	218.20-080ER-ME04 T350M	XOMX060204R-M05 F40M	0,065	0,075	0,11	0,16
S3	218.20-080ER-ME04 T350M	XOMX060204R-M05 F40M	0,060	0,070	0,11	0,15
S11	218.20-080ER-ME04 MS2050	XOMX060204R-M05 MS2050	0,042	0,050	0,075	0,10
S12	218.20-080ER-ME04 MS2050	XOMX060204R-M05 MS2050	0,042	0,050	0,075	0,10
S13	218.20-080ER-ME04 MS2050	XOMX060204R-M05 MS2050	0,038	0,044	0,065	0,090
H11	218.20-080ER-M04 F25M	XOMX060204R-M05 MP3000	0,065	0,075	0,11	0,15
H12	218.20-080ER-M04 F25M	XOMX060204R-M05 MP3000	0,048	0,055	0,085	0,12

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)

	T350M				F25M				F40M				MM4500				MS2050			
SMG	100%	25%	10%	5%	100%	25%	10%	5%	100%	25%	10%	5%	100%	25%	10%	5%	100%	25%	10%	5%
P1	240	335	380	410	225	310	355	380	205	285	325	345	165	230	260	280	265	360	415	440
P2	235	330	370	395	220	305	345	370	200	275	315	335	160	225	255	270	255	350	405	430
P3	205	290	325	345	190	265	300	320	175	245	275	290	140	195	220	235	220	305	350	375
P4	180	255	285	305	170	235	265	280	150	215	240	255	125	175	195	210	195	270	310	330
P5	175	240	275	295	160	225	255	275	145	205	235	250	120	165	190	200	190	260	295	315
P6	195	270	310	330	180	250	290	310	165	230	260	280	135	185	210	225	215	295	335	355
P7	185	255	295	315	170	240	270	290	155	215	245	265	125	175	200	215	200	280	315	335
P8	175	240	275	290	160	225	255	270	145	205	230	245	120	165	185	200	185	260	295	315
P11	180	250	285	305	165	230	265	280	150	210	240	255	125	170	195	210	195	270	305	325
P12	115	160	180	195	105	145	170	180	95	135	155	165	80	110	125	135	120	165	190	205
M1	180	255	285	305	—	—	—	—	160	225	255	270	140	190	220	235	205	285	325	345
M2	150	210	240	255	—	—	—	—	135	185	210	225	115	160	180	195	170	230	265	285
M3	120	165	190	200	—	—	—	—	105	145	165	180	90	125	145	155	135	185	210	225
M4	95	130	145	155	—	—	—	—	85	115	130	135	70	95	110	120	105	140	160	170
M5	80	105	125	130	—	—	—	—	70	95	110	115	60	80	95	100	85	115	135	145
K1	—	—	—	—	175	240	275	290	155	220	250	265	—	—	—	—	—	—	—	—
K2	—	—	—	—	155	215	245	260	140	195	220	235	—	—	—	—	—	—	—	—
K3	—	—	—	—	130	180	205	220	120	165	190	200	—	—	—	—	—	—	—	—
K4	—	—	—	—	125	170	195	210	115	155	180	190	—	—	—	—	—	—	—	—
K5	—	—	—	—	75	105	120	130	70	95	110	115	—	—	—	—	—	—	—	—
K6	—	—	—	—	110	150	175	185	100	140	160	170	—	—	—	—	—	—	—	—
K7	—	—	—	—	95	135	150	165	90	120	140	150	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	1175	1650	1875	1975	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	470	660	760	800	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	315	440	500	530	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	360	500	580	610	—	—	—	—	—	—	—	—
S1	44	60	70	75	43	60	65	70	39	55	60	65	22	30	34	36	48	65	75	80
S2	35	48	55	60	34	47	55	55	31	42	49	50	18	24	28	29	39	55	60	65
S3	31	42	48	50	30	41	46	50	27	37	42	45	15	21	24	25	34	46	55	55
S11	60	85	95	100	60	80	95	100	55	75	85	90	30	42	48	50	70	95	105	115
S12	42	60	65	70	41	55	65	70	37	50	60	65	28	39	44	47	47	65	75	80
S13	25	34	39	41	24	33	38	40	22	30	34	36	16	22	26	27	27	37	42	45
H11	48	65	75	80	45	60	70	75	41	55	65	70	—	—	—	—	—	—	—	—
H12	75	100	115	120	65	90	105	110	60	85	95	100	—	—	—	—	—	—	—	—

R218.24-100 – Insert selection

SMG			f_z			
			100%	25%	10%	5%
P1	218.20-100ER-ME05 F40M	XOMX10T308TR-ME07 F40M	0,10	0,12	0,18	0,25
P2	218.20-100ER-ME05 F40M	XOMX10T308TR-ME07 F40M	0,10	0,12	0,18	0,25
P3	218.20-100ER-ME05 F40M	XOMX10T308TR-ME07 MP2501	0,095	0,11	0,17	0,24
P4	218.20-100ER-ME05 F40M	XOMX10T308TR-M09 MP2501	0,095	0,11	0,17	0,24
P5	218.20-100ER-M05 F40M	XOMX10T308TR-M09 MP2501	0,090	0,11	0,16	0,22
P6	218.20-100ER-M05 F40M	XOMX10T308TR-M09 MP2501	0,090	0,11	0,16	0,22
P7	218.20-100ER-M05 F40M	XOMX10T308TR-M09 MP2501	0,090	0,11	0,16	0,22
P8	218.20-100ER-M05 F40M	XOMX10T308TR-M09 MP2501	0,095	0,11	0,17	0,24
P11	218.20-100ER-M05 F40M	XOMX10T308TR-M09 MP2501	0,090	0,11	0,16	0,22
P12	218.20-100ER-M05 F40M	XOMX10T308TR-M09 MP2501	0,065	0,075	0,11	0,15
M1	218.20-100ER-ME05 F40M	XOEX10T308R-M06 F40M	0,10	0,12	0,18	0,25
M2	218.20-100ER-ME05 F40M	XOEX10T308R-M06 F40M	0,090	0,11	0,16	0,22
M3	218.20-100ER-ME05 F40M	XOEX10T308R-M06 F40M	0,075	0,085	0,13	0,18
M4	218.20-100ER-M05 F40M	XOEX10T308R-M06 T350M	0,065	0,075	0,11	0,16
M5	218.20-100ER-M05 F40M	XOEX10T308R-M06 T350M	0,065	0,075	0,11	0,16
K1	218.20-100ER-M05 F25M	XOMX10T308TR-M09 MK2050	0,10	0,12	0,18	0,25
K2	218.20-100ER-M05 F25M	XOMX10T308TR-M09 MK2050	0,090	0,11	0,16	0,22
K3	218.20-100ER-M05 F25M	XOMX10T308TR-M09 MK2050	0,090	0,11	0,16	0,22
K4	218.20-100ER-M05 F25M	XOMX10T308TR-M09 MK2050	0,090	0,11	0,16	0,22
K5	218.20-100ER-M05 F25M	XOMX10T308TR-M09 MK2050	0,080	0,10	0,15	0,20
K6	218.20-100ER-M05 F25M	XOMX10T308TR-M09 MK2050	0,090	0,11	0,16	0,22
K7	218.20-100ER-M05 F25M	XOMX10T308TR-M09 MK2050	0,080	0,10	0,15	0,20
N1	218.20-100ER-ME05 F40M	XOEX10T308FR-E05 H15	0,13	0,15	0,22	0,32
N2	218.20-100ER-ME05 F40M	XOEX10T308FR-E05 H15	0,13	0,15	0,22	0,32
N3	218.20-100ER-ME05 F40M	XOEX10T308FR-E05 H15	0,13	0,15	0,22	0,32
N11	218.20-100ER-ME05 F40M	XOEX10T308FR-E05 H15	0,13	0,15	0,22	0,32
S1	218.20-100ER-ME05 F40M	XOEX10T308R-M06 F40M	0,065	0,075	0,11	0,16
S2	218.20-100ER-ME05 F40M	XOEX10T308R-M06 F40M	0,065	0,075	0,11	0,16
S3	218.20-100ER-ME05 F40M	XOEX10T308R-M06 F40M	0,060	0,070	0,11	0,15
S11	218.20-100ER-ME05 MS2050	XOEX10T308R-M06 MS2050	0,055	0,060	0,090	0,13
S12	218.20-100ER-ME05 MS2050	XOEX10T308R-M06 MS2050	0,055	0,060	0,090	0,13
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 MP1501	0,065	0,075	0,11	0,15
H12	218.20-100ER-M05 F25M	XOMX10T308TR-M09 MP1501	0,048	0,055	0,085	0,12

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R218.24-100 – Cutting data v_c = (m/min)

	F25M				F40M				MM4500				MS2050			
SMG	100%	25%	10%	5%	100%	25%	10%	5%	100%	25%	10%	5%	100%	25%	10%	5%
P1	230	320	365	390	210	295	330	355	170	235	270	285	255	350	405	425
P2	225	315	355	380	205	285	325	345	165	230	260	280	245	340	385	410
P3	195	275	310	330	180	250	280	300	145	205	230	245	210	295	335	360
P4	175	240	275	290	155	220	250	265	125	180	200	215	190	260	295	320
P5	165	230	265	285	150	210	240	255	125	170	195	210	180	250	285	305
P6	190	260	295	315	170	235	270	290	140	190	220	235	205	280	325	340
P7	175	245	280	300	160	225	255	270	130	180	205	220	190	265	305	325
P8	165	230	260	275	150	210	235	250	120	170	190	205	180	250	285	300
P11	170	240	270	290	155	215	250	265	125	175	200	215	185	255	295	315
P12	110	150	175	185	100	140	160	170	80	110	130	135	120	160	185	200
M1	—	—	—	—	165	230	260	280	140	200	225	240	200	275	310	330
M2	—	—	—	—	135	190	215	230	120	165	185	200	165	225	255	275
M3	—	—	—	—	110	150	175	185	95	130	150	160	130	180	205	215
M4	—	—	—	—	85	115	135	140	75	100	115	120	100	135	155	170
M5	—	—	—	—	70	95	110	120	60	85	95	100	85	115	130	140
K1	180	250	280	300	160	225	255	275	—	—	—	—	—	—	—	—
K2	160	220	250	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	130	70	100	110	120	—	—	—	—	—	—	—	—
K6	115	155	180	190	105	140	165	175	—	—	—	—	—	—	—	—
K7	100	140	155	170	90	125	145	155	—	—	—	—	—	—	—	—
N1	—	—	—	—	1200	1700	1925	2025	—	—	—	—	—	—	—	—
N2	—	—	—	—	485	680	780	820	—	—	—	—	—	—	—	—
N3	—	—	—	—	325	455	520	550	—	—	—	—	—	—	—	—
N11	—	—	—	—	370	520	590	630	—	—	—	—	—	—	—	—
S1	44	60	70	75	40	55	60	65	23	31	35	37	47	65	75	80
S2	35	48	55	60	32	44	50	55	18	25	28	30	38	50	60	65
S3	31	42	48	50	28	38	43	46	16	22	25	26	33	45	50	55
S11	60	85	95	100	55	75	85	95	31	43	49	55	65	90	105	110
S12	42	60	65	70	38	55	60	65	29	40	46	49	45	65	70	75
S13	25	34	39	41	23	30	35	37	17	23	26	28	26	36	41	44
H11	46	65	75	80	42	60	65	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	0,12	0,17	0,24
P2	218.20-125ER-ME07 F40M	XOMX10T308TR-ME07 F40M	0,10	0,12	0,18	0,25
P3	218.20-125ER-ME07 F40M	XOMX10T308TR-ME07 MP2501	0,095	0,11	0,17	0,24
P4	218.20-125ER-ME07 F40M	XOMX10T308TR-M09 MP2501	0,095	0,11	0,16	0,22
P5	218.20-125ER-M07 F40M	XOMX10T308TR-M09 MP2501	0,090	0,11	0,16	0,22
P6	218.20-125ER-M07 F40M	XOMX10T308TR-M09 MP2501	0,090	0,11	0,16	0,22
P7	218.20-125ER-M07 F40M	XOMX10T308TR-M09 MP2501	0,090	0,11	0,16	0,22
P8	218.20-125ER-M07 F40M	XOMX10T308TR-M09 MP2501	0,095	0,11	0,17	0,24
P11	218.20-125ER-M07 F40M	XOMX10T308TR-M09 MP2501	0,090	0,11	0,16	0,22
P12	218.20-125ER-M07 F40M	XOMX10T308TR-M09 MP2501	0,065	0,075	0,11	0,15
M1	218.20-125ER-ME07 F40M	XOEX10T308R-M06 F40M	0,10	0,12	0,18	0,25
M2	218.20-125ER-ME07 F40M	XOEX10T308R-M06 F40M	0,090	0,11	0,16	0,22
M3	218.20-125ER-ME07 F40M	XOEX10T308R-M06 F40M	0,075	0,085	0,13	0,18
M4	218.20-125ER-M07 F40M	XOEX10T308R-M06 T350M	0,070	0,075	0,11	0,16
M5	218.20-125ER-M07 F40M	XOEX10T308R-M06 T350M	0,070	0,075	0,11	0,16
K1	218.20-125ER-M07 F25M	XOMX10T308TR-M09 MK2050	0,10	0,12	0,18	0,25
K2	218.20-125ER-M07 F25M	XOMX10T308TR-M09 MK2050	0,090	0,11	0,16	0,22
K3	218.20-125ER-M07 F25M	XOMX10T308TR-M09 MK2050	0,090	0,11	0,16	0,22
K4	218.20-125ER-M07 F25M	XOMX10T308TR-M09 MK2050	0,090	0,11	0,16	0,22
K5	218.20-125ER-M07 F25M	XOMX10T308TR-M09 MK2050	0,080	0,10	0,14	0,20
K6	218.20-125ER-M07 F25M	XOMX10T308TR-M09 MK2050	0,090	0,11	0,16	0,22
K7	218.20-125ER-M07 F25M	XOMX10T308TR-M09 MK2050	0,080	0,10	0,14	0,20
N1	218.20-125ER-ME07 F40M	XOEX10T308FR-E05 H15	0,13	0,15	0,22	0,32
N2	218.20-125ER-ME07 F40M	XOEX10T308FR-E05 H15	0,13	0,15	0,22	0,32
N3	218.20-125ER-ME07 F40M	XOEX10T308FR-E05 H15	0,13	0,15	0,22	0,32
N11	218.20-125ER-ME07 F40M	XOEX10T308FR-E05 H15	0,13	0,15	0,22	0,32
S1	218.20-125ER-ME07 F40M	XOEX10T308R-M06 F40M	0,070	0,075	0,11	0,16
S2	218.20-125ER-ME07 F40M	XOEX10T308R-M06 F40M	0,070	0,075	0,11	0,16
S3	218.20-125ER-ME07 F40M	XOEX10T308R-M06 F40M	0,065	0,070	0,10	0,14
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	0,070	0,075	0,11	0,16
H11	218.20-125ER-M07 F25M	XOMX10T308TR-M09 MP1501	0,065	0,075	0,11	0,15
H12	218.20-125ER-M07 F25M	XOMX10T308TR-M09 MP1501	0,050	0,055	0,085	0,12

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R218.24-125 – Cutting data v_c = (m/min)

	F25M				F40M				MM4500				MS2050			
SMG	100%	25%	10%	5%	100%	25%	10%	5%	100%	25%	10%	5%	100%	25%	10%	5%
P1	230	320	365	390	225	310	360	380	180	250	290	310	250	340	395	420
P2	225	310	350	375	220	305	345	365	180	245	280	300	240	335	380	405
P3	195	270	305	325	190	265	300	320	155	215	245	260	210	295	330	350
P4	170	240	275	295	170	235	270	285	135	190	215	230	185	260	295	315
P5	165	230	260	280	165	225	255	275	130	180	205	220	180	245	280	300
P6	185	255	295	315	185	250	285	305	150	205	235	250	200	275	315	340
P7	175	240	275	295	170	235	270	290	140	190	220	235	190	260	300	320
P8	165	230	260	275	160	225	250	270	130	180	205	215	175	245	275	295
P11	170	235	270	290	165	230	265	280	135	185	215	230	185	255	290	310
P12	110	150	170	185	105	145	170	180	85	120	135	145	120	160	185	200
M1	—	—	—	—	175	245	275	295	150	210	240	255	195	270	305	325
M2	—	—	—	—	145	200	230	245	125	175	200	210	160	220	255	270
M3	—	—	—	—	115	160	185	195	100	140	160	170	130	180	200	215
M4	—	—	—	—	95	125	140	150	80	105	125	130	100	135	155	165
M5	—	—	—	—	75	105	120	125	65	90	100	110	85	115	130	140
K1	180	245	280	300	175	240	275	290	—	—	—	—	—	—	—	—
K2	160	215	250	265	155	210	245	260	—	—	—	—	—	—	—	—
K3	135	185	210	225	130	180	205	220	—	—	—	—	—	—	—	—
K4	125	175	200	215	125	170	195	210	—	—	—	—	—	—	—	—
K5	80	105	125	130	75	105	120	130	—	—	—	—	—	—	—	—
K6	110	155	175	190	110	150	175	185	—	—	—	—	—	—	—	—
K7	100	135	155	165	100	135	155	165	—	—	—	—	—	—	—	—
N1	—	—	—	—	1275	1800	2050	2175	—	—	—	—	—	—	—	—
N2	—	—	—	—	520	730	830	880	—	—	—	—	—	—	—	—
N3	—	—	—	—	345	485	550	580	—	—	—	—	—	—	—	—
N11	—	—	—	—	395	550	630	670	—	—	—	—	—	—	—	—
S1	44	60	70	70	43	60	65	70	24	33	38	40	48	65	75	75
S2	36	48	55	60	35	47	55	55	20	26	30	32	38	50	60	60
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	50	55	65	90	100	110
S12	42	60	65	70	42	55	65	70	31	43	48	50	46	60	70	75
S13	25	33	38	40	24	33	37	39	18	25	28	30	27	36	41	43
H11	46	65	75	80	45	60	70	75	—	—	—	—	—	—	—	—
H12	70	95	105	115	70	90	105	110	—	—	—	—	—	—	—	—

High feed milling cutters

Insert	a_p max	Material suitability										
		P	M	K	N	S	S	H				
LP05 	0,65	■	■	■	□	■	■	■	■	□	■	■
LP06 	0,8	■	■	■	■	■	■	■	■	□	■	■
LP09 	1,8	■	■	■	□	■	■	□	■	■	■	■
LO06 	0,9	■	◩	■	–	■	◩	■	■	◩	◩	◩
218.19-100 	0,7	■	◩	■	■	◩	◩	■	■	◩	■	■
218.19-125 	1,0	■	◩	■	■	◩	◩	■	◩	■	■	■
218.19-160 	1,8	■	◩	■	■	◩	◩	□	-	■	■	■
218.21-230 	1,8	■	■	■	-	■	□	◩	-	■	□	■
SCET 	2,0	■	■	■	-	■	■	-	-	■	□	■
ON09 	2,0	■	-	■	-	-	-	-	-	■	-	-





High feed milling cutters

No. of cutting edges	Application	Cutter diameter (mm) 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																						433-434
		2	2	3	3	4																						
2										4																		437-438
						2	3	3	4	5																		
				2	2	3	4		5	6	6																	
2							2		3				5															441-442
									4	4	4		6		6		7											
											5	5	7	7	8	8	9			10								
4											5																	445-446
						2	3	3	4	5	6																	
							4		5	6	7	7	8	8	9													
3							2																					449-463
						2	3																					
3									2																			
							2		3	3	4																	
3													3		4													
													4	4	5	5	6	7		7								
									2		3		5	5	6	6	7	8		9								
6													4		5		6			7		9		10				452
											3	3	5	5	6	6	7	8		9								
4															4	4	5	5		5								464-466
													4	4	5		6	6		7		6		7				
													5	5	6	6	7			8								
16																	6			7		8		10				467

x — x indicates number of teeth (first choice)

x — x indicates number of teeth

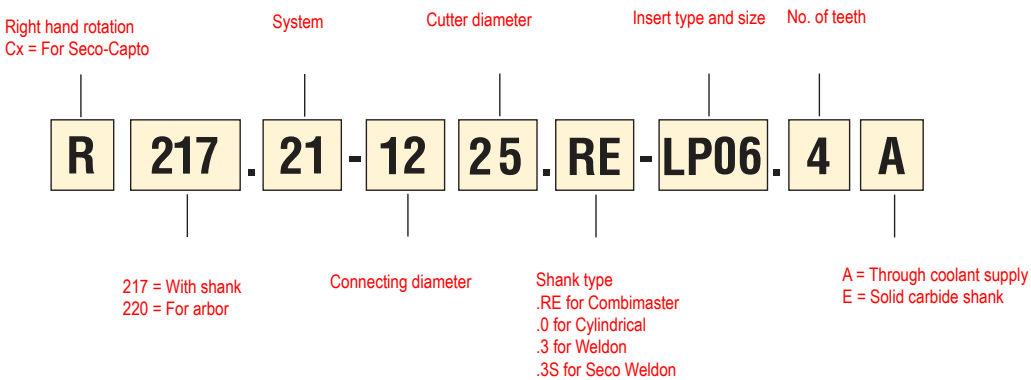
Troubleshooter for unstable fixturing and/or unstable conditions

Basic choice

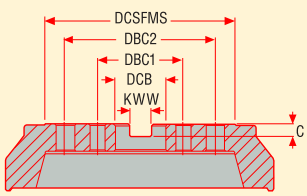
Milling cutters

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

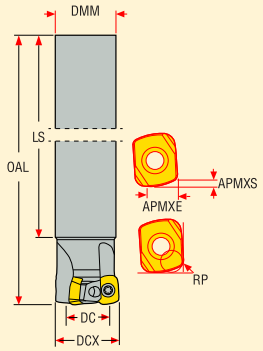


Dimensions in mm						Spindle-nose
DCSFMS	DCB	KWW	C	DBC1	DBC2	
30-35	16	8,4	5,6	–	–	–
42-47	22	10,4	6.3	–	–	–
48-62	27	12,4	7	–	–	–
60-90	32	14,4	8	–	–	–
90-130	40	16,4	9	66,7	–	(8xxx)
130-270	60	25,7	14	101,6	177,8	(8xxx)

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

R217.21-LP05





- For insert selection and cutting data recommendations, see page(s) 435-436
- For complete insert programme, see page(s) 630
- 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	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	17,4	22,0	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	21,4	26,0	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	25,4	30,0	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	29,4	34,0	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	33,4	38,0	3	0,3	35000	LP..05

Spare Parts

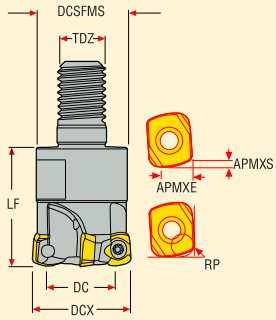
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.21-..	DOUBLE-T	C02005-T06P	H4B-T06P	0,5
R217.21-..	DOUBLE-T	C02053-T06P	H4B-T06P	0,5

Please check availability in current price and stock-list

Torque keys, see page 710

R217.21-LP05





- For insert selection and cutting data recommendations, see page(s) 435-436
- For complete insert programme, see page(s) 630
- 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	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	17,4	22,0	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	17,4	22,0	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	21,4	26,0	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	21,4	26,0	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	25,4	30,0	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	33,4	38,0	4	0,1	35000	LP..05

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

Please check availability in current price and stock-list

Torque keys, see page 710

R217/220.21-LP05 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	LPHT05T210TR-ME04 T350M	0,60	0,42	0,42	0,55
P2	LPHT05T210TR-ME04 T350M	0,60	0,42	0,42	0,55
P3	LPHT05T210TR-ME04 T350M	0,60	0,40	0,40	0,50
P4	LPKT05T210TR-M05 MP2501	0,60	0,50	0,50	0,65
P5	LPKT05T210TR-M05 MP2501	0,60	0,48	0,50	0,65
P6	LPKT05T210TR-M05 MP2501	0,60	0,48	0,48	0,65
P7	LPKT05T210TR-M05 MP2501	0,60	0,48	0,48	0,65
P8	LPKW05T210TR-MD05 MP2501	0,60	0,50	0,50	0,65
P11	LPKT05T210TR-M05 MS2500	0,60	0,48	0,48	0,65
P12	LPKT05T210TR-M05 MS2500	0,46	0,34	0,34	0,42
M1	LPKT05T210TR-M05 F40M	0,60	0,55	0,55	0,70
M2	LPKT05T210TR-M05 F40M	0,60	0,48	0,50	0,65
M3	LPKT05T210TR-M05 F40M	0,46	0,40	0,40	0,50
M4	LPKT05T210TR-M05 F40M	0,36	0,34	0,34	0,44
M5	LPKT05T210TR-M05 F40M	0,36	0,34	0,34	0,44
K1	LPKW05T210TR-MD05 MP2501	0,60	0,55	0,55	0,70
K2	LPKW05T210TR-MD05 MP2501	0,60	0,48	0,50	0,65
K3	LPKW05T210TR-MD05 MP2501	0,60	0,48	0,50	0,65
K4	LPKW05T210TR-MD05 MP2501	0,60	0,48	0,50	0,65
K5	LPKW05T210TR-MD05 MP2501	0,60	0,44	0,44	0,55
K6	LPKW05T210TR-MD05 MP2501	0,60	0,48	0,50	0,65
K7	LPKW05T210TR-MD05 MP2501	0,60	0,44	0,44	0,55
N1	LPHT05T210TR-ME04 F40M	0,60	0,55	0,55	0,70
N2	LPHT05T210TR-ME04 F40M	0,60	0,55	0,55	0,70
N3	LPHT05T210TR-ME04 F40M	0,60	0,55	0,55	0,70
N11	LPHT05T210TR-ME04 F40M	0,60	0,55	0,55	0,70
S1	LPHT05T210TR-ME04 F40M	0,36	0,28	0,28	0,34
S2	LPHT05T210TR-ME04 F40M	0,36	0,28	0,28	0,34
S3	LPKT05T210TR-M05 F40M	0,36	0,32	0,32	0,40
S11	LPHT05T210TR-ME04 MS2050	0,40	0,32	0,32	0,40
S12	LPHT05T210TR-ME04 MS2050	0,40	0,32	0,32	0,40
S13	LPHT05T210TR-ME04 MS2050	0,36	0,28	0,28	0,34
H5	LPHW05T210TR-MD05 MH1000	0,36	0,28	0,28	0,36
H8	LPHW05T210TR-MD05 MH1000	0,32	0,22	0,22	0,28
H11	LPKT05T210TR-M05 F40M	0,36	0,28	0,28	0,36
H12	LPKT05T210TR-M05 F40M	0,32	0,22	0,22	0,28
H21	LPHW05T210TR-MD05 MH1000	0,32	0,22	0,22	0,28

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

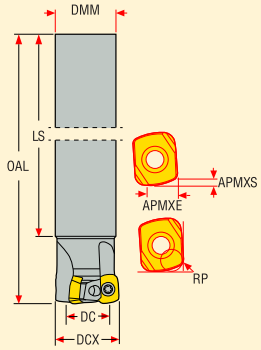
R217/220.21-LP05 – Cutting data v_c = (m/min)

	MP2050			MP2501			MP3000			T350M			F40M			MM4500		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	315	380	445	320	390	455	300	370	430	305	375	435	240	295	345	215	265	305
P2	305	370	435	310	380	440	295	360	415	300	365	420	235	285	335	210	255	295
P3	270	330	380	275	335	385	260	315	365	260	320	370	205	255	295	185	225	260
P4	235	290	335	240	295	340	230	280	320	230	280	325	180	225	260	160	195	230
P5	230	275	320	230	280	325	220	265	310	220	265	310	175	215	245	155	190	220
P6	255	310	360	260	320	365	245	300	345	250	305	350	195	240	275	175	215	245
P7	240	295	340	245	300	345	235	285	325	235	285	330	185	230	260	165	200	235
P8	225	275	320	230	280	325	220	265	310	220	265	310	175	215	245	155	190	220
P11	235	285	330	240	290	335	225	275	315	230	280	320	180	220	255	160	195	225
P12	155	195	225	160	195	225	150	185	215	150	185	215	120	150	170	105	130	150
M1	220	265	310	225	275	320	220	270	310	230	280	325	190	230	270	180	220	255
M2	180	220	255	185	225	260	185	220	255	190	230	270	160	190	220	150	180	210
M3	150	190	215	155	190	220	150	190	215	155	195	225	130	165	185	120	150	175
M4	120	155	175	125	160	180	120	155	175	125	160	180	105	135	150	95	125	140
M5	100	130	145	105	130	150	100	130	145	105	130	150	85	110	125	80	105	115
K1	240	295	345	245	300	350	235	285	330	—	—	—	185	225	265	—	—	—
K2	215	260	305	220	265	310	210	250	290	—	—	—	165	200	235	—	—	—
K3	185	220	255	185	225	260	175	215	245	—	—	—	140	170	200	—	—	—
K4	175	210	245	180	215	250	170	205	235	—	—	—	135	165	190	—	—	—
K5	105	130	150	110	130	155	105	125	145	—	—	—	80	100	115	—	—	—
K6	155	185	215	155	190	220	150	180	210	—	—	—	120	145	165	—	—	—
K7	135	165	195	140	170	195	130	160	185	—	—	—	105	130	150	—	—	—
N1	—	—	—	—	—	—	1725	2100	2450	—	—	—	1375	1675	1950	—	—	—
N2	—	—	—	—	—	—	700	850	990	—	—	—	560	680	790	—	—	—
N3	—	—	—	—	—	—	465	570	660	—	—	—	370	455	530	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	425	520	600	—	—	—
S1	60	75	85	—	—	—	55	75	80	60	75	85	49	65	70	30	38	43
S2	47	60	70	—	—	—	46	60	65	46	60	65	39	50	55	24	30	35
S3	41	55	60	—	—	—	40	50	60	41	50	60	34	44	50	21	27	30
S11	80	100	115	—	—	—	80	100	110	80	100	115	65	85	95	41	50	60
S12	55	70	80	—	—	—	55	70	80	55	70	80	46	60	65	38	48	55
S13	33	42	48	—	—	—	32	41	46	32	41	47	27	35	39	22	28	32
H5	50	60	70	50	60	70	50	60	70	55	65	75	43	50	60	—	—	—
H8	55	65	75	55	65	75	55	65	75	55	70	80	45	55	65	—	—	—
H11	65	75	90	65	80	90	65	75	90	65	80	95	55	65	75	—	—	—
H12	105	130	145	105	130	150	100	125	140	100	120	140	80	100	115	—	—	—
H21	55	65	75	55	65	75	55	65	75	55	70	80	45	55	65	—	—	—

	MS2050			MS2500			MH1000		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	—	—	—	345	425	495	—	—	—
P2	—	—	—	340	415	480	—	—	—
P3	—	—	—	300	365	420	—	—	—
P4	—	—	—	265	320	370	—	—	—
P5	—	—	—	255	305	355	—	—	—
P6	—	—	—	285	345	400	—	—	—
P7	205	250	285	270	330	375	—	—	—
P8	190	235	270	250	305	355	—	—	—
P11	200	245	280	260	320	365	—	—	—
P12	130	165	190	175	215	250	—	—	—
M1	210	255	295	240	295	345	—	—	—
M2	175	210	245	205	245	285	—	—	—
M3	145	180	205	165	210	240	—	—	—
M4	115	145	165	135	170	195	—	—	—
M5	95	125	140	110	145	160	—	—	—
K1	—	—	—	—	—	—	250	305	355
K2	—	—	—	—	—	—	225	270	315
K3	—	—	—	—	—	—	190	230	265
K4	—	—	—	—	—	—	180	220	255
K5	—	—	—	—	—	—	110	135	155
K6	—	—	—	—	—	—	160	190	225
K7	—	—	—	—	—	—	140	170	200
N1	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—
S1	55	70	75	65	85	95	—	—	—
S2	43	55	60	55	70	75	—	—	—
S3	38	48	55	46	60	65	—	—	—
S11	75	95	105	90	115	130	—	—	—
S12	50	65	75	60	80	90	—	—	—
S13	30	39	43	37	47	55	—	—	—
H5	—	—	—	—	—	—	55	70	80
H8	—	—	—	—	—	—	60	75	85
H11	—	—	—	—	—	—	75	90	100
H12	—	—	—	—	—	—	110	135	150
H21	—	—	—	—	—	—	60	75	85

R217.21-LP06





- For insert selection and cutting data recommendations, see page(s) 439-440
- For complete insert programme, see page(s) 630
- 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	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	23,5	30,0	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	27,5	34,0	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	31,6	38,0	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	41,5	48,0	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	45,5	52,0	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	55,5	62,0	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	61,5	68,0	4	0,4	26000	LP..06

Spare Parts

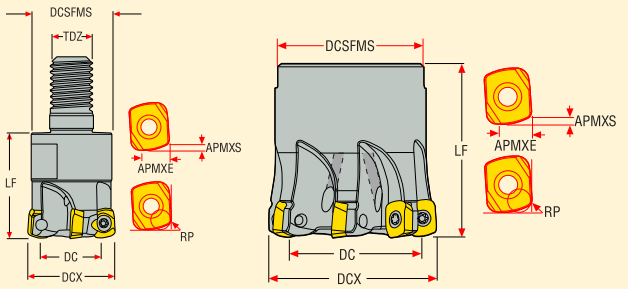
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
Ø16-20	DOUBLE-T	C02555-T08P	H4B-T08P	1,2
Ø25-35	DOUBLE-T	C02506-T08P	H4B-T08P	1,2

Please check availability in current price and stock-list

Torque keys, see page 710

R217/220.21-LP06





- For insert selection and cutting data recommendations, see page(s) 439-440
- For complete insert programme, see page(s) 630
- 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	23,5	30,0	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	31,5	38,0	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	31,5	38,0	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	41,5	48,0	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	41,5	48,0	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	55,5	62,0	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	61,5	68,0	5	0,3	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	71,5	78,0	7	0,4	24000	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	61,5	68,0	6	0,4	26000	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	71,5	78,0	6	0,2	24000	LP..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)
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 710

R217/220.21-LP06 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	LPHT060310TR-M06 T350M	0,70	0,65	0,65	0,80
P2	LPHT060310TR-M06 T350M	0,70	0,65	0,65	0,85
P3	LPHT060310TR-M06 T350M	0,70	0,60	0,60	0,80
P4	LPHT060310TR-M06 MP2501	0,70	0,60	0,60	0,75
P5	LPHT060310TR-M06 MP2501	0,70	0,60	0,60	0,75
P6	LPHT060310TR-M06 MP2501	0,70	0,60	0,60	0,75
P7	LPHW060310TR-MD07 MP2501	0,70	0,70	0,70	0,85
P8	LPHW060310TR-MD07 MP2501	0,70	0,70	0,70	0,90
P11	LPHW060310TR-MD07 MS2500	0,70	0,70	0,70	0,85
P12	LPHW060310TR-MD07 MS2500	0,60	0,48	0,48	0,60
M1	LPHT060310TR-ME05 F40M	0,70	0,55	0,55	0,70
M2	LPHT060310TR-ME05 F40M	0,70	0,50	0,50	0,65
M3	LPHT060310TR-ME05 F40M	0,60	0,40	0,40	0,50
M4	LPHT060310TR-M06 F40M	0,44	0,42	0,42	0,50
M5	LPHT060310TR-M06 F40M	0,44	0,42	0,42	0,50
K1	LPHW060310TR-D06 MP3000	0,70	0,65	0,65	0,85
K2	LPHW060310TR-D06 MP3000	0,70	0,60	0,60	0,75
K3	LPHW060310TR-D06 MP3000	0,70	0,60	0,60	0,75
K4	LPHW060310TR-D06 MP3000	0,70	0,60	0,60	0,75
K5	LPHW060310TR-D06 MP3000	0,70	0,55	0,55	0,70
K6	LPHW060310TR-D06 MP3000	0,70	0,60	0,60	0,75
K7	LPHW060310TR-D06 MP3000	0,70	0,55	0,55	0,70
N1	LPHT060310ER-E05 H25	0,70	0,70	0,70	0,90
N2	LPHT060310ER-E05 H25	0,70	0,70	0,70	0,90
N3	LPHT060310ER-E05 H25	0,70	0,70	0,70	0,90
N11	LPHT060310ER-E05 H25	0,70	0,70	0,70	0,90
S1	LPHT060310TR-M06 MS2500	0,44	0,42	0,42	0,50
S2	LPHT060310TR-M06 MS2500	0,44	0,42	0,42	0,50
S3	LPHT060310TR-M06 MS2500	0,44	0,38	0,38	0,48
S11	LPHT060310TR-M06 MS2050	0,50	0,48	0,48	0,60
S12	LPHT060310TR-M06 MS2050	0,50	0,48	0,48	0,60
S13	LPHT060310TR-M06 MS2050	0,44	0,42	0,42	0,50
H5	LPHW060310TR-D06 MH1000	0,44	0,34	0,34	0,44
H8	LPHW060310TR-D06 MH1000	0,40	0,26	0,26	0,34
H11	LPHW060310TR-D06 MP3000	0,44	0,34	0,34	0,44
H12	LPHT060310TR-M06 T350M	0,40	0,26	0,26	0,34
H21	LPHW060310TR-D06 MH1000	0,40	0,26	0,26	0,34

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

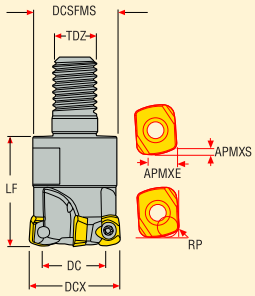
R217/220.21-LP06 – Cutting data v_c = (m/min)

	MP2050			MP2501			MP3000			T350M			F40M			MM4500		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	290	340	405	295	345	415	280	330	395	260	300	360	225	265	315	195	230	275
P2	285	330	390	290	335	395	275	320	375	250	295	345	220	255	300	190	225	265
P3	250	290	340	255	295	350	240	280	330	220	260	305	190	225	265	170	200	235
P4	220	255	300	225	260	305	210	245	290	195	230	265	170	200	230	150	175	205
P5	210	245	290	215	250	295	200	235	280	185	215	260	160	190	225	140	165	195
P6	235	275	330	240	280	335	225	265	315	210	245	290	180	210	255	160	185	220
P7	220	260	310	225	265	315	215	250	300	195	230	275	170	200	240	150	175	210
P8	210	245	285	215	250	290	200	235	275	185	215	255	160	190	220	140	165	195
P11	215	250	300	220	255	305	210	245	290	190	225	265	165	195	230	145	170	200
P12	145	175	200	145	175	205	140	165	195	130	155	180	110	135	155	95	115	135
M1	205	235	280	210	245	285	205	240	280	195	225	265	175	205	240	165	190	230
M2	170	195	235	170	200	240	170	195	235	160	185	225	145	170	205	135	160	190
M3	140	165	195	140	170	200	140	170	200	130	160	190	120	145	170	110	135	155
M4	110	135	160	115	140	160	110	140	160	105	130	150	95	120	135	90	110	125
M5	95	115	130	95	115	135	95	115	130	90	110	125	80	100	115	75	90	105
K1	225	260	310	230	265	315	215	255	300	200	235	275	175	205	240	—	—	—
K2	200	230	275	205	235	280	190	225	265	175	205	245	155	180	215	—	—	—
K3	170	195	235	170	200	240	160	190	225	150	175	210	130	150	180	—	—	—
K4	160	190	225	165	190	230	155	180	215	145	165	200	125	145	175	—	—	—
K5	100	115	135	100	115	140	95	110	130	85	100	120	75	90	105	—	—	—
K6	140	165	195	145	170	200	135	160	190	125	145	175	110	130	150	—	—	—
K7	125	145	175	130	150	175	120	140	170	110	130	155	95	115	135	—	—	—
N1	—	—	—	—	—	—	1600	1850	2225	—	—	—	1275	1475	1775	—	—	—
N2	—	—	—	—	—	—	640	750	900	—	—	—	510	600	720	—	—	—
N3	—	—	—	—	—	—	430	500	600	—	—	—	345	400	480	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	390	455	550	—	—	—
S1	55	65	75	—	—	—	50	65	75	50	60	70	45	55	65	28	34	39
S2	44	55	60	—	—	—	42	50	60	40	49	55	36	45	50	22	27	31
S3	39	48	55	—	—	—	37	46	50	35	43	50	32	39	45	19	24	27
S11	75	90	105	—	—	—	70	90	100	70	85	95	60	75	90	38	46	55
S12	50	65	75	—	—	—	50	60	70	47	60	65	43	55	60	35	43	49
S13	31	38	43	—	—	—	29	36	42	28	34	40	25	31	36	21	25	29
H5	46	55	65	48	55	65	46	55	65	46	55	60	40	46	55	—	—	—
H8	49	60	70	50	60	70	49	60	70	49	60	65	42	50	60	—	—	—
H11	60	70	80	60	70	85	60	70	80	60	70	80	50	60	70	—	—	—
H12	100	115	135	100	120	135	95	115	130	85	105	120	75	90	105	—	—	—
H21	49	60	70	50	60	70	49	60	70	49	60	65	42	50	60	—	—	—

	MS2050			MS2500			MH1000			H25		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	—	—	—	325	380	455	—	—	—	—	—	—
P2	—	—	—	315	370	435	—	—	—	—	—	—
P3	—	—	—	275	325	380	—	—	—	—	—	—
P4	—	—	—	245	285	335	—	—	—	—	—	—
P5	—	—	—	235	270	325	—	—	—	—	—	—
P6	—	—	—	260	305	365	—	—	—	—	—	—
P7	190	220	265	245	290	345	—	—	—	—	—	—
P8	180	210	245	235	270	320	—	—	—	—	—	—
P11	185	215	255	240	280	335	—	—	—	—	—	—
P12	120	145	170	160	190	225	—	—	—	—	—	—
M1	195	225	265	225	265	310	—	—	—	—	—	—
M2	160	185	225	185	220	260	—	—	—	—	—	—
M3	130	160	190	155	185	220	—	—	—	—	—	—
M4	105	130	150	125	155	175	—	—	—	—	—	—
M5	90	110	125	105	125	145	—	—	—	—	—	—
K1	—	—	—	—	—	—	230	270	320	—	—	—
K2	—	—	—	—	—	—	205	240	285	—	—	—
K3	—	—	—	—	—	—	175	205	245	—	—	—
K4	—	—	—	—	—	—	165	195	230	—	—	—
K5	—	—	—	—	—	—	100	120	140	—	—	—
K6	—	—	—	—	—	—	145	170	205	—	—	—
K7	—	—	—	—	—	—	130	150	180	—	—	—
N1	—	—	—	—	—	—	—	—	—	1325	1550	1825
N2	—	—	—	—	—	—	—	—	—	530	620	740
N3	—	—	—	—	—	—	—	—	—	355	415	490
N11	—	—	—	—	—	—	—	—	—	405	475	560
S1	50	60	70	60	75	85	—	—	—	—	—	—
S2	40	49	55	49	60	70	—	—	—	—	—	—
S3	35	43	50	43	55	60	—	—	—	—	—	—
S11	70	85	95	85	100	120	—	—	—	—	—	—
S12	47	60	65	60	70	80	—	—	—	—	—	—
S13	28	34	40	34	42	48	—	—	—	—	—	—
H5	—	—	—	—	—	—	55	60	70	—	—	—
H8	—	—	—	—	—	—	55	65	80	—	—	—
H11	—	—	—	—	—	—	70	80	90	—	—	—
H12	—	—	—	—	—	—	100	120	140	—	—	—
H21	—	—	—	—	—	—	55	65	80	—	—	—

R217.21-LP09





- For insert selection and cutting data recommendations, see page(s) 443-444
- For complete insert programme, see page(s) 630
- 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	DCSFMS	TDZ	LF	UTCN	RP							
R217.21-1225.RE-LP09.2A	Combimaster	7,3	1,8	25,0	12,0	23,0	M12	35,0	0,7	3,5	8,8	37,0	48,0	2	0,1	35200	LP..09
R217.21-1632.RE-LP09.3A	Combimaster	7,3	1,8	32,0	19,1	30,0	M16	35,0	0,7	3,5	4,8	51,1	62,0	3	0,2	31100	LP..09
R217.21-1632.RE-LP09.4A	Combimaster	7,3	1,8	32,0	19,1	30,0	M16	35,0	0,7	3,5	4,8	51,1	62,0	4	0,2	31100	LP..09
R217.21-1635.RE-LP09.4A	Combimaster	7,3	1,8	35,0	22,1	30,0	M16	35,0	0,7	3,5	4,0	57,1	68,0	4	0,2	29700	LP..09
R217.21-2040.RE-LP09.5A	Combimaster	7,3	1,8	40,0	27,0	36,5	M20	40,0	0,7	3,5	3,2	67,0	78,0	5	0,3	27800	LP..09
R217.21-2042.RE-LP09.4A	Combimaster	7,3	1,8	42,0	29,0	36,5	M20	40,0	0,7	3,5	2,9	71,0	82,0	4	0,3	27100	LP..09
R217.21-2042.RE-LP09.5A	Combimaster	7,3	1,8	42,0	28,9	36,5	M20	40,0	0,7	3,5	2,9	70,9	82,0	5	0,3	27100	LP..09

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
				
R217.21-..LP09	DOUBLE-T	C04009-T15P	H4B-T15P	3,5

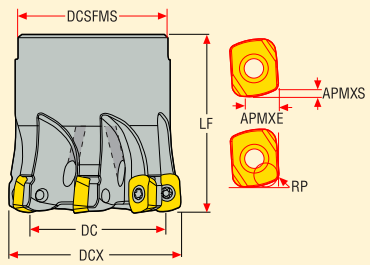
Please check availability in current price and stock-list

Torque keys, see page 710

R220.21-LP09

High feed cutters





- For insert selection and cutting data recommendations, see page(s) 443-444
- For complete insert programme, see page(s) 630
- 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	LF	RP							
R220.21-0040-LP09.4A	Arbor	7,3	1,8	40,0	27,5	16,0	32,0	40,0	3,5	3,2	67,5	78,0	4	0,3	27800	LP..09
R220.21-0050-LP09.5A	Arbor	7,3	1,8	50,0	37,0	22,0	40,0	40,0	3,5	2,2	87,0	98,0	5	0,3	24800	LP..09
R220.21-0050-LP09.6A	Arbor	7,3	1,8	50,0	37,0	22,0	40,0	40,0	3,5	2,2	87,0	98,0	6	0,3	24800	LP..09
R220.21-0050-LP09.7A	Arbor	7,3	1,8	50,0	37,1	22,0	40,0	40,0	3,5	2,2	87,1	98,0	7	0,3	24800	LP..09
R220.21-0052-LP09.5A	Arbor	7,3	1,8	51,98	39,0	22,0	49,0	40,0	3,5	2,1	90,98	101,96	5	0,4	24400	LP..09
R220.21-0052-LP09.7A	Arbor	7,3	1,8	51,98	39,1	22,0	48,0	40,0	3,5	2,1	91,08	101,96	7	0,4	24400	LP..09
R220.21-0063-LP09.6A	Arbor	7,3	1,8	63,0	50,0	22,0	48,0	40,0	3,5	2,7	113,0	124,0	6	0,5	22100	LP..09
R220.21-0063-LP09.8A	Arbor	7,3	1,8	63,0	50,1	22,0	48,0	40,0	3,5	1,6	113,1	124,0	8	0,5	22100	LP..09
R220.21-0066-LP09.6A	Arbor	7,3	1,8	66,0	53,1	27,0	61,0	50,0	3,5	1,5	119,1	130,0	6	0,8	21600	LP..09
R220.21-0066-LP09.8A	Arbor	7,3	1,8	66,0	53,1	27,0	60,0	50,0	3,5	1,5	119,1	130,0	8	0,8	21600	LP..09
R220.21-0080-LP09.7A	Arbor	7,3	1,8	80,0	67,0	27,0	60,0	50,0	3,5	1,1	147,0	158,0	7	0,9	19600	LP..09
R220.21-0080-LP09.9A	Arbor	7,3	1,8	80,0	67,0	27,0	60,0	50,0	3,5	1,1	147,0	158,0	9	0,9	19600	LP..09
R220.21-0084-LP09.7A	Arbor	7,3	1,8	84,0	71,0	32,0	79,0	50,0	3,4	1,1	155,0	166,0	7	1,3	18600	LP..09
R220.21-0100-LP09.10A	Arbor	7,3	1,8	100,0	87,0	32,0	78,0	50,0	3,4	0,8	187,0	198,0	10	1,5	17600	LP..09

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.21-0040	DOUBLE-T	C04009-T15P	H4B-T15P	MC6S8X30	3,5
R220.21-0050-0063	DOUBLE-T	C04009-T15P	H4B-T15P	220.17-692	3,5
R220.21-0063-6A	DOUBLE-T	C04011-T15P	H4B-T15P	220.17-692	3,5
R220.21-0066	DOUBLE-T	C04009-T15P	H4B-T15P	MC6S12X35	3,5
R220.21-0080	DOUBLE-T	C04011-T15P	H4B-T15P	MC6S12X35	3,5
R220.21-0084	DOUBLE-T	C04009-T15P	H4B-T15P	MLC6S16X35	3,5
R220.21-0100	DOUBLE-T	C04011-T15P	H4B-T15PL	MLC6S16X35	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

R217/220.21-LP09– Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	LPKT09T420TR-M13 MP2501	1,6	1,0	1,0	1,3
P2	LPKT09T420TR-M13 MP2501	1,6	1,0	1,0	1,3
P3	LPKT09T420TR-M13 MP2501	1,6	1,0	1,0	1,2
P4	LPKT09T420TR-M13 MP2501	1,6	0,95	0,95	1,2
P5	LPKT09T420TR-M13 MP2501	1,6	0,95	0,95	1,2
P6	LPKT09T420TR-M13 MP2501	1,6	0,95	0,95	1,2
P7	LPKW09T420TR-MD15 MP2501	1,6	1,1	1,1	1,3
P8	LPKW09T420TR-MD15 MP2501	1,6	1,1	1,1	1,4
P11	LPKW09T420TR-MD15 MP2501	1,6	1,1	1,1	1,3
P12	LPKW09T420TR-MD15 MP2501	1,3	0,75	0,75	0,90
M1	LPKT09T420TR-ME08 F40M	1,6	0,65	0,65	0,80
M2	LPKT09T420TR-ME08 F40M	1,6	0,60	0,60	0,70
M3	LPKT09T420TR-ME08 F40M	1,3	0,46	0,46	0,55
M4	LPKT09T420TR-M13 F40M	0,95	0,65	0,65	0,80
M5	LPKT09T420TR-M13 F40M	0,95	0,65	0,65	0,80
K1	LPKW09T420TR-D15 MK2050	1,6	1,2	1,2	1,5
K2	LPKW09T420TR-D15 MK2050	1,6	1,1	1,1	1,4
K3	LPKW09T420TR-D15 MK2050	1,6	1,1	1,1	1,4
K4	LPKW09T420TR-D15 MK2050	1,6	1,1	1,1	1,4
K5	LPKW09T420TR-D15 MK2050	1,6	1,0	1,0	1,2
K6	LPKW09T420TR-D15 MK2050	1,6	1,1	1,1	1,4
K7	LPKW09T420TR-D15 MK2050	1,6	1,0	1,0	1,2
N1	LPHT09T420R-E08 H25	1,6	0,80	0,80	1,0
N2	LPHT09T420R-E08 H25	1,6	0,80	0,80	1,0
N3	LPHT09T420R-E08 H25	1,6	0,80	0,80	1,0
N11	LPHT09T420R-E08 H25	1,6	0,80	0,80	1,0
S1	LPKT09T420TR-M13 MS2500	0,95	0,65	0,65	0,80
S2	LPKT09T420TR-M13 MS2500	0,95	0,65	0,65	0,80
S3	LPKT09T420TR-M13 MS2500	0,95	0,60	0,60	0,75
S11	LPKT09T420TR-ME08 MS2050	1,1	0,46	0,46	0,55
S12	LPKT09T420TR-ME08 MS2050	1,1	0,46	0,46	0,55
S13	LPKT09T420TR-ME08 MS2050	0,95	0,40	0,40	0,50
H5	LPHW09T420TR-D12 MH1000	1,0	0,50	0,50	0,65
H8	LPHW09T420TR-D12 MH1000	0,90	0,40	0,40	0,48
H11	LPHW09T420TR-D12 MH1000	1,0	0,50	0,50	0,65
H12	LPHW09T420TR-D12 MH1000	0,90	0,40	0,40	0,48
H21	LPHW09T420TR-D12 MH1000	0,90	0,40	0,40	0,48

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

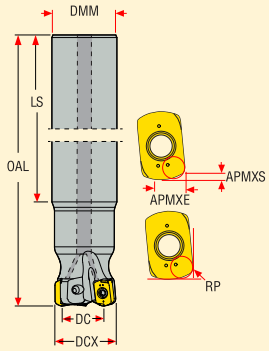
R217/220.21-LP09 – Cutting data v_c = (m/min)

	MP2501			MP3000			T350M			F40M			MM4500			MK2050		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	240	285	335	225	270	315	210	250	290	215	255	305	175	210	245	205	245	290
P2	235	280	325	220	265	310	205	240	285	210	250	295	170	205	240	200	240	285
P3	200	240	285	190	225	270	175	210	250	185	220	260	150	180	210	180	215	250
P4	180	215	255	170	205	240	155	185	220	165	195	230	130	160	185	155	185	220
P5	170	205	240	160	195	230	150	180	210	155	185	225	125	150	180	150	180	210
P6	190	230	270	180	220	255	165	200	235	175	210	250	140	170	205	170	200	240
P7	180	215	255	170	205	240	160	190	225	165	195	235	135	160	190	160	190	230
P8	170	200	240	160	190	230	145	175	210	155	185	220	125	150	175	150	180	210
P11	175	210	250	165	200	235	155	185	215	160	190	230	130	155	185	155	185	220
P12	120	150	175	115	140	165	105	130	150	110	135	155	90	110	125	105	130	155
M1	170	200	235	165	195	230	155	185	220	170	200	240	145	175	205	—	—	—
M2	140	165	195	135	160	190	130	155	180	140	165	200	120	145	175	—	—	—
M3	115	145	165	115	140	165	110	135	155	120	145	170	100	125	145	—	—	—
M4	95	125	140	95	120	140	90	115	130	95	120	140	85	105	120	—	—	—
M5	80	105	115	80	100	115	75	95	110	80	100	115	70	90	100	—	—	—
K1	185	220	255	175	210	245	160	190	225	165	200	235	—	—	—	215	260	305
K2	165	195	230	155	185	215	140	170	200	145	175	210	—	—	—	195	230	270
K3	140	165	195	130	155	185	120	145	170	125	150	180	—	—	—	165	195	230
K4	130	155	185	125	150	175	115	135	160	120	140	170	—	—	—	155	185	220
K5	80	95	115	75	90	105	70	85	100	75	90	105	—	—	—	95	115	135
K6	115	140	165	110	130	155	100	120	140	105	125	150	—	—	—	135	165	195
K7	105	125	145	100	115	135	90	110	125	95	115	135	—	—	—	125	145	175
N1	—	—	—	1250	1500	1750	—	—	—	1225	1475	1725	—	—	—	—	—	—
N2	—	—	—	510	610	710	—	—	—	495	590	700	—	—	—	—	—	—
N3	—	—	—	340	405	475	—	—	—	330	395	465	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	380	455	530	—	—	—	—	—	—
S1	—	—	—	44	55	65	42	55	60	45	55	65	25	32	36	—	—	—
S2	—	—	—	36	46	50	34	43	49	36	46	50	20	26	29	—	—	—
S3	—	—	—	31	40	46	30	38	43	32	40	46	18	23	26	—	—	—
S11	—	—	—	60	75	85	55	70	80	60	75	90	35	43	50	—	—	—
S12	—	—	—	41	50	60	39	49	55	42	55	60	32	40	46	—	—	—
S13	—	—	—	25	32	36	24	30	34	25	32	36	19	24	27	—	—	—
H5	40	48	55	39	47	55	38	46	55	39	47	55	—	—	—	—	—	—
H8	44	55	60	42	50	60	42	50	60	42	50	60	—	—	—	—	—	—
H11	50	60	70	50	60	70	49	60	70	50	60	70	—	—	—	—	—	—
H12	85	105	120	80	100	115	75	90	105	75	90	105	—	—	—	—	—	—
H21	44	55	60	42	50	60	42	50	60	42	50	60	—	—	—	—	—	—

	MS2050			MS2500			MP2050			MH1000			H25		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	—	—	—	260	310	365	235	280	325	—	—	—	—	—	—
P2	—	—	—	255	305	355	230	275	320	—	—	—	—	—	—
P3	—	—	—	220	260	315	195	235	280	—	—	—	—	—	—
P4	—	—	—	195	235	275	175	210	250	—	—	—	—	—	—
P5	—	—	—	185	225	265	170	200	235	—	—	—	—	—	—
P6	—	—	—	210	250	295	190	225	265	—	—	—	—	—	—
P7	150	180	215	200	235	280	180	215	250	—	—	—	—	—	—
P8	140	170	200	185	220	265	165	200	235	—	—	—	—	—	—
P11	145	175	205	190	230	270	175	205	245	—	—	—	—	—	—
P12	100	125	145	130	165	190	120	145	170	—	—	—	—	—	—
M1	155	185	220	180	220	255	165	195	230	—	—	—	—	—	—
M2	130	155	180	150	180	210	135	160	190	—	—	—	—	—	—
M3	110	135	155	125	155	180	115	140	165	—	—	—	—	—	—
M4	90	115	130	105	135	150	95	120	135	—	—	—	—	—	—
M5	75	95	110	85	110	125	80	100	115	—	—	—	—	—	—
K1	—	—	—	—	—	—	180	215	255	190	230	270	—	—	—
K2	—	—	—	—	—	—	160	190	225	170	205	240	—	—	—
K3	—	—	—	—	—	—	135	160	190	145	175	205	—	—	—
K4	—	—	—	—	—	—	130	155	180	140	165	195	—	—	—
K5	—	—	—	—	—	—	80	95	110	85	100	120	—	—	—
K6	—	—	—	—	—	—	115	135	160	125	145	170	—	—	—
K7	—	—	—	—	—	—	100	120	140	110	130	155	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—	1200	1450	1700
N2	—	—	—	—	—	—	—	—	—	—	—	—	490	580	690
N3	—	—	—	—	—	—	—	—	—	—	—	—	325	390	460
N11	—	—	—	—	—	—	—	—	—	—	—	—	370	445	520
S1	42	55	60	50	65	75	46	60	65	—	—	—	—	—	—
S2	34	43	49	41	55	60	37	47	55	—	—	—	—	—	—
S3	30	38	43	36	46	55	33	42	47	—	—	—	—	—	—
S11	55	70	80	70	85	100	60	80	90	—	—	—	—	—	—
S12	39	49	55	48	60	70	43	55	60	—	—	—	—	—	—
S13	24	30	34	29	37	42	26	33	38	—	—	—	—	—	—
H5	—	—	—	—	—	—	39	47	55	46	55	65	—	—	—
H8	—	—	—	—	—	—	42	50	60	50	60	70	—	—	—
H11	—	—	—	—	—	—	50	60	70	60	70	80	—	—	—
H12	—	—	—	—	—	—	85	100	120	90	110	125	—	—	—
H21	—	—	—	—	—	—	42	50	60	50	60	70	—	—	—

R217.21-LO06





- For insert selection and cutting data recommendations, see page(s) 447-448
- For complete insert programme, see page(s) 629
- 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	DMM	OAL	LS	RP							
R217.21-1820.0-LO06.2A	Cylindrical	2,5	0,9	20,0	13,3	18,0	160,0	134,9	1,8	1,0	33,3	38,0	2	0,3	35000	LO..06
R217.21-2525.0-LO06.3A	Cylindrical	2,5	0,9	25,0	18,3	25,0	180,0	140,0	1,8	0,8	43,3	48,0	3	0,7	30000	LO..06
R217.21-2527.0-LO06.3A	Cylindrical	2,5	0,9	27,0	20,3	25,0	200,0	175,0	1,8	0,7	47,3	52,0	3	0,7	29000	LO..06
R217.21-3232.0-LO06.4A	Cylindrical	2,5	0,9	32,0	25,3	32,0	200,0	160,0	1,8	0,5	57,3	62,0	4	1,2	27000	LO..06

Spare Parts

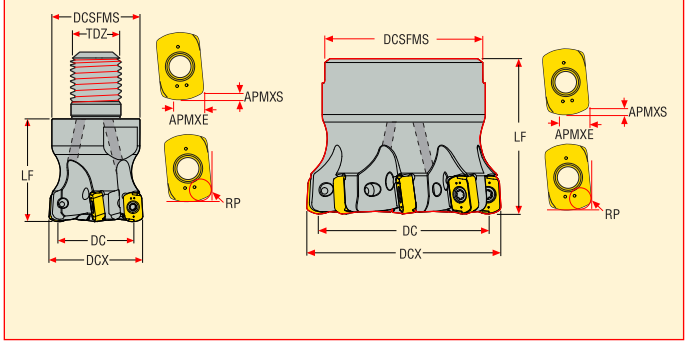
For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
R217.21-..	DOUBLE-T	C02508-T08P	H4B-T08P	1,2

Please check availability in current price and stock-list

Torque keys, see page 710

R217/220.21-LO06





- For insert selection and cutting data recommendations, see page(s) 447-448
- For complete insert programme, see page(s) 629
- 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							
R217.21-1020.RE-LO06.2A	Combimaster	2,5	0,9	20,0	13,3	–	18,5	M10	28,0	1,8	1,0	33,3	38,0	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	43,3	48,0	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	48,0	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	57,3	62,0	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	62,0	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	68,0	5	0,2	26000	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	78,0	5	0,2	18000	LO..06
R217.21-2040.RE-LO06.6A	Combimaster	7,5	0,9	40,0	33,0	–	36,5	M20	40,0	1,8	0,4	52,0	–	6	0,4	18000	LO..06
R220.21-0035-LO06.6A	Arbor	2,5	0,9	35,0	28,3	16,0	32,0	–	35,0	1,8	0,5	63,3	68,0	6	0,2	24500	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	78,0	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	98,0	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	102,0	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	119,3	124,0	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 710

R217/220.21-LO06 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	LOHT060310TR-ME06 T350M	0,80	0,50	0,50	0,55
P2	LOHT060310TR-ME06 T350M	0,80	0,50	0,50	0,60
P3	LOHT060310TR-ME06 T350M	0,80	0,48	0,48	0,55
P4	LOHT060310TR-M07 MP2501	0,80	0,55	0,55	0,65
P5	LOHT060310TR-M07 MP2501	0,80	0,55	0,55	0,60
P6	LOHT060310TR-M07 MP2501	0,80	0,55	0,55	0,60
P7	LOHT060310TR-M07 MP2501	0,80	0,55	0,55	0,60
P8	LOHT060310TR-MD07 MP2501	0,80	0,55	0,55	0,65
P11	LOHT060310TR-M07 MS2500	0,80	0,55	0,55	0,60
P12	LOHT060310TR-M07 MS2500	0,65	0,36	0,36	0,42
M1	LOHT060310TR-ME06 T350M	0,80	0,50	0,50	0,60
M2	LOHT060310TR-ME06 T350M	0,80	0,46	0,46	0,55
M3	LOHT060310TR-ME06 T350M	0,65	0,36	0,36	0,42
M4	LOHT060310TR-ME06 T350M	0,48	0,32	0,32	0,38
M5	LOHT060310TR-ME06 T350M	0,48	0,32	0,32	0,38
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	0,48	0,48	0,55
K6	LOHT060310TR-MD07 MK2050	0,80	0,55	0,55	0,60
K7	LOHT060310TR-MD07 MK2050	0,80	0,48	0,48	0,55
S1	LOHT060310TR-ME06 MS2500	0,48	0,32	0,32	0,38
S2	LOHT060310TR-ME06 MS2500	0,48	0,32	0,32	0,38
S3	LOHT060310TR-M07 F40M	0,48	0,34	0,34	0,40
S11	LOHT060310TR-ME06 MS2050	0,55	0,36	0,36	0,42
S12	LOHT060310TR-ME06 MS2050	0,55	0,36	0,36	0,42
S13	LOHT060310TR-ME06 MS2050	0,48	0,32	0,32	0,38
H5	LOHW060310TR-D07 MH1000	0,50	0,32	0,32	0,36
H8	LOHW060310TR-D07 MH1000	0,44	0,24	0,24	0,28
H11	LOHT060310TR-M07 T350M	0,50	0,32	0,32	0,36
H12	LOHT060310TR-M07 T350M	0,44	0,24	0,24	0,28
H21	LOHW060310TR-D07 MH1000	0,44	0,24	0,24	0,28

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R217/220.21-LO06 – Cutting data v_c = (m/min)

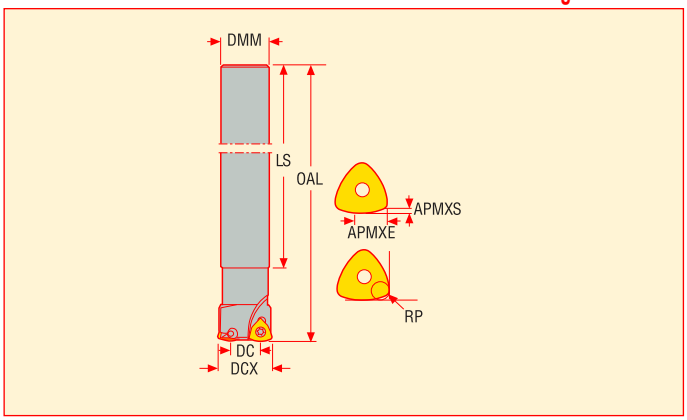
	MP1501			MP2050			MP2501			MP3000			T350M			F40M		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	280	320	390	265	305	370	270	310	380	260	295	360	235	270	330	205	235	285
P2	270	310	370	260	295	355	265	300	360	250	285	340	230	265	315	200	230	275
P3	240	275	325	230	260	310	235	265	315	220	250	300	205	230	275	175	200	240
P4	210	240	285	200	230	275	205	235	280	195	220	265	180	205	245	155	180	210
P5	200	230	280	195	220	270	195	225	275	185	210	260	170	195	235	150	170	205
P6	225	260	315	215	245	300	220	250	305	210	240	290	190	220	265	165	190	230
P7	215	245	295	205	235	285	210	235	290	195	225	275	180	205	250	160	180	220
P8	200	230	275	195	220	260	195	225	265	185	210	255	170	195	230	150	170	200
P11	205	235	290	200	225	275	200	230	280	190	220	265	175	200	245	155	175	215
P12	140	165	195	135	155	185	135	160	190	130	150	180	120	140	165	105	120	140
M1	—	—	—	185	210	255	190	220	260	190	215	255	180	205	245	160	185	220
M2	—	—	—	155	175	215	160	180	220	155	175	215	145	170	205	135	155	185
M3	—	—	—	130	150	180	135	155	180	130	155	180	125	145	170	115	130	155
M4	—	—	—	105	125	145	105	130	150	105	125	145	100	120	140	90	110	125
M5	—	—	—	85	105	120	90	110	125	85	105	120	85	100	115	75	90	105
K1	215	245	295	205	235	280	210	240	285	200	225	270	185	210	250	160	180	215
K2	190	220	265	185	210	255	185	215	260	175	200	245	160	185	225	140	160	195
K3	160	185	225	155	175	215	160	180	220	150	170	205	135	155	190	120	135	165
K4	155	175	215	150	170	205	150	170	210	145	165	200	130	150	180	115	130	160
K5	95	110	130	90	105	125	95	105	125	90	100	120	80	90	110	70	80	95
K6	135	155	190	130	150	180	135	150	185	125	145	175	115	130	160	100	115	140
K7	120	140	165	115	135	160	120	135	165	115	130	155	105	120	140	90	105	125
S1	—	—	—	50	60	70	—	—	—	49	60	70	46	55	65	42	50	60
S2	—	—	—	41	50	55	—	—	—	39	48	55	37	45	50	34	41	47
S3	—	—	—	36	44	50	—	—	—	35	42	48	33	40	46	30	36	42
S11	—	—	—	70	85	95	—	—	—	70	80	95	65	75	90	60	70	80
S12	—	—	—	49	60	65	—	—	—	47	55	65	45	55	60	40	48	55
S13	—	—	—	29	35	40	—	—	—	28	33	38	26	32	36	24	29	33
H5	50	55	70	43	49	60	44	50	60	43	49	60	42	48	55	37	42	50
H8	55	60	70	46	55	65	47	55	65	46	55	65	45	55	60	40	46	55
H11	65	70	85	55	60	75	55	65	75	55	60	75	55	60	75	47	55	65
H12	95	110	130	90	105	125	95	110	125	90	105	120	80	95	110	70	80	95
H21	55	60	70	46	55	65	47	55	65	46	55	65	45	55	60	40	46	55

	MM4500			MK2050			MS2050			MS2500			MH1000		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	185	210	255	245	275	340	—	—	—	295	340	415	—	—	—
P2	180	205	245	235	270	325	—	—	—	290	330	395	—	—	—
P3	155	180	215	210	240	285	—	—	—	255	290	345	—	—	—
P4	140	160	190	185	210	250	—	—	—	225	255	305	—	—	—
P5	135	150	180	175	200	245	—	—	—	215	245	295	—	—	—
P6	150	170	205	195	225	275	—	—	—	240	275	335	—	—	—
P7	140	160	195	185	210	260	175	200	240	225	260	315	—	—	—
P8	130	150	180	175	200	240	165	185	220	215	245	290	—	—	—
P11	135	155	190	180	205	250	170	190	235	220	250	305	—	—	—
P12	90	105	125	125	145	170	115	135	155	150	175	205	—	—	—
M1	155	175	210	—	—	—	180	205	245	205	235	280	—	—	—
M2	125	145	170	—	—	—	145	170	205	170	195	240	—	—	—
M3	105	125	145	—	—	—	125	145	170	145	170	200	—	—	—
M4	85	105	120	—	—	—	100	120	140	115	140	160	—	—	—
M5	70	85	100	—	—	—	85	100	115	95	115	135	—	—	—
K1	—	—	—	255	290	350	—	—	—	—	—	—	200	225	270
K2	—	—	—	225	260	315	—	—	—	—	—	—	175	200	245
K3	—	—	—	190	220	265	—	—	—	—	—	—	150	170	205
K4	—	—	—	185	210	255	—	—	—	—	—	—	140	160	195
K5	—	—	—	115	130	155	—	—	—	—	—	—	90	100	120
K6	—	—	—	160	185	225	—	—	—	—	—	—	125	145	175
K7	—	—	—	145	165	200	—	—	—	—	—	—	110	130	155
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
S1	26	31	36	—	—	—	46	55	65	55	70	80	—	—	—
S2	21	25	29	—	—	—	37	45	50	46	55	65	—	—	—
S3	18	22	26	—	—	—	33	40	46	40	49	55	—	—	—
S11	36	43	50	—	—	—	65	75	90	80	95	110	—	—	—
S12	33	39	46	—	—	—	45	55	60	55	65	75	—	—	—
S13	20	24	27	—	—	—	26	32	36	32	39	44	—	—	—
H5	—	—	—	—	—	—	—	—	—	—	—	—	46	50	60
H8	—	—	—	—	—	—	—	—	—	—	—	—	49	55	65
H11	—	—	—	—	—	—	—	—	—	—	—	—	60	65	80
H12	—	—	—	—	—	—	—	—	—	—	—	—	90	100	120
H21	—	—	—	—	—	—	—	—	—	—	—	—	49	55	65

R217.21

High feed cutters





- For insert selection and cutting data recommendations, see page(s) 454-461
- For complete insert programme, see page(s) 668
- 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	DMM	OAL	LS	RP							
R217.21-1416.0-R080.2A	Cylindrical	5,0	0,63	16,0	9,25	14,0	150,0	127,0	1,0	6,1	25,25	30,0	2	0,2	53400	218.19-080
R217.21-1820.0-R100.2A	Cylindrical	7,0	0,74	20,0	11,4	18,0	160,0	132,0	1,47	5,7	31,4	38,0	2	0,3	32600	218.19-100
R217.21-2025.0-R100.2A	Cylindrical	7,0	0,74	25,0	16,46	20,0	170,0	140,0	1,47	3,48	41,46	48,0	2	0,4	29100	218.19-100
R217.21-2525.0-R100.3A	Cylindrical	7,0	0,74	25,0	16,46	25,0	170,0	135,0	1,47	3,48	41,46	48,0	3	0,6	29100	218.19-100
R217.21-2532.0-R125.2A	Cylindrical	9,0	1,0	32,0	21,16	25,0	195,0	161,0	1,74	3,67	53,16	62,0	2	0,8	19700	218.19-125
R217.21-3232.0-R125.3A	Cylindrical	9,0	1,0	32,0	21,16	32,0	195,0	155,0	1,74	3,67	53,16	62,0	3	1,1	19700	218.19-125

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

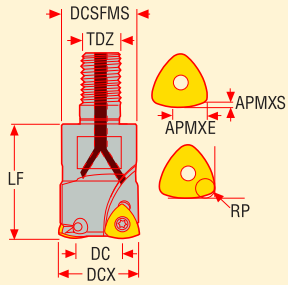
Please check availability in current price and stock-list

Torque keys, see page 710

R217.21

High feed cutters





- For insert selection and cutting data recommendations, see page(s) 454-461
- For complete insert programme, see page(s) 668
- 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	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	25,25	30,0	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	31,45	38,0	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	30,44	38,0	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	41,46	48,0	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	37,36	48,0	2	0,1	29100	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	53,21	62,0	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	48,09	62,0	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	59,16	68,0	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	69,25	78,0	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	63,99	78,0	3	0,2	14500	218.19-160

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

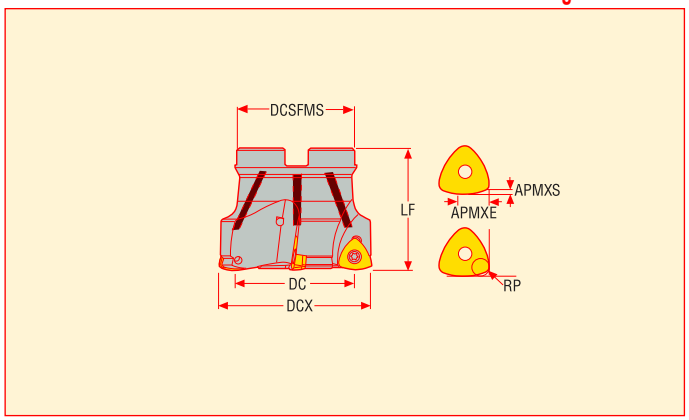
Please check availability in current price and stock-list

Torque keys, see page 710

R220.21-R160

High feed cutters





- For insert selection and cutting data recommendations, see page(s) 454-461
- For complete insert programme, see page(s) 668
- 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	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	69,2	78,0	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	73,2	82,0	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	84,17	98,0	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	84,17	98,0	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	83,7	98,0	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	88,19	102,0	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	87,7	102,0	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	110,2	124,0	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	110,2	124,0	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	110,9	124,0	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	116,21	130,0	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	116,9	130,0	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	144,15	158,0	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	143,6	158,0	7	1,3	10200	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	184,13	198,0	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	183,6	198,0	9	1,6	9700	218.19-160

Spare Parts

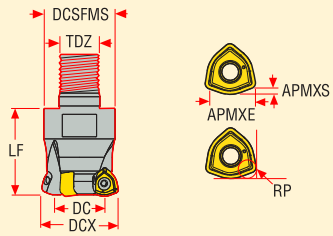
For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.21-0040-0042	DOUBLE-T	C03007-T09P	H4B-T09P	220.17-689	2,0
R220.21-0050-0052	DOUBLE-T	C03510-T15P	H4B-T15P	220.17-692	3,5
R220.21-0063-0080	DOUBLE-T	C03510-T15P	H4B-T15P	MC6S12X35	3,5
R220.21-0063-0080	DOUBLE-T	C03510-T15P	H4B-T15PL	MC6S12X35	3,5
R220.21-0100	DOUBLE-T	C03510-T15P	H4B-T15PL	220.17-694	3,5
R220.21-0084-0100	DOUBLE-T	C03510-T15P	H4B-T15PL	950E1645	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

R220.21-R230





- For insert selection and cutting data recommendations, see page(s) 462-463
- For complete insert programme, see page(s) 668
- 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	DCSFMS	TDZ	LF	RP							
R217.21-2040.RE-R230.3A	Combimaster	10,0	1,8	40,0	25,6	36,5	M20	45,0	3,32	1,4	65,6	78,0	3	0,4	12100	218.21-..
R217.21-2042.RE-R230.3A	Combimaster	10,0	1,8	42,0	27,6	36,5	M20	45,0	3,32	1,3	69,6	82,0	3	0,4	12100	218.21-..

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Torque value (Nm)
				
R217.21-2040-2042	DOUBLE-T	C04011-T15P	H4B-T15P	3,5

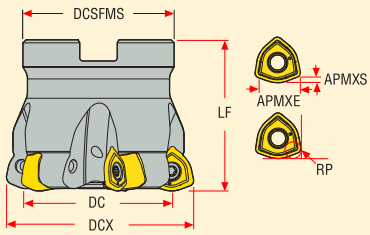
Please check availability in current price and stock-list

Torque keys, see page 710

R220.21-R230

High feed cutters





- For insert selection and cutting data recommendations, see page(s) 462-463
- For complete insert programme, see page(s) 668
- 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	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 710

R217.21-080 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	218.19-080T-M04 MP2501	0,55	0,50	0,50	0,65
P2	218.19-080T-M04 MP2501	0,55	0,50	0,50	0,65
P3	218.19-080T-M04 MP2501	0,55	0,48	0,48	0,65
P4	218.19-080T-M04 MP2501	0,55	0,46	0,48	0,60
P5	218.19-080T-M04 MP2501	0,55	0,46	0,46	0,60
P6	218.19-080T-MD04 MS2500	0,55	0,46	0,46	0,60
P7	218.19-080T-MD04 MS2500	0,55	0,46	0,46	0,60
P8	218.19-080T-MD04 MS2500	0,55	0,48	0,48	0,65
P11	218.19-080T-MD04 MS2500	0,55	0,46	0,46	0,60
P12	218.19-080T-MD04 MS2500	0,44	0,30	0,32	0,42
M1	218.19-080T-M04 F40M	0,55	0,50	0,50	0,65
M2	218.19-080T-M04 F40M	0,55	0,46	0,46	0,60
M3	218.19-080T-M04 F40M	0,44	0,36	0,36	0,48
M4	218.19-080T-M04 F40M	0,32	0,32	0,32	0,42
M5	218.19-080T-M04 F40M	0,32	0,32	0,32	0,42
S1	218.19-080T-M04 F40M	0,32	0,32	0,32	0,42
S2	218.19-080T-M04 F40M	0,32	0,32	0,32	0,42
S3	218.19-080T-M04 F40M	0,32	0,30	0,30	0,40
S11	218.19-080T-M04 F40M	0,38	0,36	0,36	0,48
S12	218.19-080T-M04 F40M	0,38	0,36	0,36	0,48
S13	218.19-080T-M04 F40M	0,32	0,32	0,32	0,42
H5	218.19-080T-MD04 F15M	0,34	0,26	0,28	0,36
H8	218.19-080T-MD04 F15M	0,30	0,20	0,20	0,28
H11	218.19-080T-MD04 F15M	0,34	0,26	0,28	0,36
H12	218.19-080T-MD04 F15M	0,30	0,20	0,20	0,28
H21	218.19-080T-MD04 F15M	0,30	0,20	0,20	0,28

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R217.21-080 – Cutting data v_c = (m/min)

SMG	MP2501			F15M			F30M			F40M		
	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	340	425	495	—	—	—	270	340	390	260	325	375
P2	335	415	480	—	—	—	265	330	380	250	315	365
P3	290	360	415	—	—	—	230	285	330	220	275	315
P4	255	320	370	—	—	—	205	255	295	195	240	280
P5	245	305	355	—	—	—	195	245	280	185	230	270
P6	275	345	395	—	—	—	220	275	315	210	260	300
P7	260	325	375	—	—	—	205	260	300	195	245	285
P8	245	305	345	—	—	—	195	240	275	185	230	265
P11	255	315	365	—	—	—	200	250	290	190	240	275
P12	170	210	240	—	—	—	135	170	190	125	160	180
M1	240	300	345	—	—	—	215	265	310	205	255	295
M2	200	245	285	—	—	—	175	220	255	170	210	240
M3	165	210	235	—	—	—	145	185	210	140	175	200
M4	130	170	190	—	—	—	115	150	170	110	145	160
M5	110	140	155	—	—	—	95	125	140	90	120	135
K1	265	330	380	230	285	330	210	260	300	200	250	290
K2	235	290	335	200	250	290	185	230	265	175	220	255
K3	195	245	285	170	215	245	155	195	225	150	185	215
K4	190	235	270	165	205	235	150	185	215	145	180	205
K5	115	145	165	100	125	140	90	115	130	90	110	125
K6	165	205	240	145	180	205	130	165	190	125	155	180
K7	150	185	210	130	160	180	120	145	165	110	140	160
N1	—	—	—	—	—	—	1550	1950	2250	1475	1850	2125
N2	—	—	—	—	—	—	630	780	910	600	750	860
N3	—	—	—	—	—	—	420	520	600	400	495	570
N11	—	—	—	—	—	—	480	600	690	455	570	660
S1	—	—	—	—	—	—	55	70	80	50	65	75
S2	—	—	—	—	—	—	43	55	65	41	55	60
S3	—	—	—	—	—	—	38	49	55	36	47	50
S11	—	—	—	—	—	—	75	95	110	70	90	105
S12	—	—	—	—	—	—	43	55	65	49	65	70
S13	—	—	—	—	—	—	25	33	37	29	38	42
H5	55	65	75	50	60	70	47	55	65	45	55	65
H8	55	70	80	55	65	75	49	60	70	47	60	65
H11	70	85	95	65	80	90	60	75	85	55	70	80
H12	110	140	155	95	120	135	90	110	125	85	105	120
H21	55	70	80	55	65	75	49	60	70	47	60	65

SMG	MS2500		
	100%	70%	30%
P1	355	440	510
P2	345	430	500
P3	300	375	430
P4	265	330	385
P5	255	320	365
P6	285	355	410
P7	270	335	390
P8	250	315	360
P11	260	325	375
P12	175	220	250
M1	245	310	355
M2	205	255	295
M3	170	215	245
M4	135	175	195
M5	110	145	160
K1	—	—	—
K2	—	—	—
K3	—	—	—
K4	—	—	—
K5	—	—	—
K6	—	—	—
K7	—	—	—
N1	—	—	—
N2	—	—	—
N3	—	—	—
N11	—	—	—
S1	65	85	95
S2	55	70	75
S3	46	60	65
S11	90	115	130
S12	65	80	90
S13	37	48	55
H5	—	—	—
H8	—	—	—
H11	—	—	—
H12	—	—	—
H21	—	—	—

R217.21-100 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	218.19-100T-M06 MP2501	0,65	0,75	0,80	1,0
P2	218.19-100T-M06 MP2501	0,65	0,80	0,80	1,1
P3	218.19-100T-M06 MP2501	0,65	0,75	0,75	1,0
P4	218.19-100T-M06 MP2501	0,65	0,75	0,75	1,0
P5	218.19-100T-M06 MP2501	0,65	0,70	0,75	0,95
P6	218.19-100T-MD08 MS2500	0,65	0,95	0,95	1,3
P7	218.19-100T-MD08 MS2500	0,65	0,95	0,95	1,3
P8	218.19-100T-MD08 MS2500	0,65	1,0	1,0	1,4
P11	218.19-100T-MD08 MS2500	0,65	0,95	0,95	1,3
P12	218.19-100T-MD08 MS2500	0,50	0,65	0,65	0,85
M1	218.19-100T-M06 F40M	0,65	0,80	0,80	1,1
M2	218.19-100T-M06 F40M	0,65	0,70	0,75	0,95
M3	218.19-100T-M06 F40M	0,50	0,55	0,60	0,75
M4	218.19-100T-M06 F40M	0,38	0,50	0,50	0,65
M5	218.19-100T-M06 F40M	0,38	0,50	0,50	0,65
S1	218.19-100T-M06 MS2500	0,38	0,50	0,50	0,65
S2	218.19-100T-M06 MS2500	0,38	0,50	0,50	0,65
S3	218.19-100T-M06 MS2500	0,38	0,46	0,48	0,60
S11	218.19-100T-M06 MS2050	0,44	0,55	0,60	0,75
S12	218.19-100T-M06 MS2050	0,44	0,55	0,60	0,75
S13	218.19-100T-M06 MS2050	0,38	0,50	0,50	0,65
H5	218.19-100T-MD08 MH1000	0,40	0,55	0,55	0,75
H8	218.19-100T-MD08 MH1000	0,34	0,42	0,44	0,55
H11	218.19-100T-MD08 MH1000	0,40	0,55	0,55	0,75
H12	218.19-100T-M06 MP3000	0,34	0,32	0,32	0,42
H21	218.19-100T-MD08 MH1000	0,34	0,42	0,44	0,55

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)

	MP2501			MP3000			T350M			F15M		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	265	325	375	290	350	400	265	320	370	—	—	—
P2	260	315	365	275	335	390	255	305	360	—	—	—
P3	225	270	315	240	290	340	220	270	315	—	—	—
P4	200	240	285	210	255	305	195	235	280	—	—	—
P5	190	230	270	205	250	290	190	230	265	—	—	—
P6	215	260	305	230	280	325	215	260	300	—	—	—
P7	200	245	285	220	265	310	200	245	285	—	—	—
P8	190	225	265	205	245	285	185	225	265	—	—	—
P11	195	235	280	210	255	300	195	235	275	—	—	—
P12	135	165	190	145	175	205	130	160	185	—	—	—
M1	185	225	265	205	250	290	195	235	275	—	—	—
M2	155	185	215	170	210	240	165	200	230	—	—	—
M3	130	160	185	145	180	205	135	170	195	—	—	—
M4	105	135	150	115	145	165	110	140	155	—	—	—
M5	85	110	125	95	120	135	90	115	130	—	—	—
K1	205	250	290	220	265	310	200	245	285	185	225	265
K2	180	220	255	195	235	275	180	220	255	165	200	235
K3	155	185	215	165	200	235	150	185	215	140	170	195
K4	145	175	205	160	190	225	145	175	205	135	160	190
K5	90	110	125	95	115	135	90	105	125	80	100	115
K6	130	155	180	140	170	195	130	155	180	115	140	165
K7	115	140	160	125	150	175	115	135	160	105	125	145
N1	—	—	—	1625	1950	2275	—	—	—	—	—	—
N2	—	—	—	650	790	920	—	—	—	—	—	—
N3	—	—	—	435	530	610	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	55	70	75	50	65	75	—	—	—
S2	—	—	—	43	55	60	41	50	60	—	—	—
S3	—	—	—	38	48	55	36	46	50	—	—	—
S11	—	—	—	75	95	105	70	90	100	—	—	—
S12	—	—	—	50	65	75	49	60	70	—	—	—
S13	—	—	—	30	38	43	29	36	41	—	—	—
H5	—	—	—	47	55	65	46	55	65	43	50	60
H8	—	—	—	50	60	70	49	60	70	47	55	65
H11	—	—	—	60	70	85	60	70	80	55	65	75
H12	—	—	—	95	120	135	90	110	125	85	100	115
H21	—	—	—	50	60	70	49	60	70	47	55	65

	F40M			MS2050			MS2500			MH1000		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	230	280	320	—	—	—	330	400	460	—	—	—
P2	220	265	310	—	—	—	315	385	450	—	—	—
P3	195	235	270	—	—	—	280	335	390	—	—	—
P4	170	205	245	—	—	—	245	295	350	—	—	—
P5	165	200	230	—	—	—	240	290	335	—	—	—
P6	185	225	260	—	—	—	265	325	375	—	—	—
P7	175	210	245	190	235	270	250	305	355	—	—	—
P8	160	195	230	180	215	250	235	280	330	—	—	—
P11	170	205	240	185	225	265	245	295	345	—	—	—
P12	115	140	160	125	155	180	165	205	235	—	—	—
M1	175	215	250	195	235	275	225	275	320	—	—	—
M2	150	180	210	165	200	230	190	230	270	—	—	—
M3	125	155	175	135	170	195	160	200	225	—	—	—
M4	100	125	140	110	140	155	125	160	180	—	—	—
M5	85	105	120	90	115	130	105	135	150	—	—	—
K1	175	210	245	—	—	—	—	—	—	225	275	320
K2	155	190	220	—	—	—	—	—	—	200	240	280
K3	135	160	185	—	—	—	—	—	—	170	205	240
K4	125	155	180	—	—	—	—	—	—	160	195	225
K5	75	95	110	—	—	—	—	—	—	100	120	140
K6	110	135	155	—	—	—	—	—	—	140	170	200
K7	100	120	140	—	—	—	—	—	—	125	155	175
N1	1300	1575	1825	—	—	—	—	—	—	—	—	—
N2	520	630	740	—	—	—	—	—	—	—	—	—
N3	350	425	490	—	—	—	—	—	—	—	—	—
N11	400	485	560	—	—	—	—	—	—	—	—	—
S1	46	60	65	50	65	75	60	80	90	—	—	—
S2	37	48	55	41	50	60	50	65	70	—	—	—
S3	33	42	47	36	46	50	44	55	65	—	—	—
S11	65	80	90	70	90	100	85	110	125	—	—	—
S12	44	55	65	49	60	70	60	75	85	—	—	—
S13	26	33	37	29	36	41	35	44	50	—	—	—
H5	40	48	55	—	—	—	—	—	—	50	65	75
H8	43	55	60	—	—	—	—	—	—	55	70	80
H11	50	60	70	—	—	—	—	—	—	65	80	95
H12	75	95	110	—	—	—	—	—	—	100	125	140
H21	43	55	60	—	—	—	—	—	—	55	70	80

R217/220.21-125 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	218.19-125T-T3-M07 T350M	0,90	0,85	0,85	1,1
P2	218.19-125T-T3-M07 T350M	0,90	0,85	0,85	1,1
P3	218.19-125T-T3-M07 T350M	0,90	0,80	0,80	1,0
P4	218.19-125T-T3-MD10 MS2500	0,90	1,1	1,1	1,4
P5	218.19-125T-T3-MD10 MS2500	0,90	1,1	1,1	1,4
P6	218.19-125T-T3-MD10 MS2500	0,90	1,1	1,1	1,4
P7	218.19-125T-T3-MD10 MS2500	0,90	1,1	1,1	1,4
P8	218.19-125T-T3-MD10 MS2500	0,90	1,2	1,2	1,5
P11	218.19-125T-T3-MD10 MS2500	0,90	1,1	1,1	1,4
P12	218.19-125T-T3-MD10 MS2500	0,70	0,75	0,75	0,95
M1	218.19-125T-T3-M07 F40M	0,90	0,85	0,85	1,1
M2	218.19-125T-T3-M07 F40M	0,90	0,80	0,80	1,0
M3	218.19-125T-T3-M07 F40M	0,70	0,60	0,60	0,80
M4	218.19-125T-T3-M07 F40M	0,55	0,55	0,55	0,70
M5	218.19-125T-T3-M07 F40M	0,55	0,55	0,55	0,70
S1	218.19-125T-T3-M07 MS2500	0,55	0,55	0,55	0,70
S2	218.19-125T-T3-M07 MS2500	0,55	0,55	0,55	0,70
S3	218.19-125T-T3-M07 MS2500	0,55	0,50	0,50	0,65
S11	218.19-125T-T3-M07 MS2050	0,65	0,60	0,60	0,80
S12	218.19-125T-T3-M07 MS2050	0,65	0,60	0,60	0,80
S13	218.19-125T-T3-M07 MS2050	0,55	0,55	0,55	0,70
H5	218.19-125T-T3-MD10 MH1000	0,55	0,65	0,65	0,80
H8	218.19-125T-T3-MD10 MH1000	0,50	0,50	0,50	0,65
H11	218.19-125T-T3-MD08 MP3000	0,55	0,50	0,50	0,65
H12	218.19-125T-T3-M07 T350M	0,50	0,34	0,34	0,44
H21	218.19-125T-T3-MD10 MH1000	0,50	0,50	0,50	0,65

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R217/220.21-125 – Cutting data v_c = (m/min)

	MP1501			MP2501			MP3000			T350M			F40M		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	275	325	380	290	340	410	275	325	385	255	300	355	220	260	310
P2	270	315	370	280	335	395	265	315	375	245	290	345	215	250	300
P3	235	280	325	245	290	340	235	275	325	215	255	300	185	220	260
P4	210	245	285	220	255	305	205	245	290	190	225	265	165	195	230
P5	200	235	280	210	250	290	200	235	275	185	215	255	160	190	220
P6	225	265	315	240	280	325	225	265	310	205	245	285	180	210	250
P7	210	250	295	225	265	310	210	250	295	195	230	270	170	200	235
P8	200	235	275	210	245	285	195	230	270	180	215	250	155	185	220
P11	205	240	290	220	255	300	205	245	285	190	225	260	165	195	225
P12	140	170	200	145	175	205	135	165	195	125	150	175	110	130	155
M1	—	—	—	205	240	285	200	235	280	190	225	265	170	205	245
M2	—	—	—	170	200	235	165	195	230	160	185	220	145	170	200
M3	—	—	—	145	170	200	140	170	195	135	160	185	120	145	170
M4	—	—	—	115	140	160	110	140	160	105	130	150	95	120	140
M5	—	—	—	95	120	135	95	115	135	90	110	125	80	100	115
K1	210	250	295	225	265	315	210	250	300	195	230	275	170	200	240
K2	190	220	265	200	235	275	190	225	260	175	205	240	150	180	210
K3	160	190	225	170	200	235	160	190	220	150	175	205	130	150	175
K4	150	180	215	160	190	225	155	180	210	140	165	195	125	145	170
K5	95	110	130	100	115	135	95	110	130	85	100	120	75	90	105
K6	135	160	190	145	170	195	135	160	185	125	145	170	110	130	150
K7	120	140	170	125	150	175	120	140	165	110	130	155	95	115	135
N1	—	—	—	—	—	—	1550	1825	2200	—	—	—	1250	1475	1750
N2	—	—	—	—	—	—	630	740	880	—	—	—	500	590	710
N3	—	—	—	—	—	—	420	495	590	—	—	—	335	395	470
N11	—	—	—	—	—	—	—	—	—	—	—	—	380	450	540
S1	—	—	—	—	—	—	50	65	75	49	60	70	45	55	65
S2	—	—	—	—	—	—	42	50	60	40	50	55	36	45	50
S3	—	—	—	—	—	—	37	46	55	35	44	50	32	40	45
S11	—	—	—	—	—	—	70	90	100	70	85	95	60	75	85
S12	—	—	—	—	—	—	50	60	70	47	60	65	43	55	60
S13	—	—	—	—	—	—	29	37	42	28	35	40	25	31	36
H5	50	60	70	47	55	65	46	55	65	45	55	60	39	46	55
H8	55	65	75	50	60	70	49	60	70	48	60	65	42	50	60
H11	65	75	90	60	70	85	60	70	80	55	70	80	50	60	70
H12	95	115	135	100	120	140	95	115	130	85	105	120	75	90	105
H21	55	65	75	50	60	70	49	60	70	48	60	65	42	50	60

	MM4500			MS2050			MS2500			MH1000		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	180	210	250	—	—	—	315	375	445	—	—	—
P2	175	205	245	—	—	—	310	365	435	—	—	—
P3	150	180	210	—	—	—	270	320	375	—	—	—
P4	135	155	185	—	—	—	235	280	335	—	—	—
P5	130	155	180	—	—	—	230	270	320	—	—	—
P6	145	170	200	—	—	—	260	305	355	—	—	—
P7	140	160	190	185	220	255	245	290	335	—	—	—
P8	130	150	175	175	205	240	225	265	315	—	—	—
P11	135	160	185	180	215	250	240	280	325	—	—	—
P12	90	105	125	120	145	170	160	190	220	—	—	—
M1	150	175	210	190	225	265	220	260	310	—	—	—
M2	125	145	170	160	185	220	185	220	255	—	—	—
M3	105	125	145	135	160	185	155	185	215	—	—	—
M4	85	105	120	105	130	150	125	155	175	—	—	—
M5	70	85	100	90	110	125	100	130	145	—	—	—
K1	—	—	—	—	—	—	—	—	—	205	245	285
K2	—	—	—	—	—	—	—	—	—	185	215	260
K3	—	—	—	—	—	—	—	—	—	155	185	220
K4	—	—	—	—	—	—	—	—	—	150	175	210
K5	—	—	—	—	—	—	—	—	—	90	105	125
K6	—	—	—	—	—	—	—	—	—	130	155	185
K7	—	—	—	—	—	—	—	—	—	115	135	165
N1	—	—	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—
S1	25	32	36	49	60	70	60	75	85	—	—	—
S2	20	25	29	40	50	55	48	60	70	—	—	—
S3	18	22	26	35	44	50	43	55	60	—	—	—
S11	35	43	49	70	85	95	85	100	115	—	—	—
S12	32	40	45	47	60	65	55	70	80	—	—	—
S13	19	24	27	28	35	40	34	42	48	—	—	—
H5	—	—	—	—	—	—	—	—	—	49	55	65
H8	—	—	—	—	—	—	—	—	—	50	65	75
H11	—	—	—	—	—	—	—	—	—	60	75	85
H12	—	—	—	—	—	—	—	—	—	95	115	130
H21	—	—	—	—	—	—	—	—	—	50	65	75

R217/220.21-160 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	218.19-160T-04-M08 T350M	1,6	0,80	0,80	1,0
P2	218.19-160T-04-M08 T350M	1,6	0,80	0,80	1,0
P3	218.19-160T-04-M08 T350M	1,6	0,80	0,80	0,95
P4	218.19-160T-04-M08 MP2501	1,6	0,75	0,75	0,95
P5	218.19-160T-04-MD11 MP2501	1,6	1,0	1,0	1,3
P6	218.19-160T-04-MD11 MP2501	1,6	1,0	1,0	1,3
P7	218.19-160T-04-MD11 MP2501	1,6	1,0	1,0	1,3
P8	218.19-160T-04-MD11 MP2501	1,6	1,1	1,1	1,3
P11	218.19-160T-04-MD11 MS2500	1,6	1,0	1,0	1,3
P12	218.19-160T-04-MD11 MS2500	1,3	0,70	0,70	0,85
M1	218.19-160T-04-M08 F40M	1,6	0,80	0,80	1,0
M2	218.19-160T-04-M08 F40M	1,6	0,75	0,75	0,90
M3	218.19-160T-04-M08 F40M	1,3	0,60	0,60	0,75
M4	218.19-160T-04-M08 F40M	0,95	0,50	0,50	0,65
M5	218.19-160T-04-M08 F40M	0,95	0,50	0,50	0,65
K1	218.19-160T-04-MD11 MK2050	1,6	1,1	1,1	1,4
K2	218.19-160T-04-MD11 MK2050	1,6	1,0	1,0	1,3
K3	218.19-160T-04-MD11 MK2050	1,6	1,0	1,0	1,3
K4	218.19-160T-04-MD11 MK2050	1,6	1,0	1,0	1,3
K5	218.19-160T-04-MD11 MK2050	1,6	0,90	0,90	1,1
K6	218.19-160T-04-MD11 MK2050	1,6	1,0	1,0	1,3
K7	218.19-160T-04-MD11 MK2050	1,6	0,90	0,90	1,1
N1	218.19-160-04-E07 H25	1,6	0,90	0,90	1,1
N2	218.19-160-04-E07 H25	1,6	0,90	0,90	1,1
N3	218.19-160-04-E07 H25	1,6	0,90	0,90	1,1
N11	218.19-160-04-E07 H25	1,6	0,90	0,90	1,1
S1	218.19-160T-04-M08 MS2500	0,95	0,50	0,50	0,65
S2	218.19-160T-04-M08 MS2500	0,95	0,50	0,50	0,65
S3	218.19-160T-04-M08 MS2500	0,95	0,48	0,48	0,60
S11	218.19-160T-04-M08 MS2050	1,1	0,60	0,60	0,75
S12	218.19-160T-04-M08 MS2050	1,1	0,60	0,60	0,75
S13	218.19-160T-04-M08 MS2050	0,95	0,50	0,50	0,65
H5	218.19-160T-04-MD11 MH1000	1,0	0,60	0,60	0,75
H8	218.19-160T-04-MD11 MH1000	0,90	0,46	0,46	0,55
H11	218.19-160T-04-MD09 MP3000	1,0	0,50	0,50	0,60
H12	218.19-160T-04-M08 T350M	0,90	0,34	0,34	0,42
H21	218.19-160T-04-MD11 MH1000	0,90	0,46	0,46	0,55

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)

	MP1501			MP2050			MP2501			MP3000			T350M			F15M		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	270	320	380	280	335	390	285	340	400	270	320	380	245	295	350	—	—	—
P2	260	315	370	270	325	380	275	330	390	260	315	370	240	290	340	—	—	—
P3	225	270	325	235	280	335	235	285	340	225	270	320	205	250	295	—	—	—
P4	205	245	285	210	250	295	215	255	300	200	240	285	185	220	260	—	—	—
P5	195	235	275	200	240	285	205	245	290	195	230	275	175	210	255	—	—	—
P6	220	265	305	225	270	320	230	275	325	215	260	310	200	240	285	—	—	—
P7	205	250	290	210	255	300	215	260	305	205	245	290	190	225	270	—	—	—
P8	190	225	275	195	235	280	200	240	285	190	225	270	175	210	250	—	—	—
P11	200	240	280	205	245	295	210	250	300	200	235	285	180	220	260	—	—	—
P12	135	170	195	140	170	195	145	175	200	135	165	190	125	150	175	—	—	—
M1	—	—	—	195	230	275	200	240	280	195	235	275	185	220	260	—	—	—
M2	—	—	—	160	190	230	165	195	235	160	195	230	155	185	215	—	—	—
M3	—	—	—	135	165	190	135	170	195	135	165	190	130	155	180	—	—	—
M4	—	—	—	110	140	155	115	145	160	110	140	160	105	135	150	—	—	—
M5	—	—	—	90	115	130	95	120	135	90	115	130	90	110	125	—	—	—
K1	210	250	290	215	255	300	220	260	310	205	250	290	190	230	270	165	200	235
K2	185	220	260	190	225	270	195	230	275	185	220	260	170	200	240	150	180	210
K3	155	190	220	160	190	230	165	195	235	155	185	220	140	170	205	125	150	175
K4	150	180	210	155	185	220	155	185	220	150	175	210	135	165	195	120	145	170
K5	90	110	130	95	115	130	95	115	135	90	110	125	85	100	115	75	90	105
K6	130	160	185	135	160	190	135	165	195	130	155	185	120	145	170	105	125	150
K7	120	140	170	120	145	170	125	150	170	115	140	165	110	130	150	95	115	135
N1	—	—	—	—	—	—	—	—	—	1525	1825	2125	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	620	740	860	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	410	490	570	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	55	70	75	—	—	—	50	65	75	49	60	70	—	—	—
S2	—	—	—	43	55	60	—	—	—	42	55	60	39	50	55	—	—	—
S3	—	—	—	38	48	55	—	—	—	36	46	50	34	44	49	—	—	—
S11	—	—	—	75	90	105	—	—	—	70	85	100	65	85	95	—	—	—
S12	—	—	—	50	65	70	—	—	—	48	60	70	46	55	65	—	—	—
S13	—	—	—	30	38	43	—	—	—	29	37	41	28	35	39	—	—	—
H5	49	60	70	45	55	65	46	55	65	45	55	65	44	55	60	40	47	55
H8	55	65	75	48	60	70	49	60	70	48	60	70	47	55	65	43	50	60
H11	65	75	90	55	70	80	60	70	80	55	70	80	55	65	80	50	60	70
H12	95	115	135	95	115	135	100	120	135	90	110	130	85	105	120	75	95	110
H21	55	65	75	48	60	70	49	60	70	48	60	70	47	55	65	43	50	60

	F40M			MK2050			MS2050			MS2500			MH1000			H25		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	215	255	300	235	280	330	—	—	—	310	370	435	—	—	—	—	—	—
P2	210	250	295	230	275	320	—	—	—	300	360	425	—	—	—	—	—	—
P3	180	215	255	195	235	285	—	—	—	260	310	370	—	—	—	—	—	—
P4	160	195	225	180	215	250	—	—	—	230	280	325	—	—	—	—	—	—
P5	155	185	220	170	205	240	—	—	—	220	265	315	—	—	—	—	—	—
P6	175	205	245	190	230	265	—	—	—	250	300	355	—	—	—	—	—	—
P7	165	195	235	180	215	250	180	215	255	235	280	335	—	—	—	—	—	—
P8	150	180	215	165	200	240	165	200	240	220	260	310	—	—	—	—	—	—
P11	160	190	225	175	210	245	175	210	250	230	275	325	—	—	—	—	—	—
P12	110	130	150	120	145	170	120	145	165	155	190	220	—	—	—	—	—	—
M1	170	200	235	—	—	—	185	220	260	215	260	305	—	—	—	—	—	—
M2	140	165	200	—	—	—	155	185	215	180	215	255	—	—	—	—	—	—
M3	115	145	165	—	—	—	130	155	180	150	180	210	—	—	—	—	—	—
M4	95	120	135	—	—	—	105	135	150	120	155	175	—	—	—	—	—	—
M5	80	100	115	—	—	—	85	110	125	100	130	145	—	—	—	—	—	—
K1	165	200	235	245	295	345	—	—	—	—	—	—	200	240	285	—	—	—
K2	145	175	210	220	265	310	—	—	—	—	—	—	180	215	250	—	—	—
K3	125	150	175	185	225	260	—	—	—	—	—	—	155	185	215	—	—	—
K4	120	140	170	180	215	250	—	—	—	—	—	—	145	175	205	—	—	—
K5	75	90	100	110	130	155	—	—	—	—	—	—	90	110	130	—	—	—
K6	105	125	150	155	190	220	—	—	—	—	—	—	130	155	180	—	—	—
K7	95	110	130	140	170	200	—	—	—	—	—	—	115	140	165	—	—	—
N1	1225	1450	1700	—	—	—	—	—	—	—	—	—	—	—	—	1275	1525	1825
N2	495	590	690	—	—	—	—	—	—	—	—	—	—	—	—	520	620	740
N3	330	395	460	—	—	—	—	—	—	—	—	—	—	—	—	345	415	490
N11	375	450	520	—	—	—	—	—	—	—	—	—	—	—	—	395	470	560
S1	45	55	65	—	—	—	49	60	70	60	75	85	—	—	—	—	—	—
S2	36	45	50	—	—	—	39	50	55	48	60	70	—	—	—	—	—	—
S3	31	40	45	—	—	—	34	44	49	42	55	60	—	—	—	—	—	—
S11	60	75	85	—	—	—	65	85	95	80	100	115	—	—	—	—	—	—
S12	42	50	60	—	—	—	46	55	65	55	70	80	—	—	—	—	—	—
S13	25	32	36	—	—	—	28	35	39	34	43	48	—	—	—	—	—	—
H5	38	46	55	—	—	—	—	—	—	—	—	—	48	55	65	—	—	—
H8	41	50	60	—	—	—	—	—	—	—	—	—	50	65	75	—	—	—
H11	49	60	70	—	—	—	—	—	—	—	—	—	60	75	85	—	—	—
H12	75	90	105	—	—	—	—	—	—	—	—	—	95	115	130	—	—	—
H21	41	50	60	—	—	—	—	—	—	—	—	—	50	65	75	—	—	—

R217/220.21-R230 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	218.21-230TR-06-ME13 T350M	1,6	0,95	0,95	1,1
P2	218.21-230TR-06-ME13 T350M	1,6	0,95	0,95	1,1
P3	218.21-230TR-06-ME13 T350M	1,6	0,90	0,90	1,1
P4	218.21-230TR-06-M15 MP2501	1,6	1,0	1,0	1,2
P5	218.21-230TR-06-M15 MP2501	1,6	1,0	1,0	1,2
P6	218.21-230TR-06-M15 MP2501	1,6	1,0	1,0	1,2
P7	218.21-230TR-06-M15 MP2501	1,6	1,0	1,0	1,2
P8	218.21-230TR-06-M15 MP2501	1,6	1,0	1,0	1,2
P11	218.21-230TR-06-M15 MS2500	1,6	1,0	1,0	1,2
P12	218.21-230TR-06-M15 MS2500	1,3	0,70	0,70	0,80
M1	218.21-230TR-06-ME13 T350M	1,6	0,95	0,95	1,1
M2	218.21-230TR-06-ME13 T350M	1,6	0,85	0,85	1,0
M3	218.21-230TR-06-ME13 T350M	1,3	0,70	0,70	0,80
M4	218.21-230TR-06-ME13 MM4500	0,95	0,60	0,60	0,70
M5	218.21-230TR-06-ME13 MM4500	0,95	0,60	0,60	0,70
K1	218.21-230TR-06-MD17 MK2050	1,8	1,2	1,2	1,5
K2	218.21-230TR-06-MD17 MK2050	1,8	1,1	1,1	1,3
K3	218.21-230TR-06-MD17 MK2050	1,8	1,1	1,1	1,3
K4	218.21-230TR-06-MD17 MK2050	1,8	1,1	1,1	1,3
K5	218.21-230TR-06-MD17 MK2050	1,8	1,0	1,0	1,2
K6	218.21-230TR-06-MD17 MK2050	1,8	1,1	1,1	1,3
K7	218.21-230TR-06-MD17 MK2050	1,8	1,0	1,0	1,2
S1	218.21-230TR-06-ME13 MS2500	0,95	0,60	0,60	0,70
S2	218.21-230TR-06-ME13 MS2500	0,95	0,60	0,60	0,70
S3	218.21-230TR-06-M15 F40M	0,95	0,65	0,65	0,75
S11	218.21-230TR-06-ME13 MS2050	1,1	0,70	0,70	0,80
S12	218.21-230TR-06-ME13 MS2050	1,1	0,70	0,70	0,80
S13	218.21-230TR-06-ME13 MS2050	0,95	0,60	0,60	0,70
H5	218.21-230TR-06-MD17 MP3000	1,1	0,65	0,65	0,80
H8	218.21-230TR-06-MD17 MP3000	1,0	0,50	0,50	0,60
H11	218.21-230TR-06-M15 T350M	1,0	0,60	0,60	0,70
H12	218.21-230TR-06-M15 T350M	0,90	0,44	0,44	0,55
H21	218.21-230TR-06-MD17 MP3000	1,0	0,50	0,50	0,60

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

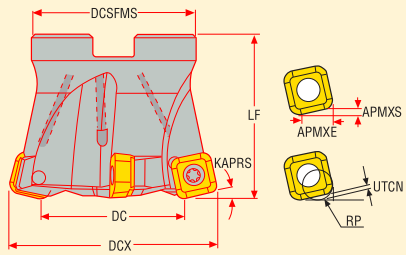
R217/220.21-R230 – Cutting data v_c = (m/min)

	MP1501			MP2050			MP2501			MP3000			T350M			F40M		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	210	245	290	210	240	290	210	245	295	200	235	280	185	215	260	160	185	225
P2	205	240	280	205	235	285	205	240	290	195	225	275	180	210	250	155	180	220
P3	175	205	250	180	210	250	185	215	255	175	200	240	160	185	225	140	160	195
P4	155	180	220	160	185	220	160	190	225	155	180	215	140	165	195	125	140	170
P5	155	180	215	150	175	210	155	180	215	145	170	205	135	155	185	115	135	165
P6	170	200	240	170	200	235	175	200	240	165	190	230	150	175	210	130	155	185
P7	160	190	225	160	185	225	165	190	230	155	180	215	145	165	200	125	145	175
P8	150	170	210	150	175	210	155	180	215	145	170	205	135	155	185	115	135	165
P11	155	185	220	155	180	215	160	185	220	150	175	210	140	160	195	120	140	170
P12	110	130	160	105	130	155	110	130	155	105	125	145	95	115	135	85	100	120
M1	—	—	—	145	170	205	150	175	210	145	170	205	140	160	195	125	145	175
M2	—	—	—	120	140	170	125	145	175	120	140	170	115	135	160	105	120	145
M3	—	—	—	105	125	145	105	125	150	105	125	145	100	120	140	90	105	125
M4	—	—	—	85	105	120	85	110	125	85	105	120	80	100	115	75	90	105
M5	—	—	—	70	90	100	70	90	105	70	90	100	70	85	95	60	75	90
K1	160	190	225	160	185	225	165	190	230	155	180	215	145	165	200	125	145	175
K2	145	170	205	145	165	200	145	170	205	140	160	195	130	150	180	110	130	155
K3	125	145	170	120	140	170	125	145	175	115	135	165	110	125	150	95	110	130
K4	115	135	165	115	135	160	120	140	165	110	130	155	105	120	145	90	105	125
K5	70	85	100	70	85	100	75	85	100	70	80	95	65	75	90	55	65	75
K6	105	120	145	100	120	145	105	120	145	100	115	135	90	105	125	80	90	110
K7	90	105	130	90	105	125	95	110	130	90	105	120	80	95	115	70	80	100
S1	—	—	—	41	50	60	—	—	—	40	50	55	38	47	55	34	43	49
S2	—	—	—	33	42	48	—	—	—	32	40	46	30	38	43	28	35	40
S3	—	—	—	29	37	43	—	—	—	28	35	41	27	34	39	24	30	35
S11	—	—	—	55	70	80	—	—	—	55	65	75	50	65	75	47	55	65
S12	—	—	—	39	48	55	—	—	—	37	46	55	35	44	50	32	40	46
S13	—	—	—	23	29	33	—	—	—	22	28	32	21	27	30	19	24	28
H5	40	46	55	35	41	49	36	42	50	35	41	49	34	40	48	30	35	42
H8	44	55	60	39	46	55	40	47	55	39	46	55	38	45	50	33	39	45
H11	50	60	70	45	50	60	46	55	65	45	50	60	44	50	60	38	44	55
H12	80	95	110	75	90	105	80	95	110	75	90	100	70	80	95	60	70	80
H21	44	55	60	39	46	55	40	47	55	39	46	55	38	45	50	33	39	45

	MM4500			MK2050			MS2050			MS2500		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	140	165	200	185	215	255	—	—	—	230	270	325
P2	135	160	195	180	210	245	—	—	—	225	260	315
P3	120	140	165	155	180	215	—	—	—	200	235	280
P4	105	125	150	135	155	190	—	—	—	175	205	245
P5	105	120	145	135	155	185	—	—	—	170	195	235
P6	115	135	160	150	175	210	—	—	—	190	220	265
P7	110	125	155	140	165	200	135	160	190	180	205	250
P8	100	115	140	130	150	180	130	150	180	170	195	235
P11	105	125	150	135	160	195	130	155	185	175	200	240
P12	70	85	100	95	115	140	90	110	130	120	140	170
M1	120	135	165	—	—	—	140	160	195	160	190	225
M2	100	115	140	—	—	—	115	135	160	135	155	190
M3	85	100	120	—	—	—	100	120	140	115	135	160
M4	70	85	100	—	—	—	80	100	115	95	120	135
M5	55	70	80	—	—	—	70	85	95	80	100	110
K1	—	—	—	195	225	265	—	—	—	—	—	—
K2	—	—	—	170	200	240	—	—	—	—	—	—
K3	—	—	—	145	170	205	—	—	—	—	—	—
K4	—	—	—	140	160	195	—	—	—	—	—	—
K5	—	—	—	85	100	120	—	—	—	—	—	—
K6	—	—	—	125	145	170	—	—	—	—	—	—
K7	—	—	—	110	125	155	—	—	—	—	—	—
S1	21	26	30	—	—	—	38	47	55	46	60	65
S2	17	21	24	—	—	—	30	38	43	37	46	55
S3	15	19	21	—	—	—	27	33	39	33	41	47
S11	28	35	41	—	—	—	50	65	75	60	75	90
S12	26	32	37	—	—	—	35	44	50	43	55	60
S13	16	20	23	—	—	—	21	27	30	26	32	37
H5	—	—	—	—	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—	—	—	—	—
H11	—	—	—	—	—	—	—	—	—	—	—	—
H12	—	—	—	—	—	—	—	—	—	—	—	—
H21	—	—	—	—	—	—	—	—	—	—	—	—

R220.21-SC





- For insert selection and cutting data recommendations, see page(s) 465-466
- For complete insert programme, see page(s) 639
- 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	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	113,1	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	141,1	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	149,1	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	220.17-692M	5,0
R220.21-0063-0066	DOUBLE-T	C45011-T20P	H6B-T20P	MC6S12X35	5,0
R220.21-0080	DOUBLE-T	C45011-T20P	H6B-T20PL	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 710

R220.21-SC12– Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	SCET120630T-M14 MP2501	1,0	0,75	0,75	0,85
P2	SCET120630T-M14 MP2501	1,0	0,75	0,75	0,90
P3	SCET120630T-M14 MP2501	1,0	0,70	0,70	0,85
P4	SCET120630T-M14 MP2501	1,0	0,70	0,70	0,80
P5	SCET120630T-M14 MP2501	1,0	0,70	0,70	0,80
P6	SCET120630T-MD16 MS2500	1,0	0,75	0,75	0,90
P7	SCET120630T-MD16 MS2500	1,0	0,75	0,75	0,90
P8	SCET120630T-MD16 MP2501	1,0	0,80	0,80	0,95
P11	SCET120630T-MD16 MS2500	1,0	0,75	0,75	0,90
P12	SCET120630T-MD16 MS2500	0,80	0,55	0,55	0,65
M1	SCET120630T-M14 F40M	1,0	0,75	0,75	0,90
M2	SCET120630T-M14 F40M	1,0	0,70	0,70	0,80
M3	SCET120630T-M14 F40M	0,80	0,55	0,55	0,65
M4	SCET120630T-M14 F40M	0,60	0,48	0,48	0,55
M5	SCET120630T-M14 F40M	0,60	0,48	0,48	0,55
K1	SCET120630T-MD16 MP1501	1,0	0,85	0,85	1,0
K2	SCET120630T-MD16 MP1501	1,0	0,80	0,80	0,90
K3	SCET120630T-MD16 MP1501	1,0	0,80	0,80	0,90
K4	SCET120630T-MD16 MP1501	1,0	0,80	0,80	0,90
K5	SCET120630T-MD16 MP1501	1,0	0,70	0,70	0,85
K6	SCET120630T-MD16 MP1501	1,0	0,80	0,80	0,90
K7	SCET120630T-MD16 MP1501	1,0	0,70	0,70	0,85
S1	SCET120630T-M14 MS2500	0,60	0,48	0,48	0,55
S2	SCET120630T-M14 MS2500	0,60	0,48	0,48	0,55
S3	SCET120630T-M14 MS2500	0,60	0,44	0,44	0,50
S11	SCET120630T-M14 MS2500	0,70	0,55	0,55	0,65
S12	SCET120630T-M14 MS2500	0,70	0,55	0,55	0,65
S13	SCET120630T-M14 MS2500	0,60	0,48	0,48	0,55
H5	SCET120630T-MD16 MP1501	0,80	0,55	0,55	0,65
H8	SCET120630T-MD16 MP1501	0,70	0,40	0,40	0,48
H11	SCET120630T-MD16 T350M	0,80	0,55	0,55	0,65
H12	SCET120630T-MD16 T350M	0,70	0,40	0,40	0,48
H21	SCET120630T-MD16 MP1501	0,70	0,40	0,40	0,48

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)

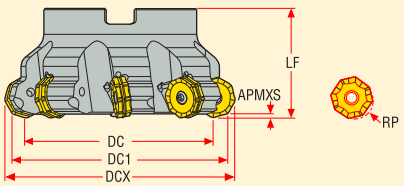
	MP1501			MP2501			MP3000			T350M			F40M			MK2050		
SMG	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	310	380	440	275	335	390	270	330	385	245	305	355	215	265	310	280	345	400
P2	300	370	430	265	325	380	260	320	375	240	295	345	210	255	300	270	335	390
P3	265	325	380	235	285	335	230	280	325	210	260	300	185	225	260	240	295	340
P4	230	285	335	205	250	295	200	250	290	185	230	265	160	200	230	210	260	300
P5	220	270	320	195	240	280	195	235	280	180	220	255	155	190	225	200	245	290
P6	255	310	360	225	275	315	220	265	315	205	245	290	175	215	250	230	275	325
P7	240	295	340	210	260	300	210	250	295	190	230	275	165	200	235	215	260	310
P8	220	270	320	195	240	280	195	235	275	180	220	255	155	190	220	200	245	285
P11	230	285	330	205	255	290	205	245	290	185	225	265	160	195	230	210	255	300
P12	150	185	215	135	165	190	130	165	185	120	150	170	105	130	150	135	170	195
M1	—	—	—	190	235	275	195	240	280	185	230	265	170	205	240	—	—	—
M2	—	—	—	160	195	225	160	200	235	155	190	220	140	170	200	—	—	—
M3	—	—	—	130	160	185	130	165	190	125	155	180	115	140	165	—	—	—
M4	—	—	—	100	125	145	105	130	150	100	125	140	90	110	130	—	—	—
M5	—	—	—	85	105	120	85	110	125	80	105	120	75	95	105	—	—	—
K1	240	295	340	210	260	300	205	255	295	190	235	275	165	205	240	295	360	420
K2	210	260	300	185	230	270	185	225	265	170	205	245	145	180	210	260	320	375
K3	180	220	255	160	195	225	155	190	225	145	175	205	125	150	180	220	270	320
K4	170	210	245	150	185	215	150	180	215	135	165	195	120	145	170	210	255	305
K5	105	130	150	95	115	135	90	115	130	85	105	120	75	90	105	130	160	185
K6	150	185	215	130	165	190	130	160	190	120	145	175	105	130	150	185	225	265
K7	135	165	190	120	145	170	120	145	165	110	135	155	95	115	135	165	205	235
N1	—	—	—	—	—	—	1525	1875	2200	—	—	—	1225	1500	1750	—	—	—
N2	—	—	—	—	—	—	620	760	890	—	—	—	495	610	710	—	—	—
N3	—	—	—	—	—	—	410	510	590	—	—	—	330	405	475	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	375	465	540	—	—	—
S1	—	—	—	—	—	—	48	60	70	46	60	65	42	50	60	—	—	—
S2	—	—	—	—	—	—	39	49	55	37	46	55	34	42	48	—	—	—
S3	—	—	—	—	—	—	34	43	49	33	41	47	30	37	43	—	—	—
S11	—	—	—	—	—	—	65	85	95	65	80	90	60	70	85	—	—	—
S12	—	—	—	—	—	—	46	60	65	44	55	65	40	50	55	—	—	—
S13	—	—	—	—	—	—	27	34	39	26	32	37	23	29	34	—	—	—
H5	50	60	70	—	—	—	41	50	60	40	50	55	35	43	50	—	—	—
H8	55	65	80	—	—	—	44	55	60	43	55	60	37	46	55	—	—	—
H11	65	80	90	—	—	—	50	65	75	50	65	75	45	55	65	—	—	—
H12	95	120	140	—	—	—	85	105	120	75	95	110	65	85	95	—	—	—
H21	55	65	80	—	—	—	44	55	60	43	55	60	37	46	55	—	—	—

	MS2500		
SMG	100%	70%	30%
P1	310	380	445
P2	300	370	430
P3	265	325	375
P4	235	285	330
P5	220	275	320
P6	255	305	360
P7	240	290	340
P8	220	275	315
P11	235	280	330
P12	150	190	215
M1	215	265	310
M2	180	220	260
M3	145	180	210
M4	115	145	165
M5	95	120	135
K1	—	—	—
K2	—	—	—
K3	—	—	—
K4	—	—	—
K5	—	—	—
K6	—	—	—
K7	—	—	—
N1	—	—	—
N2	—	—	—
N3	—	—	—
N11	—	—	—
S1	55	70	80
S2	45	55	65
S3	40	50	55
S11	80	95	110
S12	55	65	75
S13	31	39	45
H5	—	—	—
H8	—	—	—
H11	—	—	—
H12	—	—	—
H21	—	—	—

R220.21-ON09

High feed cutters





- For insert selection and cutting data recommendations, see page(s) 468-468
- For complete insert programme, see page(s) 634
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm									KG		Insert
		APMXS	DCX	DC	DC1	DCB	DCSFMS	LF	RP				
R220.21-0080-ON09-6A	Arbor	2,0	89,9	65,35	80,0	27,0	62,0	50,0	10,28	6	1,0	4400	ON..09
R220.21-0100-ON09-7A	Arbor	2,0	109,9	85,35	100,0	32,0	77,0	50,0	10,28	7	1,5	3900	ON..09
R220.21-0125-ON09-8A	Arbor	2,0	134,9	110,35	125,0	40,0	90,0	63,0	10,28	8	2,9	3500	ON..09
R220.21-8160-ON09-10	Arbor	2,0	169,9	145,35	160,0	40,0	90,0	63,0	10,28	10	4,1	3100	ON..09

Spare Parts

For cutter	Key (T-handle)	Insert screw	Insert key	Arbor screw	Torque value (Nm)
R220.21-0080	DOUBLE-T	C05013-T20P	H6B-T20PL	MC6S12X35	5,0
R220.21-0100-8160	DOUBLE-T	C05013-T20P	H6B-T20PL	–	5,0

Please check availability in current price and stock-list

Torque keys, see page 710

R220.21-ON09 – Insert selection

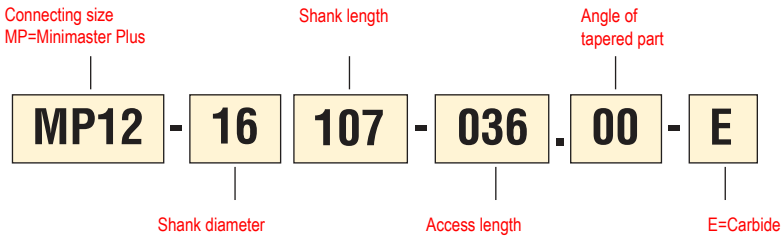
SMG		a_p	f_z		
			100%	70%	30%
P1	ONMU090520ANTN-M12 MP2501	1,2	0,60	0,60	0,70
P2	ONMU090520ANTN-M12 MP2501	1,2	0,60	0,60	0,70
P3	ONMU090520ANTN-M12 MP2501	1,2	0,60	0,60	0,65
P4	ONMU090520ANTN-M12 MP2501	1,2	0,60	0,60	0,65
P5	ONMU090520ANTN-M12 MP2501	1,2	0,55	0,55	0,65
P6	ONMU090520ANTN-M12 MP2501	1,2	0,55	0,55	0,65
P7	ONMU090520ANTN-MD16 MP1501	1,2	0,75	0,75	0,85
P8	ONMU090520ANTN-MD16 MP1501	1,2	0,80	0,80	0,90
P11	ONMU090520ANTN-MD16 MP1501	1,2	0,75	0,75	0,85
P12	ONMU090520ANTN-MD16 MP1501	0,95	0,50	0,50	0,55
K1	ONMU090520ANTN-M14 MK2050	1,2	0,75	0,75	0,80
K2	ONMU090520ANTN-M14 MK2050	1,2	0,65	0,65	0,75
K3	ONMU090520ANTN-M14 MK2050	1,2	0,65	0,65	0,75
K4	ONMU090520ANTN-M14 MK2050	1,2	0,65	0,65	0,75
K5	ONMU090520ANTN-M14 MK2050	1,2	0,60	0,60	0,65
K6	ONMU090520ANTN-MD16 MK1500	1,2	0,75	0,75	0,85
K7	ONMU090520ANTN-MD16 MK1500	1,2	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

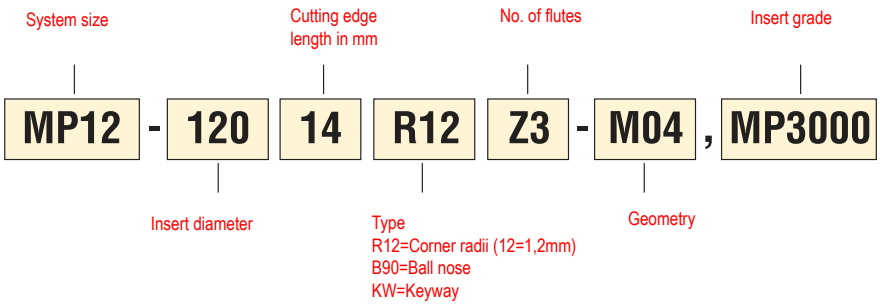
R220.21-ON09 – Cutting data v_c = (m/min)

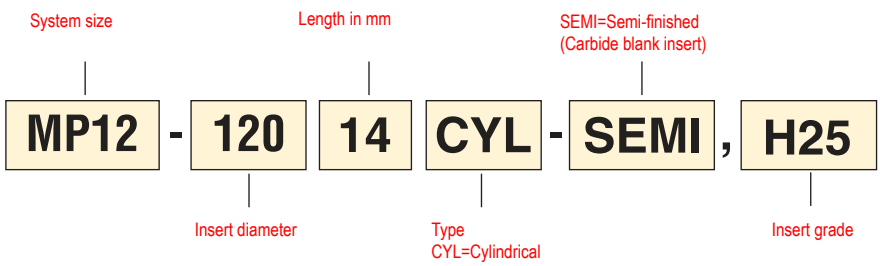
SMG	MP1501			MP2050			MP2501			MK1500			MK2050		
	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	315	350	420	275	305	365	280	310	370	—	—	—	275	305	365
P2	305	340	410	265	295	355	270	300	360	—	—	—	265	295	355
P3	265	295	360	230	255	310	235	260	315	—	—	—	230	255	315
P4	230	260	315	200	225	275	205	230	280	—	—	—	200	225	275
P5	225	250	300	195	220	260	200	225	265	—	—	—	200	220	265
P6	255	285	340	220	245	295	225	250	300	—	—	—	220	245	295
P7	240	265	320	210	235	280	215	235	285	—	—	—	210	235	280
P8	220	245	300	190	215	260	195	220	265	—	—	—	195	215	265
P11	235	260	310	205	225	270	205	230	275	—	—	—	205	225	270
P12	150	170	205	130	145	175	135	150	180	—	—	—	135	145	175
K1	240	270	325	210	235	280	215	240	285	305	340	405	290	320	385
K2	215	240	285	185	210	250	190	210	255	270	300	360	255	285	340
K3	180	205	240	160	175	210	160	180	215	230	255	305	215	240	285
K4	175	195	230	150	170	200	155	170	205	220	245	290	205	230	275
K5	105	120	145	95	105	125	95	105	130	135	150	180	125	140	170
K6	155	170	205	135	150	175	135	150	180	190	215	255	180	205	240
K7	135	150	185	120	130	160	120	135	165	170	190	230	160	180	220

Code key shanks

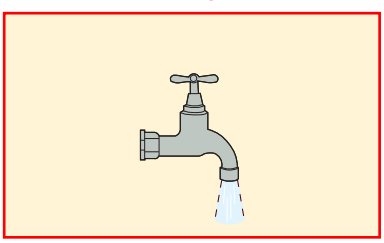


Code key inserts





Internal through coolant



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 712 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 the best possible stability.

Note! Carbide shanks are to be used for Finishing/Semi finishing operations only.

4. Select cutting data
a. Cutting speed recommendations are found in the cutting data tables for each selected taper size. 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 ap in slotting is DC*0.3= Max APMXS. (See figure 1)
b. Feed and cutting speed recommendations are found in the cutting data conversion table.
c. Maximum RPM that for safety reasons should never be exceeded, are shown on page 613.
d. 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.
e. Divide the radial depth of cut with the cutter diameter to get the actual cutter engagement percentage(ae/DC%), for ball nose cutters use the effective working diameter Dw instead of DC (See figure 2 & 6)
f. Use the percentage to get a correct feed per tooth and cutting speed recommendation for the actual cutter engagement.

5. General
- 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.
- 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 (DC) as working diameter instead of Dw.
- When calculating feed per revolution and feed speed, always use the ZEFP-value. That is the effective number of teeth to use for cutting data calculations. The ZEFP-value can be found in the insert selection table.

Note! There will be a deterioration in the surface finish on the workpiece when the feed rate is increased. (See figure 3 & 5)

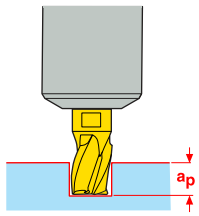


Figure 1

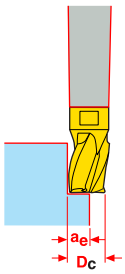


Figure 2

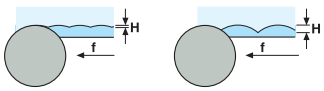


Figure 3

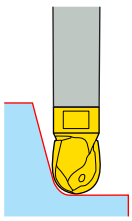


Figure 4

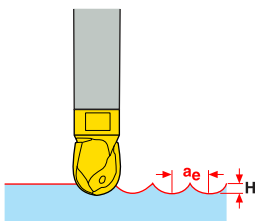


Figure 5

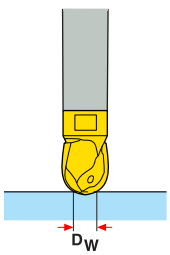


Figure 6

Torque wrench information

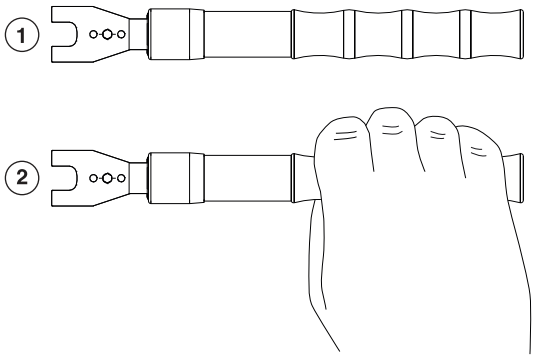


We recommend a torque wrench when mounting the insert
for best precision and extended tool life.

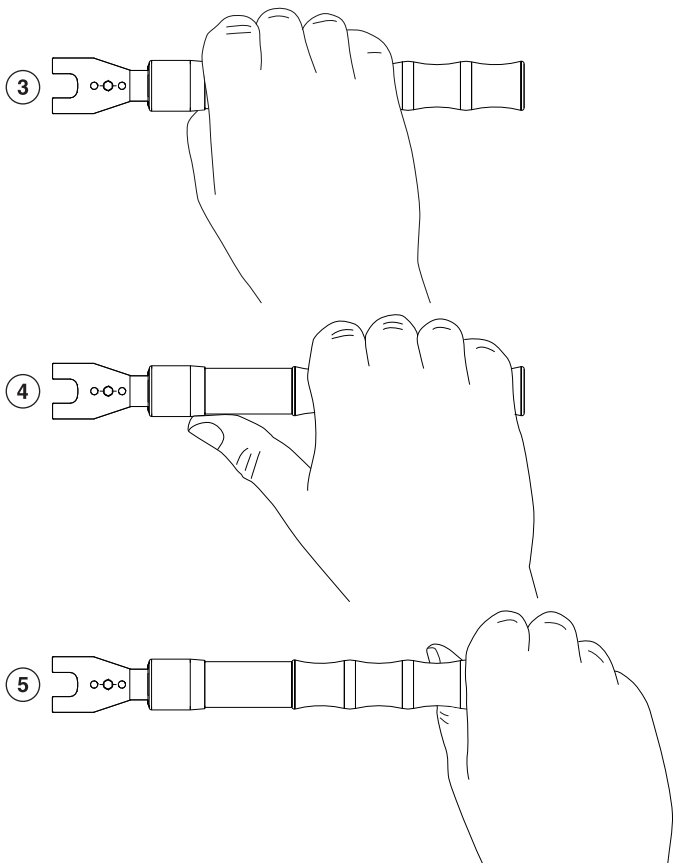
Different torque values for assembly
– MP10: 11Nm
– MP12: 15Nm
– MP16: 19Nm
Do not use worn out replaceable blades

Note: Torque wrenches and standard keys must be ordered separately!

User instructions Torque wrench



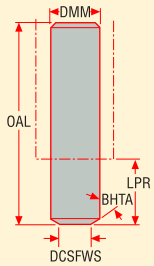
Use the arched handle (fig. 1) to grip the wrench by hand as shown (fig. 2)



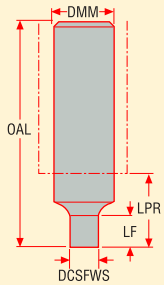
Do not grip the wrench as shown on figure 3-5, there is a risk that the applied torque might be incorrect and the insert will not be properly seated.

MP10 Shank

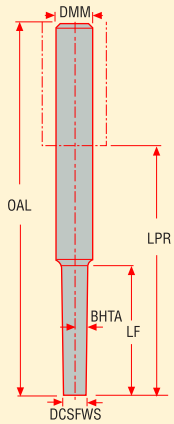
Design 1



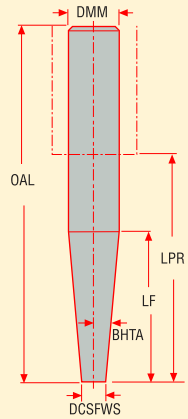
Design 2



Design 3



Design 4



- Cylindrical shank DMM with tolerance h5, compatible for Shrinkfit
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm					RPMX	BHTA°	Design		KG
		DCSFWS	DMM	OAL	LPR	LF					
MP10-10055-010.00	Cylindrical	9,8	10,0	55,0	15,0	10,0	80000	0,0	2	✓	0,1
MP10-16068-000.60	Cylindrical	9,5	16,0	68,0	20,0	0,0	80000	60,0	1	✓	0,2
MP10-16073-015.00	Cylindrical	9,8	16,0	73,0	25,0	15,0	80000	0,0	2	✓	0,1
MP10-16118-035.01	Cylindrical	9,5	16,0	118,0	70,0	35,0	80000	1,0	3	✓	0,2
MP10-16158-060.01	Cylindrical	9,5	16,0	158,0	110,0	60,0	80000	1,0	3	✓	0,2
MP10-20100-045.03	Cylindrical	9,5	20,0	100,0	50,0	45,0	80000	3,0	3	✓	0,2
MP10-20140-085.03	Cylindrical	9,5	20,0	140,0	90,0	85,0	80000	3,0	3	✓	0,3
MP10-20140-090.05	Cylindrical	9,5	20,0	140,0	90,0	60,0	80000	5,0	4	✓	0,3
MP10-12095-030.00-E	Cylindrical	9,8	12,0	95,0	50,0	30,0	80000	0,0	2	✓	0,2
MP10-12105-040.00-E	Cylindrical	9,8	12,0	105,0	60,0	40,0	80000	0,0	2	✓	0,2
MP10-12125-060.00-E	Cylindrical	9,8	12,0	125,0	80,0	60,0	80000	0,0	2	✓	0,2
MP10-16120-050.01-E	Cylindrical	9,5	16,0	120,0	72,0	50,0	80000	1,0	3	✓	0,3
MP10-16150-080.01-E	Cylindrical	9,5	16,0	150,0	102,0	80,0	80000	1,0	3	✓	0,3
MP10-16170-100.01-E	Cylindrical	9,5	16,0	170,0	122,0	100,0	80000	1,0	3	✓	0,4
MP10-16140-092.03-E	Cylindrical	9,5	16,0	140,0	92,0	62,0	80000	3,0	4	✓	0,4
MP10-16170-122.03-E	Cylindrical	9,5	16,0	170,0	122,0	62,0	80000	3,0	4	✓	0,4

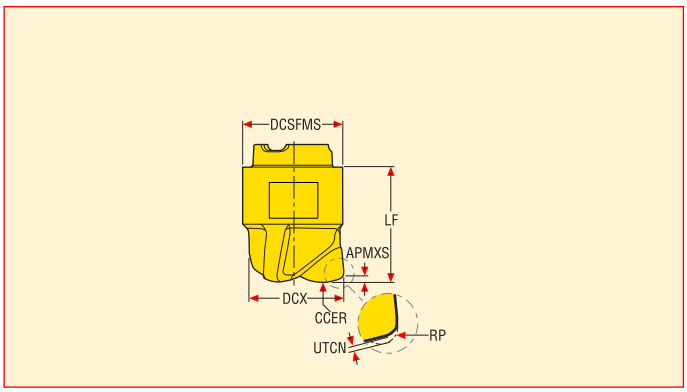
Accessories

Inserts	Torque key	Replacement blade	Key
MP10	MP00-10.110	MP00-10M	MP1016

Blades are included with the torque key

MP10 High feed





- For insert selection and cutting data recommendations, see page(s) 483-484
- For ISO attribute explanation, see page 15

Z3



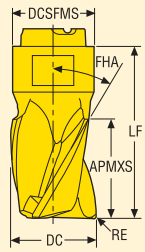
Designation	Dimensions in mm								RMPX°	C min	C max	ZEFP		Coated Grades	
	APMXS	DCX	DC	DCSFMS	CCER	RP	LF	UTCN						MP3000	F40M
MP10-1000.6HFZ3-MD08	0,6	10,0	5,0	9,6	6,2	1,13	11,0	0,32	5,0	10,9	14,8	3	✓	■	
MP10-0950.6HFZ3-MD08	0,6	9,525	4,55	9,4	6,2	1,13	11,0	0,32	5,0	10,4	13,4	3	✓	■	

MP10 Square shoulder



- For insert selection and cutting data recommendations, see page(s) 485-486
- For ISO attribute explanation, see page 15

Slotting and contouring



Z3



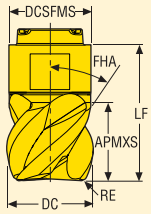
Designation	Dimensions in mm					FHA°	RMPX°	C min	C max	ZEFP		Coated Grades	
	APMXS	DC	RE	DCSFMS	LF							MP3000	F40M
MP10-09807KWZ3-E03	7,0	9,8	0,3	9,6	16,0	30	15,0	12,0	18,8	3	✓		■
MP10-10007R04Z3-E03	7,0	10,0	0,4	9,6	16,0	30	15,0	12,2	19,0	3	✓		■
MP10-10007R04Z3-M03	7,0	10,0	0,4	9,6	16,0	30	15,0	12,2	19,0	3	✓	■	
MP10-10007R05Z3-E03	7,0	10,0	0,5	9,6	16,0	30	15,0	12,2	18,8	3	✓		■
MP10-10007R08Z3-E03	7,0	10,0	0,8	9,6	16,0	30	15,0	12,2	18,2	3	✓		■
MP10-10007R08Z3-M03	7,0	10,0	0,8	9,6	16,0	30	15,0	12,2	18,2	3	✓	■	
MP10-10007R20Z3-E03	7,0	10,0	2,0	9,6	16,0	30	15,0	12,2	15,8	3	✓		■
MP10-10007R31Z3-E03	7,0	10,0	3,1	9,6	16,0	30	15,0	12,2	13,6	3	✓		■
MP10-09812KWZ3-E03	12,0	9,8	0,3	9,6	21,0	30	15,0	12,0	18,8	3	✓		■
MP10-10012R04Z3-E03	12,0	10,0	0,4	9,6	21,0	30	15,0	12,2	19,0	3	✓		■
MP10-10012R04Z3-M03	12,0	10,0	0,4	9,6	21,0	30	15,0	12,2	19,0	3	✓	■	
MP10-10012R05Z3-E03	12,0	10,0	0,5	9,6	21,0	30	15,0	12,2	18,8	3	✓		■
MP10-10012R08Z3-E03	12,0	10,0	0,8	9,6	21,0	30	15,0	12,2	18,2	3	✓		■
MP10-10012R08Z3-M03	12,0	10,0	0,8	9,6	21,0	30	15,0	12,2	18,2	3	✓	■	
MP10-10012R20Z3-E03	12,0	10,0	2,0	9,6	21,0	30	15,0	12,2	15,8	3	✓		■
MP10-10012R31Z3-E03	12,0	10,0	3,1	9,6	21,0	30	15,0	12,2	13,6	3	✓		■
MP10-09512R04Z3-E03	12,0	9,525	0,4	9,6	21,0	30	15,0	11,6	18,0	3	✓		■
MP10-09512R04Z3-M03	12,0	9,525	0,4	9,6	21,0	30	15,0	11,6	18,0	3	✓	■	
MP10-09512R08Z3-E03	12,0	9,525	0,8	9,6	21,0	30	15,0	11,6	17,2	3	✓		■
MP10-09512R08Z3-M03	12,0	9,525	0,8	9,6	21,0	30	15,0	11,6	17,2	3	✓	■	
MP10-09512R16Z3-E03	12,0	9,525	1,6	9,6	21,0	30	15,0	11,6	15,6	3	✓		■
MP10-09512R31Z3-E03	12,0	9,525	3,1	9,6	21,0	30	15,0	11,6	12,6	3	✓		■

MP10 Square shoulder



- For insert selection and cutting data recommendations, see page(s) 485-486
- For ISO attribute explanation, see page 15

Slotting and contouring



Z4

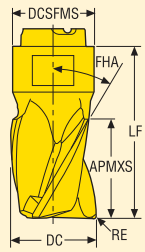


Designation	Dimensions in mm					FHA°	RMPX°	ZEFP		Coated Grades	
	APMXS	DC	RE	DCSFMS	LF					MP3000	F40M
MP10-10007R04Z4-M02	7,0	10,0	0,4	9,6	16,0	50	15,0	4	–	■	
MP10-10007R05Z4-E02	7,0	10,0	0,5	9,6	16,0	50	15,0	4	–		■
MP10-10007R08Z4-E02	7,0	10,0	0,8	9,6	16,0	50	15,0	4	–		■
MP10-10007R08Z4-M02	7,0	10,0	0,8	9,6	16,0	50	15,0	4	–	■	
MP10-10007R16Z4-E02	7,0	10,0	1,6	9,6	16,0	50	15,0	4	–		■
MP10-10012R04Z4-E02	12,0	10,0	0,4	9,6	21,0	50	15,0	4	–		■
MP10-10012R04Z4-M02	12,0	10,0	0,4	9,6	21,0	50	15,0	4	–	■	
MP10-10012R05Z4-E02	12,0	10,0	0,5	9,6	21,0	50	15,0	4	–		■
MP10-10012R08Z4-E02	12,0	10,0	0,8	9,6	21,0	50	15,0	4	–		■
MP10-10012R08Z4-M02	12,0	10,0	0,8	9,6	21,0	50	15,0	4	–	■	
MP10-10012R16Z4-E02	12,0	10,0	1,6	9,6	21,0	50	15,0	4	–		■
MP10-09512R04Z4-E02	12,0	9,525	0,4	9,6	21,0	50	15,0	4	–		■
MP10-09512R04Z4-M02	12,0	9,525	0,4	9,6	21,0	50	15,0	4	–	■	
MP10-09512R08Z4-E02	12,0	9,525	0,8	9,6	21,0	50	15,0	4	–		■
MP10-09512R08Z4-M02	12,0	9,525	0,8	9,6	21,0	50	15,0	4	–	■	

MP10 Square shoulder

Contouring only





- For insert selection and cutting data recommendations, see page(s) 485-486
- For ISO attribute explanation, see page 15

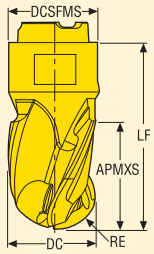
Z5



Designation	Dimensions in mm					FHA°	ZEFP		Coated Grades	
	APMXS	DC	RE	DCSFMS	LF				MP3000	F40M
MP10-10012R04Z5-M02	12,0	10,0	0,4	9,6	21,0	40	5	–	■	
MP10-09512R04Z5-M02	12,0	9,525	0,4	9,6	21,0	40	5	–	■	

MP10 Ball nose design





- For insert selection and cutting data recommendations, see page(s) 487-488
- For ISO attribute explanation, see page 15

Z3



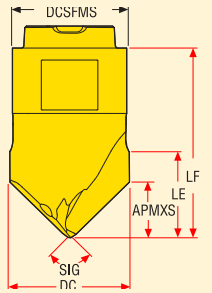
Z4



Designation	Dimensions in mm					FHA°	RMPX°	ZEFP		Coated Grades	
	APMXS	DC	RE	DCSFMS	LF					MP3000	F40M
MP10-10007B90Z3-E03	7,0	10,0	5,0	9,6	16,0	30	15,0	3	✓		■
MP10-10007B90Z3-M03	7,0	10,0	5,0	9,6	16,0	30	15,0	3	✓	■	
MP10-10012B90Z3-E03	12,0	10,0	5,0	9,6	21,0	30	15,0	3	✓		■
MP10-10012B90Z3-M03	12,0	10,0	5,0	9,6	21,0	30	15,0	3	✓	■	
MP10-10007B90Z4-E02	7,0	10,0	5,0	9,6	16,0	20	15,0	4	–		■
MP10-10007B90Z4-M02	7,0	10,0	5,0	9,6	16,0	20	15,0	4	–	■	
MP10-09507B90Z3-E03	7,0	9,525	4,7625	9,4	16,0	30	15,0	3	✓		■
MP10-09507B90Z3-M03	7,0	9,525	4,7625	9,4	16,0	30	15,0	3	✓	■	
MP10-09512B90Z3-E03	12,0	9,525	4,7625	9,6	21,0	30	15,0	3	✓		■
MP10-09512B90Z3-M03	12,0	9,525	4,7625	9,6	21,0	30	15,0	3	✓	■	
MP10-09507B90Z4-E02	7,0	9,525	4,7625	9,4	16,0	20	15,0	4	–		■
MP10-09507B90Z4-M02	7,0	9,525	4,7625	9,4	16,0	20	15,0	4	–	■	

MP10 Centre drilling





- For insert selection and cutting data recommendations, see page(s) 489-490
- For ISO attribute explanation, see page 15

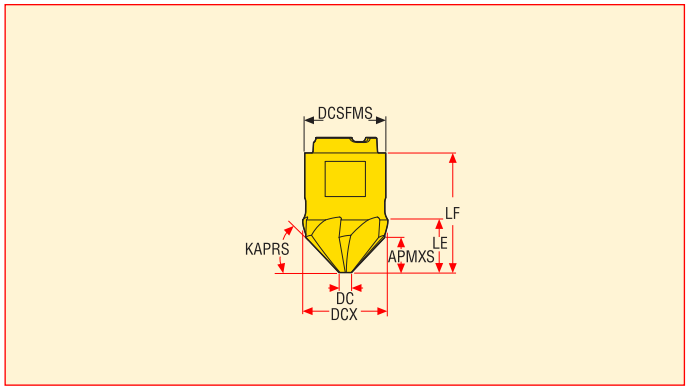
Z2



Designation	Dimensions in mm					SIG°	ZEFP		Coated Grades	
	APMXS	DC	DCSFMS	LE	LF				MP3000	F40M
MP10-10006C90Z2-M03	4,6	10,0	9,6	7,1	16,0	90,0	2	✓		■

MP10 Chamfering





- For insert selection and cutting data recommendations, see page(s) 491-492
- For ISO attribute explanation, see page 15

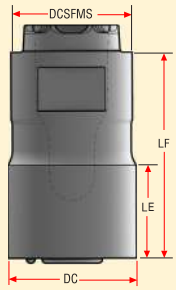
Z6



Designation	Dimensions in mm						KAPRS°	ZEFP		Coated Grades	
	APMXS	DCX	DC	DCSFMS	LE	LF				MP3000	F40M
MP10-10006C90Z6-M03	4,0	10,1	1,95	9,6	5,9	14,5	45,0	6	–		■

MP10 Cylindrical blanks





- Cylindrical carbide blanks for production of own geometries
- For ISO attribute explanation, see page 15





Designation	Dimensions in mm					Uncoated	
						Grades	
	DC	DCSFMS	LE	LF		H25	
MP10-10007CYL-SEMI	10,15	9,6	7,3	16,3	–	■	
MP10-10012CYL-SEMI	10,15	9,6	12,4	21,3	–	■	

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)

	MP3000			
SMG	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 and Side 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_e/DC = %
All cutting data are start values

MP10 Slot and Side milling – Cutting data v_c = (m/min)

	MP3000				F40M			
SMG	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_e/DC = %
All cutting data are start values

MP10 Copy milling – Cutting data v_c = (m/min)

	MP3000					F40M				
SMG	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	3,0
P2	MP10-10006C90Z2-M03 F40M	0,042	3,0
P3	MP10-10006C90Z2-M03 F40M	0,040	3,0
P4	MP10-10006C90Z2-M03 F40M	0,040	3,0
P5	MP10-10006C90Z2-M03 F40M	0,040	3,0
P6	MP10-10006C90Z2-M03 F40M	0,038	3,0
P7	MP10-10006C90Z2-M03 F40M	0,038	3,0
P8	MP10-10006C90Z2-M03 F40M	0,040	3,0
P11	MP10-10006C90Z2-M03 F40M	0,038	3,0
P12	MP10-10006C90Z2-M03 F40M	0,026	2,0
M1	MP10-10006C90Z2-M03 F40M	0,042	3,0
M2	MP10-10006C90Z2-M03 F40M	0,040	3,0
M3	MP10-10006C90Z2-M03 F40M	0,032	2,0
M4	MP10-10006C90Z2-M03 F40M	0,028	1,7
M5	MP10-10006C90Z2-M03 F40M	0,028	1,7
K1	MP10-10006C90Z2-M03 F40M	0,042	3,0
K2	MP10-10006C90Z2-M03 F40M	0,040	3,0
K3	MP10-10006C90Z2-M03 F40M	0,040	3,0
K4	MP10-10006C90Z2-M03 F40M	0,040	3,0
K5	MP10-10006C90Z2-M03 F40M	0,036	3,0
K6	MP10-10006C90Z2-M03 F40M	0,040	3,0
K7	MP10-10006C90Z2-M03 F40M	0,036	3,0
N1	MP10-10006C90Z2-M03 F40M	0,055	3,0
N2	MP10-10006C90Z2-M03 F40M	0,055	3,0
N3	MP10-10006C90Z2-M03 F40M	0,055	3,0
N11	MP10-10006C90Z2-M03 F40M	0,055	3,0
S1	MP10-10006C90Z2-M03 F40M	0,028	1,7
S2	MP10-10006C90Z2-M03 F40M	0,028	1,7
S3	MP10-10006C90Z2-M03 F40M	0,025	1,7
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	1,7
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

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	270
P2	265
P3	230
P4	205
P5	195
P6	220
P7	205
P8	195
P11	200
P12	125
M1	215
M2	175
M3	135
M4	105
M5	85
K1	210
K2	185
K3	155
K4	150
K5	90
K6	130
K7	115
N1	1575
N2	640
N3	425
N11	490
S1	48
S2	39
S3	34
S11	70
S12	48
S13	27
H5	41
H8	43
H11	55
H12	75
H21	43

MP10 Chamfering – Insert selection

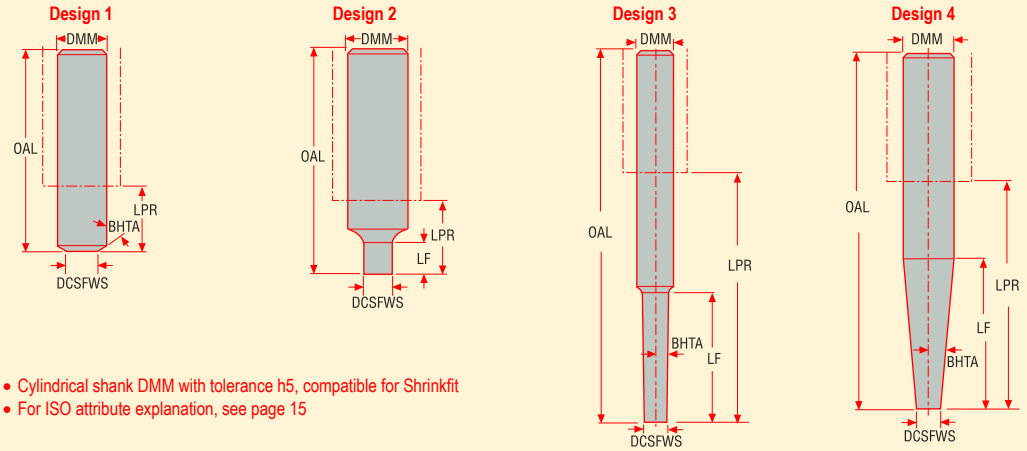
SMG		a_p	f_z				
			100%	50%	30%	20%	10%
P1	MP10-10006C90Z2-M03 F40M	2,0	0,060	0,060	0,060	0,060	0,075
P2	MP10-10006C90Z2-M03 F40M	2,0	0,060	0,060	0,060	0,060	0,075
P3	MP10-10006C90Z2-M03 F40M	2,0	0,055	0,055	0,055	0,055	0,070
P4	MP10-10006C90Z2-M03 F40M	2,0	0,055	0,055	0,055	0,055	0,070
P5	MP10-10006C90Z2-M03 F40M	2,0	0,055	0,055	0,055	0,055	0,065
P6	MP10-10006C90Z2-M03 F40M	2,0	0,055	0,055	0,055	0,055	0,065
P7	MP10-10006C90Z2-M03 F40M	2,0	0,055	0,055	0,055	0,055	0,065
P8	MP10-10006C90Z2-M03 F40M	2,0	0,055	0,055	0,055	0,055	0,070
P11	MP10-10006C90Z2-M03 F40M	2,0	0,055	0,055	0,055	0,055	0,065
P12	MP10-10006C90Z2-M03 F40M	1,8	0,038	0,038	0,038	0,038	0,046
M1	MP10-10006C90Z2-M03 F40M	2,0	0,060	0,060	0,060	0,060	0,075
M2	MP10-10006C90Z2-M03 F40M	2,0	0,055	0,055	0,055	0,055	0,065
M3	MP10-10006C90Z2-M03 F40M	1,8	0,044	0,044	0,044	0,044	0,055
M4	MP10-10006C90Z2-M03 F40M	1,3	0,038	0,038	0,038	0,038	0,048
M5	MP10-10006C90Z2-M03 F40M	1,3	0,038	0,038	0,038	0,038	0,048
K1	MP10-10006C90Z2-M03 F40M	2,0	0,060	0,060	0,060	0,060	0,075
K2	MP10-10006C90Z2-M03 F40M	2,0	0,055	0,055	0,055	0,055	0,065
K3	MP10-10006C90Z2-M03 F40M	2,0	0,055	0,055	0,055	0,055	0,065
K4	MP10-10006C90Z2-M03 F40M	2,0	0,055	0,055	0,055	0,055	0,065
K5	MP10-10006C90Z2-M03 F40M	2,0	0,050	0,050	0,050	0,050	0,060
K6	MP10-10006C90Z2-M03 F40M	2,0	0,055	0,055	0,055	0,055	0,065
K7	MP10-10006C90Z2-M03 F40M	2,0	0,050	0,050	0,050	0,050	0,060
N1	MP10-10006C90Z2-M03 F40M	2,0	0,075	0,075	0,075	0,075	0,095
N2	MP10-10006C90Z2-M03 F40M	2,0	0,075	0,075	0,075	0,075	0,095
N3	MP10-10006C90Z2-M03 F40M	2,0	0,075	0,075	0,075	0,075	0,095
N11	MP10-10006C90Z2-M03 F40M	2,0	0,075	0,075	0,075	0,075	0,095
S1	MP10-10006C90Z2-M03 F40M	1,3	0,038	0,038	0,038	0,038	0,048
S2	MP10-10006C90Z2-M03 F40M	1,3	0,038	0,038	0,038	0,038	0,048
S3	MP10-10006C90Z2-M03 F40M	1,3	0,036	0,036	0,036	0,036	0,044
S11	MP10-10006C90Z2-M03 F40M	1,5	0,044	0,044	0,044	0,044	0,055
S12	MP10-10006C90Z2-M03 F40M	1,5	0,044	0,044	0,044	0,044	0,055
S13	MP10-10006C90Z2-M03 F40M	1,3	0,038	0,038	0,038	0,038	0,048
H5	MP10-10006C90Z2-M03 F40M	1,8	0,038	0,038	0,038	0,038	0,046
H8	MP10-10006C90Z2-M03 F40M	1,5	0,028	0,028	0,028	0,028	0,034
H11	MP10-10006C90Z2-M03 F40M	1,8	0,038	0,038	0,038	0,038	0,046
H12	MP10-10006C90Z2-M03 F40M	1,5	0,028	0,028	0,028	0,028	0,034
H21	MP10-10006C90Z2-M03 F40M	1,5	0,028	0,028	0,028	0,028	0,034

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)

	F40M				
SMG	100%	50%	30%	20%	10%
P1	330	300	360	395	465
P2	320	290	350	385	455
P3	285	255	305	340	395
P4	250	225	270	300	350
P5	240	215	260	285	335
P6	265	240	290	320	380
P7	250	230	275	300	355
P8	240	215	260	285	330
P11	245	220	265	295	345
P12	155	130	155	175	220
M1	260	235	280	310	365
M2	215	195	230	255	305
M3	170	145	170	195	240
M4	130	95	120	135	185
M5	105	80	100	115	155
K1	255	230	275	305	360
K2	225	205	245	270	320
K3	190	175	205	230	270
K4	180	165	200	220	260
K5	110	100	120	135	155
K6	160	145	175	190	230
K7	140	130	155	170	200
N1	1925	1725	2075	2300	2700
N2	770	690	840	930	1100
N3	520	465	560	620	730
N11	590	530	640	710	830
S1	60	45	55	65	85
S2	48	36	44	50	70
S3	42	32	39	45	60
S11	85	70	80	95	120
S12	60	47	55	65	85
S13	34	25	31	36	48
H5	50	44	50	60	75
H8	55	44	50	60	75
H11	65	55	65	75	90
H12	95	80	95	105	135
H21	55	44	50	60	75

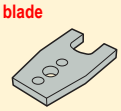
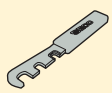
MP12 Shank



- Cylindrical shank DMM with tolerance h5, compatible for Shrinkfit
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm					RPMX	BHTA°	Design		KG
		DCSFWS	DMM	OAL	LPR	LF					
MP12-12060-012.00	Cylindrical	11,5	12,0	60,0	15,0	12,0	72700	0,0	2	✓	0,1
MP12-16068-000.60	Cylindrical	11,5	16,0	68,0	20,0	0,0	72700	60,0	1	✓	0,2
MP12-16078-018.00	Cylindrical	11,5	16,0	78,0	30,0	18,0	72700	0,0	2	✓	0,1
MP12-16153-042.01	Cylindrical	11,5	16,0	153,0	105,0	42,0	72700	1,0	3	✓	0,2
MP12-20170-072.01	Cylindrical	11,5	20,0	170,0	120,0	72,0	72700	1,0	3	✓	0,3
MP12-20110-055.03	Cylindrical	11,5	20,0	110,0	60,0	55,0	72700	3,0	3	✓	0,2
MP12-20150-100.03	Cylindrical	11,5	20,0	150,0	100,0	81,1	72700	3,0	3	✓	0,3
MP12-20155-105.05	Cylindrical	11,5	20,0	155,0	105,0	48,6	72700	5,0	4	✓	0,4
MP12-16107-036.00-E	Cylindrical	11,5	16,0	107,0	59,0	36,0	72700	0,0	2	✓	0,3
MP12-16120-048.00-E	Cylindrical	11,5	16,0	120,0	72,0	48,0	72700	0,0	2	✓	0,3
MP12-16150-072.00-E	Cylindrical	11,5	16,0	150,0	102,0	72,0	72700	0,0	2	✓	0,3
MP12-16120-060.01-E	Cylindrical	11,5	16,0	120,0	72,0	60,0	72700	1,0	3	✓	0,3
MP12-16150-096.01-E	Cylindrical	11,5	16,0	150,0	102,0	96,0	72700	1,0	3	✓	0,4
MP12-16175-120.01-E	Cylindrical	11,5	16,0	175,0	127,0	120,0	72700	1,0	3	✓	0,4
MP12-16155-107.03-E	Cylindrical	11,5	16,0	155,0	107,0	42,9	72700	3,0	4	✓	0,4
MP12-16180-132.03-E	Cylindrical	11,5	16,0	180,0	132,0	42,9	72700	3,0	4	✓	0,5

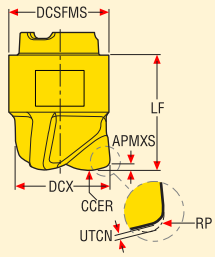
Accessories

Inserts	Torque key	Replacement blade	Key
			
MP12	MP00-12.150	MP00-12M	MP1016

Blades are included with the torque key

MP12 High feed





- For insert selection and cutting data recommendations, see page(s) 502-503
- For ISO attribute explanation, see page 15

Z3



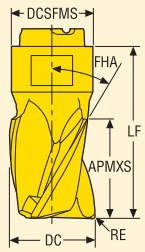
Designation	Dimensions in mm								RMPX°	C min	C max	ZEFP		Coated Grades	
	APMXS	DCX	DC	DCSFMS	CCER	RP	LF	UTCN						MP3000	F40M
MP12-1200.7HFZ3-MD10	0,7	12,0	6,0	11,5	7,5	1,66	13,3	0,32	5,0	13,1	17,8	3	✓	■	
MP12-1270.7HFZ3-MD10	0,7	12,7	6,7	11,5	7,5	1,66	13,3	0,32	5,0	13,8	19,2	3	✓	■	

MP12 Square shoulder



- For insert selection and cutting data recommendations, see page(s) 504-505
- For ISO attribute explanation, see page 15

Slotting and contouring



Z3



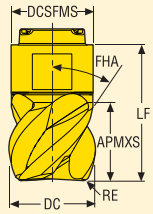
Designation	Dimensions in mm						RMPX°	C min	C max	ZEFP		Coated Grades	
	APMXS	DC	RE	DCSFMS	FHA°	LF						MP3000	F40M
MP12-12008R04Z3-E04	8,0	12,0	0,4	11,5	30	18,8	15,0	14,6	23,0	3	✓		■
MP12-12008R04Z3-M04	8,0	12,0	0,4	11,5	30	18,8	15,0	14,6	23,0	3	✓	■	
MP12-12008R05Z3-E04	8,0	12,0	0,5	11,5	30	18,8	15,0	14,6	22,8	3	✓		■
MP12-12008R08Z3-E04	8,0	12,0	0,8	11,5	30	18,8	15,0	14,6	22,2	3	✓		■
MP12-12008R08Z3-M04	8,0	12,0	0,8	11,5	30	18,8	15,0	14,6	22,2	3	✓	■	
MP12-12008R16Z3-E04	8,0	12,0	1,6	11,5	30	18,8	15,0	14,6	20,6	3	✓		■
MP12-12008R31Z3-E04	8,0	12,0	3,1	11,5	30	18,8	15,0	14,6	17,6	3	✓		■
MP12-11714KWZ3-E04	14,0	11,7	0,3	11,5	30	24,0	15,0	14,2	22,6	3	✓		■
MP12-12014R04Z3-E04	14,0	12,0	0,4	11,5	30	24,0	15,0	14,6	23,0	3	✓		■
MP12-12014R04Z3-M04	14,0	12,0	0,4	11,5	30	24,0	15,0	14,6	23,0	3	✓	■	
MP12-12014R05Z3-E04	14,0	12,0	0,5	11,5	30	24,0	15,0	14,6	22,8	3	✓		■
MP12-12014R08Z3-M04	14,0	12,0	0,8	11,5	30	24,0	15,0	14,6	22,2	3	✓	■	
MP12-12014R12Z3-E04	14,0	12,0	1,2	11,5	30	24,0	15,0	14,6	21,4	3	✓		■
MP12-12014R12Z3-M04	14,0	12,0	1,2	11,5	30	24,0	15,0	14,6	21,4	3	✓	■	
MP12-12014R20Z3-E04	14,0	12,0	2,0	11,5	30	24,0	15,0	14,6	19,8	3	✓		■
MP12-12014R31Z3-E04	14,0	12,0	3,1	11,5	30	24,0	15,0	14,6	17,6	3	✓		■
MP12-12708R08Z3-M04	8,0	12,7	0,8	11,5	30	18,8	15,0	15,4	23,6	3	✓	■	
MP12-12714R04Z3-E04	14,0	12,7	0,4	11,5	30	24,0	15,0	15,4	24,4	3	✓		■
MP12-12714R04Z3-M04	14,0	12,7	0,4	11,5	30	24,0	15,0	15,4	24,4	3	✓	■	
MP12-12714R08Z3-E04	14,0	12,7	0,8	11,5	30	24,0	15,0	15,4	23,6	3	✓		■
MP12-12714R08Z3-M04	14,0	12,7	0,8	11,5	30	24,0	15,0	15,4	23,6	3	✓	■	
MP12-12714R16Z3-E04	14,0	12,7	1,6	11,5	30	24,0	15,0	15,4	23,9	3	✓		■
MP12-12714R31Z3-E04	14,0	12,7	3,1	11,5	30	24,0	15,0	15,4	22,0	3	✓		■

MP12 Square shoulder



- For insert selection and cutting data recommendations, see page(s) 504-505
- For ISO attribute explanation, see page 15

Slotting and contouring



Z4

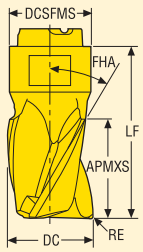


Designation	Dimensions in mm						RMPX°	ZEFP		Coated Grades	
	APMXS	DC	RE	DCSFMS	FHA°	LF				MP3000	F40M
MP12-12008R04Z4-M03	8,0	12,0	0,4	11,5	50	18,8	15,0	4	–	■	
MP12-12008R05Z4-E03	8,0	12,0	0,5	11,5	50	18,8	15,0	4	–		■
MP12-12008R08Z4-E03	8,0	12,0	0,8	11,5	50	18,8	15,0	4	–		■
MP12-12008R08Z4-M03	8,0	12,0	0,8	11,5	50	18,8	15,0	4	–	■	
MP12-12008R12Z4-M03	8,0	12,0	1,2	11,5	50	18,8	15,0	4	–	■	
MP12-12008R24Z4-E03	8,0	12,0	2,4	11,5	50	18,8	15,0	4	–		■
MP12-12014R04Z4-M03	14,0	12,0	0,4	11,5	50	24,0	15,0	4	–	■	
MP12-12014R05Z4-E03	14,0	12,0	0,5	11,5	50	24,0	15,0	4	–		■
MP12-12014R08Z4-E03	14,0	12,0	0,8	11,5	50	24,0	15,0	4	–		■
MP12-12014R08Z4-M03	14,0	12,0	0,8	11,5	50	24,0	15,0	4	–	■	
MP12-12014R12Z4-E03	14,0	12,0	1,2	11,5	50	24,0	15,0	4	–		■
MP12-12014R12Z4-M03	14,0	12,0	1,2	11,5	50	24,0	15,0	4	–	■	
MP12-12014R16Z4-E03	14,0	12,0	1,6	11,5	50	24,0	15,0	4	–		■
MP12-12714R04Z4-E03	14,0	12,7	0,4	11,5	50	24,0	15,0	4	–		■
MP12-12714R04Z4-M03	14,0	12,7	0,4	11,5	50	24,0	15,0	4	–	■	
MP12-12714R08Z4-E03	14,0	12,7	0,8	11,5	50	24,0	15,0	4	–		■
MP12-12714R08Z4-M03	14,0	12,7	0,8	11,5	50	24,0	15,0	4	–	■	

MP12 Square shoulder

Contouring only





- For insert selection and cutting data recommendations, see page(s) 504-505
- For ISO attribute explanation, see page 15

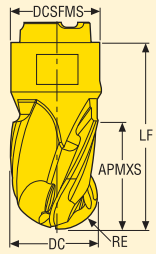
Z6



Designation	Dimensions in mm					FHA°	ZEFP		Coated Grades	
	APMXS	DC	RE	DCSFMS	LF				MP3000	F40M
MP12-12014R04Z6-M03	14,0	12,0	0,4	11,5	24,0	40	6	–	■	
MP12-12714R04Z6-M03	14,0	12,7	0,4	11,5	24,0	40	6	–	■	

MP12 Ball nose design





- For insert selection and cutting data recommendations, see page(s) 506-507
- For ISO attribute explanation, see page 15

Z3



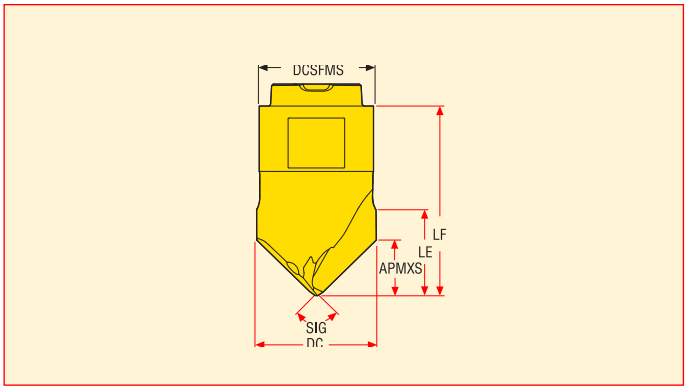
Z4



Designation	Dimensions in mm					FHA°	RMPX°	ZEFP		Coated Grades	
	APMXS	DC	RE	DCSFMS	LF					MP3000	F40M
MP12-12008B90Z3-E04	8,0	12,0	6,0	11,5	18,8	30	15,0	3	✓		■
MP12-12008B90Z3-M04	8,0	12,0	6,0	11,5	18,8	30	15,0	3	✓	■	
MP12-12014B90Z3-E04	14,0	12,0	6,0	11,5	24,0	30	15,0	3	✓		■
MP12-12014B90Z3-M04	14,0	12,0	6,0	11,5	24,0	30	15,0	3	✓	■	
MP12-12008B90Z4-E03	8,0	12,0	6,0	11,5	18,7	20	15,0	4	–		■
MP12-12008B90Z4-M03	8,0	12,0	6,0	11,5	18,7	20	15,0	4	–	■	
MP12-12708B90Z3-E04	8,0	12,7	6,35	11,5	18,8	30	15,0	3	✓		■
MP12-12708B90Z3-M04	8,0	12,7	6,35	11,5	18,8	30	15,0	3	✓	■	
MP12-12714B90Z3-E04	14,0	12,7	6,35	11,5	24,0	30	15,0	3	✓		■
MP12-12714B90Z3-M04	14,0	12,7	6,35	11,5	24,0	30	15,0	3	✓	■	
MP12-12708B90Z4-E03	8,0	12,7	6,35	11,5	18,7	20	15,0	4	–		■
MP12-12708B90Z4-M03	8,0	12,7	6,35	11,5	18,7	20	15,0	4	–	■	

MP12 Centre drilling





- For insert selection and cutting data recommendations, see page(s) 508-509
- For ISO attribute explanation, see page 15

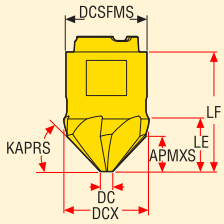
Z2



Designation	Dimensions in mm					SIG°	ZEFP		Coated Grades	
	APMXS	DC	DCSFMS	LE	LF				MP3000	F40M
MP12-12007C90Z2-M04	5,6	12,0	11,5	8,7	19,0	90,0	2	✓		■

MP12 Chamfering





- For insert selection and cutting data recommendations, see page(s) 510-511
- For ISO attribute explanation, see page 15

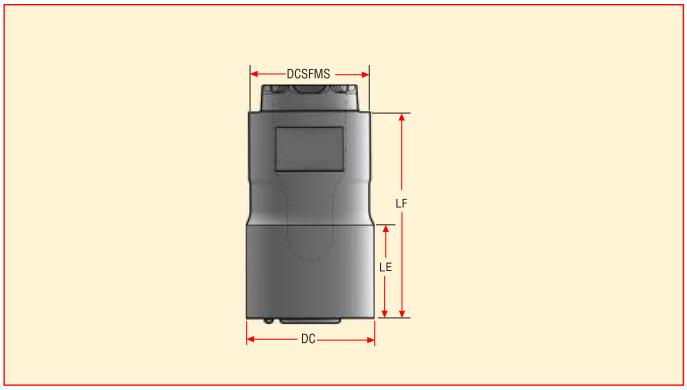
Z6



Designation	Dimensions in mm						KAPRS°	ZEFP		Coated Grades	
	APMXS	DCX	DC	DCSFMS	LE	LF				MP3000	F40M
MP12-12007C90Z6-M04	4,4	12,1	2,95	11,5	7,5	18,0	45,0	6	–		■

MP12 Cylindrical blanks





- Cylindrical carbide blanks for production of own geometries
- For ISO attribute explanation, see page 15





Designation	Dimensions in mm					Uncoated	
	DC	DCSFMS	LE	LF		Grades	
						H25	
MP12-12008CYL-SEMI	12,95	11,5	9,4	19,35	–	■	
MP12-12014CYL-SEMI	12,95	11,5	14,3	24,15	–	■	

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_e/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 and Side 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_e/DC = %
All cutting data are start values

MP12 Slot and Side milling – Cutting data v_c = (m/min)

	MP3000				F40M			
SMG	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	MP12-12008B90Z3-M04 MP3000	4,0	0,065	0,065	0,085	0,095	0,11
P2	MP12-12008B90Z3-M04 MP3000	4,0	0,065	0,070	0,085	0,095	0,11
P3	MP12-12008B90Z3-M04 MP3000	4,0	0,060	0,065	0,080	0,090	0,10
P4	MP12-12008B90Z3-M04 MP3000	4,0	0,060	0,065	0,080	0,090	0,10
P5	MP12-12008B90Z3-M04 MP3000	4,0	0,060	0,060	0,080	0,090	0,10
P6	MP12-12008B90Z3-M04 MP3000	4,0	0,060	0,060	0,075	0,090	0,10
P7	MP12-12008B90Z3-M04 MP3000	4,0	0,060	0,060	0,075	0,090	0,10
P8	MP12-12008B90Z3-M04 MP3000	4,0	0,060	0,065	0,080	0,090	0,10
P11	MP12-12008B90Z3-M04 MP3000	4,0	0,060	0,060	0,075	0,090	0,10
P12	MP12-12008B90Z3-M04 MP3000	3,0	0,044	0,044	0,050	0,055	0,060
M1	MP12-12008B90Z3-E04 F40M	4,0	0,065	0,070	0,085	0,095	0,11
M2	MP12-12008B90Z3-E04 F40M	4,0	0,060	0,060	0,080	0,090	0,10
M3	MP12-12008B90Z3-E04 F40M	3,0	0,050	0,050	0,060	0,065	0,070
M4	MP12-12008B90Z3-E04 F40M	2,5	0,046	0,046	0,055	0,055	0,060
M5	MP12-12008B90Z3-E04 F40M	2,5	0,046	0,046	0,055	0,055	0,060
K1	MP12-12008B90Z3-M04 MP3000	4,0	0,065	0,070	0,085	0,095	0,11
K2	MP12-12008B90Z3-M04 MP3000	4,0	0,060	0,060	0,080	0,090	0,10
K3	MP12-12008B90Z3-M04 MP3000	4,0	0,060	0,060	0,080	0,090	0,10
K4	MP12-12008B90Z3-M04 MP3000	4,0	0,060	0,060	0,080	0,090	0,10
K5	MP12-12008B90Z3-M04 MP3000	4,0	0,055	0,055	0,070	0,080	0,090
K6	MP12-12008B90Z3-M04 MP3000	4,0	0,060	0,060	0,080	0,090	0,10
K7	MP12-12008B90Z3-M04 MP3000	4,0	0,055	0,055	0,070	0,080	0,090
N1	MP12-12008B90Z3-E04 F40M	4,0	0,085	0,085	0,11	0,12	0,14
N2	MP12-12008B90Z3-E04 F40M	4,0	0,085	0,085	0,11	0,12	0,14
N3	MP12-12008B90Z3-E04 F40M	4,0	0,085	0,085	0,11	0,12	0,14
N11	MP12-12008B90Z3-E04 F40M	4,0	0,085	0,085	0,11	0,12	0,14
S1	MP12-12008B90Z3-E04 F40M	2,5	0,046	0,046	0,055	0,055	0,060
S2	MP12-12008B90Z3-E04 F40M	2,5	0,046	0,046	0,055	0,055	0,060
S3	MP12-12008B90Z3-E04 F40M	2,5	0,042	0,042	0,050	0,055	0,055
S11	MP12-12008B90Z3-E04 F40M	2,5	0,055	0,055	0,060	0,065	0,070
S12	MP12-12008B90Z3-E04 F40M	2,5	0,055	0,055	0,060	0,065	0,070
S13	MP12-12008B90Z3-E04 F40M	2,5	0,046	0,046	0,055	0,055	0,060
H5	MP12-12008B90Z3-M04 MP3000	3,0	0,044	0,044	0,050	0,055	0,060
H8	MP12-12008B90Z3-M04 MP3000	2,5	0,034	0,034	0,040	0,042	0,046
H11	MP12-12008B90Z3-M04 MP3000	3,0	0,044	0,044	0,050	0,055	0,060
H12	MP12-12008B90Z3-M04 MP3000	2,5	0,034	0,034	0,040	0,042	0,046
H21	MP12-12008B90Z3-M04 MP3000	2,5	0,034	0,034	0,040	0,042	0,046

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

MP12 Copy milling – Cutting data v_c = (m/min)

	MP3000					F40M				
SMG	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%
P1	MP12-12007C90Z2-M04 F40M	0,055	3,5
P2	MP12-12007C90Z2-M04 F40M	0,055	3,5
P3	MP12-12007C90Z2-M04 F40M	0,055	3,5
P4	MP12-12007C90Z2-M04 F40M	0,055	3,5
P5	MP12-12007C90Z2-M04 F40M	0,050	3,5
P6	MP12-12007C90Z2-M04 F40M	0,050	3,5
P7	MP12-12007C90Z2-M04 F40M	0,050	3,5
P8	MP12-12007C90Z2-M04 F40M	0,055	3,5
P11	MP12-12007C90Z2-M04 F40M	0,050	3,5
P12	MP12-12007C90Z2-M04 F40M	0,036	2,5
M1	MP12-12007C90Z2-M04 F40M	0,055	3,5
M2	MP12-12007C90Z2-M04 F40M	0,050	3,5
M3	MP12-12007C90Z2-M04 F40M	0,042	2,5
M4	MP12-12007C90Z2-M04 F40M	0,036	2,0
M5	MP12-12007C90Z2-M04 F40M	0,036	2,0
K1	MP12-12007C90Z2-M04 F40M	0,055	3,5
K2	MP12-12007C90Z2-M04 F40M	0,050	3,5
K3	MP12-12007C90Z2-M04 F40M	0,050	3,5
K4	MP12-12007C90Z2-M04 F40M	0,050	3,5
K5	MP12-12007C90Z2-M04 F40M	0,046	3,5
K6	MP12-12007C90Z2-M04 F40M	0,050	3,5
K7	MP12-12007C90Z2-M04 F40M	0,046	3,5
N1	MP12-12007C90Z2-M04 F40M	0,075	3,5
N2	MP12-12007C90Z2-M04 F40M	0,075	3,5
N3	MP12-12007C90Z2-M04 F40M	0,075	3,5
N11	MP12-12007C90Z2-M04 F40M	0,075	3,5
S1	MP12-12007C90Z2-M04 F40M	0,036	2,0
S2	MP12-12007C90Z2-M04 F40M	0,036	2,0
S3	MP12-12007C90Z2-M04 F40M	0,034	2,0
S11	MP12-12007C90Z2-M04 F40M	0,042	2,5
S12	MP12-12007C90Z2-M04 F40M	0,042	2,5
S13	MP12-12007C90Z2-M04 F40M	0,036	2,0
H5	MP12-12007C90Z2-M04 F40M	0,036	2,5
H8	MP12-12007C90Z2-M04 F40M	0,028	2,5
H11	MP12-12007C90Z2-M04 F40M	0,036	2,5
H12	MP12-12007C90Z2-M04 F40M	0,028	2,5
H21	MP12-12007C90Z2-M04 F40M	0,028	2,5

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%
P1	255
P2	250
P3	215
P4	190
P5	180
P6	205
P7	195
P8	180
P11	185
P12	120
M1	200
M2	165
M3	130
M4	100
M5	80
K1	195
K2	175
K3	145
K4	140
K5	85
K6	125
K7	110
N1	1475
N2	600
N3	400
N11	455
S1	46
S2	37
S3	32
S11	65
S12	45
S13	26
H5	39
H8	41
H11	50
H12	75
H21	41

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	0,10
P2	MP12-12007C90Z2-M04 F40M	2,5	0,080	0,080	0,080	0,080	0,10
P3	MP12-12007C90Z2-M04 F40M	2,5	0,075	0,075	0,075	0,075	0,095
P4	MP12-12007C90Z2-M04 F40M	2,5	0,075	0,075	0,075	0,075	0,095
P5	MP12-12007C90Z2-M04 F40M	2,5	0,075	0,075	0,075	0,075	0,090
P6	MP12-12007C90Z2-M04 F40M	2,5	0,075	0,075	0,075	0,075	0,090
P7	MP12-12007C90Z2-M04 F40M	2,5	0,075	0,075	0,075	0,075	0,090
P8	MP12-12007C90Z2-M04 F40M	2,5	0,075	0,075	0,075	0,075	0,095
P11	MP12-12007C90Z2-M04 F40M	2,5	0,075	0,075	0,075	0,075	0,090
P12	MP12-12007C90Z2-M04 F40M	2,0	0,050	0,050	0,050	0,050	0,060
M1	MP12-12007C90Z2-M04 F40M	2,5	0,080	0,080	0,080	0,080	0,10
M2	MP12-12007C90Z2-M04 F40M	2,5	0,075	0,075	0,075	0,075	0,090
M3	MP12-12007C90Z2-M04 F40M	2,0	0,060	0,060	0,060	0,060	0,075
M4	MP12-12007C90Z2-M04 F40M	1,6	0,050	0,050	0,050	0,050	0,065
M5	MP12-12007C90Z2-M04 F40M	1,6	0,050	0,050	0,050	0,050	0,065
K1	MP12-12007C90Z2-M04 F40M	2,5	0,080	0,080	0,080	0,080	0,10
K2	MP12-12007C90Z2-M04 F40M	2,5	0,075	0,075	0,075	0,075	0,090
K3	MP12-12007C90Z2-M04 F40M	2,5	0,075	0,075	0,075	0,075	0,090
K4	MP12-12007C90Z2-M04 F40M	2,5	0,075	0,075	0,075	0,075	0,090
K5	MP12-12007C90Z2-M04 F40M	2,5	0,065	0,065	0,065	0,065	0,085
K6	MP12-12007C90Z2-M04 F40M	2,5	0,075	0,075	0,075	0,075	0,090
K7	MP12-12007C90Z2-M04 F40M	2,5	0,065	0,065	0,065	0,065	0,085
N1	MP12-12007C90Z2-M04 F40M	2,5	0,10	0,10	0,10	0,10	0,13
N2	MP12-12007C90Z2-M04 F40M	2,5	0,10	0,10	0,10	0,10	0,13
N3	MP12-12007C90Z2-M04 F40M	2,5	0,10	0,10	0,10	0,10	0,13
N11	MP12-12007C90Z2-M04 F40M	2,5	0,10	0,10	0,10	0,10	0,13
S1	MP12-12007C90Z2-M04 F40M	1,6	0,050	0,050	0,050	0,050	0,065
S2	MP12-12007C90Z2-M04 F40M	1,6	0,050	0,050	0,050	0,050	0,065
S3	MP12-12007C90Z2-M04 F40M	1,6	0,048	0,048	0,048	0,048	0,060
S11	MP12-12007C90Z2-M04 F40M	1,9	0,060	0,060	0,060	0,060	0,075
S12	MP12-12007C90Z2-M04 F40M	1,9	0,060	0,060	0,060	0,060	0,075
S13	MP12-12007C90Z2-M04 F40M	1,6	0,050	0,050	0,050	0,050	0,065
H5	MP12-12007C90Z2-M04 F40M	2,0	0,050	0,050	0,050	0,050	0,060
H8	MP12-12007C90Z2-M04 F40M	1,9	0,038	0,038	0,038	0,038	0,048
H11	MP12-12007C90Z2-M04 F40M	2,0	0,050	0,050	0,050	0,050	0,060
H12	MP12-12007C90Z2-M04 F40M	1,9	0,038	0,038	0,038	0,038	0,048
H21	MP12-12007C90Z2-M04 F40M	1,9	0,038	0,038	0,038	0,038	0,048

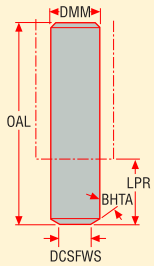
SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

MP12 Chamfering – Cutting data v_c = (m/min)

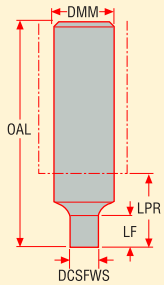
	F40M				
SMG	100%	50%	30%	20%	10%
P1	300	275	330	365	430
P2	290	270	320	355	415
P3	255	235	280	310	360
P4	225	210	250	275	320
P5	215	200	235	260	310
P6	240	225	265	295	345
P7	225	210	250	275	325
P8	215	200	235	260	305
P11	220	205	245	270	320
P12	140	120	145	165	205
M1	235	220	260	285	335
M2	190	180	215	235	280
M3	150	130	155	180	220
M4	115	90	110	130	170
M5	95	75	90	105	140
K1	230	215	255	280	330
K2	200	190	225	250	295
K3	170	160	190	210	250
K4	165	150	180	200	235
K5	100	95	110	125	145
K6	145	135	160	175	210
K7	130	120	145	160	185
N1	1725	1600	1900	2100	2450
N2	690	640	770	850	990
N3	460	430	510	570	660
N11	530	490	590	650	750
S1	55	42	50	60	80
S2	44	34	41	48	65
S3	38	29	36	42	55
S11	75	60	75	85	110
S12	55	43	50	60	75
S13	30	24	29	34	45
H5	46	40	47	55	70
H8	49	41	47	55	70
H11	60	50	60	70	85
H12	85	75	85	100	125
H21	49	41	47	55	70

MP16 Shank

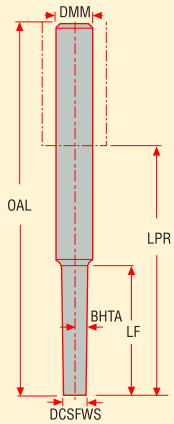
Design 1



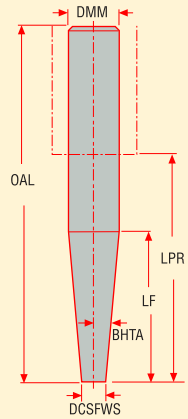
Design 2



Design 3



Design 4



- Cylindrical shank DMM with tolerance h5, compatible for Shrinkfit
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm					RPMX	BHTA°	Design		KG
		DCSFWS	DMM	OAL	LPR	LF					
MP16-16068-016.00	Cylindrical	15,2	16,0	68,0	20,0	16,0	63600	0,0	2	✓	0,1
MP16-20070-000.60	Cylindrical	15,2	20,0	70,0	20,0	0,0	63600	60,0	1	✓	0,2
MP16-20090-024.00	Cylindrical	15,2	20,0	90,0	40,0	24,0	63600	0,0	2	✓	0,2
MP16-20190-056.01	Cylindrical	15,2	20,0	190,0	140,0	56,0	63600	1,0	3	✓	0,4
MP16-20195-095.01	Cylindrical	15,2	20,0	195,0	145,0	95,0	63600	1,0	3	✓	0,4
MP16-25136-075.03	Cylindrical	15,2	25,0	136,0	80,0	75,0	63600	3,0	3	✓	0,4
MP16-25181-125.03	Cylindrical	15,2	25,0	181,0	125,0	93,5	63600	3,0	4	✓	0,6
MP16-25181-125.05	Cylindrical	15,2	25,0	181,0	125,0	56,0	63600	5,0	4	✓	0,6
MP16-16126-048.00-E	Cylindrical	15,2	16,0	126,0	78,0	48,0	63600	0,0	2	✓	0,4
MP16-16140-064.00-E	Cylindrical	15,2	16,0	140,0	92,0	64,0	63600	0,0	2	✓	0,4
MP16-16180-096.00-E	Cylindrical	15,2	16,0	180,0	132,0	96,0	63600	0,0	2	✓	0,5
MP16-20135-080.01-E	Cylindrical	15,2	20,0	135,0	85,0	80,0	63600	1,0	3	✓	0,5
MP16-20180-128.01-E	Cylindrical	15,2	20,0	180,0	130,0	128,0	63600	1,0	3	✓	0,7
MP16-20200-150.01-E	Cylindrical	15,2	20,0	200,0	150,0	137,5	63600	1,0	4	✓	0,8
MP16-20180-130.03-E	Cylindrical	15,2	20,0	180,0	130,0	45,8	63600	3,0	4	✓	0,8
MP16-20210-160.03-E	Cylindrical	15,2	20,0	210,0	160,0	45,8	63600	3,0	4	✓	0,9

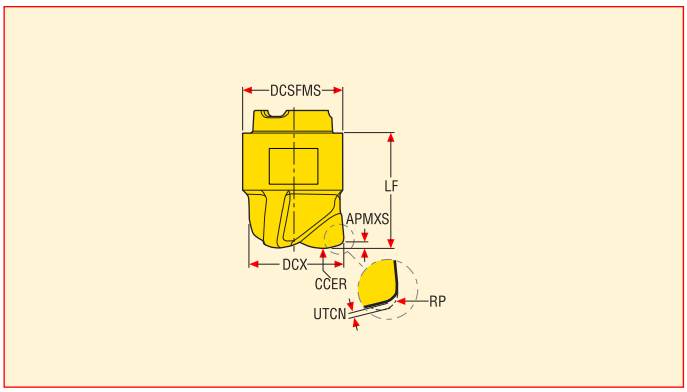
Accessories

Inserts	Torque key	Replacement blade	Key
MP16	MP00-16.190	MP00-16M	MP1016

Blades are included with the torque key

MP16 High feed





- For insert selection and cutting data recommendations, see page(s) 521-522
- For ISO attribute explanation, see page 15

Z3



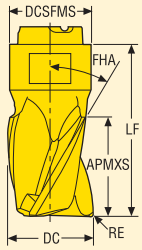
Designation	Dimensions in mm								RMPX°	C min	C max	ZEFP		Coated Grades	
	APMXS	DCX	DC	DCSFMS	CCER	RP	LF	UTCN						MP3000	F40M
MP16-1600.9HFZ3-MD12	0,9	16,0	8,0	15,4	7,8	1,79	18,5	0,46	5,0	17,3	23,8	3	✓	■	
MP16-1580.9HFZ3-MD12	0,9	15,875	7,88	15,4	7,8	1,79	18,5	0,46	5,0	17,2	23,5	3	✓	■	

MP16 Square shoulder



- For insert selection and cutting data recommendations, see page(s) 523-524
- For ISO attribute explanation, see page 15

Slotting and contouring



Z3



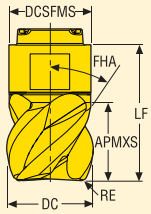
Designation	Dimensions in mm					FHA°	RMPX°	C min	C max	ZEFP		Coated Grades	
	APMXS	DC	RE	DCSFMS	LF							MP3000	F40M
MP16-16010R04Z3-M05	10,0	16,0	0,4	15,4	24,6	30	15,0	19,4	31,0	3	✓	■	
MP16-16010R05Z3-E05	10,0	16,0	0,5	15,4	24,6	30	15,0	19,4	30,8	3	✓		■
MP16-16010R08Z3-E05	10,0	16,0	0,8	15,4	24,6	30	15,0	19,4	30,0	3	✓		■
MP16-16010R08Z3-M05	10,0	16,0	0,8	15,4	24,6	30	15,0	19,4	30,0	3	✓	■	
MP16-16010R12Z3-E05	10,0	16,0	1,2	15,4	24,6	30	15,0	19,4	29,4	3	✓		■
MP16-16010R20Z3-E05	10,0	16,0	2,0	15,4	24,6	30	15,0	19,4	27,8	3	✓		■
MP16-16010R31Z3-E05	10,0	16,0	3,1	15,4	24,6	30	15,0	19,4	25,6	3	✓		■
MP16-15719KWZ3-E05	19,0	15,7	0,3	15,4	32,6	30	15,0	19,0	29,6	3	✓		■
MP16-16019R04Z3-M05	19,0	16,0	0,4	15,4	32,6	30	15,0	19,4	31,0	3	✓	■	
MP16-16019R05Z3-E05	19,0	16,0	0,5	15,4	32,6	30	15,0	19,4	30,8	3	✓		■
MP16-16019R08Z3-E05	19,0	16,0	0,8	15,4	32,6	30	15,0	19,4	30,2	3	✓		■
MP16-16019R08Z3-M05	19,0	16,0	0,8	15,4	32,6	30	15,0	19,4	30,2	3	✓	■	
MP16-16019R20Z3-E05	19,0	16,0	2,0	15,4	32,6	30	15,0	19,4	27,8	3	✓		■
MP16-16019R31Z3-E05	19,0	16,0	3,1	15,4	32,6	30	15,0	19,4	25,6	3	✓		■
MP16-15919R04Z3-E05	19,0	15,875	0,4	15,4	32,6	30	15,0	19,3	30,7	3	✓		■
MP16-15919R04Z3-M05	19,0	15,875	0,4	15,4	32,6	30	15,0	19,3	30,7	3	✓	■	
MP16-15919R08Z3-E05	19,0	15,875	0,8	15,4	32,6	30	15,0	19,3	29,9	3	✓		■
MP16-15919R08Z3-M05	19,0	15,875	0,8	15,4	32,6	30	15,0	19,3	29,9	3	✓	■	
MP16-15919R31Z3-E05	19,0	15,875	3,1	15,4	32,6	30	15,0	19,3	25,3	3	✓		■

MP16 Square shoulder



- For insert selection and cutting data recommendations, see page(s) 523-524
- For ISO attribute explanation, see page 15

Slotting and contouring



Z4

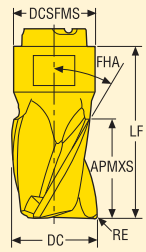


Designation	Dimensions in mm					FHA°	RMPX°	ZEFP		Coated Grades	
	APMXS	DC	RE	DCSFMS	LF					MP3000	F40M
MP16-16010R04Z4-M04	10,0	16,0	0,4	15,4	24,6	50	15,0	4	–	■	
MP16-16010R05Z4-E04	10,0	16,0	0,5	15,4	24,6	50	15,0	4	–		■
MP16-16010R08Z4-E04	10,0	16,0	0,8	15,4	24,6	50	15,0	4	–		■
MP16-16010R08Z4-M04	10,0	16,0	0,8	15,4	24,6	50	15,0	4	–	■	
MP16-16010R16Z4-M04	10,0	16,0	1,6	15,4	24,6	50	15,0	4	–	■	
MP16-16010R31Z4-E04	10,0	16,0	3,1	15,4	24,6	50	15,0	4	–		■
MP16-16019R04Z4-E04	19,0	16,0	0,4	15,4	32,6	50	15,0	4	–		■
MP16-16019R04Z4-M04	19,0	16,0	0,4	15,4	32,6	50	15,0	4	–	■	
MP16-16019R05Z4-E04	19,0	16,0	0,5	15,4	32,6	50	15,0	4	–		■
MP16-16019R08Z4-E04	19,0	16,0	0,8	15,4	32,6	50	15,0	4	–		■
MP16-16019R08Z4-M04	19,0	16,0	0,8	15,4	32,6	50	15,0	4	–	■	
MP16-16019R16Z4-E04	19,0	16,0	1,6	15,4	32,6	50	15,0	4	–		■
MP16-16019R20Z4-E04	19,0	16,0	2,0	15,4	32,6	50	15,0	4	–		■
MP16-15919R04Z4-E04	19,0	15,875	0,4	15,4	32,6	50	15,0	4	–		■
MP16-15919R04Z4-M04	19,0	15,875	0,4	15,4	32,6	50	15,0	4	–	■	
MP16-15919R08Z4-E04	19,0	15,875	0,8	15,4	32,6	50	15,0	4	–		■
MP16-15919R08Z4-M04	19,0	15,875	0,8	15,4	32,6	50	15,0	4	–	■	

MP16 Square shoulder

Contouring only





- For insert selection and cutting data recommendations, see page(s) 523-524
- For ISO attribute explanation, see page 15

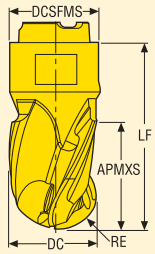
Z6/Z8



Designation	Dimensions in mm					FHA°	ZEFP		Coated Grades	
	APMXS	DC	RE	DCSFMS	LF				MP3000	F40M
MP16-16019R04Z6-M04	19,0	16,0	0,4	15,4	32,6	40	6	✓	■	
MP16-16019R04Z8-M04	19,0	16,0	0,4	15,4	32,6	40	8	✓	■	
MP16-15919R04Z6-M04	19,0	15,875	0,4	15,4	32,6	40	6	✓	■	

MP16 Ball nose design





- For insert selection and cutting data recommendations, see page(s) 525-526
- For ISO attribute explanation, see page 15

Z3



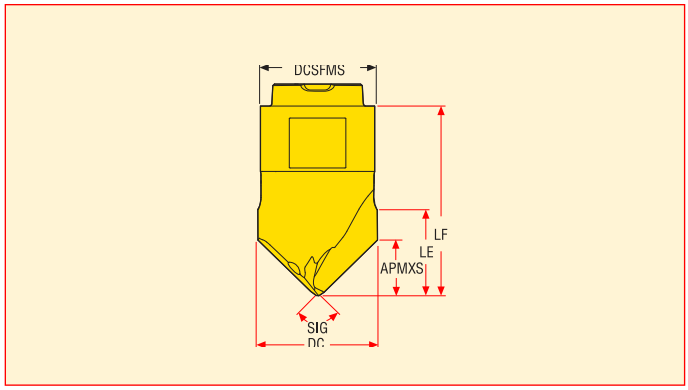
Z4



Designation	Dimensions in mm					FHA°	RMPX°	ZEFP		Coated Grades	
	APMXS	DC	RE	DCSFMS	LF					MP3000	F40M
MP16-16010B90Z3-E05	10,0	16,0	8,0	15,4	24,6	30	15,0	3	✓		■
MP16-16010B90Z3-M05	10,0	16,0	8,0	15,4	24,6	30	15,0	3	✓	■	
MP16-16019B90Z3-E05	19,0	16,0	8,0	15,4	32,6	30	15,0	3	✓		■
MP16-16019B90Z3-M05	19,0	16,0	8,0	15,4	32,6	30	15,0	3	✓	■	
MP16-16010B90Z4-E04	10,0	16,0	8,0	15,4	24,6	20	15,0	4	–		■
MP16-16010B90Z4-M04	10,0	16,0	8,0	15,4	24,6	20	15,0	4	–	■	
MP16-15910B90Z3-E05	10,0	15,875	7,9375	15,4	24,6	30	15,0	3	✓		■
MP16-15910B90Z3-M05	10,0	15,875	7,9375	15,4	24,6	30	15,0	3	✓	■	
MP16-15919B90Z3-E05	19,0	15,875	7,9375	15,4	32,6	30	15,0	3	✓		■
MP16-15919B90Z3-M05	19,0	15,875	7,9375	15,4	32,6	30	15,0	3	✓	■	
MP16-15910B90Z4-E04	10,0	15,875	7,9375	15,4	24,6	20	15,0	4	–		■
MP16-15910B90Z4-M04	10,0	15,875	7,9375	15,4	24,6	20	15,0	4	–	■	

MP16 Centre drilling





- For insert selection and cutting data recommendations, see page(s) 527-528
- For ISO attribute explanation, see page 15

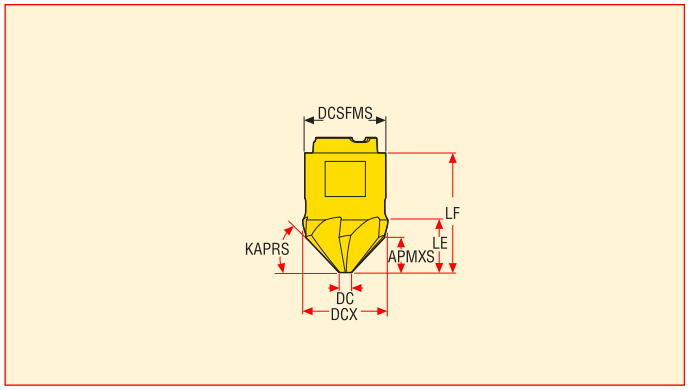
Z2



Designation	Dimensions in mm					SIG°	ZEFP		Coated Grades	
	APMXS	DC	DCSFMS	LE	LF				MP3000	F40M
MP16-16009C90Z2-M05	7,4	16,0	15,4	12,0	26,4	90,0	2	✓		■

MP16 Chamfering





- For insert selection and cutting data recommendations, see page(s) 529-530
- For ISO attribute explanation, see page 15

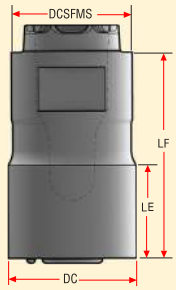
Z6



Designation	Dimensions in mm						KAPRS°	ZEFP		Coated Grades	
	APMXS	DCX	DC	DCSFMS	LE	LF				MP3000	F40M
MP16-16009C90Z6-M05	6,0	16,4	3,95	15,4	10,4	23,5	45,0	6	–		■

MP16 Cylindrical blanks





- Cylindrical carbide blanks for production of own geometries
- For ISO attribute explanation, see page 15





Designation	Dimensions in mm					Uncoated	
						Grades	
	DC	DCSFMS	LE	LF		H25	
MP16-16010CYL-SEMI	16,4	15,4	11,4	24,8	–	■	
MP16-16019CYL-SEMI	16,4	15,4	19,5	32,85	✓	■	

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
H8	MP16-1600.9HFZ3-MD12 MP3000	0,44	0,34	0,34	0,38	0,44
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_e/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 and Side 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_e/DC = %
All cutting data are start values

MP16 Slot and Side milling – Cutting data v_c = (m/min)

	MP3000				F40M			
SMG	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_e/DC = %
All cutting data are start values

MP16 Copy milling – Cutting data v_c = (m/min)

	MP3000					F40M				
SMG	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

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%
P1	315
P2	305
P3	265
P4	235
P5	230
P6	255
P7	240
P8	225
P11	235
P12	150
M1	245
M2	205
M3	165
M4	125
M5	105
K1	245
K2	215
K3	185
K4	175
K5	105
K6	155
K7	135
N1	1775
N2	720
N3	480
N11	550
S1	60
S2	48
S3	42
S11	85
S12	55
S13	33
H5	50
H8	55
H11	65
H12	95
H21	55

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	0,12
P2	MP16-16009C90Z2-M05 F40M	3,5	0,10	0,10	0,10	0,10	0,12
P3	MP16-16009C90Z2-M05 F40M	3,5	0,095	0,095	0,095	0,095	0,12
P4	MP16-16009C90Z2-M05 F40M	3,5	0,095	0,095	0,095	0,095	0,11
P5	MP16-16009C90Z2-M05 F40M	3,5	0,090	0,090	0,090	0,090	0,11
P6	MP16-16009C90Z2-M05 F40M	3,5	0,090	0,090	0,090	0,090	0,11
P7	MP16-16009C90Z2-M05 F40M	3,5	0,090	0,090	0,090	0,090	0,11
P8	MP16-16009C90Z2-M05 F40M	3,5	0,095	0,095	0,095	0,095	0,12
P11	MP16-16009C90Z2-M05 F40M	3,5	0,090	0,090	0,090	0,090	0,11
P12	MP16-16009C90Z2-M05 F40M	3,0	0,065	0,065	0,065	0,065	0,075
M1	MP16-16009C90Z2-M05 F40M	3,5	0,10	0,10	0,10	0,10	0,12
M2	MP16-16009C90Z2-M05 F40M	3,5	0,090	0,090	0,090	0,090	0,11
M3	MP16-16009C90Z2-M05 F40M	3,0	0,075	0,075	0,075	0,075	0,090
M4	MP16-16009C90Z2-M05 F40M	2,0	0,065	0,065	0,065	0,065	0,080
M5	MP16-16009C90Z2-M05 F40M	2,0	0,065	0,065	0,065	0,065	0,080
K1	MP16-16009C90Z2-M05 F40M	3,5	0,10	0,10	0,10	0,10	0,12
K2	MP16-16009C90Z2-M05 F40M	3,5	0,090	0,090	0,090	0,090	0,11
K3	MP16-16009C90Z2-M05 F40M	3,5	0,090	0,090	0,090	0,090	0,11
K4	MP16-16009C90Z2-M05 F40M	3,5	0,090	0,090	0,090	0,090	0,11
K5	MP16-16009C90Z2-M05 F40M	3,5	0,085	0,085	0,085	0,085	0,10
K6	MP16-16009C90Z2-M05 F40M	3,5	0,090	0,090	0,090	0,090	0,11
K7	MP16-16009C90Z2-M05 F40M	3,5	0,085	0,085	0,085	0,085	0,10
N1	MP16-16009C90Z2-M05 F40M	3,5	0,13	0,13	0,13	0,13	0,16
N2	MP16-16009C90Z2-M05 F40M	3,5	0,13	0,13	0,13	0,13	0,16
N3	MP16-16009C90Z2-M05 F40M	3,5	0,13	0,13	0,13	0,13	0,16
N11	MP16-16009C90Z2-M05 F40M	3,5	0,13	0,13	0,13	0,13	0,16
S1	MP16-16009C90Z2-M05 F40M	2,0	0,065	0,065	0,065	0,065	0,080
S2	MP16-16009C90Z2-M05 F40M	2,0	0,065	0,065	0,065	0,065	0,080
S3	MP16-16009C90Z2-M05 F40M	2,0	0,060	0,060	0,060	0,060	0,070
S11	MP16-16009C90Z2-M05 F40M	2,5	0,075	0,075	0,075	0,075	0,090
S12	MP16-16009C90Z2-M05 F40M	2,5	0,075	0,075	0,075	0,075	0,090
S13	MP16-16009C90Z2-M05 F40M	2,0	0,065	0,065	0,065	0,065	0,080
H5	MP16-16009C90Z2-M05 F40M	3,0	0,065	0,065	0,065	0,065	0,075
H8	MP16-16009C90Z2-M05 F40M	2,5	0,048	0,048	0,048	0,048	0,060
H11	MP16-16009C90Z2-M05 F40M	3,0	0,065	0,065	0,065	0,065	0,075
H12	MP16-16009C90Z2-M05 F40M	2,5	0,048	0,048	0,048	0,048	0,060
H21	MP16-16009C90Z2-M05 F40M	2,5	0,048	0,048	0,048	0,048	0,060

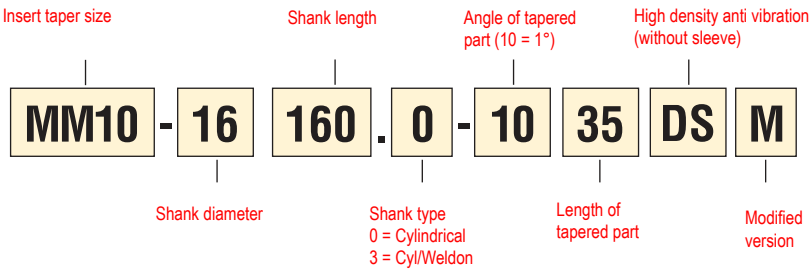
SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

MP16 Chamfering – Cutting data v_c = (m/min)

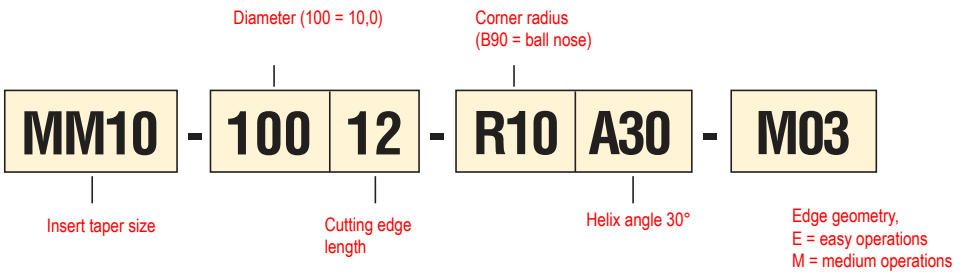
	F40M				
SMG	100%	50%	30%	20%	10%
P1	290	270	315	350	415
P2	285	260	310	345	400
P3	250	230	270	300	345
P4	220	200	235	265	310
P5	210	195	230	255	295
P6	235	220	260	285	335
P7	225	205	245	270	315
P8	210	190	225	250	290
P11	220	200	235	260	305
P12	140	120	135	155	195
M1	230	210	250	275	325
M2	190	175	205	230	265
M3	150	130	145	170	215
M4	115	85	105	125	165
M5	95	70	85	105	135
K1	225	205	245	270	320
K2	200	185	220	240	280
K3	170	155	185	205	240
K4	160	150	175	195	230
K5	100	90	105	120	140
K6	145	130	155	170	200
K7	125	115	135	150	175
N1	1650	1500	1800	2000	2325
N2	670	610	720	810	940
N3	445	405	485	540	630
N11	510	465	550	610	720
S1	55	39	48	60	75
S2	43	32	39	47	60
S3	37	28	34	42	55
S11	75	60	70	80	110
S12	50	40	49	55	75
S13	30	22	27	33	43
H5	46	39	45	50	65
H8	48	38	45	55	70
H11	60	50	55	65	85
H12	85	70	80	95	125
H21	48	38	45	55	70

Note that parts of the code can vary for different types of insert or shanks

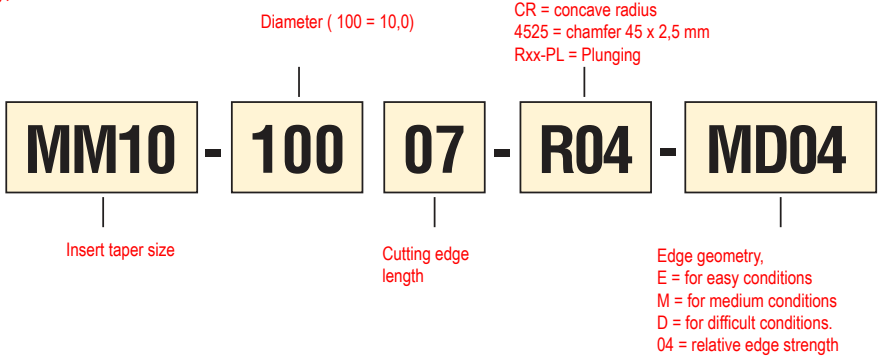
Code key shanks



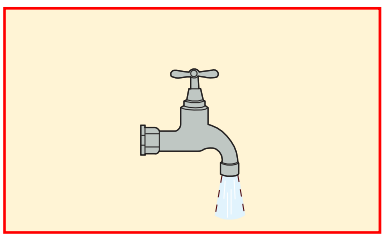
Code key, 3-flute Minimaster inserts



Code key, 2-flute Minimaster inserts

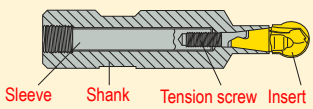


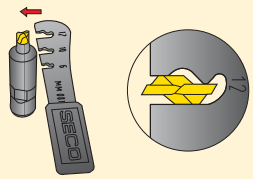
Internal through coolant



Mounting instructions for 2-flute Minimaster

During normal operations inserts are exchanged using the Minimaster wrench



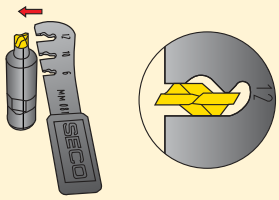


- The sleeve must be securely tightened in the shank before the tension screw and insert are fitted.
- If the wrench cannot be used for changing the insert (If the insert has broken off or jammed in the shank) , the sleeve can be released, which will also release the insert.
- Use Allen key (turn it 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.

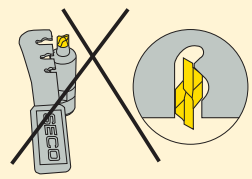
For 3-flute Minimaster another key (MM0416) must be used (Key grip on hexagonal part of the insert.)

Make sure that the wrench is used correctly.

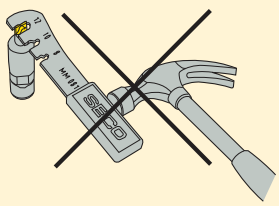
Mounting instructions for 2-flute Minimaster



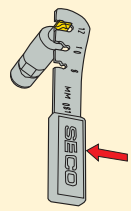
Make sure that the wrench is used correctly...



...if used on the wrong side, it will cause damage.



Do not use excessive force...



...normal hand-power is quite sufficient.

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 712 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 the best possible stability.

4. Select cutting data
a. Cutting speed recommendations are found in the cutting data tables for each selected taper size. 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 ap in slotting is DC*0.3= Max APMXS. (See figure 1)
b. Feed and cutting speed recommendations are found in the cutting data conversion table.
c. Maximum RPM that for safety reasons should never be exceeded, are shown on page 613.
d. 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.
e. 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 & 6)
f. Use the percentage to get a correct feed per tooth and cutting speed recommendation for the actual cutter engagement.

5. General
- 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.
- 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 (DC) as working diameter instead of Dw.
- When calculating feed per revolution and feed speed, always use the ZEFP-value. That is the effective number of teeth to use for cutting data calculations. The ZEFP-value can be found in the insert selection table.

Note! There will be a deterioration in the surface finish on the workpiece when the feed rate is increased. (See figure 3 & 5)

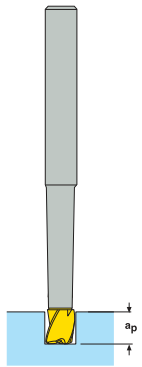


Figure 1

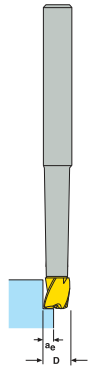


Figure 2

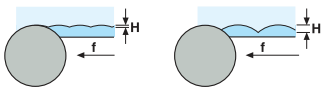


Figure 3

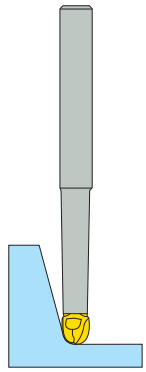


Figure 4

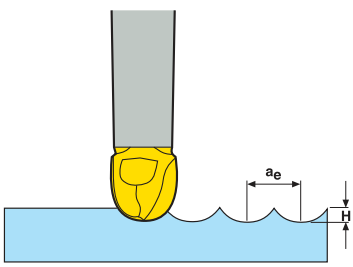


Figure 5

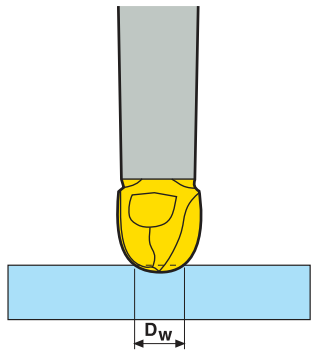
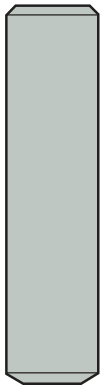


Figure 6

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

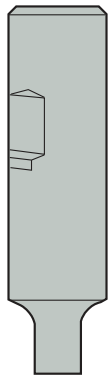
Taper size	For centre drilling	For chamfer milling	For milling of external radius	For copying with 90º cutting angle	For copying, with 120º cutting angle	For plunge milling
						
MM16	D = 16	D = 16	–	D = 16, D = 20	D = 20	D = 16
MM12	D = 12	–	D = 12	D = 12, D = 14	D = 14, D = 16	D = 12
MM10	D = 10	D = 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



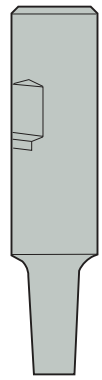
Keyway shank

Design 2



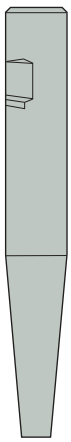
Cylindrical/Weldon back end and 90º front

Design 3



Cylindrical/Weldon back end tapered front 87º/89º

Design 4

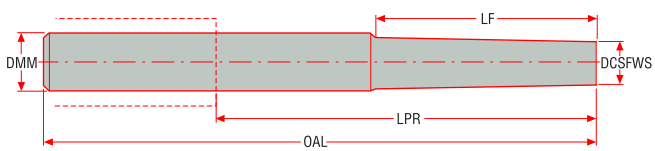


Cylindrical/Weldon back end tapered front 80º/85º/87º

Design 5



Cylindrical back end double tapered front end 89º/85º



For ISO attribute explanation, see page 15

MM06 Shank

Designation	Type of mounting	Dimensions in mm					BHTA°	Design	RPMX		KG	Spare part no.
		DCSFWS	DMM	OAL	LF	LPR						
MM06-12070.3-0005	Weldon	5,75	12,0	70,0	5,0	25,0	0,0	2	80000	✓	0,1	1
MM06-16075.3-3009	Weldon	5,75	16,0	75,0	9,0	27,0	3,0	3	80000	✓	0,1	1
MM06-16110.3-5058	Weldon	5,75	16,0	110,0	58,6	62,0	5,0	4	80000	✓	0,2	4
MM06-10040.0-0007	Cylindrical	5,75	10,0	40,0	7,0	7,0	0,0	2	80000	✓	0,1	2
MM06-12065.0-0000	Cylindrical	5,7	12,0	65,0	0,0	15,0	60,0	1	80000	✓	0,1	1
MM06-16140.0-1020M	Cylindrical	5,75	16,0	140,0	20,0	92,0	1,0	3	80000	✓	0,2	5
MM06-16140.0-1035M	Cylindrical	5,75	16,0	140,0	35,0	92,0	1,0	3	80000	✓	0,2	6
MM06-16140.0-1050M	Cylindrical	5,75	16,0	140,0	50,0	92,0	1,0	3	80000	✓	0,2	6
MM06-10050.0-0007DS	Cylindrical	5,75	10,0	50,0	7,0	7,0	0,0	2	80000	✓	0,1	3
MM06-10075.0-3041DS	Cylindrical	5,75	10,0	75,0	40,5	35,0	3,0	4	80000	✓	0,1	3
MM06-10100.0-1035DS	Cylindrical	5,75	10,0	100,0	35,0	60,0	1,0	3	80000	✓	0,1	3
MM06-12120.0-1050DS	Cylindrical	5,75	12,0	120,0	50,0	75,0	1,0	3	80000	✓	0,2	3
MM06-16090.0-0012DS	Cylindrical	5,75	16,0	90,0	12,0	42,0	0,0	2	80000	✓	0,3	3
MM06-16095.0-0024DS	Cylindrical	5,75	16,0	95,0	24,0	47,0	0,0	2	80000	✓	0,3	3
MM06-16140.0-1050DS	Cylindrical	5,75	16,0	140,0	50,0	92,0	1,0	3	80000	✓	0,3	3
MM06-16140.0-1035DS	Cylindrical	5,75	16,0	140,0	35,0	92,0	1,0	3	80000	✓	0,4	3
MM06-20250.0-1035DS	Cylindrical	5,75	20,0	250,0	35,0	190,0	1,0	5	80000	✓	1,0	3

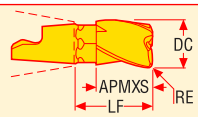
Spare Parts

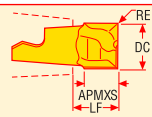
Spare part no.	Tension screw	Sleeve
1	MM06-03518	MM-035046
4	MM06-03518	MM-035091
2	MM06-03518	MM-035023
5	MM06-03544	MM-035046
6	MM06-03564	MM-035046
3	MM06-03518	–

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

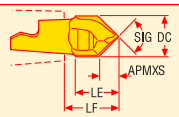




Designation	Dimensions in mm				RMPX°	C min	C max	FHA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LF								T60M	F15M	F30M	F40M
MM06-06007-A30-E02	7,5	6,0	0,0	9,9	15,0	7,4	11,8	30	3	MM0416	✓			■	
MM06-06007-R05A30-M02	7,5	6,0	0,5	9,9	15,0	7,4	10,8	30	3	MM0416	✓				■
MM06-06007-R10A30-E02	7,5	6,0	1,0	9,9	15,0	7,4	9,8	30	3	MM0416	✓			■	
MM06-06007-R10A30-M02	7,5	6,0	1,0	9,9	15,0	7,4	9,8	30	3	MM0416	✓				■
MM06-06007-R10A30-D02	7,5	6,0	1,0	9,9	15,0	7,4	9,8	30	3	MM0416	✓			■	
MM06-06007-R20A30-M02	7,5	6,0	2,0	9,9	15,0	7,4	7,8	30	3	MM0416	✓				■
MM06-06407-A30-E02	7,5	6,35	0,0	9,9	15,0	7,8	12,5	30	3	MM0416	✓			■	
MM06-06407-R04A30-M02	7,5	6,35	0,4	9,9	15,0	7,8	11,7	30	3	MM0416	✓				■
MM06-06407-R08A30-M02	7,5	6,35	0,8	9,9	15,0	7,8	10,9	30	3	MM0416	✓				■
MM06-06004-M02	4,1	6,0	0,0	5,1	15,0	7,4	11,8	0	2	MM0612	–	■			
MM06-06004-R04-MD02	4,1	6,0	0,4	5,1	15,0	7,4	11,0	0	2	MM0612	–	■		■	
MM06-06004-R10-MD02	4,1	6,0	1,0	5,1	15,0	7,4	9,8	0	2	MM0612	–			■	
MM06-05807-R02A30-M02	7,5	5,8	0,2	9,9	15,0	7,2	11,0	30	3	MM0416	✓				■
MM06-05804T-R02-D02	4,1	5,8	0,2	5,1	15,0	7,2	11,0	0	2	MM0612	–	■			

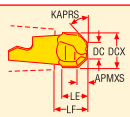
For Torque keys and torque values, see page 613

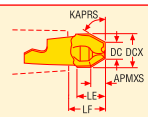
Centre drilling



Designation	Dimensions in mm				SIG°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	LE	LF					T60M	F15M	F30M	F40M
MM06-06003-C90-M02	2,86	6,0	6,0	7,12	90,0	2	MM0612	–	■			
MM06-06003-C120-M02	1,6	6,0	6,27	7,19	120,0	2	MM0612	–	■			

Chamfering

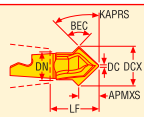




Designation	Dimensions in mm					KAPRS°	ZEFP	Wrench		Coated Grades			
	APMXS	DCX	DC	LE	LF					T60M	F15M	F30M	F40M
MM06-06004-4515-E02	2,1	6,0	1,8	4,0	5,1	45,0	2	MM0612	–	■			
MM06-06004-6015-E02	2,4	6,0	3,14	4,6	5,75	60,0	2	MM0612	–	■			

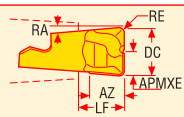
For Torque keys and torque values, see page 613

Double chamfering



Designation	Dimensions in mm					BEC°	KAPRS°	ZEFP	Wrench		Coated Grades			
	APMXS	DCX	DC	LF	DN						T60M	F15M	F30M	F40M
MM06-08008-D4510P-M02	3,7	8,0	0,6	8,5	6,0	90,0	45,0	2	MM0612	–		■		

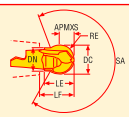
Plunge milling



Designation	Dimensions in mm					RA°	ZEFP	Wrench		Coated Grades			
	APMXE	DC	RE	AZ	LF					T60M	F15M	F30M	F40M
MM06-06004-R10-PL-MD02	3,0	6,0	1,0	4,3	5,08	5,0	2	MM0612	–			■	

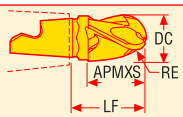
For Torque keys and torque values, see page 613

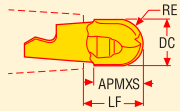
Precision inserts for semi-finishing in all materials



Designation	Dimensions in mm						SA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LE	LF	DN					T60M	F15M	F30M	F40M
MM06-08008-B120PF-M01	4,0	8,0	4,0	8,0	8,73	6,0	263,0	2	MM0612	–		■		
MM06-08008-B120P-M03	4,0	8,0	4,0	8,0	8,73	6,0	263,0	2	MM0612	–			■	

Copy milling





Designation	Dimensions in mm				FHA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LF					T60M	F15M	F30M	F40M
MM06-06007-B90A30-E02	7,4	6,0	3,0	9,85	30,0	3	MM0416	✓			■	
MM06-06007-B90A30-M02	7,4	6,0	3,0	9,85	30,0	3	MM0416	✓				■
MM06-06006-B90-MD02	6,1	6,0	3,0	7,06	0,0	2	MM0612	–	■		■	
MM06-06006-B90S-E02	6,1	6,0	3,0	7,06	0,0	2	MM0612	–			■	
MM06-06406-B90S-E02	6,3	6,35	3,175	7,24	0,0	2	MM0612	–			■	
MM06-06006-B90P-M02	5,2	6,0	3,0	7,04	0,0	2	MM0612	–			■	
MM06-06406-B90P-M02	5,4	6,35	3,175	7,22	0,0	2	MM0612	–			■	
MM06-06006-B90PF-M01	5,2	6,0	3,0	7,04	0,0	2	MM0612	–		■		

For Torque keys and torque values, see page 613

MM06 - Slot and Side milling – Insert 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_e/DC = %
All cutting data are start values

Minimaster – MM06 cutting data

MM06 - Slot and Side milling – Cutting data v_c = (m/min)

	F15M				F30M				F40M				T60M			
SMG	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 milling – 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 milling – Insert 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_e/DC = %
All cutting data are start values

MM06 Z3-Copy milling – Cutting data v_c = (m/min)

	F30M					F40M				
SMG	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 milling – 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 milling – Insert selection – Finishing

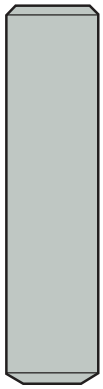
SMG		a_p	f_z			
			15%	10%	5%	2%
P1	MM06-06006-B90PF-M01 F15M	2,5	0,019	0,022	0,026	0,030
P2	MM06-06006-B90PF-M01 F15M	2,5	0,020	0,022	0,026	0,030
P3	MM06-06006-B90PF-M01 F15M	2,5	0,019	0,020	0,024	0,030
P4	MM06-06006-B90PF-M01 F15M	2,5	0,018	0,020	0,024	0,028
P5	MM06-06006-B90PF-M01 F15M	2,5	0,018	0,020	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_e/DC = %
All cutting data are start values

MM06 Z2-Copy milling – Cutting data v_c = (m/min)

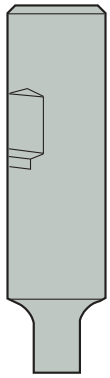
	F15M					F30M					T60M				
SMG	100%	20%	10%	5%	2%	100%	20%	10%	5%	2%	100%	20%	10%	5%	2%
P1	315	395	430	465	465	275	345	375	405	405	225	280	305	330	325
P2	305	385	420	450	450	265	335	365	395	395	215	270	295	320	320
P3	265	330	360	390	390	230	290	315	340	340	190	235	255	275	275
P4	235	290	320	345	345	205	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



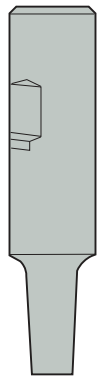
Keyway shank

Design 2



Cylindrical/Weldon back end and 90° front

Design 3

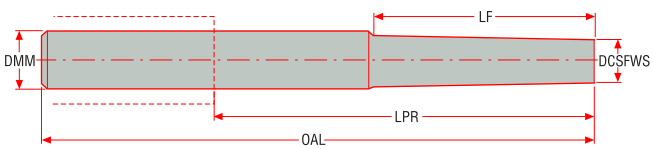


Cylindrical/Weldon back end tapered front 87°/89°

Design 4



Cylindrical/Weldon back end tapered front 80°/85°/87°



For ISO attribute explanation, see page 15

MM08 Shank

Designation	Type of mounting	Dimensions in mm					BHTA°	Design	RPMX		KG	Spare part no.
		DCSFWS	DMM	OAL	LF	LPR						
MM08-16070.3-0007	Weldon	7,6	16,0	70,0	7,6	22,0	0,0	2	80000	✓	0,1	1
MM08-16075.3-3012	Weldon	7,6	16,0	75,0	12,0	27,0	3,0	3	80000	✓	0,1	1
MM08-16120.3-5048M	Weldon	7,6	16,0	120,0	48,0	72,0	5,0	4	80000	✓	0,2	1
MM08-10040.0-0007	Cylindrical	7,6	10,0	40,0	7,0	7,0	0,0	2	80000	✓	0,1	2
MM08-12065.0-0000	Cylindrical	7,6	12,0	65,0	0,0	20,0	60,0	1	80000	✓	0,1	1
MM08-16150.0-1030M	Cylindrical	7,6	16,0	150,0	30,0	102,0	1,0	3	80000	✓	0,2	5
MM08-16150.0-1050M	Cylindrical	7,6	16,0	150,0	50,0	102,0	1,0	3	80000	✓	0,2	4
MM08-16150.0-1070M	Cylindrical	7,6	16,0	150,0	70,0	102,0	1,0	3	80000	✓	0,2	4
MM08-10050.0-0007DS	Cylindrical	7,6	10,0	50,0	7,0	10,0	0,0	2	80000	✓	0,1	3
MM08-10080.0-3023DS	Cylindrical	7,6	10,0	80,0	22,9	40,0	3,0	4	80000	✓	0,1	3
MM08-12100.0-1035DS	Cylindrical	7,6	12,0	100,0	35,0	55,0	1,0	3	80000	✓	0,2	3
MM08-12120.0-1050DS	Cylindrical	7,6	12,0	120,0	50,0	75,0	1,0	3	80000	✓	0,2	3
MM08-16085.0-0016DS	Cylindrical	7,6	16,0	85,0	16,0	37,0	0,0	2	80000	✓	0,3	3
MM08-16100.0-0032DS	Cylindrical	7,6	16,0	100,0	32,0	52,0	0,0	2	80000	✓	0,3	3
MM08-16150.0-1050DS	Cylindrical	7,6	16,0	150,0	50,0	102,0	1,0	3	80000	✓	0,4	3
MM08-16150.0-1070DS	Cylindrical	7,6	16,0	150,0	70,0	102,0	1,0	3	80000	✓	0,3	3

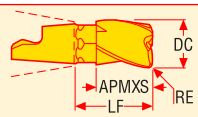
Spare Parts

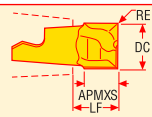
Spare part no.	Tension screw	Sleeve
1	MM08-0524	MM-05044
2	MM08-0524	MM-05019
5	MM08-0543	MM-05044
4	MM08-0582	MM-05044
3	MM08-0524	–

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

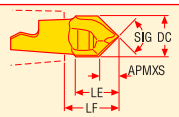




Designation	Dimensions in mm				RMPX°	C min	C max	FHA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LF								T60M	F15M	F30M	F40M
MM08-08009-A30-E03	10,0	8,0	0,0	13,0	15,0	9,8	15,0	30	3	MM0416	✓			■	
MM08-08009-R05A30-M03	10,0	8,0	0,5	13,0	15,0	9,8	14,8	30	3	MM0416	✓				■
MM08-08009-R10A30-D03	10,0	8,0	1,0	13,0	15,0	9,8	13,8	30	3	MM0416	✓			■	
MM08-08009-R10A30-E03	10,0	8,0	1,0	13,0	15,0	9,8	13,8	30	3	MM0416	✓			■	
MM08-08009-R10A30-M03	10,0	8,0	1,0	13,0	15,0	9,8	13,8	30	3	MM0416	✓				■
MM08-08009-R20A30-M03	10,0	8,0	2,0	13,0	15,0	9,8	11,8	30	3	MM0416	✓				■
MM08-08009-R30A30-M03	10,0	8,0	3,0	13,0	15,0	9,8	9,8	30	3	MM0416	✓				■
MM08-08005-M03	5,5	8,0	0,0	6,8	15,0	9,8	15,8	0	2	MM0612	–	■			
MM08-08005-R04-MD03	5,5	8,0	0,4	6,8	15,0	9,8	15,0	0	2	MM0612	–	■		■	
MM08-08005-R04P-M02	5,4	8,0	0,4	6,7	15,0	9,8	15,0	0	2	MM0612	–			■	
MM08-08005-R10-MD03	5,4	8,0	1,0	6,8	15,0	9,8	13,8	0	2	MM0612	–			■	
MM08-08005-R04A8-E03	5,4	8,0	0,4	6,7	15,0	9,8	15,0	8	2	MM0612	–	■		■	
MM08-07809-R02A30-M03	10,0	7,8	0,2	13,0	15,0	9,6	15,0	30	3	MM0416	✓				■
MM08-07805T-R02-D03	5,4	7,8	0,2	6,8	15,0	9,6	15,0	0	2	MM0612	–	■			

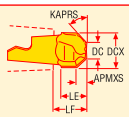
For Torque keys and torque values, see page 613

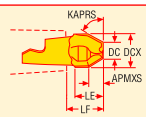
Centre drilling



Designation	Dimensions in mm				SIG°	ZEFP	Wrench		Coated			
	APMXS	DC	LE	LF					Grades			
									T60M	F15M	F30M	F40M
MM08-08004-C90-M03	3,79	8,0	8,0	9,5	90,0	2	MM0612	–	■			
MM08-08006-C120-M03	2,15	8,0	8,32	9,46	120,0	2	MM0612	–	■			

Chamfering

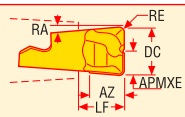




Designation	Dimensions in mm					KAPRS°	ZEFP	Wrench		Coated			
	APMXS	DCX	DC	LE	LF					Grades			
										T60M	F15M	F30M	F40M
MM08-08005-4520-E03	2,1	8,0	3,87	5,5	6,7	45,0	2	MM0612	–	■			
MM08-08006-6030-E03	3,3	8,0	4,19	6,45	7,66	60,0	2	MM0612	–	■			

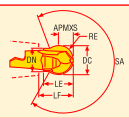
For Torque keys and torque values, see page 613

Plunge milling



Designation	Dimensions in mm					RA°	ZEFP	Wrench		Coated Grades			
	APMXE	DC	RE	AZ	LF					T60M	F15M	F30M	F40M
MM08-08005-R10-PL-MD03	4,0	8,0	1,0	5,7	6,78	5,0	2	MM0612	–			■	

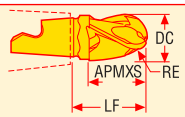
Precision inserts for semi-finishing in all materials

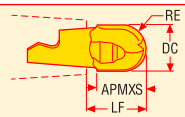


Designation	Dimensions in mm						SA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LE	LF	DN					T60M	F15M	F30M	F40M
MM08-10010-B120PF-M02	5,0	10,0	5,0	10,0	10,97	8,0	254,0	2	MM0612	–		■		
MM08-10010-B120P-M04	5,0	10,0	5,0	10,0	10,97	8,0	254,0	2	MM0612	–			■	

For Torque keys and torque values, see page 613

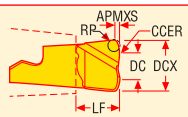
Copy milling





Designation	Dimensions in mm				FHA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LF					T60M	F15M	F30M	F40M
MM08-08009-B90A30-E03	10,0	8,0	4,0	13,0	30,0	3	MM0416	✓			■	
MM08-08009-B90A30-M03	10,0	8,0	4,0	13,0	30,0	3	MM0416	✓				■
MM08-08008-B90-MD03	8,1	8,0	4,0	9,42	0,0	2	MM0612	–	■		■	
MM08-08008-B90S-E03	8,1	8,0	4,0	9,42	0,0	2	MM0612	–			■	
MM08-08008-B90P-M03	6,9	8,0	4,0	9,39	0,0	2	MM0612	–			■	
MM08-08008-B90PF-M01	6,9	8,0	4,0	9,39	0,0	2	MM0612	–		■		

High feed



Designation	Dimensions in mm						RMPX°	C min	C max	ZEFP	Wrench		Coated Grades			
	APMXS	DCX	DC	RP	CCER	LF							T60M	F15M	F30M	F40M
MM08-08.40-HF-MD06	0,37	8,0	4,0	0,88	4,0	6,84	5,0	9,8	14,6	2	MM0612	–			■	

For Torque keys and torque values, see page 613

MM08 - Slot and Side milling – 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_e/DC = %
All cutting data are start values

MM08 - Slot and Side milling – Cutting data v_c = (m/min)

	F30M				F40M				T60M			
SMG	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 milling – 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_e/DC = %
All cutting data are start values

MM08 Z3 – Copy milling – 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_e/DC = %
All cutting data are start values

MM08 Z3 – Copy milling – Cutting data v_c = (m/min)

	F30M					F40M				
SMG	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 milling – 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_e/DC = %
All cutting data are start values

MM08 Z2 – Copy milling – 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 milling – Cutting data v_c = (m/min)

	F15M					F30M					T60M				
SMG	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

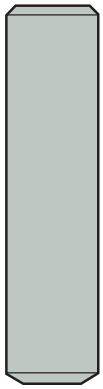
SMG		a_p	f_z			
			100%	70%	30%	20%
P1	MM08-08.40-HF-MD06 F30M	0,26	0,32	0,32	0,34	0,42
P2	MM08-08.40-HF-MD06 F30M	0,26	0,32	0,32	0,36	0,42
P3	MM08-08.40-HF-MD06 F30M	0,26	0,30	0,30	0,34	0,40
P4	MM08-08.40-HF-MD06 F30M	0,26	0,30	0,30	0,32	0,38
P5	MM08-08.40-HF-MD06 F30M	0,26	0,28	0,28	0,32	0,38
P6	MM08-08.40-HF-MD06 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_e/DC = %
All cutting data are start values

MM08 High-Feed – Cutting data v_c = (m/min)

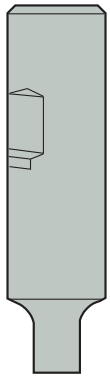
SMG	F30M			
	100%	70%	30%	20%
P1	250	305	365	385
P2	245	300	355	375
P3	215	260	310	325
P4	190	230	275	290
P5	180	220	260	275
P6	205	250	295	310
P7	195	235	275	295
P8	180	220	260	275
P11	185	230	270	285
P12	120	145	170	180
M1	195	240	285	305
M2	165	200	235	250
M3	130	155	185	195
M4	105	120	145	150
M5	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



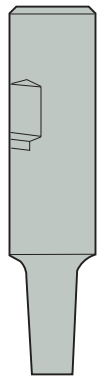
Keyway shank

Design 2



Cylindrical/Weldon back end and 90º front

Design 3



Cylindrical/Weldon back end tapered front 87º/89º

Design 4

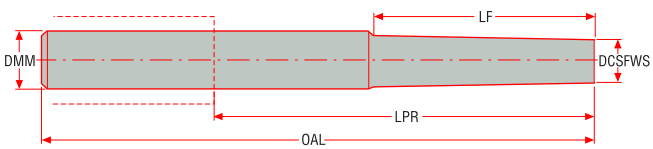


Cylindrical/Weldon back end tapered front 80º/85º/87º

Design 5



Cylindrical back end double tapered front end 89º/85º



For ISO attribute explanation, see page 15

MM10 Shank

Designation	Type of mounting	Dimensions in mm					BHTA°	Design	RPMX		KG	Spare part no.
		DCSFWS	DMM	OAL	LF	LPR						
MM10-20075.3-0010	Weldon	9,5	20,0	75,0	10,0	25,0	0,0	2	80000	✓	0,2	4
MM10-20085.3-3023	Weldon	9,5	20,0	85,0	23,0	35,0	3,0	3	80000	✓	0,2	4
MM10-20140.3-5060	Weldon	9,5	20,0	140,0	60,0	90,0	5,0	4	80000	✓	0,3	5
MM10-10045.0-0007	Cylindrical	9,6	10,0	45,0	7,0	7,0	0,0	2	80000	✓	0,1	2
MM10-16065.0-0000	Cylindrical	9,5	16,0	65,0	0,0	17,0	60,0	1	80000	✓	0,1	1
MM10-16160.0-1035M	Cylindrical	9,5	16,0	160,0	35,0	112,0	1,0	3	80000	✓	0,2	6
MM10-16160.0-1055M	Cylindrical	9,5	16,0	160,0	55,0	112,0	1,0	3	80000	✓	0,2	7
MM10-16160.0-1075M	Cylindrical	9,5	16,0	160,0	75,0	112,0	1,0	3	80000	✓	0,2	7
MM10-32250.0-10063	Cylindrical	9,5	32,0	250,0	63,8	190,0	10,0	4	80000	✓	1,3	5
MM10-12060.0-0007DS	Cylindrical	9,6	12,0	60,0	7,0	15,0	0,0	2	76300	✓	0,1	3
MM10-12085.0-3024DS	Cylindrical	9,5	12,0	85,0	23,8	40,0	3,0	4	76300	✓	0,2	3
MM10-12100.0-1035DS	Cylindrical	9,5	12,0	100,0	35,0	55,0	1,0	3	76300	✓	0,2	3
MM10-14120.0-1050DS	Cylindrical	9,5	14,0	120,0	50,0	75,0	1,0	3	76300	✓	0,3	3
MM10-16085.0-0020DS	Cylindrical	9,5	16,0	85,0	20,0	37,0	0,0	2	76300	✓	0,3	3
MM10-16105.0-0040DS	Cylindrical	9,5	16,0	105,0	40,0	57,0	0,0	2	76300	✓	0,3	3
MM10-16160.0-1055DS	Cylindrical	9,5	16,0	160,0	55,0	112,0	1,0	3	76300	✓	0,4	3
MM10-16160.0-1075DS	Cylindrical	9,5	16,0	160,0	75,0	112,0	1,0	3	76300	✓	0,4	3
MM10-20250.0-1055DS	Cylindrical	9,5	20,0	250,0	55,0	200,0	1,0	5	76300	✓	1,0	3

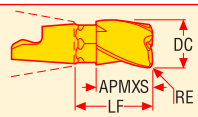
Spare Parts

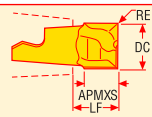
Spare part no.	Tension screw	Sleeve
4	MM10-0627	MM-06048
5	MM10-0627	MM-06116
2	MM10-0627	MM-06020
1	MM10-0627	MM-06032
6	MM10-0651	MM-06048
7	MM10-0688	MM-06032
3	MM10-061027	–

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

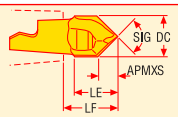




Designation	Dimensions in mm				RMPX°	C min	C max	FHA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LF								T60M	F15M	F30M	F40M
MM10-10012-A30-E03	11,8	10,0	0,0	15,72	15,0	12,2	19,8	30	3	MM0416	✓			■	
MM10-10012-R05A30-M03	11,8	10,0	0,5	15,72	15,0	12,2	18,8	30	3	MM0416	✓				■
MM10-10012-R10A30-D03	11,8	10,0	1,0	15,72	15,0	12,2	17,8	30	3	MM0416	✓			■	
MM10-10012-R10A30-E03	11,8	10,0	1,0	15,72	15,0	12,2	17,8	30	3	MM0416	✓			■	
MM10-10012-R10A30-M03	11,8	10,0	1,0	15,72	15,0	12,2	17,8	30	3	MM0416	✓				■
MM10-10012-R20A30-M03	11,8	10,0	2,0	15,72	15,0	12,2	15,8	30	3	MM0416	✓				■
MM10-10012-R30A30-M03	11,8	10,0	3,0	15,72	15,0	12,2	13,8	30	3	MM0416	✓				■
MM10-09512-R03A30-M03	11,8	9,525	0,3	15,72	15,0	11,6	18,2	30	3	MM0416	✓				■
MM10-09512-A30-E03	11,8	9,525	0,0	15,72	15,0	11,6	18,8	30	3	MM0416	✓			■	
MM10-09512-R04A30-M03	11,8	9,525	0,4	15,72	15,0	11,6	18,0	30	3	MM0416	✓				■
MM10-09512-R08A30-M03	11,8	9,525	0,8	15,72	15,0	11,6	17,2	30	3	MM0416	✓				■
MM10-09512-R16A30-M03	11,8	9,525	1,6	15,72	15,0	11,6	15,6	30	3	MM0416	✓				■
MM10-10007-M03	6,9	10,0	0,0	8,5	15,0	12,2	19,8	0	2	MM0612	–	■			
MM10-10007-R04-MD04	6,8	10,0	0,4	8,49	15,0	12,2	19,0	0	2	MM0612	–	■		■	
MM10-10007-R04P-M03	6,7	10,0	0,4	8,38	15,0	12,2	19,0	0	2	MM0612	–			■	
MM10-10007-R10-MD04	6,8	10,0	1,0	8,48	15,0	12,2	17,8	0	2	MM0612	–	■		■	
MM10-10007-R20-MD04	6,8	10,0	2,0	8,46	15,0	12,2	15,8	0	2	MM0612	–			■	
MM10-10007-R30-MD04	6,8	10,0	3,0	8,44	15,0	12,2	13,8	0	2	MM0612	–			■	
MM10-09510-M03	6,8	9,525	0,0	8,5	15,0	11,6	18,8	0	2	MM0612	–	■			
MM10-09510-R04-MD04	6,8	9,525	0,4	8,49	15,0	11,6	18,0	0	2	MM0612	–	■			
MM10-10007-R04A8-E03	6,6	10,0	0,4	8,44	15,0	12,2	19,0	8	2	MM0612	–	■		■	
MM10-09510-R08A8-E03	6,6	9,525	0,8	8,37	15,0	11,6	17,2	8	2	MM0612	–			■	
MM10-09807T-R03-D04	6,8	9,8	0,3	8,49	15,0	11,9	18,8	0	2	MM0612	–	■			

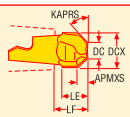
For Torque keys and torque values, see page 613

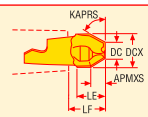
Centre drilling



Designation	Dimensions in mm				SIG°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	LE	LF					T60M	F15M	F30M	F40M
MM10-10005-C90-M03	4,69	10,0	10,0	11,8	90,0	2	MM0612	–	■			
MM10-10007-C120-M03	2,7	10,0	10,4	11,8	120,0	2	MM0612	–	■			

Chamfering

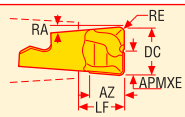




Designation	Dimensions in mm					KAPRS°	ZEFP	Wrench		Coated Grades			
	APMXS	DCX	DC	LE	LF					T60M	F15M	F30M	F40M
MM10-10007-4525-E03	2,6	10,0	4,82	6,94	8,48	45,0	2	MM0612	–	■			
MM10-10008-6040-E03	4,0	10,0	5,24	8,05	9,6	60,0	2	MM0612	–	■			

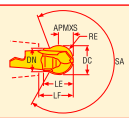
For Torque keys and torque values, see page 613

Plunge milling



Designation	Dimensions in mm					RA°	ZEFP	Wrench		Coated Grades			
	APMXE	DC	RE	AZ	LF					T60M	F15M	F30M	F40M
MM10-10007-R10-PL-MD04	5,0	10,0	1,0	7,1	8,48	5,0	2	MM0612	–			■	

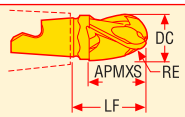
Precision inserts for semi-finishing in all materials

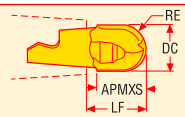


Designation	Dimensions in mm						SA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LE	LF	DN					T60M	F15M	F30M	F40M
MM10-12712-B120PF-M03	6,35	12,7	6,35	12,4	13,56	10,0	256,0	2	MM0612	–		■		
MM10-12012-B120P-M05	6,0	12,0	6,0	12,0	13,2	10,0	247,0	2	MM0612	–			■	
MM10-12712-B120P-M05	6,35	12,7	6,35	12,4	13,56	10,0	256,0	2	MM0612	–			■	

For Torque keys and torque values, see page 613

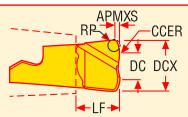
Copy milling





Designation	Dimensions in mm				FHA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LF					T60M	F15M	F30M	F40M
MM10-10012-B90A30-E03	11,8	10,0	5,0	15,72	30,0	3	MM0416	✓			■	
MM10-10012-B90A30-M03	11,8	10,0	5,0	15,72	30,0	3	MM0416	✓				■
MM10-10012-B90A30-D03	11,8	10,0	5,0	15,72	30,0	3	MM0416	✓			■	
MM10-10010-B90-MD04	10,2	10,0	5,0	11,77	0,0	2	MM0612	–	■		■	
MM10-10010-B90S-E04	10,2	10,0	5,0	11,77	0,0	2	MM0612	–			■	
MM10-10010-B90P-M04	8,73	10,0	5,0	11,74	0,0	2	MM0612	–			■	
MM10-10010-B90PF-M02	8,73	10,0	5,0	11,74	0,0	2	MM0612	–		■		
MM10-09510-B90P-M04	8,7	9,525	4,763	11,74	0,0	2	MM0612	–	■		■	

High feed



Designation	Dimensions in mm						RMPX°	C min	C max	ZEFP	Wrench		Coated Grades			
	APMXS	DCX	DC	RP	CCER	LF							T60M	F15M	F30M	F40M
MM10-10.50-HF-MD08	0,44	10,0	5,0	1,13	5,0	8,5	5,0	12,2	18,2	2	MM0612	–		■	■	

For Torque keys and torque values, see page 613

MM10 - Slot and Side milling – 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 - Slot and Side milling – Cutting data v_c = (m/min)

	F30M				F40M				T60M			
SMG	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 milling – 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 milling – 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_e/DC = %
All cutting data are start values

MM10 Z3 – Copy milling – Cutting data v_c = (m/min)

	F30M					F40M				
SMG	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 milling – 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 milling – 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_e/DC = %
All cutting data are start values

MM10 Z2 – Copy milling – Cutting data v_c = (m/min)

	F15M					F30M					T60M				
SMG	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

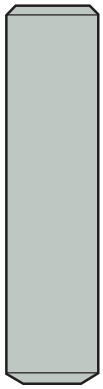
SMG		a_p	f_z			
			100%	70%	30%	20%
P1	MM10-10.50-HF-MD08 F30M	0,30	0,48	0,48	0,55	0,65
P2	MM10-10.50-HF-MD08 F30M	0,30	0,50	0,50	0,55	0,65
P3	MM10-10.50-HF-MD08 F30M	0,30	0,46	0,46	0,50	0,65
P4	MM10-10.50-HF-MD08 F30M	0,30	0,46	0,46	0,50	0,60
P5	MM10-10.50-HF-MD08 F30M	0,30	0,44	0,44	0,50	0,60
P6	MM10-10.50-HF-MD08 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_e/DC = %
All cutting data are start values

MM10 High-Feed – Cutting data v_c = (m/min)

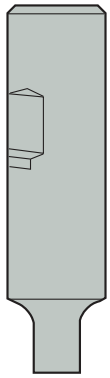
	F15M				F30M			
SMG	100%	70%	30%	20%	100%	70%	30%	20%
P1	—	—	—	—	230	285	335	355
P2	—	—	—	—	225	275	325	345
P3	—	—	—	—	195	240	285	295
P4	—	—	—	—	170	210	250	265
P5	—	—	—	—	165	205	240	255
P6	—	—	—	—	185	230	270	285
P7	—	—	—	—	175	215	255	270
P8	—	—	—	—	165	200	240	250
P11	—	—	—	—	170	210	250	260
P12	—	—	—	—	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



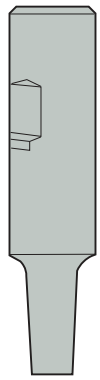
Keyway shank

Design 2



Cylindrical/Weldon back end and 90º front

Design 3



Cylindrical/Weldon back end tapered front 87º/89º

Design 4

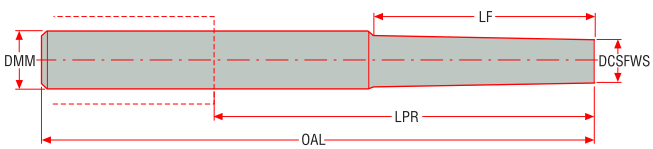


Cylindrical/Weldon back end tapered front 80º/85º/87º

Design 5



Cylindrical back end double tapered front end 89º/85º



For ISO attribute explanation, see page 15

MM12 Shank

Designation	Type of mounting	Dimensions in mm					BHTA°	Design	RPMX		KG	Spare part no.
		DCSFWS	DMM	OAL	LF	LPR						
MM12-20080.3-0012	Weldon	11,4	20,0	80,0	12,0	30,0	0,0	2	80000	✓	0,2	4
MM12-20095.3-3027	Weldon	11,4	20,0	95,0	27,0	45,0	3,0	3	80000	✓	0,2	4
MM12-20150.3-5049	Weldon	11,4	20,0	150,0	49,1	100,0	5,0	4	80000	✓	0,3	5
MM12-12055.0-0008	Cylindrical	11,5	12,0	55,0	8,5	10,0	0,0	2	80000	✓	0,1	2
MM12-16065.0-0000	Cylindrical	11,4	16,0	65,0	0,0	17,0	60,0	1	80000	✓	0,1	1
MM12-16170.0-1040	Cylindrical	11,4	16,0	170,0	40,0	122,0	1,0	3	80000	✓	0,2	5
MM12-16170.0-1060	Cylindrical	11,4	16,0	170,0	60,0	122,0	1,0	3	80000	✓	0,2	5
MM12-16170.0-1080	Cylindrical	11,4	16,0	170,0	80,0	122,0	1,0	3	80000	✓	0,2	5
MM12-12070.0-0008DS	Cylindrical	11,5	12,0	70,0	8,5	25,0	0,0	2	63600	✓	0,1	3
MM12-16095.0-0024DS	Cylindrical	11,4	16,0	95,0	24,0	47,0	0,0	2	63600	✓	0,3	3
MM12-16090.0-3044DS	Cylindrical	11,4	16,0	90,0	43,9	42,0	3,0	4	63600	✓	0,3	3
MM12-16120.0-1045DS	Cylindrical	11,4	16,0	120,0	45,0	72,0	1,0	3	63600	✓	0,3	3
MM12-16115.0-0048DS	Cylindrical	11,4	16,0	115,0	48,0	67,0	0,0	2	63600	✓	0,3	3
MM12-16170.0-1060DS	Cylindrical	11,4	16,0	170,0	60,0	122,0	1,0	3	63600	✓	0,5	3
MM12-16170.0-1080DS	Cylindrical	11,4	16,0	170,0	80,0	122,0	1,0	3	63600	✓	0,5	3
MM12-20250.0-1060DS	Cylindrical	11,4	20,0	250,0	60,0	200,0	1,0	5	63600	✓	1,0	3

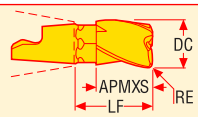
Spare Parts

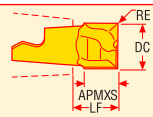
Spare part no.	Tension screw	Sleeve
4	MM12-0637	MM-06048
5	MM12-0637	MM-06116
2	MM12-0637	MM-06020
1	MM12-0637	MM-06032
3	MM12-061037	–

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

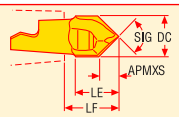




Designation	Dimensions in mm				RMPX°	C min	C max	FHA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LF								T60M	F15M	F30M	F40M
MM12-12015-A30-E04	15,35	12,0	0,0	19,9	15,0	14,6	23,8	30	3	MM0416	✓			■	
MM12-12015-R05A30-M04	15,35	12,0	0,5	19,9	15,0	14,6	22,8	30	3	MM0416	✓				■
MM12-12015-R10A30-E04	15,35	12,0	1,0	19,9	15,0	14,6	21,8	30	3	MM0416	✓			■	
MM12-12015-R10A30-M04	15,35	12,0	1,0	19,9	15,0	14,6	21,8	30	3	MM0416	✓				■
MM12-12015-R15A30-D04	15,35	12,0	1,5	19,9	15,0	14,6	20,8	30	3	MM0416	✓			■	
MM12-12015-R20A30-M04	15,35	12,0	2,0	19,9	15,0	14,6	19,8	30	3	MM0416	✓				■
MM12-12015-R30A30-E04	15,3	12,0	3,0	19,9	15,0	14,6	17,8	30	3	MM0416	✓			■	
MM12-12015-R30A30-M04	15,35	12,0	3,0	19,9	15,0	14,6	17,8	30	3	MM0416	✓				■
MM12-12015-R40A30-M04	15,35	12,0	4,0	19,9	15,0	14,6	15,8	30	3	MM0416	✓				■
MM12-11715-R03A30-M04	15,35	11,7	0,3	19,9	15,0	14,2	22,6	30	3	MM0416	✓				■
MM12-12715-A30-E04	15,35	12,7	0,0	19,9	15,0	15,4	25,2	30	3	MM0416	✓			■	
MM12-12715-R08A30-M04	15,35	12,7	0,8	19,9	15,0	15,4	23,6	30	3	MM0416	✓				■
MM12-12715-R16A30-M04	15,35	12,7	1,6	19,9	15,0	15,4	22,0	30	3	MM0416	✓				■
MM12-12008-M04	8,2	12,0	0,0	10,2	15,0	14,6	23,8	0	2	MM0612	–	■			
MM12-12008-R08-MD05	8,2	12,0	0,8	10,18	15,0	14,6	22,2	0	2	MM0612	–	■		■	
MM12-12008-R08A8-E04	8,1	12,0	0,8	10,15	15,0	14,6	22,2	8	2	MM0612	–	■			
MM12-12008-R08P-M04	8,1	12,0	0,8	10,05	15,0	14,6	22,2	0	2	MM0612	–			■	
MM12-12008-R20-MD05	8,2	12,0	2,0	10,16	15,0	14,6	19,8	0	2	MM0612	–			■	
MM12-12008-R30-MD05	8,2	12,0	3,0	10,14	15,0	14,6	17,8	0	2	MM0612	–			■	
MM12-14009-M04	9,3	14,0	0,0	11,26	15,0	17,0	27,8	0	2	MM1420	–	■			
MM12-14009-R08-MD05	9,3	14,0	0,8	11,26	15,0	17,0	26,2	0	2	MM1420	–	■		■	
MM12-14009-R08A8-E04	9,2	14,0	0,8	11,06	15,0	17,0	26,2	8	2	MM1420	–	■		■	
MM12-12708-M04	9,3	12,7	0,0	11,25	15,0	15,4	25,2	0	2	MM1420	–	■			
MM12-12708-R08-MD05	9,3	12,7	0,8	11,23	15,0	15,4	23,6	0	2	MM1420	–	■			
MM12-12708-R08P-M04	9,3	12,7	0,8	11,23	15,0	15,4	23,6	0	2	MM1420	–			■	
MM12-12708-R32-MD05	9,3	12,7	3,175	11,18	15,0	15,4	18,8	0	2	MM1420	–			■	
MM12-11708T-R03-D05	8,2	11,7	0,3	10,18	15,0	14,2	22,6	0	2	MM0612	–	■			
MM12-13709T-R03-D05	9,3	13,7	0,3	11,25	15,0	16,6	26,6	0	2	MM1420	–	■			

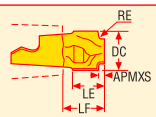
For Torque keys and torque values, see page 613

Centre drilling



Designation	Dimensions in mm					ZEFP	Wrench		Coated			
	APMXS	DC	LE	LF	SIG°				Grades			
									T60M	F15M	F30M	F40M
MM12-12006-C90-M04	5,65	12,0	12,65	14,64	90,0	2	MM0612	–	■			

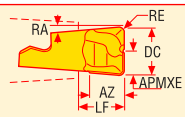
Concave radius



Designation	Dimensions in mm					ZEFP	Wrench		Coated			
	APMXS	DC	RE	LE	LF				Grades			
									T60M	F15M	F30M	F40M
MM12-12010-CR10-MD05	2,2	12,0	1,0	10,6	12,14	2	MM0612	–	■			
MM12-12010-CR20-MD05	2,4	12,0	2,0	10,7	12,25	2	MM0612	–	■			
MM12-12010-CR30-MD05	3,3	12,0	3,0	10,6	12,2	2	MM0612	–	■			

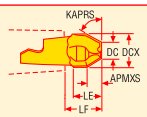
For Torque keys and torque values, see page 613

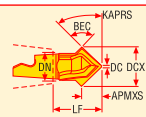
Plunge milling



Designation	Dimensions in mm					RA°	ZEFP	Wrench		Coated Grades			
	APMXE	DC	RE	AZ	LF					T60M	F15M	F30M	F40M
MM12-12008-R10-PL-MD05	6,0	12,0	1,0	8,5	10,2	5,0	2	MM0612	–			■	

Double chamfering

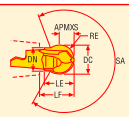




Designation	Dimensions in mm						BEC°	KAPR°	ZEFP	Wrench		Coated Grades			
	APMXS	DCX	DC	LE	LF	DN						T60M	F15M	F30M	F40M
MM12-16016-D3020P-M02	4,3	16,0	1,0	4,3	15,2	11,5	60,0	30,0	2	MM1420	–		■		
MM12-16016-D4520P-M02	7,5	16,0	1,0	7,5	17,2	11,5	90,0	45,0	2	MM1420	–		■		

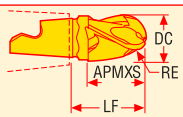
For Torque keys and torque values, see page 613

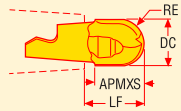
Precision inserts for semi-finishing in all materials



Designation	Dimensions in mm						SA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LE	LF	DN					T60M	F15M	F30M	F40M
MM12-14014-B120P-M05	7,0	14,0	7,0	14,0	15,45	12,0	242,0	2	MM1420	–			■	
MM12-16016-B120P-M07	8,0	16,0	8,0	16,0	17,46	12,0	263,0	2	MM1420	–			■	
MM12-16016-B120PF-M03	8,0	16,0	8,0	16,0	17,46	12,0	263,0	2	MM1420	–		■		

Copy milling

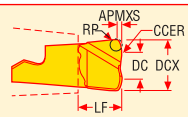




Designation	Dimensions in mm				FHA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LF					T60M	F15M	F30M	F40M
MM12-12015-B90A30-E04	15,3	12,0	6,0	19,9	30,0	3	MM0416	✓			■	
MM12-12015-B90A30-M04	15,3	12,0	6,0	19,9	30,0	3	MM0416	✓				■
MM12-12715-B90A30-M04	15,3	12,7	6,35	19,75	30,0	3	MM0416	✓				■
MM12-12012-B90-MD05	12,2	12,0	6,0	14,12	0,0	2	MM0612	–	■		■	
MM12-12012-B90S-E05	12,3	12,0	6,0	14,12	0,0	2	MM0612	–			■	
MM12-14014-B90S-E05	14,1	14,0	7,0	15,92	0,0	2	MM1420	–			■	
MM12-12012-B90P-M05	10,4	12,0	6,0	14,09	0,0	2	MM0612	–			■	
MM12-12713-B90P-M05	12,2	12,7	6,35	15,92	0,0	2	MM1420	–	■		■	
MM12-12012-B90PF-M02	10,4	12,0	6,0	14,09	0,0	2	MM0612	–		■		

For Torque keys and torque values, see page 613

High feed



Designation	Dimensions in mm						RMPX°	C min	C max	ZEFP	Wrench		Coated Grades			
	APMXS	DCX	DC	RP	CCER	LF							T60M	F15M	F30M	F40M
MM12-12.60-HF-MD10	0,51	12,0	6,0	1,21	6,5	10,25	5,0	14,6	22,2	2	MM0612	–		■	■	

For Torque keys and torque values, see page 613

MM12 - Slot and Side milling – 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

MM12 - Slot and Side milling – Cutting data v_c = (m/min)

	F15M				F30M				F40M				T60M			
SMG	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 milling – 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 milling – 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_e/DC = %
All cutting data are start values

MM12 Z3 – Copy milling – Cutting data v_c = (m/min)

	F30M					F40M				
SMG	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 milling – 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 milling – 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_e/DC = %
All cutting data are start values

MM12 Z2 – Copy milling – Cutting data v_c = (m/min)

	F15M					F30M					T60M				
SMG	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

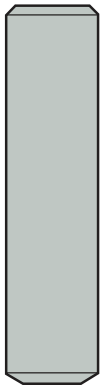
SMG		a_p	f_z			
			100%	70%	30%	20%
P1	MM12-12.60-HF-MD10 F30M	0,36	0,55	0,55	0,65	0,75
P2	MM12-12.60-HF-MD10 F30M	0,36	0,55	0,55	0,65	0,75
P3	MM12-12.60-HF-MD10 F30M	0,36	0,55	0,55	0,60	0,75
P4	MM12-12.60-HF-MD10 F30M	0,36	0,55	0,55	0,60	0,70
P5	MM12-12.60-HF-MD10 F30M	0,36	0,50	0,50	0,60	0,70
P6	MM12-12.60-HF-MD10 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_e/DC = %
All cutting data are start values

MM12 High-Feed – Cutting data v_c = (m/min)

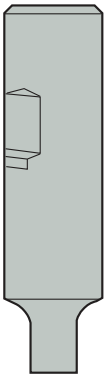
	F15M				F30M			
SMG	100%	70%	30%	20%	100%	70%	30%	20%
P1	—	—	—	—	225	275	325	350
P2	—	—	—	—	220	270	320	340
P3	—	—	—	—	190	230	280	290
P4	—	—	—	—	165	205	245	260
P5	—	—	—	—	165	200	235	250
P6	—	—	—	—	185	225	265	280
P7	—	—	—	—	170	210	250	265
P8	—	—	—	—	160	195	235	245
P11	—	—	—	—	170	205	240	255
P12	—	—	—	—	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



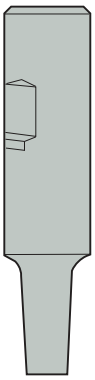
Keyway shank

Design 2



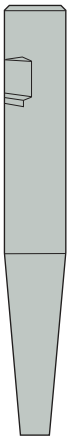
Cylindrical/Weldon back end and 90° front

Design 3



Cylindrical/Weldon back end tapered front 87°/89°

Design 4

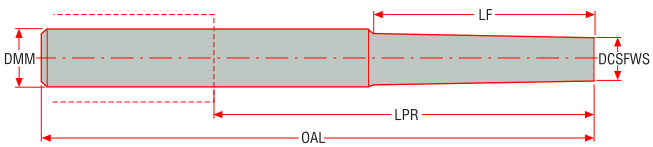


Cylindrical/Weldon back end tapered front 80°/85°/87°

Design 5



Cylindrical back end double tapered front end 89°/85°



For ISO attribute explanation, see page 15

Minimaster – Shanks MM16

MM16 Shank

Designation	Type of mounting	Dimensions in mm					BHTA°	Design	RPMX		KG	Spare part no.
		DCSFWS	DMM	OAL	LF	LPR						
MM16-20115.3-3045	Weldon	15,2	20,0	115,0	45,8	65,0	3,0	4	63600	✓	0,3	3
MM16-25100.3-0019	Weldon	15,2	25,0	100,0	19,0	94,0	0,0	2	63600	✓	0,3	3
MM16-25115.3-3035	Weldon	15,2	25,0	115,0	35,0	59,0	3,0	3	63600	✓	0,3	3
MM16-25170.3-5056	Weldon	15,2	25,0	170,0	56,0	114,0	5,0	4	63600	✓	0,6	4
MM16-16070.0-0011M	Cylindrical	15,2	16,0	70,0	11,3	22,0	0,0	2	63600	✓	0,1	1
MM16-20070.0-0000	Cylindrical	15,2	20,0	70,0	0,0	20,0	60,0	1	63600	✓	0,2	1
MM16-20190.0-1055M	Cylindrical	15,2	20,0	190,0	55,0	140,0	1,0	3	63600	✓	0,4	5
MM16-20190.0-1075M	Cylindrical	15,2	20,0	190,0	75,0	140,0	1,0	3	63600	✓	0,4	5
MM16-20190.0-1095M	Cylindrical	15,2	20,0	190,0	95,0	140,0	1,0	3	63600	✓	0,4	6
MM16-25170.0-1060	Cylindrical	19,0	25,0	170,0	60,0	114,0	1,0	3	63600	✓	0,5	5
MM16-32250.0-10047	Cylindrical	15,2	32,0	250,0	47,6	190,0	10,0	4	63600	✓	1,3	4
MM16-16150.0-0080DS	Cylindrical	15,2	16,0	150,0	80,0	102,0	0,0	2	47600	✓	0,4	2
MM16-20080.0-0011DS	Cylindrical	15,2	20,0	80,0	11,3	30,0	0,0	2	47600	✓	0,4	2
MM16-20150.0-0038DS	Cylindrical	15,2	20,0	150,0	38,0	100,0	0,0	2	47600	✓	0,6	2
MM16-20160.0-0076DS	Cylindrical	15,2	20,0	160,0	76,0	110,0	0,0	2	47600	✓	0,6	2
MM16-20130.0-1045DS	Cylindrical	15,2	20,0	130,0	45,0	80,0	1,0	3	47600	✓	0,5	2
MM16-20190.0-1075DS	Cylindrical	15,2	20,0	190,0	75,0	140,0	1,0	3	47600	✓	0,8	2
MM16-20190.0-1095DS	Cylindrical	15,2	20,0	190,0	95,0	140,0	1,0	3	47600	✓	0,8	2
MM16-25250.0-1075DS	Cylindrical	15,2	25,0	250,0	75,0	194,0	1,0	5	47600	✓	1,6	2

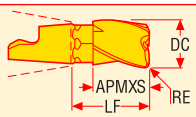
Spare Parts

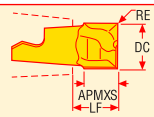
Spare part no.	Tension screw	Sleeve
3	MM16-1045	MM-10062
4	MM16-1045	MM-10132
1	MM16-1045	MM-10030
5	MM16-1093	MM-10062
6	MM16-10113	MM-10062
2	MM16-1045	–

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

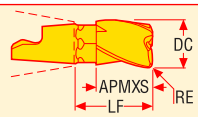


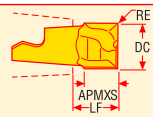


Designation	Dimensions in mm				RMPX°	C min	C max	FHA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LF								T60M	F15M	F30M	F40M
MM16-16019-A30-E06	19,05	16,0	0,0	24,5	15,0	19,4	31,8	30	3	MM0416	✓			■	
MM16-16019-R05A30-M06	19,05	16,0	0,5	24,5	15,0	19,4	30,8	30	3	MM0416	✓				■
MM16-16019-R10A30-E06	19,05	16,0	1,0	24,5	15,0	19,4	29,8	30	3	MM0416	✓			■	
MM16-16019-R10A30-M06	19,05	16,0	1,0	24,5	15,0	19,4	29,8	30	3	MM0416	✓				■
MM16-16019-R20A30-M06	19,05	16,0	2,0	24,5	15,0	19,4	27,8	30	3	MM0416	✓				■
MM16-16019-R30A30-E06	19,05	16,0	3,0	24,5	15,0	19,4	25,8	30	3	MM0416	✓			■	
MM16-16019-R30A30-M06	19,05	16,0	3,0	24,5	15,0	19,4	25,8	30	3	MM0416	✓				■
MM16-16019-R40A30-M06	19,05	16,0	4,0	24,5	15,0	19,4	23,8	30	3	MM0416	✓				■
MM16-16019-R50A30-M06	19,05	16,0	5,0	24,5	15,0	19,4	21,8	30	3	MM0416	✓				■
MM16-16019-R60A30-M06	19,05	16,0	6,0	24,5	15,0	19,4	19,8	30	3	MM0416	✓				■
MM16-20015-A30-E06	15,0	20,0	0,0	20,15	15,0	24,2	39,8	30	3	MM0416	✓			■	
MM16-20015-R05A30-M06	15,0	20,0	0,5	20,15	15,0	24,2	38,8	30	3	MM0416	✓				■
MM16-20015-R10A30-M06	15,0	20,0	1,0	20,15	15,0	24,2	37,8	30	3	MM0416	✓				■
MM16-20015-R20A30-D06	15,0	20,0	2,0	20,15	15,0	24,2	35,8	30	3	MM0416	✓			■	
MM16-20015-R30A30-M06	15,0	20,0	3,0	20,15	15,0	24,2	33,8	30	3	MM0416	✓				■
MM16-20015-R50A30-M06	15,0	20,0	5,0	20,15	15,0	24,2	29,8	30	3	MM0416	✓				■
MM16-15919-R08A30-M06	19,05	15,875	0,8	24,5	15,0	19,2	29,9	30	3	MM0416	✓				■
MM16-16011-M06	11,0	16,0	0,0	13,6	15,0	19,4	31,8	0	2	MM1420	–	■			
MM16-16011-R08A8-E06	10,5	16,0	0,8	13,62	15,0	19,4	30,2	8	2	MM1420	–	■		■	
MM16-16011-R08-MD07	11,0	16,0	0,8	13,58	15,0	19,4	30,2	0	2	MM1420	–	■		■	
MM16-16011-R08P-M05	10,8	16,0	0,8	13,41	15,0	19,4	30,2	0	2	MM1420	–			■	
MM16-16011-R20-MD07	10,9	16,0	2,0	13,55	15,0	19,4	27,8	0	2	MM1420	–			■	
MM16-16011-R30-MD07	10,9	16,0	3,0	13,54	15,0	19,4	25,8	0	2	MM1420	–			■	
MM16-16011-R40-MD07	10,9	16,0	4,0	13,52	15,0	19,4	23,8	0	2	MM1420	–	■			
MM16-16011-R50-MD07	10,9	16,0	5,0	13,5	15,0	19,4	21,8	0	2	MM1420	–	■			
MM16-20013-R08A8-E06	12,7	20,0	0,8	15,42	15,0	24,2	38,2	8	2	MM1420	–	■		■	
MM16-19013-R08A8-E06	12,7	19,05	0,8	15,39	15,0	23,1	36,3	8	2	MM1420	–			■	

For Torque keys and torque values, see page 613

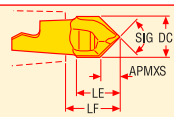
Slot milling





Designation	Dimensions in mm				FHA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LF					T60M	F15M	F30M	F40M
MM16-15719-R03A30-M06	19,05	15,7	0,3	24,5	30	3	MM0416	✓				■
MM16-15711T-R03-D07	11,0	15,7	0,3	13,6	0	2	MM1420	–	■			

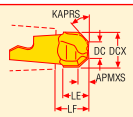
Centre drilling

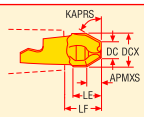


Designation	Dimensions in mm				SIG°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	LE	LF					T60M	F15M	F30M	F40M
MM16-16008-C90-M06	7,53	16,0	16,7	19,2	90,0	2	MM1420	–	■			
MM16-16011-C120-M06	4,3	16,0	16,64	18,9	120,0	2	MM1420	–	■			

For Torque keys and torque values, see page 613

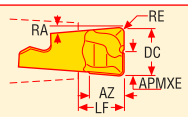
Chamfering





Designation	Dimensions in mm					KAPRS°	ZEFP	Wrench		Coated Grades			
	APMXS	DCX	DC	LE	LF					T60M	F15M	F30M	F40M
MM16-16011-4540-E06	3,9	16,0	7,69	10,9	13,25	45,0	2	MM1420	–	■			
MM16-16012-6060-E06	6,7	16,0	8,38	12,9	15,3	60,0	2	MM1420	–	■			

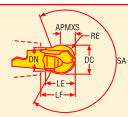
Plunge milling



Designation	Dimensions in mm					RA°	ZEFP	Wrench		Coated Grades			
	APMXE	DC	RE	AZ	LF					T60M	F15M	F30M	F40M
MM16-16011-R10-PL-MD07	8,0	16,0	1,0	11,3	11,3	5,0	2	MM1420	–			■	
MM16-16011-R20-PL-MD07	8,0	16,0	2,0	11,3	11,3	5,0	2	MM1420	–			■	

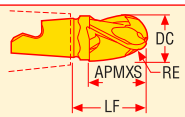
For Torque keys and torque values, see page 613

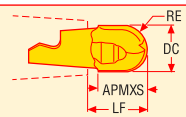
Precision inserts for semi-finishing in all materials



Designation	Dimensions in mm						SA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LE	LF	DN					T60M	F15M	F30M	F40M
MM16-20020-B120PF-M04	10,0	20,0	10,0	20,0	21,94	15,9	254,0	2	MM1420	–		■		
MM16-20020-B120P-M07	10,0	20,0	10,0	20,0	21,94	15,9	254,0	2	MM1420	–			■	

Copy milling





Designation	Dimensions in mm				FHA°	ZEFP	Wrench		Coated Grades			
	APMXS	DC	RE	LF					T60M	F15M	F30M	F40M
MM16-16019-B90A30-E06	19,0	16,0	8,0	24,5	30,0	3	MM0416	✓			■	
MM16-20015-B90A30-E06	15,0	20,0	10,0	20,15	30,0	3	MM0416	✓			■	
MM16-16019-B90A30-M06	19,0	16,0	8,0	24,5	30,0	3	MM0416	✓				■
MM16-20015-B90A30-M06	15,0	20,0	10,0	20,15	30,0	3	MM0416	✓				■
MM16-16016-B90-MD07	16,2	16,0	8,0	18,4	0,0	2	MM1420	–	■		■	
MM16-20020-B90-MD07	20,3	20,0	10,0	22,15	0,0	2	MM1420	–	■		■	
MM16-16016-B90P-M07	13,8	16,0	8,0	18,4	0,0	2	MM1420	–			■	
MM16-20020-B90P-M07	17,4	20,0	10,0	22,12	0,0	2	MM1420	–			■	
MM16-15916-B90P-M07	13,8	15,875	7,938	18,4	0,0	2	MM1420	–			■	
MM16-19020-B90P-M07	7,4	19,05	9,525	22,12	0,0	2	MM1420	–	■			
MM16-16016-B90PF-M03	13,8	16,0	8,0	18,4	0,0	2	MM1420	–		■		

For Torque keys and torque values, see page 613

MM16 - Slot and Side milling – 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_e/DC = %
All cutting data are start values

MM16 - Slot and Side milling – Cutting data v_c = (m/min)

	F30M				F40M				T60M			
SMG	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 milling – 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 milling – 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_e/DC = %
All cutting data are start values

MM16 Z3 – Copy milling – Cutting data v_c = (m/min)

	F30M					F40M				
SMG	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 milling – 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_e/DC = %
All cutting data are start values

MM16 Z2 – Copy milling – 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_e/DC = %
All cutting data are start values

MM16 Z2 – Copy milling – Cutting data v_c = (m/min)

	F15M					F30M					T60M				
SMG	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

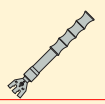
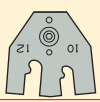
Over 10 000 RPM:
We recommend balancing of tool and tool holders at least separately.
Over 20 000 RPM:
Both tool and tool holders must be balanced at least separately.
Over 30 000 RPM:
Tool and tool holders must be balanced as a unit.
The max RPM in the tables should never be exceeded.

Torque wrench with fixed torque values to ensure the correct tightening force when mounting the Minimaster insert into its holder.
Dynamomentic keys are calibrated according to ISO 6789.

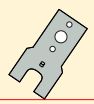
Code key: MM02-4006
MM02 = 2-flute (MM03 = 3-flute)
40 = Torque value 4 Nm
06 = Insert size



2 flute inserts

Insert size	Torque wrench (including key end)	Replaceable key end	Torque value
			
MM06	MM02-4006	MM02-06	4 Nm
MM08	MM02-8008	MM02-08	8 Nm
MM10	MM02-1201012	MM02-1012	12 Nm
MM12	MM02-1201012	MM02-1012	12 Nm
MM12 DC= Ø 14,0	MM02-16014	MM02-14	16 Nm
MM12 DCX= Ø 16,0	MM02-1601620	MM02-1620	16 Nm
MM16	MM02-1601620	MM02-1620	16 Nm

3 flute inserts

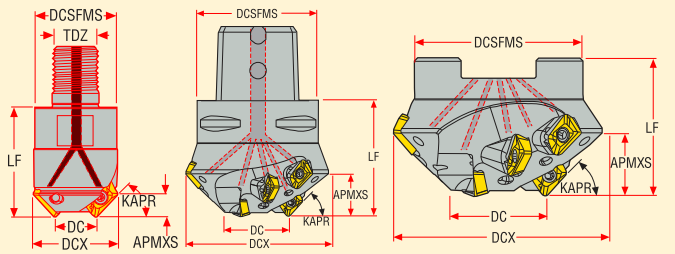
Insert size	Torque wrench (including key end)	Replaceable key end	Torque value
			
MM06	MM03-4006	MM03-06	4 Nm
MM08	MM03-8008	MM03-08	8 Nm
MM10	MM03-1201012	MM03-1012	12 Nm
MM12	MM03-1201012	MM03-1012	12 Nm
MM16	MM03-16016	MM03-16	16 Nm

Chamfer milling cutters

R217/220.49-XO12

Chamfer angle 30° / 45° / 60° and 75°





- For insert selection and cutting data recommendations, see page(s) 615-616
- For complete insert programme, see page(s) 663

Designation	Type of mounting	Dimensions in mm							KAPR°	ZEFP		KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	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	27,0	–	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	27,0	–	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	27,0	–	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	22,0	–	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 710

R217/220.49-XO12 – Insert selection

SMG		f_z		
		100%	30%	10%
P1	XOMX120408TR-ME08 F40M	0,18	0,22	0,36
P2	XOMX120408TR-ME08 F40M	0,18	0,22	0,38
P3	XOMX120408TR-ME08 MP2501	0,14	0,17	0,28
P4	XOMX120408TR-M12 MP2501	0,20	0,25	0,42
P5	XOMX120408TR-M12 MP2501	0,20	0,24	0,40
P6	XOMX120408TR-M12 MP2501	0,19	0,24	0,40
P7	XOMX120408TR-M12 MP2501	0,19	0,24	0,40
P8	XOMX120408TR-M12 MP2501	0,20	0,25	0,42
P11	XOMX120408TR-M12 T350M	0,19	0,24	0,40
P12	XOEX120408R-M07 MP3000	0,090	0,11	0,18
M1	XOEX120408R-M07 F40M	0,14	0,18	0,30
M2	XOEX120408R-M07 F40M	0,13	0,16	0,26
M3	XOEX120408R-M07 F40M	0,11	0,13	0,22
M4	XOEX120408R-M07 T350M	0,095	0,11	0,19
M5	XOEX120408R-M07 T350M	0,095	0,11	0,19
K1	XOMX120408TR-M12 MK2050	0,22	0,26	0,44
K2	XOMX120408TR-M12 MK2050	0,20	0,24	0,40
K3	XOMX120408TR-M12 MK2050	0,20	0,24	0,40
K4	XOMX120408TR-M12 MK2050	0,20	0,24	0,40
K5	XOMX120408TR-M12 MK2050	0,18	0,22	0,36
K6	XOMX120408TR-M12 MK2050	0,20	0,24	0,40
K7	XOMX120408TR-M12 MK2050	0,18	0,22	0,36
N1	XOEX120408FR-E06 H15	0,16	0,20	0,34
N2	XOEX120408FR-E06 H15	0,16	0,20	0,34
N3	XOEX120408FR-E06 H15	0,16	0,20	0,34
N11	XOEX120408FR-E06 H15	0,16	0,20	0,34
S1	XOEX120408R-M07 F40M	0,095	0,11	0,19
S2	XOEX120408R-M07 F40M	0,095	0,11	0,19
S3	XOEX120408R-M07 F40M	0,090	0,10	0,17
S11	XOEX120408R-M07 MS2050	0,11	0,12	0,22
S12	XOEX120408R-M07 MS2050	0,11	0,12	0,22
S13	XOEX120408R-M07 MS2050	0,095	0,11	0,19
H5	XOMX120408TR-MD13 MP1501	0,15	0,17	0,30
H11	XOMX120408TR-MD13 MP3000	0,15	0,17	0,30
H12	XOMX120408TR-MD13 MP1501	0,11	0,13	0,22

SMG = Seco material group
f_z = mm/tooth
v_c= m/min
a_e/DC = %
All cutting data are start values

R217/220.49-XO12 – Cutting data v_c = (m/min)

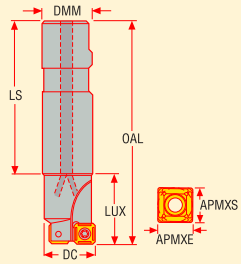
	MP1501			MP2050			MP2501			MP3000			MM4500			MK1500			MK2050		
SMG	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	185	215	225	190	215	230	175	205	220	170	200	215	145	175	190	—	—	—	175	205	215
P2	180	210	225	185	215	230	170	205	215	170	200	210	145	175	190	—	—	—	170	200	215
P3	170	200	215	175	205	220	165	190	205	160	190	200	135	165	180	—	—	—	160	190	205
P4	165	190	205	165	195	210	155	185	195	150	180	190	125	155	170	—	—	—	150	180	195
P5	160	190	205	165	190	205	150	180	195	145	175	190	125	155	165	—	—	—	150	180	195
P6	170	200	210	170	200	215	160	190	205	155	185	200	130	160	175	—	—	—	160	190	200
P7	165	195	205	165	195	210	155	185	200	150	180	195	130	155	170	—	—	—	155	185	195
P8	160	190	200	160	190	205	150	180	195	145	175	190	120	150	165	—	—	—	150	180	190
P11	160	190	205	165	195	210	155	180	195	150	180	190	125	155	170	—	—	—	150	180	195
P12	130	155	175	130	155	175	120	145	165	115	140	160	90	120	135	—	—	—	120	145	160
M1	—	—	—	160	190	205	150	180	190	145	175	190	135	165	175	—	—	—	—	—	—
M2	—	—	—	145	175	190	135	165	180	130	160	175	120	150	165	—	—	—	—	—	—
M3	—	—	—	130	155	170	115	145	160	115	145	160	105	130	145	—	—	—	—	—	—
M4	—	—	—	110	130	155	95	120	145	95	120	140	80	105	125	—	—	—	—	—	—
M5	—	—	—	95	120	140	85	110	130	80	105	130	70	95	115	—	—	—	—	—	—
K1	165	195	210	170	195	210	155	185	200	150	180	195	—	—	—	180	210	225	175	205	220
K2	155	185	200	160	190	200	145	175	190	140	170	185	—	—	—	170	200	215	170	200	210
K3	145	175	185	145	175	190	135	165	180	130	160	175	—	—	—	160	190	205	155	185	200
K4	140	170	185	145	170	185	130	160	175	125	155	170	—	—	—	155	185	200	150	180	195
K5	105	130	145	105	135	150	95	125	135	90	120	135	—	—	—	120	150	165	115	145	160
K6	130	160	175	135	165	175	120	150	165	115	145	160	—	—	—	145	175	190	145	175	185
K7	120	150	165	125	155	165	110	140	155	110	135	150	—	—	—	140	170	180	135	165	180
N1	—	—	—	—	—	—	—	—	—	300	330	345	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	230	260	275	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	200	230	245	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	55	80	100	—	—	—	46	65	85	25	35	46	—	—	—	—	—	—
S2	—	—	—	46	65	85	—	—	—	37	50	70	20	28	37	—	—	—	—	—	—
S3	—	—	—	40	55	75	—	—	—	33	45	60	18	25	33	—	—	—	—	—	—
S11	—	—	—	80	105	125	—	—	—	65	90	110	36	49	65	—	—	—	—	—	—
S12	—	—	—	55	80	95	—	—	—	45	65	80	33	46	60	—	—	—	—	—	—
S13	—	—	—	32	44	60	—	—	—	26	36	48	19	26	35	—	—	—	—	—	—
H5	50	75	90	47	65	85	41	60	75	40	55	70	—	—	—	—	—	—	—	—	—
H8	55	75	95	50	70	90	44	60	80	43	60	80	—	—	—	—	—	—	—	—	—
H11	65	90	110	60	85	105	50	75	90	50	75	90	—	—	—	—	—	—	—	—	—
H12	95	120	140	95	120	140	85	110	130	80	105	125	—	—	—	—	—	—	—	—	—

	MS2050			MS2500			T25M			T350M			F40M			H15			MP1020		
SMG	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) 618-621
- For complete insert programme, see page(s) 656

Designation	Type of mounting	Dimensions in mm							ZEFP		KG		() = No of inserts	
		APMXE	APMXS	DC	DMM	OAL	LUX	LS					SPMX*	SPMX
R417.19-2018.3-06A	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	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	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	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	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	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	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	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	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	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	2,0
R417.19-12A	DOUBLE-T	C03510-T15P	H4B-T15P	3,0

Please check availability in current price and stock-list

Torque keys, see page 710

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

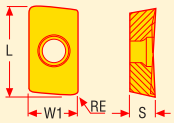
SMG = Seco material group
f_z = mm/tooth
v_c = m/min
a_e/DC = %
All cutting data are start values

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


MP2501
MP2501 R10

ABEX26



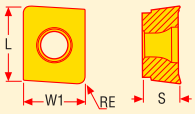
M15



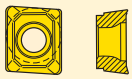
Designation	W1	L	S	RE	Cutting rake	Grades																		
						Coated																Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
ABEX2606ZFFR-M15	14,0	25,56	6,35	1,6	17,0 °	■		■				■					■				■			
ABEX2606ZZFR-M15	14,0	25,61	6,35	1,6	17,0 °												■							

■ Stock standard
Subject to change refer to current price- and stock-list

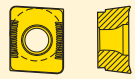
AC..15



M10/M11/M14/MD15



ME10

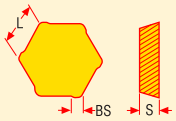


Designation	W1	L	S	RE	Cutting rake	Grades																		
						Coated																Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
ACET150612TR-ME10	12,7	15,0	6,35	1,2	22,0 °									■							■			
ACET150612TL-M11	12,7	15,0	6,35	1,2	14,0 °																■			
ACET150612TR-M11	12,7	15,0	6,35	1,2	14,0 °	■		■				■				■	■				■			
ACET150631TR-M11	12,7	15,0	6,35	3,1	14,0 °																■			
ACET150612TL-M14	12,7	15,0	6,35	1,2	15,0 °																■			
ACET150612TR-M14	12,7	15,0	6,35	1,2	15,0 °			■				■					■				■	■		
ACET150630TR-M14	12,7	15,0	6,35	3,0	15,0 °												■							
ACET150631TR-M14	12,7	15,0	6,35	3,1	15,0 °																■			
ACET150660TL-M14	12,7	15,0	6,35	6,0	15,0 °																■			
ACET150660TR-M14	12,7	15,0	6,35	6,0	15,0 °												■				■			
ACET150612TR-MD15	12,7	15,0	6,35	1,2	15,0 °	■			■								■							
ACET150630TR-MD15	12,7	15,0	6,35	3,0	15,0 °	■																		
ACMT150612TR-M14	12,7	15,0	6,35	1,2	15,0 °			■									■				■			

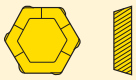
■ Stock standard

Subject to change refer to current price- and stock-list

HPMR/N



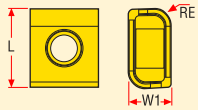
ME15/M17/MD20/D25



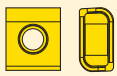
Designation	L	S	BS	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
HPMN1206ZETR-D25	12,5	6,35	0,8	0,0 °	■		■																

■ Stock standard
Subject to change refer to current price- and stock-list

LNHQ14/17

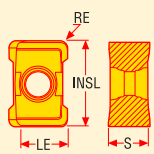


M11/M13

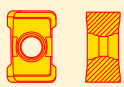


Designation	W1	L	RE	Cutting rake	Grades																	
					Coated															Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
LNHQ140708TN4-M11	7,5	14,0	0,8	16,0 °			■													■			
LNHQ140731TN4-M11	7,5	14,0	3,1	16,0 °			■													■			
LNHQ140740TN4-M11	7,5	14,0	4,0	16,0 °																■			
LNHQ140750TN4-M11	7,5	14,0	5,0	16,0 °			■													■			
LNHQ140760TN4-M11	7,5	14,0	6,0	16,0 °			■													■			
LNHQ170708TN4-M13	7,5	17,0	0,8	16,0 °																■			
LNHQ170731TN4-M13	7,5	17,0	3,1	16,0 °																■			
LNHQ170740TN4-M13	7,5	17,0	4,0	16,0 °																■			
LNHQ170750TN4-M13	7,5	17,0	5,0	16,0 °																■			
LNHQ170760TN4-M13	7,5	17,0	6,0	16,0 °																■			

LNK.05



E05/M06



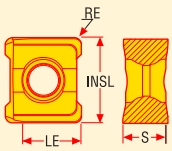
Designation	LE	INSL	S	RE	Cutting rake	Grades																	
						Coated															Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
LNKT050404PPN4-E05	5,0	10,0	4,7	0,4	23,0 °																■			■
LNKT050404PPTN4-M06	5,0	10,0	4,7	0,4	15,0 °				■		■										■			
LNKT050408PPTN4-M06	5,0	10,0	4,7	0,8	15,0 °				■								■				■			
LNKT050416PPTN4-M06	5,0	10,0	4,7	1,6	15,0 °																■			
LNKT050420PPTN4-M06	5,0	10,0	4,7	2,0	15,0 °																■			
LNKT050424PPTN2-M06	5,0	10,0	4,7	2,4	15,0 °																■			
LNKT050431PPTL1C-M06	4,96	10,0	4,7	3,1	15,0 °																■			
LNKT050431PPTL1-M06	5,0	10,0	4,7	3,1	15,0 °																■			
LNKT050431PPTR1C-M06	4,96	10,0	4,7	3,1	15,0 °																■			
LNKT050431PPTR1-M06	5,0	10,0	4,7	3,1	15,0 °																■			

■ Stock standard

Subject to change refer to current price- and stock-list

Note: When using LNK insert with corner radius = 2,4 and 3,1 please modify the external profile of the cutter or cassette by adding a corner radius or chamfer = 2,5 mm

LNK.06/08



LNK.06



LNK.08

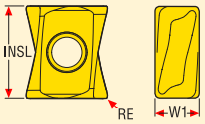


Designation	LE	INSL	S	RE	Cutting rake	Grades																	
						Coated															Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
LNKT060504PPN-E05	6,0	10,0	5,0	0,4	23,0 °																		■
LNKW060504PPN-MD08	6,0	10,0	5,0	0,4	0,0 °								■										
LNKT060504PPTN-M06	6,0	10,0	5,0	0,4	15,0 °			■									■				■		
LNKT060508PPN-E05	6,0	10,0	5,0	0,8	23,0 °																		■
LNKW060508PPN-MD08	6,0	10,0	5,0	0,8	0,0 °			■				■											
LNKT060508PPTN-M06	6,0	10,0	5,0	0,8	15,0 °			■	■			■	■				■				■		
LNKT060516PPTN-M06	6,0	10,0	5,0	1,6	15,0 °							■	■								■		
LNKT060531PPTN-M06	6,0	10,0	5,0	3,1	15,0 °																■		
LNKT060540PPTL-M06	6,0	10,0	5,0	4,0	15,0 °																■		
LNKT060540PPTR-M06	6,0	10,0	5,0	4,0	15,0 °																■		
LNKT080504PPN-E05	7,5	10,0	5,0	0,4	23,0 °																		■
LNKT080504PPTN-M06	7,5	10,0	5,0	0,4	15,0 °			■									■				■		
LNKT080508PPN-E05	7,5	10,0	5,0	0,8	23,0 °																		■
LNKW080508PPN-MD08	7,5	10,0	5,0	0,8	0,0 °			■				■											
LNKT080508PPTN-M06	7,5	10,0	5,0	0,8	15,0 °			■	■			■	■				■				■		
LNKT080516PPTN-M06	7,2	10,0	5,0	1,6	15,0 °								■								■		
LNKT080520PPN-E05	6,7	10,0	5,0	2,0	23,0 °																		■
LNKT080520PPTN-M06	6,7	10,0	5,0	2,0	15,0 °							■	■								■		
LNKT080524PPTN-M06	6,7	10,0	5,0	2,4	15,0 °							■	■								■		
LNKT080531PPN-E05	7,5	10,0	5,0	3,1	23,0 °																		■
LNKT080531PPTN-M06	7,5	10,0	5,0	3,1	15,0 °							■	■								■		
LNKT080540PPTL-M06	7,5	10,0	5,0	4,0	15,0 °																■		
LNKT080540PPTR-M06	7,5	10,0	5,0	4,0	15,0 °																■		

■ Stock standard
Subject to change refer to current price- and stock-list

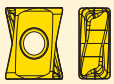
Note: When using LNK insert with corner radius = 2,4, 3,1 and 4,0 mm please modify the external profile of the cutter or cassette by adding a corner radius or chamfer = 2,5 mm

LOEX08/12

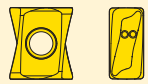


BS = Wiper flat width

M08/MD08



M09/M12/MD13



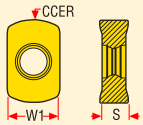
Designation	W1	INSL	BS	RE	Cutting rake	Grades																		
						Coated																Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
LOEX080404TR-M08	4,4	9,3	1,29	0,4	34,3 °	■		■	■				■								■			
LOEX080408TR-M08	4,4	9,3	0,9	0,8	34,0 °	■	■	■	■		■	■	■	■			■				■			
LOEX080412TR-M08	4,4	9,3	0,52	1,2	34,3 °			■					■								■			
LOEX080416TR-M08	4,4	9,3	0,13	1,6	34,3 °		■		■					■	■						■			
LOEX080404TR-MD08	4,4	9,3	1,29	0,4	29,0 °			■					■								■			
LOEX080408TR-MD08	4,4	9,3	0,92	0,8	29,5 °	■		■				■	■				■				■			
LOEX080412TR-MD08	4,4	9,3	0,52	1,2	29,5 °								■											
LOEX080416TR-MD08	4,4	9,3	0,13	1,6	29,5 °			■													■			
LOEX120708TR-M12	7,5	14,2	2,47	0,8	35,0 °		■	■	■		■		■	■	■		■				■			
LOEX120712TR-M12	7,5	14,2	2,1	1,2	35,0 °												■				■			
LOEX120716TR-M12	7,5	14,2	1,74	1,6	35,0 °								■								■			
LOEX120720TR-M12	7,5	14,2	1,37	2,0	35,0 °			■	■					■			■				■			
LOEX120724TR-M12	7,5	14,2	1,01	2,4	35,0 °			■						■							■			
LOEX120731TR-M12	7,5	14,2	0,37	3,1	35,0 °			■	■					■	■		■				■			
LOEX120708TR-MD13	7,5	14,2	2,47	0,8	30,0 °	■		■			■	■	■				■				■			
LOEX120712TR-MD13	7,5	14,2	2,1	1,2	30,0 °	■		■					■											
LOEX120716TR-MD13	7,5	14,2	1,74	1,6	30,0 °	■		■				■	■				■				■			
LOEX120704R-M09	7,5	14,2	2,83	0,4	36,0 °									■							■			
LOEX120708R-M09	7,5	14,2	2,47	0,8	36,0 °		■	■	■		■			■	■		■				■			
LOEX120716R-M09	7,5	14,2	1,74	1,6	36,0 °		■		■					■	■						■			
LOEX120724R-M09	7,5	14,2	1,01	2,4	36,0 °									■			■				■			
LOEX120731R-M09	7,5	14,2	0,37	3,1	36,0 °		■		■		■			■			■				■			
LOEX120740R-M09	7,5	14,2	0,14	4,0	36,0 °									■							■			
LOEX120750R-2-M09	7,5	14,2	1,06	5,0	36,0 °						■			■							■			
LOEX120763R-2-M09	7,5	14,2	0,43	6,3	36,0 °									■							■			

■ Stock standard

Note: LOEX1207xxR-2-M09 have only 2 edges

Subject to change refer to current price- and stock-list

LOH.06




M07


D07


MD07

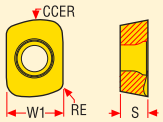

ME06

Designation	W1	S	CCER	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
LOHT060310TR-M07	6,35	3,57	5,5	20,0 °		■	■	■					■	■		■				■			
LOHT060310TR-MD07	6,35	3,57	5,5	7,0 °	■		■	■				■											
LOHT060310TR-ME06	6,35	3,57	5,5	27,0 °						■			■	■		■				■			
LOHW060310TR-D07	6,35	3,45	5,5	0,0 °	■			■	■														

■ Stock standard

Subject to change refer to current price- and stock-list

LPH.05/06/09



E05/E08/ME04/ME05/ME08/M05/M06/M13



MD05/MD07/MD15/D06/D12/D15

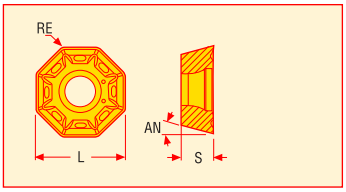


Designation	W1	S	CCER	RE	Cutting rake	Grades																	
						Coated															Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
LPHT05T210TR-ME04	5,07	2,54	6,4	1,0	16,0 °						■			■			■				■		
LPHT060310ER-E05	6,35	3,18	8,0	1,0	16,0 °						■										■		■
LPHT060310TR-ME05	6,35	3,18	8,0	1,0	16,0 °				■		■			■							■		
LPHT060310TR-M06	6,35	3,18	8,0	1,0	11,0 °		■	■	■					■	■		■				■		
LPHT09T420R-E08	9,5	4,76	9,75	2,0	20,0 °						■												■
LPHW05T210TR-MD05	5,07	2,54	6,4	1,0	0,0 °					■													
LPHW060310TR-MD07	6,35	3,18	8,0	1,0	0,0 °			■							■								
LPHW060310TR-D06	6,35	3,18	8,0	1,0	0,0 °				■	■													
LPHW09T420TR-D12	9,5	4,76	9,75	2,0	0,0 °					■													
LPKT05T210TR-M05	5,07	2,54	6,4	1,0	11,0 °		■	■	■					■	■						■		
LPKT09T420TR-ME08	9,5	4,76	9,75	2,0	15,0 °						■			■							■		
LPKT09T420TR-M13	9,5	4,76	9,75	2,0	10,0 °		■	■	■					■	■		■				■		
LPKW05T210TR-MD05	5,07	2,54	6,4	1,0	0,0 °			■	■														
LPKW09T420TR-MD15	9,5	4,76	9,75	2,0	0,0 °		■	■															
LPKW09T420TR-D15	9,5	4,76	9,75	2,0	0,0 °				■				■										

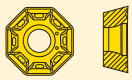
■ Stock standard

Subject to change refer to current price- and stock-list

ODMT05



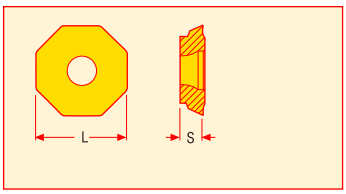
MD20



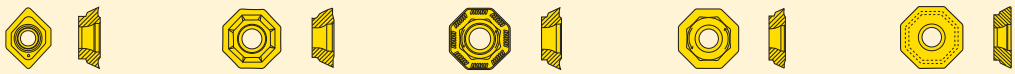
Designation	L	S	RE	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
ODMT050408TN-MD20	12,7	4,76	0,8	13,0 °								■											

■ Stock standard
Subject to change refer to current price- and stock-list

OF..05/07



E04/M05 M08/M14 ME07ME12//D09 ME10/ME15/M16 ME13/ME09/M13/M15/D18

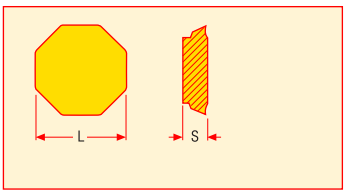


Designation	L	S	Cutting rake	Grades																		
				Coated																	Uncoated		
				MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
OFEX05T305N-E04	12,7	3,77	20,0 °													■					■	
OFEX05T305TN-ME07	12,7	3,77	18,0 °			■									■				■			
OFEX05T305N-M05	12,7	3,77	0,0 °															■				
OFEX05T305TN-M08	12,7	3,77	0,0 °			■				■					■				■			
OFEX05T305TN-D09	12,7	3,77	0,0 °	■																		
OFMT050405TR-ME12	13,3	4,76	18,0 °			■									■				■			
OFMT050405TR-M14	13,3	4,76	0,0 °			■				■					■				■			
OFMT070405TN-ME13	17,97	4,86	18,0 °			■													■			
OFMT070405TN-M15	17,97	4,86	0,0 °			■													■			
OFMT070405TR-ME13	17,97	4,86	18,0 °												■							
OFMT070405TR-M15	17,97	4,86	0,0 °																■			
OFEW070405TN-D18	17,94	4,76	0,0 °	■																		
OFET070405TN-M16	17,94	4,56	0,0 °							■												
OFET070405TN-ME10	17,94	4,56	18,0 °															■	■			
OFET070405TN-ME15	17,94	4,56	18,0 °																■			

■ Stock standard

Subject to change refer to current price- and stock-list

OFER/OFEN/OFMR07



E07/M10/D18/M16



ME10/ME13/ME15/M15



ZZ..M10/M16

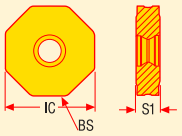


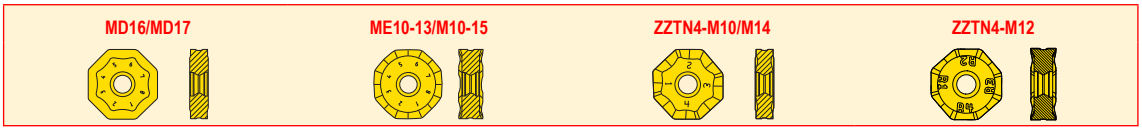
Designation	L	S	Cutting rake	Grades																		
				Coated																Uncoated		
				MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
OFER070405N-E07	17,94	4,56	20,0 °													■					■	
OFER070405TN-ME10	17,94	4,56	18,0 °			■							■						■			
OFER070405TN-ME15	17,94	4,56	18,0 °			■			■						■				■			
OFER070405N-M10	17,94	4,56	0,0 °				■											■				
OFER070405TN-M16	17,94	4,56	0,0 °	■		■			■	■	■				■				■			
OFMR070405TR-ME13	18,02	4,86	15,0 °			■									■				■			
OFMR070405TR-M15	18,02	4,86	6,0 °			■				■					■				■			
OFEN070405TN-D18	17,96	4,76	0,0 °	■		■	■			■	■							■				
OFEN0704ZZR-M10	18,02	4,76	0,0 °				■											■				
OFEN0704ZZTR-M16	18,11	4,74	0,0 °							■					■							

■ Stock standard

Subject to change refer to current price- and stock-list

ON.U05/09



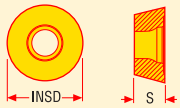


Designation	IC	S1	BS	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
ONMU050410ANTN-ME10	12,0	4,0	0,3	20,0 °			■	■		■	■		■							■			
ONMU050410ANTN-ME11	12,0	4,0	1,0	20,0 °	■		■	■		■	■		■							■			
ONMU050410ANTN-M10	12,0	4,0	0,3	20,0 °	■	■	■	■		■	■	■				■				■			
ONMU050410ANTN-M11	12,0	4,0	1,0	20,0 °	■	■	■	■		■	■	■				■				■			
ONEU050410ZZTN4-M10	12,0	4,5	3,2	20,0 °			■	■			■	■								■			
ONMU090520ANTN-ME12	22,0	5,8	0,45	20,0 °	■		■	■		■	■		■	■		■				■			
ONMU090520ANTN-ME13	22,0	5,8	2,11	20,0 °	■		■	■		■	■	■	■	■		■				■			
ONMU090510ANTN-M12	22,0	5,8	0,0	20,0 °		■						■	■	■		■				■			
ONMU090520ANTN-M12	22,0	5,8	0,45	20,0 °	■	■	■			■	■	■		■		■				■			
ONMU090520ANTN-M13	22,0	5,8	2,11	20,0 °	■	■	■	■		■	■	■		■		■				■			
ONMU090520ANTN-M14	22,0	5,8	0,45	15,0 °	■		■	■			■	■				■				■			
ONMU090520ANTN-M15	22,0	5,8	2,11	15,0 °	■		■	■			■	■				■				■			
ONMU090520ANTN-MD16	22,0	5,8	0,45	0,0 °	■		■				■					■							
ONMU090520ANTN-MD17	22,0	5,8	2,11	0,0 °	■		■				■												
ONEU090520ZZTN4-M12	21,41	6,8	6,3	20,0 °	■		■					■											
ONEU090520ZZTN4-M14	21,41	5,8	6,3	15,0 °	■		■	■			■	■				■				■			

■ Stock standard

Subject to change refer to current price- and stock-list

RD..05/06/07/08/10



RDHT-Exx



RDHW-MDxx



RDKW-MDxx

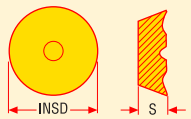


Designation	INSD	S	Cutting rake	Grades																		
				Coated																Uncoated		
				MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
RDHT06T1M0-E02	6,0	2,18	18,0 °															■				■
RDHT0803M0-E03	8,0	3,18	20,0 °												■				■			■
RDHW0501M0-MD01	5,0	1,51	0,0 °				■												■			
RDHW06T1M0-MD02	6,0	2,18	0,0 °				■				■					■		■	■			
RDHW0702M0-MD03	7,0	2,38	0,0 °				■												■			
RDHW0702M0T-MD04	7,0	2,38	0,0 °													■						
RDHW0803M0-MD03	8,0	3,18	0,0 °				■					■						■	■			
RDKW0803M0T-MD05	8,0	3,18	0,0 °			■					■		■			■	■		■			
RDHT10T3M0-8-E04	10,0	3,97	20,0 °																■			■
RDHT10T3M0T-8-M11	10,0	3,97	16,0 °		■							■							■			
RDHW10T3M0-8-MD04	10,0	3,97	0,0 °				■												■			
RDHW10T3M0T-8-MD06	10,0	3,97	0,0 °					■														
RDKT10T3M0T-6-M05	10,0	3,97	16,0 °			■						■	■						■			
RDKT10T3M0T-8-M05	10,0	3,97	16,0 °		■				■			■	■		■				■			
RDKT10T3M0T-8-M07	10,0	3,97	11,0 °			■			■		■		■		■				■			
RDKW10T3M0T-6-MD06	10,0	3,97	0,0 °										■			■			■			
RDKW10T3M0T-8-MD06	10,0	3,97	0,0 °	■		■	■				■		■			■	■		■			

■ Stock standard

Subject to change refer to current price- and stock-list

REHR16

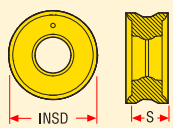


M14/MD15

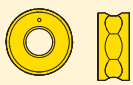


Designation	INSD	S	Cutting rake	Grades																		
				Coated																Uncoated		
				MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
REHR1605M0T-MD15	16,0	5,56		■																		

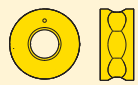
RNMU12



M10



ME10

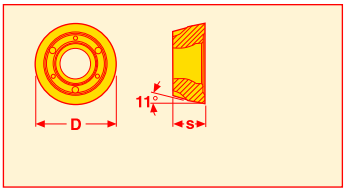


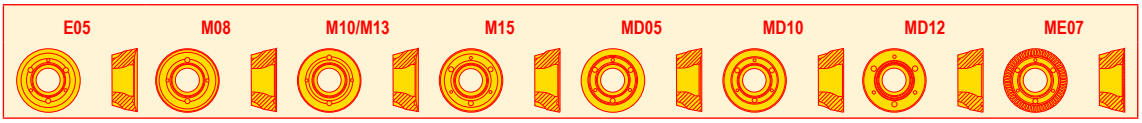
Designation	INSD	S	Cutting rake	Grades																		
				Coated																Uncoated		
				MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
RNMU1204M0-ME10	12,0	4,8	27,0 °		■						■	■	■		■				■			
RNMU1204M0T-M10	12,0	4,8	20,0 °		■	■						■	■		■				■			

■ Stock standard

Subject to change refer to current price- and stock-list

RP..12



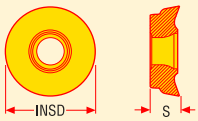


Designation	INSD	S	Cutting rake	Grades																		
				Coated																Uncoated		
				MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
RPHT1204M0T-4-M08	12,0	4,76	16,0 °										■		■				■			
RPKT1204M0T-4-M10	12,0	4,76	11,0 °		■																	
RPHT1204M0T-4-M13	12,0	4,76	16,0 °		■							■	■		■							
RPHT1204M0-6-E05	12,0	4,76	20,0 °									■							■			■
RPHT1204M0T-6-ME07	12,0	4,76	20,0 °						■			■			■				■			
RPHT1204M0T-6-M08	12,0	4,76	16,0 °			■			■			■	■		■				■			
RPHT1204M0T-6-M13	12,0	4,76	16,0 °			■						■	■		■				■			
RPKT1204M0T-6-M15	12,0	4,76	15,0 °	■		■					■		■		■				■			
RPKW1204M0T-6-MD10	12,0	4,76	0,0 °	■		■	■				■											
RPHW1204M0T-6-MD12	12,0	4,76	0,0 °					■														
RPHW1204M0-6-MD05	12,0	4,76	0,0 °				■	■				■							■			

■ Stock standard

Subject to change refer to current price- and stock-list

RP..16/19/20



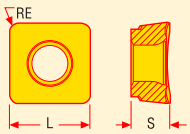


Designation	INSD	S	Cutting rake	Grades																		
				Coated																Uncoated		
				MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
RPHT1605M0T-6-ME11	16,0	5,56	21,0 °									■							■			
RPHT1605M0T-6-M12	16,0	5,56	15,0 °																■			
RPKT1605M0T-6-M18	16,0	5,56	15,0 °			■							■									
RPKW1605M0T-6-MD20	16,0	5,56	0,0 °	■		■					■		■									
RPHT1605M0T-8-ME11	16,0	5,56	21,0 °		■				■			■	■		■				■			
RPHT1605M0T-8-M12	16,0	5,56	15,0 °		■				■			■							■			
RPKT1605M0T-8-M12	16,0	5,56	15,0 °			■							■		■							
RPKT1605M0T-8-M18	16,0	5,56	15,0 °	■		■	■				■		■		■				■			
RPKW1605M0T-8-MD20	16,0	5,56	0,0 °	■		■										■						
RPHT2006M0T-ME12	20,0	6,35	20,0 °		■	■			■			■	■		■				■			
RPKT2006M0T-M15	20,0	6,35	15,0 °			■							■		■				■			
RPKT2006M0T-M20	20,0	6,35	15,0 °	■		■					■		■		■		■		■			
RPKW2006M0-MD10	20,0	6,35	0,0 °															■	■			
RPKW2006M0T-MD22	20,0	6,35	0,0 °	■							■		■			■	■					

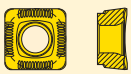
■ Stock standard

Subject to change refer to current price- and stock-list

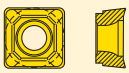
SC..12



ME10



M10/M11/M14/MD15/MD16

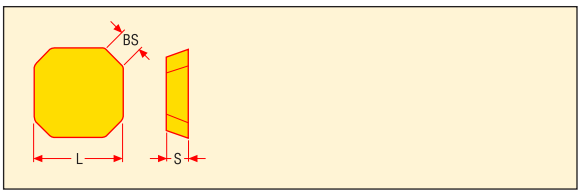


Designation	L	S	RE	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SCET120612R-M10	12,673	6,35	1,2	20,0 °									■										
SCET120612T-ME10	12,7	6,35	1,2	22,0 °									■							■			
SCET120612T-M11	12,7	6,35	1,2	14,0 °	■		■				■					■				■			
SCET120612T-M14	12,7	6,35	1,2	15,0 °			■				■		■			■				■	■		
SCET120612T-MD15	12,7	6,35	1,2	15,0 °	■			■								■							
SCET120630T-M14	12,7	6,35	3,0	15,0 °			■	■				■	■	■		■				■			
SCET120630T-MD16	12,7	6,35	3,0	15,0 °	■		■							■		■				■			
SCEX120660T-M14	12,7	6,35	6,0	15,0 °												■							
SCMT120612T-M14	12,7	6,35	1,2	15,0 °												■				■			

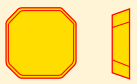
■ Stock standard

Subject to change refer to current price- and stock-list

SEAN12

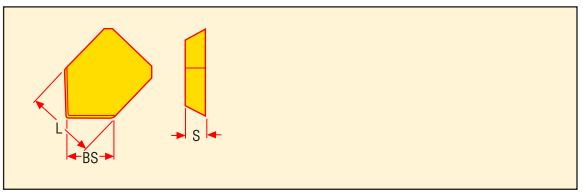


E12/M14/M15/M18/M19MD15



Designation	L	S	BS	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SEAN1203AFN-E12	12,7	3,18	1,5	0,0 °													■		■		■		
SEAN1203AFTN-M14	12,7	3,18	1,5	0,0 °											■	■					■		
SEAN1303AFN-E12	13,44	3,36	3,5	0,0 °																	■		
SEAN1303AFTN-M14	13,44	3,36	3,5	0,0 °												■							
SEAN1303AFTN-M15	13,44	3,36	3,5	0,0 °							■												
SEAN1604AFN-E15	16,8	4,79	3,5	0,0 °																	■		
SEAN1604AFTN-M18	16,8	4,79	4,1	0,0 °												■							
SEAN1604AFTN-M19	16,8	4,79	4,1	0,0 °							■												

SEAN12-ZZ



Size	Dimensions in mm		
	L	S	BS
SE..12..ZZ	12,7	3,18	7,3
SE..1203	12,7	3,18	7,3
SE..15..ZZ	15,87	4,76	9,3

M15/M18/MD15

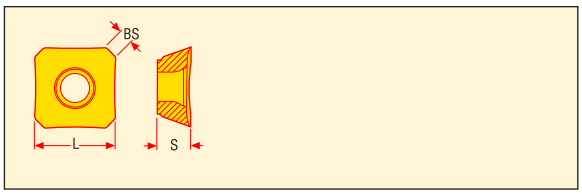


Designation	L	S	BS	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SEAN1203ZZTN-M15	12,7	3,18	7,3	0,0 °							■												
SEAN1203ZZTN-MD15	12,7	3,18	7,3	0,0 °	■																		
SEAN1504ZZTN-M18	15,87	4,76	9,3	0,0 °							■												

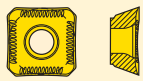
■ Stock standard

Subject to change refer to current price- and stock-list

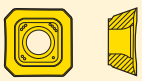
SE.X09



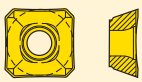
D09/M05/ME07



E04

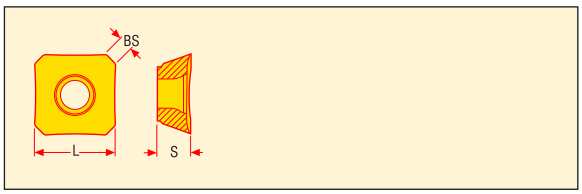


ME06/M08

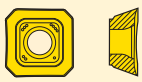


Designation	L	S	BS	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SEEX09T3AFN-E04	9,52	3,97	1,5	25,0 °													■			■		■	
SEEX09T3AFN-M05	9,52	3,97	1,5	0,0 °				■					■						■	■			
SEEX09T3AFTN-M08	9,52	3,97	1,5	0,0 °							■	■			■	■				■			
SEEX09T3AFTN-ME07	9,52	3,97	1,5	22,0 °			■			■					■	■				■			
SEEX09T3AFTN-D09	9,52	3,97	1,5	0,0 °	■																		
SEMX09T3AFTN-M08	9,52	3,97	1,5	0,0 °			■			■						■				■			
SEMX09T3AFTN-ME06	9,52	3,97	1,5	25,0 °			■									■				■			

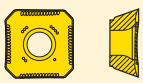
SE.X12



E08/MD18MD19



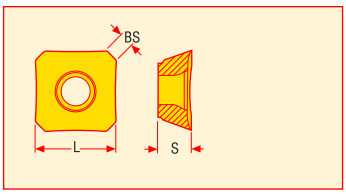
ME11/ME12/M10/M14/M15



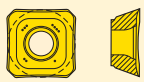
Designation	L	S	BS	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SEEX1204AFN-E08	12,7	4,76	1,5	25,0 °																■			■
SEEX1204AFTN-ME11	12,7	4,76	1,5	18,0 °			■			■						■				■			
SEEX1204AFN-M10	12,7	4,76	1,5	7,0 °			■	■		■			■			■			■	■			
SEEX1204AFTN-M14	12,7	4,76	1,5	7,0 °	■		■			■	■	■				■				■			
SEEX1204ZZTN-M14	12,7	4,76	7,4	0,0 °	■		■				■					■			■	■			
SEEX1204AFTN-MD18	12,7	4,76	1,5	0,0 °	■			■			■					■			■	■			
SEMX1204AFTN-ME12	12,7	4,76	1,5	18,0 °			■			■						■				■			
SEMX1204AFTN-M15	12,7	4,76	1,5	7,0 °	■		■			■	■	■				■				■			
SEMX1204AFTN-MD19	12,7	4,76	1,5	0,0 °	■			■			■					■							

■ Stock standard
Subject to change refer to current price- and stock-list

SE.X15



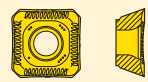
E10



M12/M17MD20



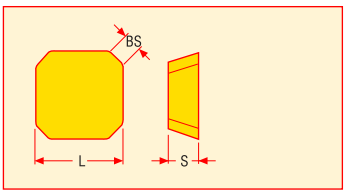
ME15



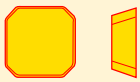
Designation	L	S	BS	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SEEX1505AFN-E10	15,87	5,56	1,8	25,0 °																			■
SEEX1505AFN-M12	15,87	5,56	1,8	5,0 °			■						■			■				■			
SEEX1505AFTN-M17	15,87	5,56	1,8	5,0 °	■		■				■	■				■				■			
SEEX1505ZZTN-M17	15,87	5,56	9,4	5,0 °			■									■							
SEMX1505AFTN-ME15	15,87	5,56	1,8	21,0 °												■				■			
SEMX1505AFTN-M18	15,87	5,56	1,8	5,0 °	■		■				■	■				■				■			
SEMX1505AFTN-MD20	15,87	5,56	1,8	0,0 °	■		■	■			■					■							

■ Stock standard
Subject to change refer to current price- and stock-list

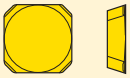
SE..12/15



E12/E10/E15/M14/M18/MD16/MD20/MD21/D16



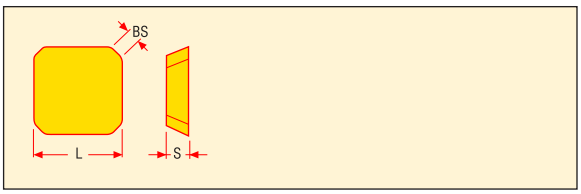
M13/MD14

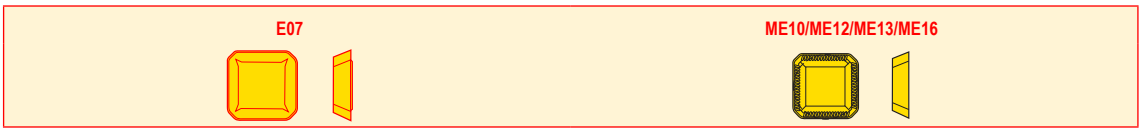


Designation	L	S	BS	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SEEX1203AFTN-M13	12,77	3,18	8,0	0,0 °												■							
SEEX1203AFTN-MD14	12,77	3,18	8,0	0,0 °					■		■						■					■	
SEKN1203AFTN-E10	12,7	3,18	2,3	0,0 °															■				
SEKN1203AFN-E12	12,7	3,18	1,6	0,0 °							■									■	■		
SEKN1203AFTN-M14	12,7	3,18	1,5	0,0 °	■		■				■	■			■	■				■			
SEKN1203AFTN-D16	12,7	3,18	1,6	0,0 °	■																		
SEKN1204AFTN-M18	15,87	4,76	1,5	0,0 °							■					■							
SEKN1504AFN-E15	15,87	4,76	1,9	0,0 °																	■		
SEKN1504AFTN-M18	15,87	4,76	1,5	0,0 °			■				■				■	■				■			
SEKN1504AFTN-MD20	15,87	4,76	1,9	0,0 °	■																		

■ Stock standard
Subject to change refer to current price- and stock-list

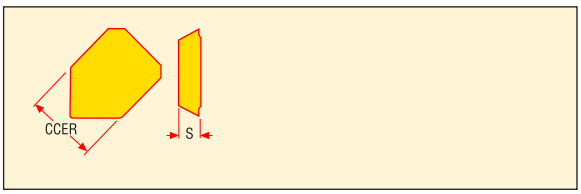
SEKR12/15/16

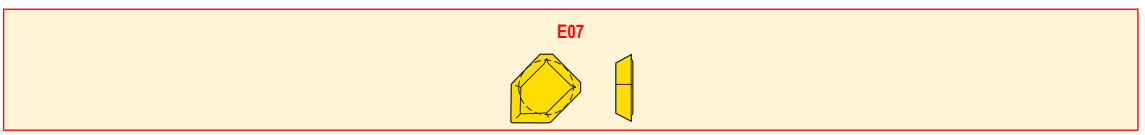




Designation	L	S	BS	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SEKR1203AFN-E07	12,7	3,18	1,5	18,0 °											■				■	■	■		
SEKR1203AFTN-ME10	12,7	3,18	1,5	20,0 °											■	■				■	■		
SEKR1203AFTN-ME13	12,7	3,18	1,5	24,0 °			■								■	■				■	■		
SEKR1204AFTN-ME16	12,7	4,76	1,5	20,0 °											■								
SEKR1303AFTN-ME13	13,44	3,36	3,5	24,0 °																■			
SEKR1504AFTN-ME12	15,87	4,76	1,5	20,0 °												■							
SEKR1504AFTN-ME16	15,87	4,76	1,5	20,0 °											■	■							
SEKR1604AFTN-ME16	16,8	4,79	4,1	20,0 °											■								

SEKR..ZZ

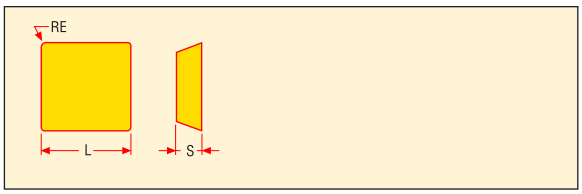


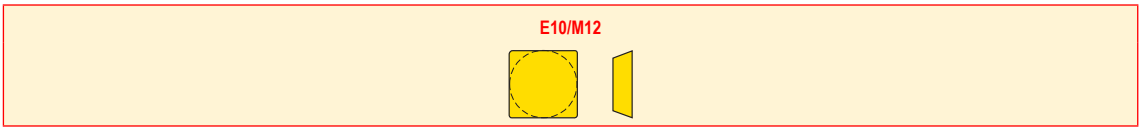


Designation	CCER	S	Cutting rake	Grades																		
				Coated																Uncoated		
				MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SEKR1203ZZN-E07	–	3,175	18,0 °																	■		

■ Stock standard
Subject to change refer to current price- and stock-list

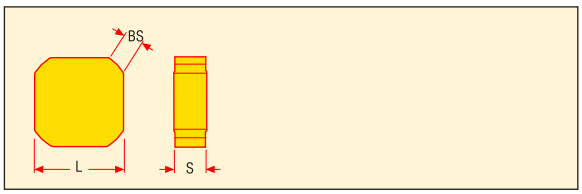
SENN

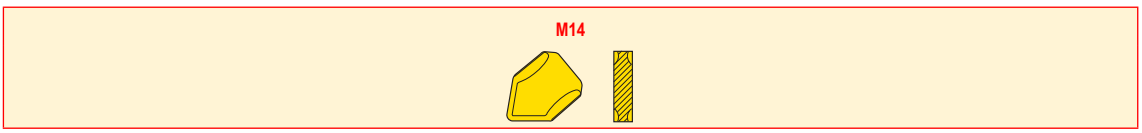




Designation	L	S	RE	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SENN120308-E10	12,7	3,175	0,8	0,0 °																■		
SENN120308T-M12	12,7	3,175	0,8	0,0 °																■			

SNH.15

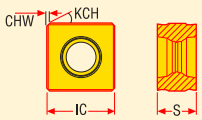




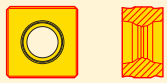
Designation	L	S	BS	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SNHF150412TN-M14	15,87	4,76	–	8,0 °							■												
SNHF150412TN-M14-H	15,87	4,76	–	8,0 °								■											
SNHF1504XNN-M14	15,87	4,76	1,37	15,0 °							■												

■ Stock standard
Subject to change refer to current price- and stock-list

SNHX11



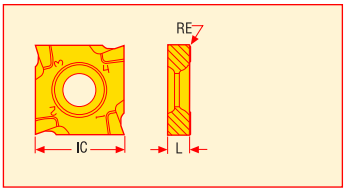
M11/M12



Designation	IC	S	CHW	KCH°	Cutting rake	Grades																	
						Coated															Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SNHX1106TN8-M11	11,0	6,35	0,5	45,0	10,0 °			■									■				■		
SNHX1406TN8-M12	14,5	6,35	0,8	45,0	10,0 °			■									■				■		

■ Stock standard
Subject to change refer to current price- and stock-list

SNHQ11



E05/M07

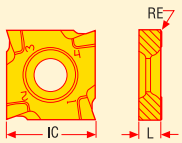


Designation	IC	L	RE	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SNHQ110202EL4-E05	11,0	2,3	0,2	20,0 °																			■
SNHQ110202ER4-E05	11,0	2,3	0,2	20,0 °																			■
SNHQ110202TL4-M07	11,0	2,3	0,2	20,0 °																■			
SNHQ110202TR4-M07	11,0	2,3	0,2	20,0 °																■			
SNHQ110204TL4-M07	11,0	2,3	0,4	20,0 °			■												■	■			
SNHQ110204TR4-M07	11,0	2,3	0,4	20,0 °			■												■	■			
SNHQ110208TL4-M07	11,0	2,3	0,8	20,0 °						■										■			
SNHQ110208TR4-M07	11,0	2,3	0,8	20,0 °						■										■			
SNHQ110212TL4-M07	11,0	2,3	1,2	20,0 °																■			
SNHQ110212TR4-M07	11,0	2,3	1,2	20,0 °																■			
SNHQ110216TL4-M07	11,0	2,3	1,6	20,0 °																■			
SNHQ110216TR4-M07	11,0	2,3	1,6	20,0 °																■			
SNHQ110220TL4-M07	11,0	2,3	2,0	20,0 °															■				
SNHQ110220TR4-M07	11,0	2,3	2,0	20,0 °															■				
SNHQ110302EL4-E05	11,0	2,7	0,2	20,0 °																			■
SNHQ110302ER4-E05	11,0	2,7	0,2	20,0 °																			■
SNHQ110302TL4-M07	11,0	2,7	0,2	20,0 °																■			
SNHQ110302TR4-M07	11,0	2,7	0,2	20,0 °																■			
SNHQ110304TL4-M07	11,0	2,7	0,4	20,0 °			■												■	■			
SNHQ110304TR4-M07	11,0	2,7	0,4	20,0 °			■												■	■			
SNHQ110308TL4-M07	11,0	2,7	0,8	20,0 °																■			
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SNHQ110312TL4-M07	11,0	2,7	1,2	20,0 °																■			
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SNHQ110316TL4-M07	11,0	2,7	1,6	20,0 °																■			
SNHQ110316TR4-M07	11,0	2,7	1,6	20,0 °																■			
SNHQ110320TL4-M07	11,0	2,7	2,0	20,0 °															■				
SNHQ110320TR4-M07	11,0	2,7	2,0	20,0 °															■				

■ Stock standard

Subject to change refer to current price- and stock-list

SNHQ1203/1204



EL/ER2-E05/M07



xL/xR4-E05/M07

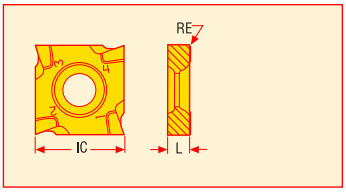


Designation	IC	L	RE	Cutting rake	Grades																	
					Coated															Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SNHQ120302EL4-E05	12,7	3,2	0,2	20,0 °																		■
SNHQ120302ER4-E05	12,7	3,2	0,2	20,0 °																		■
SNHQ120302TL4-M07	12,7	3,2	0,2	20,0 °																■			
SNHQ120302TR4-M07	12,7	3,2	0,2	20,0 °																■			
SNHQ120304TL4-M07	12,7	3,2	0,4	20,0 °			■												■	■			
SNHQ120304TR4-M07	12,7	3,2	0,4	20,0 °			■												■	■			
SNHQ120308TL4-M07	12,7	3,2	0,8	20,0 °			■													■			
SNHQ120308TR4-M07	12,7	3,2	0,8	20,0 °			■													■			
SNHQ120310TL4-M07	12,7	3,2	1,0	20,0 °																■			
SNHQ120310TR4-M07	12,7	3,2	1,0	20,0 °																■			
SNHQ120312TL4-M07	12,7	3,2	1,2	20,0 °																■			
SNHQ120312TR4-M07	12,7	3,2	1,2	20,0 °																■			
SNHQ120316TL4-M07	12,7	3,2	1,6	20,0 °																■			
SNHQ120316TR4-M07	12,7	3,2	1,6	20,0 °																■			
SNHQ120320TL4-M07	12,7	3,2	2,0	20,0 °																■			
SNHQ120320TR4-M07	12,7	3,2	2,0	20,0 °																■			
SNHQ120324EL2-M07	12,7	3,2	2,4	20,0 °																■			
SNHQ120324ER2-M07	12,7	3,2	2,4	20,0 °																■			
SNHQ120330EL2-M07	12,7	3,2	3,0	20,0 °																■			
SNHQ120330ER2-M07	12,7	3,2	3,0	20,0 °																■			
SNHQ120404EL4-E05	12,7	4,0	0,4	20,0 °																			■
SNHQ120404ER4-E05	12,7	4,0	0,4	20,0 °																			■
SNHQ120402TL4-M07	12,7	4,0	0,2	20,0 °																■			
SNHQ120402TR4-M07	12,7	4,0	0,2	20,0 °																■			
SNHQ120404TL4-M07	12,7	4,0	0,4	20,0 °															■	■			
SNHQ120404TR4-M07	12,7	4,0	0,4	20,0 °															■	■			
SNHQ120408TL4-M07	12,7	4,0	0,8	20,0 °			■												■	■			
SNHQ120408TR4-M07	12,7	4,0	0,8	20,0 °			■												■	■			
SNHQ120412TL4-M07	12,7	4,0	1,2	20,0 °																■			
SNHQ120412TR4-M07	12,7	4,0	1,2	20,0 °																■			
SNHQ120416TL4-M07	12,7	4,0	1,6	20,0 °																■			
SNHQ120416TR4-M07	12,7	4,0	1,6	20,0 °																■			
SNHQ120420TL4-M07	12,7	4,0	2,0	20,0 °																■			
SNHQ120420TR4-M07	12,7	4,0	2,0	20,0 °																■			
SNHQ120424EL2-M07	12,7	4,0	2,4	20,0 °																■			
SNHQ120424ER2-M07	12,7	4,0	2,4	20,0 °																■			
SNHQ120431EL2-M07	12,7	4,0	3,1	20,0 °																■			
SNHQ120431ER2-M07	12,7	4,0	3,1	20,0 °																■			
SNHQ120435EL2-M07	12,7	4,0	3,5	20,0 °																■			
SNHQ120435ER2-M07	12,7	4,0	3,5	20,0 °																■			

■ Stock standard

Subject to change refer to current price- and stock-list

SNHQ12045



EL/ER2-M07



xL/xR4-E05/M07

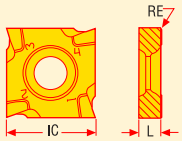


Designation	IC	L	RE	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SNHQ1204504EL4-E05	12,7	4,5	0,4	20,0 °																			■
SNHQ1204504ER4-E05	12,7	4,5	0,4	20,0 °																			■
SNHQ1204502TL4-M07	12,7	4,5	0,2	20,0 °																■			
SNHQ1204502TR4-M07	12,7	4,5	0,2	20,0 °																■			
SNHQ1204504TL4-M07	12,7	4,5	0,4	20,0 °			■												■	■			
SNHQ1204504TR4-M07	12,7	4,5	0,4	20,0 °			■												■	■			
SNHQ1204508TL4-M07	12,7	4,5	0,8	20,0 °			■													■			
SNHQ1204508TR4-M07	12,7	4,5	0,8	20,0 °			■													■			
SNHQ1204512TL4-M07	12,7	4,5	1,2	20,0 °																■			
SNHQ1204512TR4-M07	12,7	4,5	1,2	20,0 °																■			
SNHQ1204516TL4-M07	12,7	4,5	1,6	20,0 °																■			
SNHQ1204516TR4-M07	12,7	4,5	1,6	20,0 °																■			
SNHQ1204520TL4-M07	12,7	4,5	2,0	20,0 °																■			
SNHQ1204520TR4-M07	12,7	4,5	2,0	20,0 °																■			
SNHQ1204524EL2-M07	12,7	4,5	2,4	20,0 °																■			
SNHQ1204524ER2-M07	12,7	4,5	2,4	20,0 °																■			
SNHQ1204531EL2-M07	12,7	4,5	3,1	20,0 °																■			
SNHQ1204531ER2-M07	12,7	4,5	3,1	20,0 °																■			
SNHQ1204540EL2-M07	12,7	4,5	4,0	20,0 °																■			
SNHQ1204540ER2-M07	12,7	4,5	4,0	20,0 °																■			

■ Stock standard

Subject to change refer to current price- and stock-list

SNHQ1205



ER/EL2-M07



xL/xR4-E05/M07



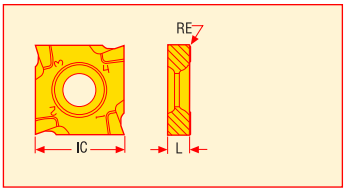
Designation	IC	L	RE	Cutting rake	Grades																	
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SNHQ120504EL4-E05	12,7	5,4	0,4	20,0 °																		■
SNHQ120504ER4-E05	12,7	5,4	0,4	20,0 °																		■
SNHQ120502TL4-M07	12,7	5,4	0,2	20,0 °																■			
SNHQ120502TR4-M07	12,7	5,4	0,2	20,0 °																■			
SNHQ120504TL4-M07	12,7	5,4	0,4	20,0 °			■			■									■	■			
SNHQ120504TR4-M07	12,7	5,4	0,4	20,0 °			■			■									■	■			
SNHQ120508TL4-M07	12,7	5,4	0,8	20,0 °			■												■	■			
SNHQ120508TR4-M07	12,7	5,4	0,8	20,0 °			■												■	■			
SNHQ120510TL4-M07	12,7	5,4	1,0	20,0 °																■			
SNHQ120510TR4-M07	12,7	5,4	1,0	20,0 °																■			
SNHQ120512TL4-M07	12,7	5,4	1,2	20,0 °																■			
SNHQ120512TR4-M07	12,7	5,4	1,2	20,0 °																■			
SNHQ120516TL4-M07	12,7	5,4	1,6	20,0 °																■			
SNHQ120516TR4-M07	12,7	5,4	1,6	20,0 °																■			
SNHQ120520TL4-M07	12,7	5,4	2,0	20,0 °																■			
SNHQ120520TR4-M07	12,7	5,4	2,0	20,0 °																■			
SNHQ120524EL2-M07	12,7	5,4	2,4	20,0 °																■			
SNHQ120524ER2-M07	12,7	5,4	2,4	20,0 °																■			
SNHQ120531EL2-M07	12,7	5,4	3,1	20,0 °																■			
SNHQ120531ER2-M07	12,7	5,4	3,1	20,0 °																■			
SNHQ120540EL2-M07	12,7	5,4	4,0	20,0 °																■			
SNHQ120540ER2-M07	12,7	5,4	4,0	20,0 °																■			
SNHQ120550EL2-M07	12,7	5,4	5,0	20,0 °																■			
SNHQ120550ER2-M07	12,7	5,4	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



EL/ER2-M07



xL/xR4-E05/M07



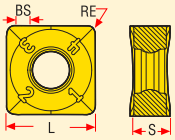
Designation	IC	L	RE	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SNHQ120704EL4-E05	12,7	7,0	0,4	20,0 °																			■
SNHQ120704ER4-E05	12,7	7,0	0,4	20,0 °																			■
SNHQ120704TL4-M07	12,7	7,0	0,4	20,0 °						■										■			
SNHQ120704TR4-M07	12,7	7,0	0,4	20,0 °						■										■			
SNHQ120708TL4-M07	12,7	7,0	0,8	20,0 °			■												■	■			
SNHQ120708TR4-M07	12,7	7,0	0,8	20,0 °			■												■	■			
SNHQ120712TL4-M07	12,7	7,0	1,2	20,0 °																■			
SNHQ120712TR4-M07	12,7	7,0	1,2	20,0 °																■			
SNHQ120716TL4-M07	12,7	7,0	1,6	20,0 °																■			
SNHQ120716TR4-M07	12,7	7,0	1,6	20,0 °																■			
SNHQ120720TL4-M07	12,7	7,0	2,0	20,0 °																■			
SNHQ120720TR4-M07	12,7	7,0	2,0	20,0 °																■			
SNHQ120724EL2-M07	12,7	7,0	2,4	20,0 °																■			
SNHQ120724ER2-M07	12,7	7,0	2,4	20,0 °																■			
SNHQ120731EL2-M07	12,7	7,0	3,1	20,0 °																■			
SNHQ120731ER2-M07	12,7	7,0	3,1	20,0 °																■			
SNHQ120740EL2-M07	12,7	7,0	4,0	20,0 °																■			
SNHQ120740ER2-M07	12,7	7,0	4,0	20,0 °																■			
SNHQ120750EL2-M07	12,7	7,0	5,0	20,0 °																■			
SNHQ120750ER2-M07	12,7	7,0	5,0	20,0 °																■			
SNHQ120760EL2-M07	12,7	7,0	6,0	20,0 °																■			
SNHQ120760ER2-M07	12,7	7,0	6,0	20,0 °																■			

■ Stock standard

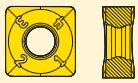
Subject to change refer to current price- and stock-list

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

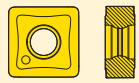
SNMU12/16



M10



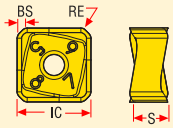
MD13/MD16



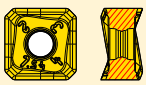
Designation	L	S	BS	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SNMU120408TN-M10	12,0	5,3	0,0	20,0 °	■		■				■	■											
SNMU120410TN-M10	12,0	5,3	1,0	20,0 °	■		■				■	■		■						■			
SNMU120408TN-MD13	12,0	5,0	0,0	0,0 °	■		■				■	■											
SNMU120410TN-MD13	12,0	5,0	1,0	0,0 °	■		■				■	■		■						■			
SNMU160610TN-M10	16,0	7,4	0,0	20,0 °	■		■				■	■											
SNMU160612TN-M10	16,0	7,4	1,2	20,0 °	■		■				■	■		■						■			
SNMU160610TN-MD16	16,0	6,6	0,0	0,0 °	■		■				■	■											
SNMU160612TN-MD16	16,0	6,6	1,2	0,0 °	■		■				■	■		■						■			

■ Stock standard
Subject to change refer to current price- and stock-list

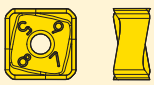
SN.X14/22



ME10



ME12/M12/M18

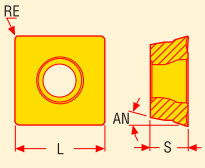


Designation	IC	S	BS	RE	Cutting rake	Grades																		
						Coated															Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SNHX1407ANR-ME10	14,0	6,59	1,5	1,0	20,0 °		■				■			■			■				■			■
SNMX1407ANTR-M10	14,0	6,59	1,5	1,0	17,0 °	■	■	■	■		■	■	■	■	■		■				■			
SNMX1407ANTR-M16	14,0	6,59	1,5	1,0	17,0 °	■		■	■		■	■	■		■		■				■			
SNHX1407ZNR-ME10	14,0	6,59	1,5	1,0	20,0 °		■				■			■			■				■			■
SNMX1407ZNTR-M10	14,0	6,59	1,5	1,0	15,0 °	■	■	■	■		■	■	■	■	■		■				■			
SNMX1407ZNTR-M16	14,0	6,59	1,5	1,0	15,0 °	■		■	■		■	■	■		■		■				■			
SNMX2209ANR-ME12	22,0	8,81	1,5	2,0	20,0 °		■							■							■			
SNMX2209ANTR-M12	22,0	8,81	1,5	2,0	20,0 °		■	■					■	■	■		■				■			
SNMX2209ANTR-M18	22,0	8,81	1,5	2,0	25,0 °	■		■				■	■		■		■							
SNMX2209ZNR-ME12	22,0	8,79	1,5	2,0	20,0 °		■							■							■			
SNMX2209ZNTR-M12	22,0	8,79	1,5	2,0	20,0 °		■	■					■	■							■			
SNMX2209ZNTR-M18	22,0	8,79	1,5	2,0	25,0 °	■		■				■	■		■		■							

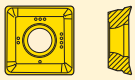
■ Stock standard

Subject to change refer to current price- and stock-list

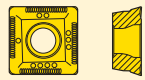
SONX09/12



M10/M12/M14



ME06/ME08

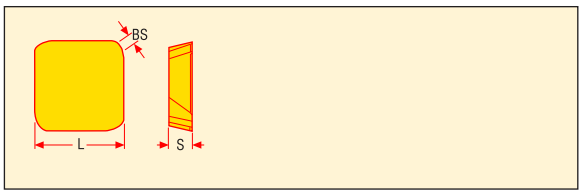


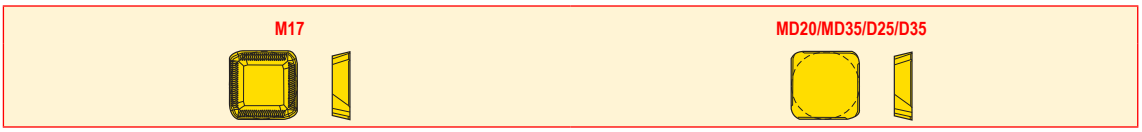
Designation	L	S	AN	RE	Cutting rake	Grades																	
						Coated															Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SONX09T304TR-ME06	9,55	3,97	15,0	0,4	22,0 °															■			
SONX09T304TR-M10	9,55	3,97	15,0	0,4	19,0 °							■					■				■			
SONX09T308TR-M10	9,55	3,97	15,0	0,8	19,0 °			■				■	■								■			
SONX120508TR-ME08	12,7	5,17	15,0	0,8	24,0 °																■			
SONX120508TR-M12	12,7	5,17	15,0	0,8	16,0 °	■		■				■	■				■				■			
SONX150508TR-M14	15,8	5,56	15,0	0,8	22,0 °			■				■					■				■			
SONX150508TR-ME10	15,8	5,56	15,0	0,8	19,0 °																■			

■ Stock standard

Subject to change refer to current price- and stock-list

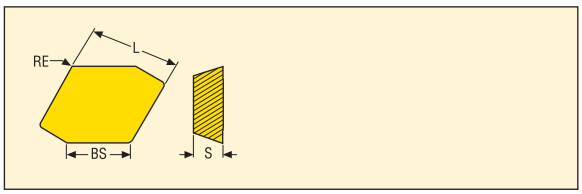
SPE.

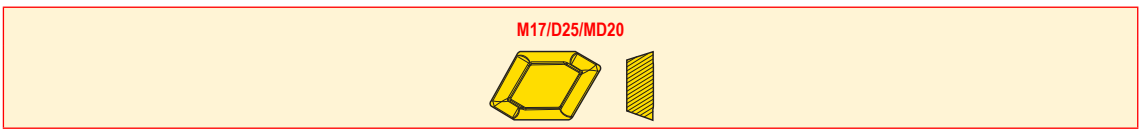




Designation	L	S	BS	Cutting rake	Grades																	
					Coated															Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SPER1906ZETR-M17	19,05	6,35	1,8	17,0 °						■						■						
SPEN1906ZETL-MD20	19,05	6,35	1,8	0,0 °			■															
SPEN1906ZETR-MD20	19,05	6,35	1,43	0,0 °			■								■	■						
SPEN1906ZETR-D25	19,05	6,35	1,8	0,0 °	■		■															
SPEN2807ZETR-D35	28,575	7,938	8,5	0,0 °	■																	

SPE.ZZ



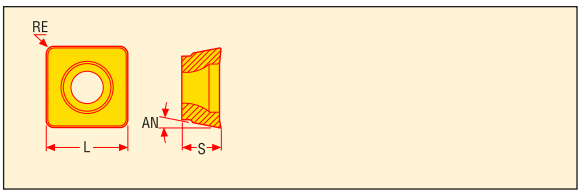


Designation	L	S	BS	RE	Cutting rake	Grades																
						Coated														Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SPER1906ZZTR-M17	20,0	6,35	12,0	–	17,0 °			■															
SPEN1906ZZTR-D25	20,0	6,35	12,0	–	0,0 °	■		■															
SPEN1906ZZTR-MD20	20,0	6,35	12,0	–	0,0 °			■															

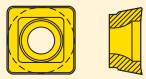
■ Stock standard

Subject to change refer to current price- and stock-list

SPMT

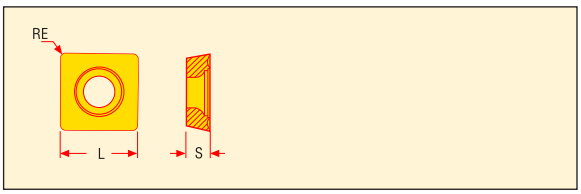


M08



Designation	L	S	AN	RE	Cutting rake	Grades																	
						Coated															Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SPMT100408T-M08	10,0	4,76	11,0	0,8	10,0 °																■			

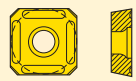
SPMX



-75



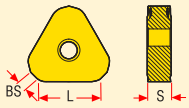
AP-75



Designation	L	S	RE	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SPMX0602AP-75	6,35	2,38	–	0,0 °																■	■		
SPMX0703AP-75	7,94	3,18	–	0,0 °																■			
SPMX0903AP-75	9,525	3,18	–	0,0 °												■				■	■		
SPMX12T3AP-75	12,7	3,97	–	0,0 °												■				■			
SPMX060204-75	6,35	2,38	0,4	20,0 °											■					■			
SPMX070304-75	7,94	3,18	0,4	16,0 °											■					■			
SPMX090304-75	9,525	3,18	0,4	16,0 °											■					■			
SPMX12T308-75	12,7	3,97	0,8	14,0 °																■			

■ Stock standard
Subject to change refer to current price- and stock-list

TNHF



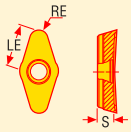
ME08



Designation	L	S	BS	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
TNHF1204ANN-ME08	22,17	4,762	1,4	15,0 °								■											

■ Stock standard
Subject to change refer to current price- and stock-list

VPGX



E06/E10



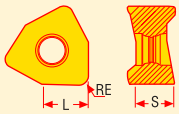
Designation	LE	S	RE	Cutting rake	Grades																	
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
VPGX220605FR-E06	14,2	6,35	0,46	25,0 °																	■	
VPGX220605ER-E10	14,2	6,35	0,46	25,0 °																		■
VPGX220608PDER-E10	14,2	6,35	0,85	25,0 °																		■
VPGX220616ER-E10	13,7	6,35	1,64	25,0 °																		■
VPGX220620ER-E10	14,2	6,35	2,05	25,0 °																		■
VPGX220624ER-E10	14,2	6,35	2,5	25,0 °																		■
VPGX220631EN-E10	14,2	6,35	3,18	25,0 °																		■
VPGX220631FN-E06	14,2	6,35	3,18	25,0 °																	■	
VPGX220640ER-E10	14,2	6,35	4,12	25,0 °																		■
VPGX220663ER-E10	11,8	6,35	6,35	25,0 °																		■

■ Stock standard

*Insert with wiper flat 1,5mm

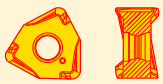
Subject to change refer to current price- and stock-list

XNEX04/08



BS = Wiper flat width

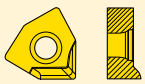
M06/M08



ME09/M08/M13/MD15



ZZR-M11

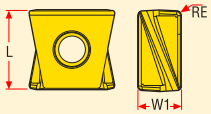


Designation	L	S	BS	RE	Cutting rake	Grades																		
						Coated																Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
XNEX040304R-M06	4,0	3,31	0,8	0,4	32,6 °				■					■							■			
XNEX040308R-M06	4,0	3,31	0,4	0,8	32,6 °			■	■		■			■							■			
XNEX040304TR-M08	4,0	3,29	0,8	0,4	27,0 °	■		■	■			■	■								■			
XNEX040308TR-M08	4,0	3,29	0,4	0,8	27,0 °	■		■	■		■	■	■								■			
XNEX080604TR-M13	7,5	6,45	1,8	0,4	22,0 °				■								■				■			
XNEX080604TR-ME09	7,5	6,45	1,8	0,4	27,0 °			■	■												■			
XNEX080608TR-ME09	7,5	6,45	1,4	0,8	27,0 °	■		■	■		■	■	■				■				■			
XNEX080608R-M08	7,5	6,45	1,4	0,8	24,0 °		■		■		■			■	■		■				■			■
XNEX080608TR-M13	7,5	6,45	1,3	0,8	22,0 °	■		■	■			■	■				■				■			
XNEX080608TR-MD15	7,5	6,45	1,4	0,8	17,0 °	■		■	■			■	■				■				■			
XNEX080612TR-ME09	7,5	6,45	1,0	1,2	27,0 °			■			■		■				■				■			
XNEX080612TR-M13	7,5	6,45	0,9	1,2	22,0 °			■				■	■								■			
XNEX080612TR-MD15	7,5	6,45	1,0	1,2	17,0 °	■		■				■												
XNEX080616TR-ME09	7,5	6,45	0,6	1,6	27,0 °			■	■		■		■				■				■			
XNEX080616TR-M13	7,5	6,45	0,5	1,6	22,0 °	■		■	■			■	■				■				■			
XNEX080616TR-MD15	7,5	6,45	0,7	1,6	17,0 °	■		■	■			■	■				■				■			
XNEX080608TL-M13	7,5	6,45	1,3	0,8	22,0 °			■						■			■				■			
XNEX080616TL-M13	7,5	6,45	0,5	1,6	22,0 °			■													■			
XNEX080608ZZR-M11	7,5	6,45	6,0	0,8	19,0 °				■			■									■			

■ Stock standard

Subject to change refer to current price- and stock-list

XNHQ09/12/14/17



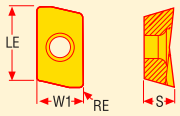
E07/E09/E10/E12/M08/M10/M11/M13



Designation	W1	L	RE	Cutting rake	Grades																	
					Coated															Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
XNHQ090508EN4-E07	5,5	9,3	0,8	21,0 °																■			
XNHQ090504TN4-M08	5,5	9,3	0,4	16,0 °																■			
XNHQ090508TN4-M08	5,5	9,3	0,8	16,0 °			■					■								■			
XNHQ090512TN4-M08	5,5	9,3	1,2	16,0 °																■			
XNHQ090516TN4-M08	5,5	9,3	1,6	16,0 °			■													■			
XNHQ090520TN4-M08	5,5	9,3	2,0	16,0 °																■			
XNHQ090524TN4-M08	5,5	9,3	2,4	16,0 °																■			
XNHQ090531TN4-M08	5,5	9,3	3,1	16,0 °																■			
XNHQ090540TN4-M08	5,5	9,3	4,0	16,0 °																■			
XNHQ120608EN4-E09	6,5	11,7	0,8	21,0 °																■			
XNHQ120608TN4-M10	6,5	11,7	0,8	16,0 °			■					■								■			
XNHQ120612TN4-M10	6,5	11,7	1,2	16,0 °																■			
XNHQ120616TN4-M10	6,5	11,7	1,6	16,0 °			■													■			
XNHQ120620TN4-M10	6,5	11,7	2,0	16,0 °																■			
XNHQ120624TN4-M10	6,5	11,7	2,4	16,0 °																■			
XNHQ120631TN4-M10	6,5	11,7	3,1	16,0 °																■			
XNHQ120640TN4-M10	6,5	11,7	4,0	16,0 °																■			
XNHQ120650TN4-M10	6,5	11,7	5,0	16,0 °																■			
XNHQ140708EN4-E10	7,5	14,0	0,8	22,0 °																■			■
XNHQ140708TN4-M11	7,5	14,0	0,8	16,0 °			■					■								■			
XNHQ140716TN4-M11	7,5	14,0	1,6	16,0 °			■													■			
XNHQ140720TN4-M11	7,5	14,0	2,0	16,0 °																■			
XNHQ140724TN4-M11	7,5	14,0	2,4	16,0 °																■			
XNHQ140731TN4-M11	7,5	14,0	3,1	16,0 °			■													■			
XNHQ140740TN4-M11	7,5	14,0	4,0	16,0 °																■			
XNHQ140750TN4-M11	7,5	14,0	5,0	16,0 °																■			
XNHQ140760TN4-M11	7,5	14,0	6,0	16,0 °																■			
XNHQ170708EN4-E12	7,5	17,0	0,8	16,0 °																■			
XNHQ170708TN4-M13	7,5	17,0	0,8	16,0 °			■					■								■			
XNHQ170716TN4-M13	7,5	17,0	1,6	16,0 °			■													■			
XNHQ170720TN4-M13	7,5	17,0	2,0	16,0 °																■			
XNHQ170724TN4-M13	7,5	17,0	2,4	16,0 °																■			
XNHQ170731TN4-M13	7,5	17,0	3,1	16,0 °																■			
XNHQ170740TN4-M13	7,5	17,0	4,0	16,0 °																■			
XNHQ170750TN4-M13	7,5	17,0	5,0	16,0 °																■			
XNHQ170760TN4-M13	7,5	17,0	6,0	16,0 °																■			

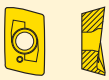
■ Stock standard
Subject to change refer to current price- and stock-list

XO.X06

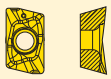


BS = Wiper flat width

E03



M05

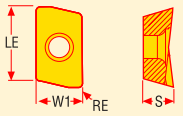


Designation	W1	S	LE	BS	RE	Cutting rake	Grades																		
							Coated																Uncoated		
							MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
XOEX060202FR-E03	4,1	2,45	6,0	1,1	0,2	30,6 °																	■	
XOEX060204FR-E03	4,1	2,45	6,0	0,9	0,4	29,2 °															■		■	
XOMX060202R-M05	4,1	2,45	5,5	1,1	0,2	20,2 °				■										■	■			
XOMX060204R-M05	4,1	2,45	5,5	0,91	0,4	20,2 °				■		■			■					■	■			
XOMX060208R-M05	4,1	2,45	5,5	0,51	0,8	20,2 °				■		■			■				■	■	■			
XOMX060216R-M05	4,1	2,45	5,5	0,64	1,6	20,2 °				■		■			■					■	■			

■ Stock standard

Subject to change refer to current price- and stock-list

XO.X10



BS = Wiper flat width

E05/M06 ME07 M09

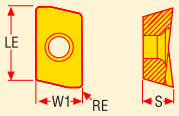


Designation	W1	S	LE	BS	RE	Cutting rake	Grades																		
							Coated																Uncoated		
							MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
XOEX10T304FR-E05	6,9	3,8	9,7	1,3	0,4	21,6 °																■		■	
XOEX10T308FR-E05	6,9	3,8	9,7	1,3	0,8	21,6 °																■		■	
XOEX10T312FR-E05	6,9	3,8	9,7	1,3	1,2	21,6 °																		■	
XOEX10T316FR-E05	6,9	3,8	9,7	1,0	1,6	21,6 °																		■	
XOEX10T320FR-E05	6,9	3,8	9,7	0,6	2,0	21,6 °																■		■	
XOEX10T331FR-E05	6,9	3,8	9,7	0,39	3,1	24,1 °																		■	
XOEX10T302R-M06	6,9	3,8	9,7	1,3	0,2	15,1 °																■			
XOEX10T304R-M06	6,9	3,8	9,7	1,3	0,4	15,1 °			■						■			■				■			
XOEX10T308R-M06	6,9	3,8	9,7	1,3	0,8	15,1 °		■	■			■			■	■		■				■			
XOEX10T312R-M06	6,9	3,8	9,7	1,3	1,2	15,1 °									■	■						■			
XOEX10T316R-M06	6,9	3,8	9,7	1,0	1,6	15,1 °									■							■			
XOEX10T320R-M06	6,9	3,8	9,7	0,6	2,0	18,8 °									■			■							
XOEX10T324R-M06	6,9	3,8	9,7	0,2	2,4	18,3 °									■										
XOEX10T331R-M06	6,9	3,8	9,7	0,4	3,1	17,3 °		■							■	■						■			
XOMX10T304TR-ME07	6,9	3,83	9,3	1,3	0,4	20,4 °	■	■	■	■			■		■	■		■				■			
XOMX10T308TR-ME07	6,9	3,83	9,3	1,3	0,8	20,4 °	■	■	■	■		■	■		■	■		■				■			
XOMX10T312TR-ME07	6,9	3,83	9,3	1,3	1,2	20,4 °			■	■					■			■				■			
XOMX10T316TR-ME07	6,9	3,83	9,3	1,0	1,6	20,4 °		■	■	■		■			■			■				■			
XOMX10T320TR-ME07	6,9	3,83	9,3	0,6	2,0	20,4 °			■	■					■			■				■			
XOMX10T324TR-ME07	6,9	3,83	9,3	0,2	2,4	20,4 °			■						■			■				■			
XOMX10T331TR-ME07	6,9	3,83	9,3	0,4	3,1	20,4 °		■	■						■			■				■			
XOMX10T304TR-M09	6,9	3,83	9,3	1,3	0,4	10,6 °	■		■	■			■	■				■				■			
XOMX10T308TR-M09	6,9	3,83	9,3	1,3	0,8	10,6 °	■		■	■		■	■	■		■		■				■			
XOMX10T312TR-M09	6,9	3,83	9,3	1,3	1,2	10,6 °								■				■				■			
XOMX10T316TR-M09	6,9	3,83	9,3	1,0	1,6	10,6 °												■				■			
XOMX10T320TR-M09	6,9	3,83	9,3	0,6	2,0	10,6 °												■				■			
XOMX10T324TR-M09	6,9	3,83	9,3	0,2	2,4	10,6 °																■			
XOMX10T331TR-M09	6,9	3,83	9,3	0,4	3,1	10,6 °												■				■			

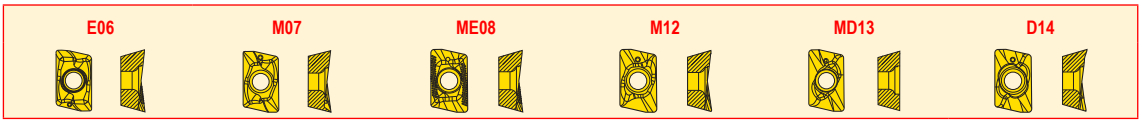
■ Stock standard

Subject to change refer to current price- and stock-list

XO.X12



BS = Wiper flat width

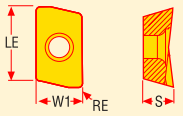


Designation	W1	S	LE	BS	RE	Cutting rake	Grades																	
							Coated															Uncoated		
							MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
XOEX120404FR-E06	8,2	5,03	12,0	2,0	0,4	27,4 °													■			■		■	
XOEX120408FR-E06	8,2	5,03	12,0	1,6	0,8	27,2 °													■			■		■	
XOEX120420FR-E06	8,2	5,03	12,0	0,6	2,0	21,2 °													■			■			
XOEX120416FR-E06	8,2	5,03	12,0	1,2	1,6	26,3 °													■			■			
XOEX120431FR-E06	8,2	5,03	12,0	–	3,1	24,8 °																■			
XOEX120402R-M07	8,2	5,03	12,0	2,0	0,2	20,5 °																■			
XOEX120404R-M07	8,2	5,03	12,0	2,0	0,4	20,5 °			■						■						■	■			
XOEX120408R-M07	8,2	5,03	12,0	1,6	0,8	20,3 °		■	■	■		■			■	■		■			■	■			
XOEX120416R-M07	8,2	5,03	12,0	1,2	1,6	19,1 °		■		■		■			■							■			
XOEX120420R-M07	8,2	5,03	12,0	0,95	2,0	18,6 °						■			■										
XOEX120424R-M07	8,2	5,03	12,0	0,6	2,4	18,6 °									■						■	■			
XOEX120431R-M07	8,2	5,03	12,0	–	3,1	15,0 °		■							■	■		■				■			
XOEX120440R-M07	8,2	5,03	12,0	–	4,0	16,8 °									■							■			
XOEX120463R-M07	8,2	5,03	12,0	–	6,3	15,3 °									■							■			
XOEX120450R-M07	8,2	5,03	12,0	–	5,0	16,8 °									■							■			
XOEX120408ZZR-M07	8,2	5,03	11,1	6,6	0,8	20,3 °				■											■	■			
XOMX120404TR-ME08	8,2	5,07	11,6	2,0	0,4	20,1 °			■				■		■							■			
XOMX120408TR-ME08	8,2	5,07	11,6	1,6	0,8	20,1 °		■	■			■	■	■	■			■				■			
XOMX120412TR-ME08	8,2	5,07	11,6	1,2	1,2	20,1 °			■						■			■				■			
XOMX120416TR-ME08	8,2	5,07	11,6	1,2	1,6	20,1 °		■	■			■						■				■			
XOMX120420TR-ME08	8,2	5,07	11,6	1,0	2,0	20,1 °			■						■			■				■			
XOMX120424TR-ME08	8,2	5,07	11,6	0,92	2,4	20,1 °			■						■			■				■			
XOMX120431TR-ME08	8,2	5,07	11,6	0,6	3,1	20,1 °		■	■			■			■			■				■			
XOMX120440TR-ME08	8,2	5,07	11,6	0,8	4,0	20,1 °		■	■						■			■				■			
XOMX120408TR-M12	8,2	5,07	11,6	1,6	0,8	10,4 °	■		■	■			■	■				■				■			
XOMX120416TR-M12	8,2	5,07	11,6	1,2	1,6	10,4 °				■								■				■			
XOMX120431TR-M12	8,2	5,07	11,6	0,6	3,1	10,4 °				■								■				■			
XOMX120408TR-MD13	8,2	5,07	11,6	1,6	0,8	14,6 °	■		■	■			■	■				■				■			
XOMX120404TR-MD13	8,2	5,07	11,6	2,0	0,4	14,6 °	■						■									■			
XOMX120412TR-MD13	8,2	5,07	11,6	1,2	1,2	14,7 °	■			■			■									■			
XOMX120416TR-MD13	8,2	5,07	11,6	1,2	1,6	14,7 °	■			■			■									■			
XOMX120408TR-D14	8,2	5,07	11,6	1,6	0,8	1,0 °	■		■	■			■								■				
XOMX120431TR-D14	8,2	5,07	11,6	0,6	3,1	1,0 °				■											■				

■ Stock standard

Subject to change refer to current price- and stock-list

XO.X18



BS = Wiper flat width

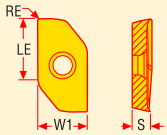


Designation	W1	S	LE	BS	RE	Cutting rake	Grades																	
							Coated															Uncoated		
							MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
XOEX180604FR-E10	11,2	6,4	16,5	2,4	0,4	29,0 °																■			■
XOEX180608FR-E10	11,2	6,4	16,5	2,4	0,8	29,0 °																■			■
XOEX180616FR-E10	11,2	6,4	16,5	2,3	1,6	30,0 °																			■
XOEX180620FR-E10	11,2	6,4	16,5	2,2	2,0	30,0 °																			■
XOEX180631FR-E10	11,2	6,4	16,5	2,2	3,1	29,0 °																			■
XOEX180608ZZR-M10	11,2	6,4	16,5	9,0	0,8	22,4 °																■			
XOMX180604TR-ME13	11,2	6,4	16,5	2,4	0,4	25,0 °			■													■			
XOMX180608TR-ME13	11,2	6,4	16,5	2,4	0,8	25,3 °			■			■	■					■				■			
XOMX180616TR-ME13	11,2	6,4	16,5	2,3	1,6	24,7 °			■																
XOMX180620TR-ME13	11,2	6,4	16,5	2,2	2,0	24,7 °			■													■			
XOMX180631TR-ME13	11,2	6,38	16,5	2,2	3,1	23,6 °			■													■			
XOMX180640TR-ME13	11,2	6,38	16,5	0,8	4,0	24,0 °			■																
XOMX180604R-M10	11,2	6,4	16,5	2,4	0,4	22,0 °									■							■			
XOMX180608R-M10	11,2	6,4	16,5	2,4	0,8	22,4 °		■	■			■			■			■			■	■			
XOMX180616R-M10	11,2	6,4	16,5	2,3	1,6	21,7 °						■			■			■				■			
XOMX180620R-M10	11,2	6,4	16,5	2,2	2,0	21,8 °									■			■				■			
XOMX180624R-M10	11,2	6,35	16,5	2,2	2,4	21,1 °									■							■			
XOMX180631R-M10	11,2	6,35	16,5	2,2	3,1	21,0 °						■			■			■				■			
XOMX180640R-M10	11,2	6,35	16,5	0,8	4,0	21,0 °									■			■				■			
XOMX180650R-M10	11,2	6,35	16,5	0,3	5,0	19,4 °		■							■			■				■			
XOMX180663R-M10	11,2	6,35	16,5	0,3	6,3	19,0 °									■			■				■			
XOMX180608TR-M14	11,2	6,4	16,5	2,38	0,8	15,5 °	■		■	■			■	■				■			■	■			
XOMX180612TR-M14	11,2	6,4	16,5	2,4	1,2	15,5 °	■		■	■			■	■				■				■			
XOMX180616TR-M14	11,2	6,4	16,5	2,3	1,6	15,0 °			■	■			■					■				■			
XOMX180620TR-M14	11,2	6,4	16,5	2,2	2,0	15,0 °			■									■				■			
XOMX180624TR-M14	11,2	6,37	16,5	2,2	2,4	14,0 °			■									■				■			
XOMX180631TR-M14	11,2	6,37	16,5	2,2	3,1	14,0 °			■	■								■				■			
XOMX180608TR-MD15	11,2	6,4	16,5	2,4	0,8	15,9 °	■		■	■			■	■				■			■	■			
XOMX180612TR-MD15	11,2	6,4	16,5	2,4	1,2	15,0 °	■			■												■			
XOMX180616TR-MD15	11,2	6,4	16,5	2,3	1,6	15,3 °				■			■					■				■			
XOMX180608TR-D16	11,2	6,4	16,5	2,4	0,8	11,0 °	■		■				■					■			■				
XOMX180631TR-D16	11,2	6,39	16,5	2,2	3,1	9,0 °	■			■															

■ Stock standard

Subject to change refer to current price- and stock-list

XPKX



E06





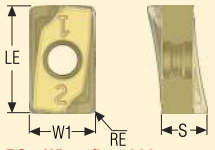
E08



Designation	W1	LE	BS	RE	Cutting rake	Grades																	
						Coated															Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
XPKX080304PDER-E06	7,0	8,0	1,3	0,4	25,0 °																		■
XPKX080308PDER-E06	7,0	8,0	1,3	0,8	25,0 °																		■
XPKX080316PDER-E06	7,0	8,0	1,2	1,6	25,0 °																		■
XPKX080320PDER-E06	7,0	8,0	1,3	2,0	25,0 °																		■
XPKX080324PDER-E06	7,0	8,0	1,2	2,4	25,0 °																		■
XPKX080331PDER-E06	7,0	8,0	0,5	3,1	25,0 °																		■
XPKX12T304PDER-E08	10,0	12,1	1,5	0,4	23,1 °																		■
XPKX12T308PDER-E08	10,0	12,1	1,5	0,8	23,0 °																		■
XPKX12T320PDER-E08	10,0	12,1	1,9	2,0	25,0 °																		■
XPKX12T324PDER-E08	10,0	12,1	1,5	2,4	25,0 °																		■
XPKX12T331PDER-E08	10,0	12,1	1,7	3,1	25,0 °																		■
XPKX12T340PDER-E08	10,0	12,1	1,1	4,0	25,0 °																		■

■ Stock standard
Subject to change refer to current price- and stock-list

ZOMX16



BS = Wiper flat width

M12



ME10

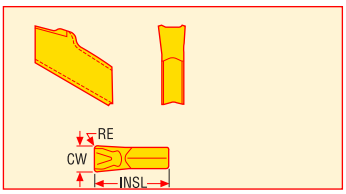


Designation	W1	S	LE	BS	RE	Cutting rake	Grades																	
							Coated															Uncoated		
							MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
ZOMX160708TR-ME10	10,76	7,38	15,5	2,0	0,8	40,0 °			■						■	■						■		
ZOMX160708TR-M12	10,76	7,38	15,5	2,0	0,8	30,0 °	■		■	■				■		■						■		
ZOMX160716TR-ME10	10,76	7,26	15,5	1,2	1,6	40,0 °			■						■							■		
ZOMX160716TR-M12	10,76	7,26	15,5	1,2	1,6	30,0 °	■		■	■				■								■		

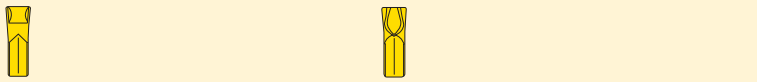
■ Stock standard

Subject to change refer to current price- and stock-list

150.10



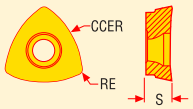
150.10-12 150.10-14 150.10-16



Designation	INSL	CW	RE	Grades																		
				Coated																Uncoated		
				MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
150.10-2.5N-12	9,0	2,5	0,17											■	■							
150.10-3N-12	9,0	3,1	0,19											■	■							
150.10-2.25N-14	9,0	2,25	0,15												■					■		
150.10-2.5N-14	9,0	2,5	0,17											■						■		
150.10-3N-14	9,0	3,1	0,19											■	■					■		
150.10-2.25N-16	9,0	2,25	0,15											■	■					■		
150.10-2.5N-16	9,0	2,5	0,17											■	■					■		
150.10-3N-16	9,0	3,1	0,19											■	■					■		
150.10-4N-12	9,0	4,1	0,23											■	■							
150.10-4N-14	9,0	4,1	0,23											■	■					■		
150.10-4N-16	9,0	4,1	0,23											■	■					■		

■ Stock standard
Subject to change refer to current price- and stock-list

218.19



E04-E07



M04-M11



MD04-MD11



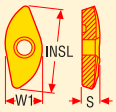
ME07-ME12



Designation	S	CCER	RE	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
218.19-160-04-E07	4,76	16,0	1,2	20,0 °																			■
218.19-125T-T3-ME07	3,97	12,5	0,8	20,0 °																■			
218.19-160T-04-ME08	4,76	16,0	1,2	20,0 °																■			
218.19-200T-05-ME10	5,5	20,0	0,6	20,0 °																■			
218.19-080T-M04	2,38	8,0	0,4	7,0 °			■												■	■			
218.19-100T-M06	2,78	10,0	0,8	7,0 °			■	■					■	■		■			■	■			
218.19-125T-T3-M07	3,97	12,5	0,8	10,0 °			■	■		■			■	■		■			■	■			
218.19-160T-04-M11	4,76	16,0	1,2	15,0 °	■		■							■									
218.19-160T-04-M08	4,76	16,0	1,2	10,0 °		■	■	■		■			■	■		■		■	■	■			
218.19-200T-05-M10	5,5	20,0	0,6	10,0 °														■		■			
218.19-080T-MD04	2,38	8,0	0,4	0,0 °										■			■						
218.19-100T-MD08	2,78	10,0	0,8	0,0 °			■		■					■			■	■					
218.19-125T-T3-MD10	3,97	12,5	0,8	0,0 °	■		■		■					■		■	■	■					
218.19-125T-T3-MD08	3,97	12,5	0,8	0,0 °				■											■				
218.19-160T-04-MD11	4,76	16,0	1,2	0,0 °	■		■		■			■		■		■	■	■					
218.19-160T-04-MD09	4,76	16,0	1,2	0,0 °				■											■				

■ Stock standard
Subject to change refer to current price- and stock-list

218.20



ME/M

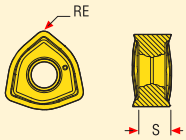


Designation	W1	INSL	S	Cutting rake	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
218.20-0.250ER-ME03	5,46	12,42	2,52	11,0 °									■							■			
218.20-0.250ER-M03	5,46	12,42	2,52	7,0 °																■			
218.20-060ER-ME03	5,16	11,73	2,37	12,0 °									■							■			
218.20-080ER-ME04	6,88	15,64	3,21	5,0 °									■			■				■			
218.20-080ER-M04	6,88	15,64	3,21	1,0 °						■								■		■			
218.20-100ER-ME05	8,59	19,55	4,05	3,0 °						■			■							■			
218.20-100ER-M05	8,59	19,55	4,05	2,0 °						■								■		■			
218.20-125ER-ME07	10,74	24,48	5,05	11,0 °						■			■							■			
218.20-125ER-M07	10,74	24,48	5,05	1,0 °														■		■			
218.20-150ER-ME07	11,91	28,7	5,99	6,0 °									■							■			
218.20-150ER-M08	11,91	28,7	5,99	-2,0 °						■										■			
218.20-160ER-ME08	12,7	30,61	6,4	6,0 °						■			■							■			
218.20-160ER-M08	12,7	30,61	6,4	-2,0 °						■								■		■			
218.20-200ER-ME10	15,88	38,26	8,06	6,0 °						■			■							■			
218.20-200ER-M10	15,88	38,26	8,06	-2,0 °																■			
218.20-250ER-ME12	19,85	47,83	10,16	6,0 °						■			■							■			
218.20-250TR-M14	19,85	47,83	10,16	-2,0 °																■			

■ Stock standard

Subject to change refer to current price- and stock-list

218.21

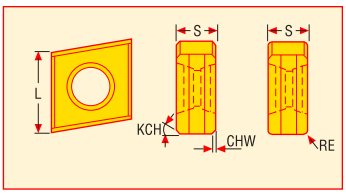




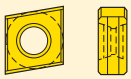
Designation	S	RE	Cutting rake	Grades																		
				Coated																Uncoated		
				MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
218.21-230TR-06-ME13	5,95	1,6	21,0 °		■				■			■	■		■				■			
218.21-230TR-06-M15	5,95	1,6	17,0 °		■	■	■					■	■		■				■			
218.21-230TR-06-MD17	6,02	1,6	7,0 °	■		■	■				■		■									

■ Stock standard
Subject to change refer to current price- and stock-list

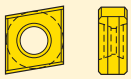
335.18



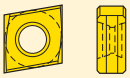
E07/E08/E09



M10/M11/M12



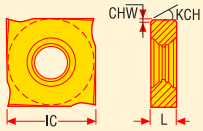
MD10/D13



Designation	L	S	KCH°	CHW	RE	Cutting rake	Grades																	
							Coated														Uncoated			
							MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F25M	F30M	F40M	HX	H15	H25
335.18-1005-E07	10,0	5,4	45,0	0,5	0,0	20,0 °																■		
335.18-1305-E08	12,7	5,4	45,0	0,5	0,0	20,0 °																■		
335.18-1606-E09	16,0	6,4	45,0	0,5	0,0	20,0 °																■		
335.18-1005T-M10	10,0	5,4	45,0	0,5	0,0	10,0 °	■		■				■	■							■	■		
335.18-100508-M10	10,0	5,4	0,0	0,0	0,8	10,0 °												■						
335.18-1305T-M11	12,7	5,4	45,0	0,5	0,0	10,0 °	■		■				■	■							■			
335.18-130508-M11	12,7	5,4	0,0	0,0	0,8	10,0 °												■						
335.18-1606T-M12	16,0	6,4	45,0	0,5	0,0	10,0 °	■		■												■			
335.18-160608-M12	16,0	6,4	0,0	0,0	0,8	10,0 °												■						
335.18-1005ZZ-MD10	10,0	5,4	45,0	0,5	0,0	10,0 °																■		

■ Stock standard
Subject to change refer to current price- and stock-list

335.19



M08



MD09



Designation	L	IC	KCH°	CHW	Cutting rake	Grades																
						Coated														Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F25M	F30M	F40M	HX	H15	H25
335.19-1102-M08	2,3	11,0	45,0	0,1	15,0 °															■			
335.19-1103-M08	2,7	11,0	45,0	0,1	15,0 °															■			
335.19-1203-M08	3,2	12,7	45,0	0,15	15,0 °															■			
335.19-1204-M08	4,0	12,7	45,0	0,15	15,0 °															■			
335.19-12045-M08	4,5	12,7	45,0	0,15	15,0 °															■			
335.19-1205-M08	5,4	12,7	45,0	0,15	15,0 °															■			
335.19-1207-M08	7,0	12,7	45,0	0,15	15,0 °															■			
335.19-1203T-MD09	3,2	12,7	20,0	0,1	15,0 °															■			
335.19-12045T-MD09	4,5	12,7	20,0	0,1	15,0 °															■			
335.19-1204T-MD09	4,0	12,7	20,0	0,1	15,0 °															■			
335.19-1205T-MD09	5,4	12,7	20,0	0,1	15,0 °			■								■				■			
335.19-1207T-MD09	7,0	12,7	20,0	0,1	15,0 °															■			

■ Stock standard

Subject to change refer to current price- and stock-list

R235.15



E05

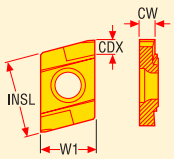


Designation	L	Cutting rake	Grades																		
			Coated																Uncoated		
			MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
R235.15-032-E05	42,987	22,0 °															■				
R235.15-050-E05	54,64	22,0 °															■				
R235.15-080-E05	54,746	22,0 °															■		■		

■ Stock standard

Subject to change refer to current price- and stock-list

R335.15-13/18



E08 M12 M8



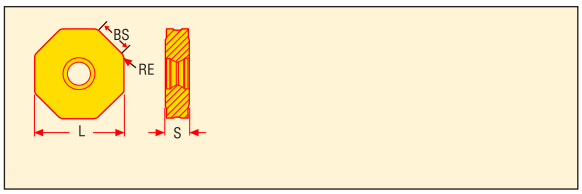
Designation	W1	INSL	CDX	CW	Cutting rake	Grades																	
						Coated															Uncoated		
						MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
R335.15-13110FG-E08	9,0	13,5	1,8	1,13	15,0 °																■			
R335.15-13130FG-E08	9,0	13,5	2,0	1,33	15,0 °																■			
R335.15-13160FG-E08	9,0	13,5	2,6	1,63	15,0 °																■			
R335.15-13185FG-E08	9,0	13,5	2,6	1,88	15,0 °																■			
R335.15-13215FG-E08	9,0	13,5	3,15	2,18	15,0 °																■			
R335.15-13265FG-E08	9,0	13,5	3,15	2,68	15,0 °																■			
R335.15-13215FG-M10	9,0	13,5	3,15	2,18	0,0 °																■			
R335.15-13265FG-M10	9,0	13,5	3,15	2,68	0,0 °																■			
R335.15-18315FG-M12	9,0	18,0	3,8	3,2	0,0 °																■			
R335.15-18350FG-M12	9,0	18,0	4,1	3,55	0,0 °																■			
R335.15-18400FG-M12	9,0	18,0	4,8	4,05	0,0 °																■			
R335.15-18415FG-M12	9,0	18,0	4,8	4,2	0,0 °																■			
R335.15-18500FG-M12	9,0	18,0	5,5	5,05	0,0 °																■			
R335.15-18515FG-M12	9,0	18,0	5,5	5,2	0,0 °																■			

■ Stock standard

Tolerance (mm): CW: +0/+0.05 - CDX: +0/+0.15

Subject to change refer to current price- and stock-list

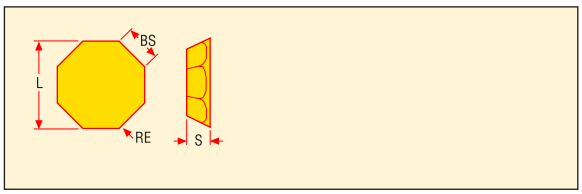
ONEW05





Designation	L	S	BS	RE	Cutting rake	Grades								
						CBN200	CBN300	CBN300P	CBN400C	CBN500	CBN600			
ONEW050410ANSN-02020-LF	12,0	4,427	0,3	1,0	0 °	■								
ONEW050410ZZSR4-02020LF	11,9	4,427	3,26	1,0	0 °	■								

OFEN

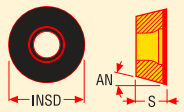




Designation	L	S	BS	RE	Cutting rake	Grades								
						CBN200	CBN300	CBN300P	CBN400C	CBN500	CBN600			
OFEN070405TN-MD16-LF	17,96	4,76	1,6	0,5	0 °	■								

■ Stock standard
Subject to change refer to current price- and stock-list

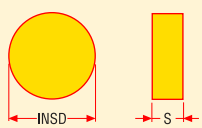
RDHW





Designation	INSD	S	AN	Cutting rake	Grades								
					CBN200	CBN300	CBN300P	CBN400C	CBN500	CBN600			
RDHW0803M0S-01030-LF	8,0	3,18	15,0	0 °	■								
RDHW10T3M0S-01030-8-LF	10,0	3,97	15,0		■								

RN.N-LF06/09/12

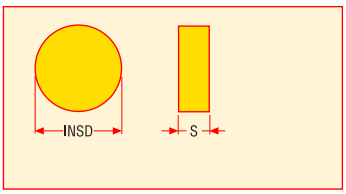




Designation	INSD	S	Cutting rake	Grades								
				CBN200	CBN300	CBN300P	CBN400C	CBN500	CBN600			
RNGN060300S-02020-LF	6,35	3,18	0 °	■								
RNGN060300S-01525-LF	6,35	3,18	0 °									
RNGN090300S-01525-LF	9,52	3,18	0 °									
RNGN090300S-02020-LF	9,52	3,18	0 °	■								
RNGN120400S-02020-LF	12,7	4,76	0 °	■								

■ Stock standard
Subject to change refer to current price- and stock-list

RN.N-06/09

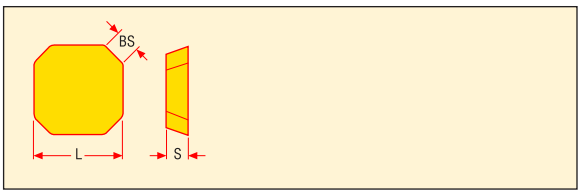


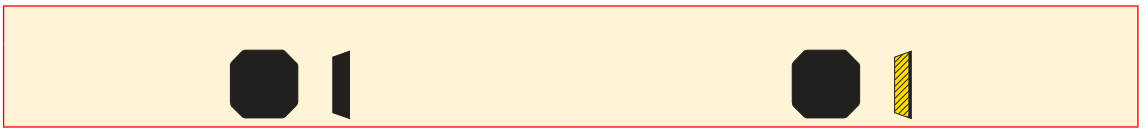


Designation	INSD	S	Cutting rake	Grades								
				CBN200	CBN300	CBN300P	CBN400C	CBN500	CBN600			
RNGN060300S	6,35	3,18	0 °	■								
RNGN090300S	9,52	3,18	0 °	■								
RNMN060300S	6,35	3,18	0 °		■	■						
RNMN060300S-02020P	6,35	3,18	0 °						■			
RNMN090300E	9,52	3,18	0 °		■		■					
RNMN090300S	9,52	3,18	0 °		■	■						
RNMN090300S-02020	9,52	3,18	0 °				■	■				
RNMN090300S-02020P	9,52	3,18	0 °						■			

■ Stock standard
Subject to change refer to current price- and stock-list

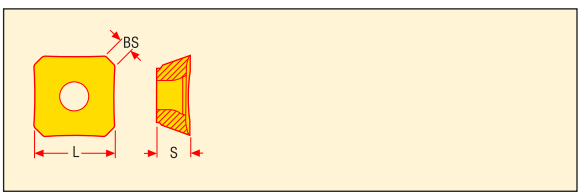
SEE.12

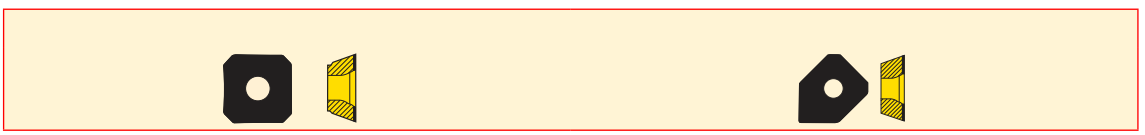




Designation	L	S	BS	Cutting rake	Grades								
					CBN200	CBN300	CBN300P	CBN400C	CBN500	CBN600			
SEEN1203AFTN-D16	12,7	3,18	1,5	0 °		■							
SEEX1203AETN-MD13-LF	12,7	3,18	1,6	0 °	■								

SEEX

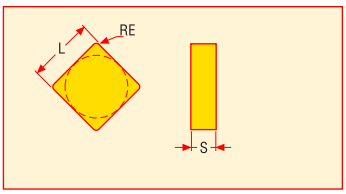




Designation	L	S	BS	Cutting rake	Grades								
					CBN200	CBN300	CBN300P	CBN400C	CBN500	CBN600			
SEEX09T3AFTN-D09-LF	9,52	3,97	1,25	0 °	■								
SEEX1204AFTN-D16-LF	12,7	4,76	1,6	0 °	■								
SEEX1204ZZTN-D16-LF	12,7	4,76	7,53	0 °	■								

■ Stock standard
Subject to change refer to current price- and stock-list

SN..06/09/SNEX12

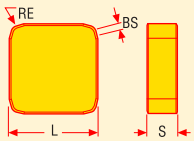




Designation	L	S	RE	Cutting rake	Grades								
					CBN200	CBN300	CBN300P	CBN400C	CBN500	CBN600			
SNMN060308E	6,35	3,18	0,794	0 °				■					
SNMN060308S	6,35	3,18	0,794	0 °		■							
SNMN090308E	9,525	3,18	0,794	0 °		■							
SNMN090308S	9,525	3,18	0,794	0 °		■							
SNMN090312E	9,525	3,18	1,191	0 °		■							
SNMN090312S	9,525	3,18	1,191	0 °		■	■						
SNMN090312S-02020P	9,525	3,18	1,191							■			
SNMN090316S	9,525	3,18	1,588	0 °		■							
SNGN090308E	9,525	3,18	0,8	0 °	■								
SNGN090308S	9,525	3,18	0,8	0 °	■								
SNGN090312S	9,525	3,18	1,2	0 °	■								
SNGN090316S	9,525	3,18	1,6	0 °	■								
SNEX120312ZZ	12,7	3,18	1,2	0 °	■								

■ Stock standard
Subject to change refer to current price- and stock-list

SNEN

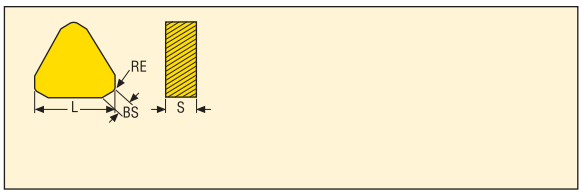




Designation	L	S	BS	RE	Cutting rake	Grades								
						CBN200	CBN300	CBN300P	CBN400C	CBN500	CBN600			
SNEN0903ENE-M06	9,52	3,18	0,9	0,8	0 °	■								
SNEN0903ENS-M08	9,52	3,18	0,9	0,8	0 °	■								

■ Stock standard
Subject to change refer to current price- and stock-list

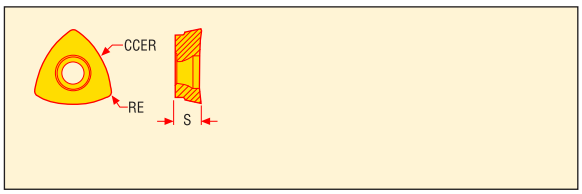
TNGN

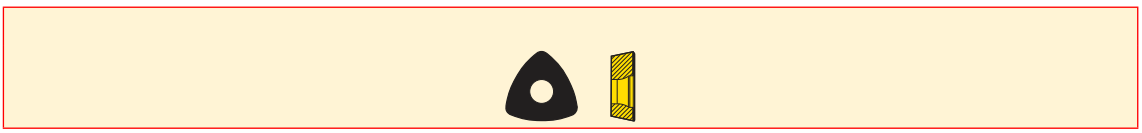




Designation	L	S	BS	RE	Cutting rake	Grades								
						CBN200	CBN300	CBN300P	CBN400C	CBN500	CBN600			
TNGN1103PNE	10,999	3,18	1,0	0,8	0 °	■								
TNGN1103PNS	10,999	3,18	1,0	0,8	0 °	■								
TNGN1103PRS	10,999	3,18	1,0	1,2	0 °	■								
TNGN1604PNE	16,498	4,76	1,9	0,8	0 °	■								
TNGN1604PNS	16,498	4,76	1,9	0,8	0 °	■								
TNGN1604PRS	16,498	4,76	1,3	1,2	0 °	■								

218.19

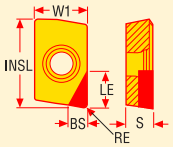


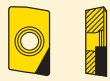


Designation	S	CCER	RE	Cutting rake	Grades								
					CBN200	CBN300	CBN300P	CBN400C	CBN500	CBN600			
218.19-100T-MD08-LF	2,81	10,0	0,8	0 °	■								

■ Stock standard
Subject to change refer to current price- and stock-list

APHT

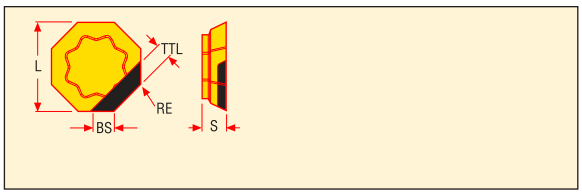




Designation	W1	INSL	LE	S	RE	Cutting rake	BS	Grades			
								PCD20	PCD05	PCD30	PCD30M
APHT160408FR-M08	9,475	16,886	5,6	4,86	0,8	15,0 °	2,458	■			

■ Stock standard
Subject to change refer to current price- and stock-list

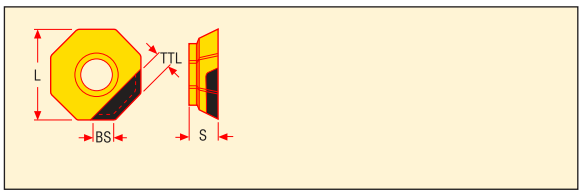
OFEN





Designation	L	S	TTL	BS	RE	Cutting rake	Grades			
							PCD20	PCD05	PCD30	PCD30M
OFEN070405FN-M09	17,95	4,76	3,5	7,009	0,5	0,0 °	■			

OFEX

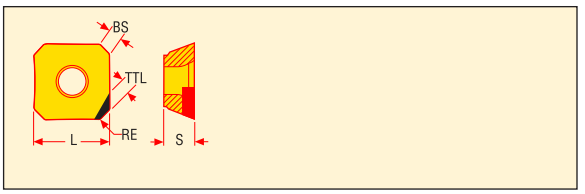


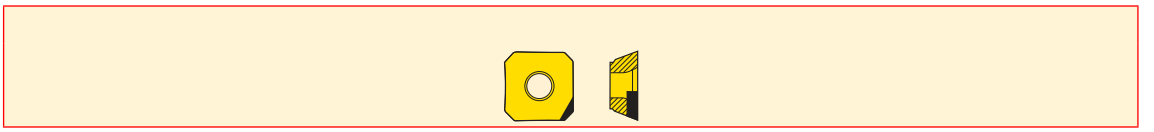


Designation	L	S	TTL	BS	Cutting rake	Grades			
						PCD20	PCD05	PCD30	PCD30M
OFEX05T305FN-M05	12,79	3,97	2,5	4,893	0,0 °	■			

■ Stock standard
Subject to change refer to current price- and stock-list

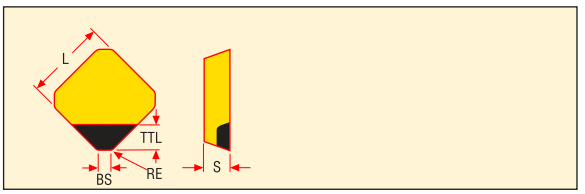
SEEX

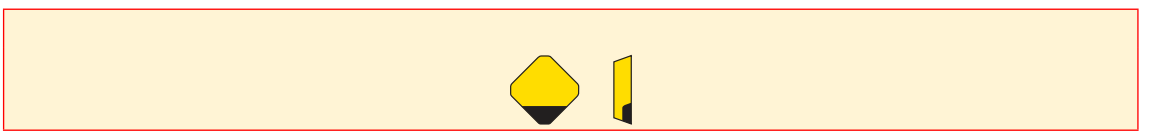




Designation	L	S	TTL	BS	RE	Cutting rake	Grades			
							PCD20	PCD05	PCD30	PCD30M
SEEX09T3AFFN-L1	9,525	3,97	3,0	1,5	0,4	12,0 °	■	■		

SEHN



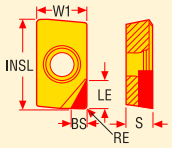


Designation	L	S	TTL	BS	RE	Cutting rake	Grades			
							PCD20	PCD05	PCD30	PCD30M
SEHN1203AFFN-E08	12,7	3,18	4,0	1,6	1,0	0,0 °	■			

■ Stock standard

Subject to change refer to current price- and stock-list

XOEX

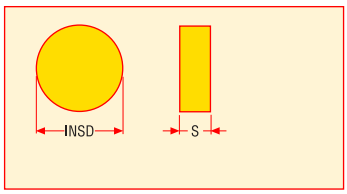




Designation	W1	S	INSL	LE	BS	RE	Cutting rake	Grades			
								PCD20	PCD05	PCD30	PCD30M
XOEX060204FR	4,09	2,45	6,94	3,4	1,5	0,4	8,0 °		■		
XOEX10T304F	6,87	3,77	11,08	5,51	1,08	0,4	15,0 °	■	■		
XOEX120404FR	8,18	5,03	13,88	5,6	1,54	0,4	15,0 °	■		■	
XOEX120404FR-L2	8,18	4,95	13,7	6,52	2,39	0,4	14,0 °		■		

■ Stock standard
Subject to change refer to current price- and stock-list

RNGN12



RNGN



RPGN

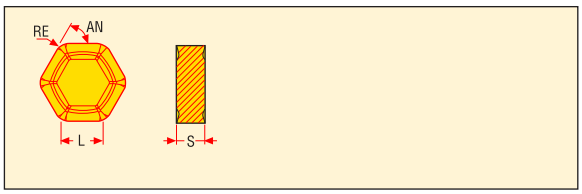


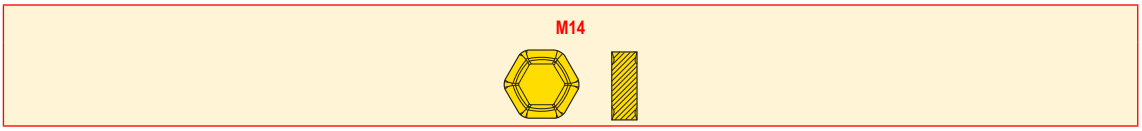
Designation	INSD	S	Cutting rake	Grades			
				Uncoated			
				CS300			
RNGN120400T-01020	12,7	4,76	0,0 °	■			
RNGN120700T-01020	12,7	7,94	0,0 °	■			
RPGN120400T-01020	12,7	4,76		■			

■ Stock standard

Subject to change refer to current price- and stock-list

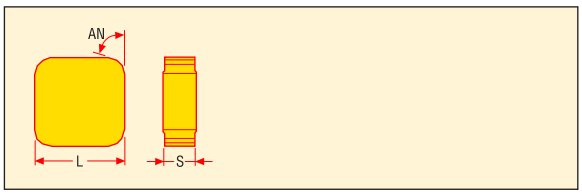
HNEF

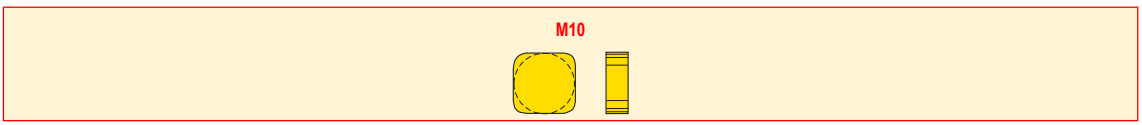




Designation	L	S	RE	AN	Grades																		
					Coated																Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
HNEF090531-M14	9,37	5,6	3,1	–							■												

SNKN

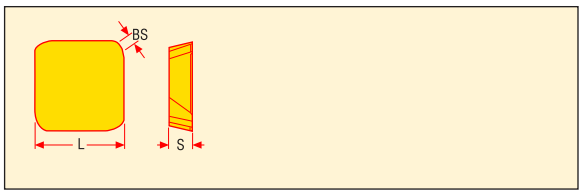




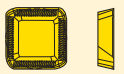
Designation	L	S	AN	Grades																		
				Coated																Uncoated		
				MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SNKN1204EN-M10	12,7	4,76	–							■				■								

■ Stock standard
Subject to change refer to current price- and stock-list

SPER

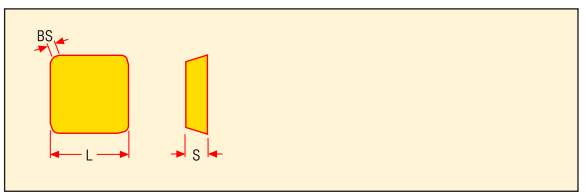


M17



Designation	L	S	BS	Cutting rake	Grades																	
					Coated															Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SPER1906ZETR-M17	19,05	6,35	1,8	17,0 °						■						■						

SPKN/SPKR



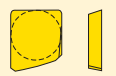
M15/MD14/MD17



ME12/ME14



ZZ.-M15



Designation	L	S	BS	Cutting rake	Grades																	
					Coated															Uncoated		
					MP1501	MP2050	MP2501	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T25M	T350M	F15M	F25M	F30M	F40M	HX	H15	H25
SPKN1203EDTR-MD14	12,7	3,17	1,4	0,0 °											■	■						
SPKN1203EDTL-MD14	12,7	3,17	1,4	0,0 °											■							
SPKR1203EDTR-ME12	12,7	3,17	1,4	20,0 °																■		
SPKR1504EDTR-ME14	15,87	4,76	1,4	20,0 °												■						
SPKN1504EDTR-MD17	15,87	4,76	1,4	0,0 °												■						
SPKN1504ZZL-M15	15,87	4,76	10,0	0,0 °															■			
SPKN1504ZZR-M15	15,87	4,76	10,0	0,0 °															■			

■ 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

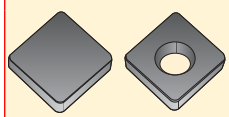
Solid insert



According to the geometry, two sides can be used.

Grades:
CBN200, CBN300, CBN300P, CBN500, CBN600

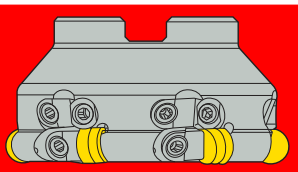
Sintered layer insert -LF



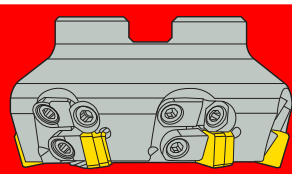
CBN layer sintered on to carbide. One side is usable.

Grades:
CBN200

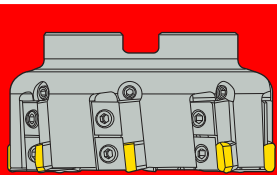
Face milling cutter type R217/220.70



Face milling cutter type 220.74



Square shoulder and slot milling cutter type R220.68



Inserts for standard milling cutters

For roughing
SEEX09T3AFTN-D09-LF
SEEX1204AFTN-D16-LF
R220.53
Face milling cutters



Wiper insert for high quality surface finish
SEEX1204ZZTN-D16-LF



For roughing
OFEN070405-MD16-LF
R220.43
Face milling cutters



RDHW0803M0S-01030-LF
R217/220.29
Copy milling cutter
R335.25/R335.18
Disc milling cutter



For roughing
ONEW05
Octomill R217/220.48
Face milling cutters



218.19-100T-MD08-LF
High feed milling cutter



For roughing
SEEN1203AFTN-D16
R220.13
Face milling cutters



For finishing
SEEX1203AETN-MD13-LF
R220.30
Face milling cutters



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 703

PCBN, Roughing a_p 0,5-3,0 mm

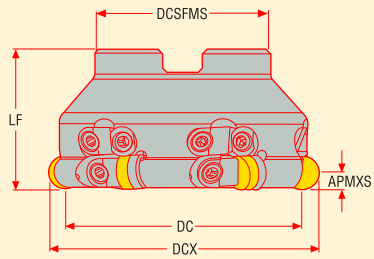
	CBN200		CBN300		CBN500	
SMG	v_c	f_z	v_c	f_z	v_c	f_z
K1	700 — 1700	0,050 — 0,20	700 — 1700	0,050 — 0,20	700 — 1700	0,050 — 0,20
H3	—	—	—	—	—	—
H5	—	—	—	—	—	—
H7	—	—	—	—	—	—
H8	—	—	—	—	—	—
H11	—	—	—	—	—	—
H21	—	—	—	—	130 — 230	0,050 — 0,20
H31	—	—	—	—	100 — 270	0,050 — 0,20
	180 — 400	0,050 — 0,20	—	—	—	—
	150 — 300	0,050 — 0,20	—	—	—	—
	—	—	—	—	—	—
	150 — 240	0,050 — 0,20	—	—	150 — 250	0,050 — 0,20
	120 — 300	0,050 — 0,20	—	—	120 — 300	0,050 — 0,20

PCBN, Finishing a_p < 0,5 mm

	CBN200		CBN300		CBN500	
SMG	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
	180 — 400	0,050 — 0,20	—	—	—	—
	150 — 300	0,050 — 0,20	—	—	—	—
	—	—	—	—	—	—
	—	—	—	—	—	—
	—	—	—	—	—	—

220.70-06/09





- For insert selection and cutting data recommendations, see page(s) 692
- For complete insert programme, see page(s) 677, 677, 679, 679
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		Insert
		APMXS	DCX	DC	DCSFMS	DCB	LF				
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*

*Wiper insert

Spare Parts

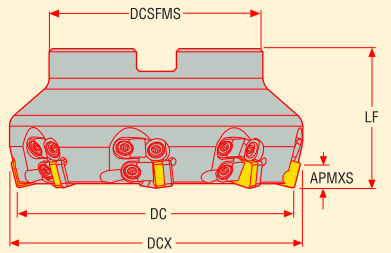
For cutter	Wedge screw	Wedge	Shim screw	Setting key	Setting gauge	Insert shim	Gauge screw	Arbor screw
R220.70-0063	LD6018T-T15P	CW0608M	174.10-652-T07P	T15P-4ST	AS6011F	117.10-620	LD6019-T15P	220.17-692
R220.70-0080-0100	LD6018T-T15P	CW0608M	174.10-652-T07P	T15P-4ST	AS6011F	117.10-620	LD6019-T15P	–
R220.70-8160	LD6018T-T15P	CW0608M	174.10-652-T07P	T15P-4ST	AS6011F	117.10-620	LD6019-T15P	–

Please check availability in current price and stock-list
Torque keys, see page 710

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) 692
- For complete insert programme, see page(s) 679, 679
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm							KG		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*

*Wiper insert

Spare Parts

For cutter	Wedge screw	Wedge	Shim screw	Setting screw	Setting key	Setting gauge	Insert shim	Arbor screw	Anvil screw	Anvil
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	–	F94009-T09P	268-621

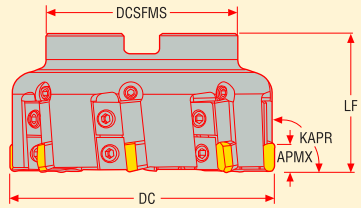
Please check availability in current price and stock-list

Torque keys, see page 710

R220.68-T16C

For PCBN inserts





- For insert selection and cutting data recommendations, see page(s) 692
- For complete insert programme, see page(s) 681, 681
- For ISO attribute explanation, see page 15

Designation	Type of mounting	Dimensions in mm						KG		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..
R220.68-0125-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..

Spare Parts

For cutter	Wedge screw	Wedge clamp	Setting gauge	Insert wedge	Cassette	Arbor screw
R220.68-0063	LD8020-T25P	L257.9-120M	AU1114T-T15P	L257.9-120-T16	TN16PR	220.17-696
R220.68-0080	LD8020-T25P	L257.9-120M	AU1114T-T15P	L257.9-120-T16	TN16PR	MC6S12X40
R220.68-0125-8160	LD8020-T25P	L257.9-120M	AU1114T-T15P	L257.9-120-T16	TN16PR	

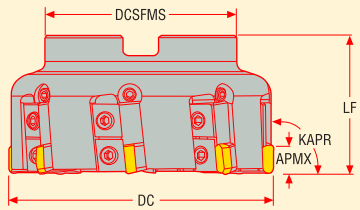
Please check availability in current price and stock-list

Torque keys, see page 710

R220.68-T11C

For PCBN inserts





- For insert selection and cutting data recommendations, see page(s) 692
- For complete insert programme, see page(s) 681, 681
- 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..

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	

Please check availability in current price and stock-list

Torque keys, see page 710

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

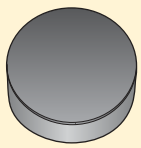
Heat resistant superalloys (HRSA) include a broad range of nickel, iron and cobalt based alloys developed specifically for applications demanding exceptional mechanical and chemical properties at elevated temperatures.

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.

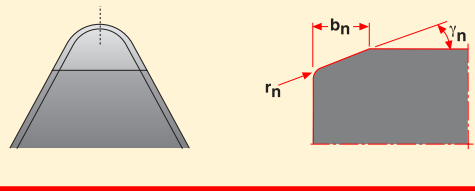
Other common nickel based superalloy names are:

– Hastalloy
– Haynes (Waspaloy)
– MAR
– Nimonic
– Rene
– Udimet

Introduction

CS300 	Format: Solid. Composition: Sialon (Si, Al, O, N) ceramic grade. Coating: No coating.

Edge preparation

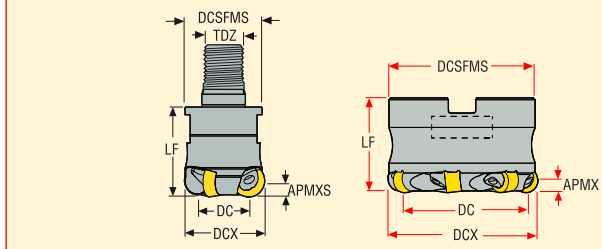


Ceramic, Roughing a_p 0,5 – 3,0 mm

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) 698
- 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		KG		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-RP1204.3A	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	1,6	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-H2.5	CW0508	DOUBLE-T	3,5

Please check availability in current price and stock-list

Torque keys, see page 710

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.:

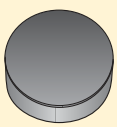
- Aluminium
- Copper
- Brass
- Bronze
- Cemented carbide

It can also be used for other materials, e.g.:

- Composites (MMC, ...)
- Reinforced plastics
- Graphite
- Tungsten carbide
- Ceramics
- Titanium alloys

Selection of insert types

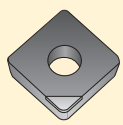
Sintered layer -LF



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

SEHN12
R220.13
R220.30
Face milling cutters



SEEX12
R220.53
Face milling cutters



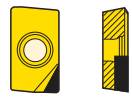
OFEN07
Face milling cutters
R220.43



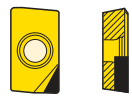
OFEX05
R220.43
Face milling cutters



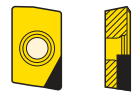
XC..13
R220.69
Square shoulder milling cutters



XOEX06/10/12
217/220.69
Square shoulder milling cutters



AP..16
R220.69
Square shoulder milling cutters



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 703

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

	PCD05		PCD20		PCD30		PCD30M	
SMG	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
	100 — 1500	0,10 — 0,40	100 — 1500	0,10 — 0,40	—	—	—	—
	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20
	100 — 800	0,050 — 0,20	100 — 800	0,050 — 0,20	100 — 800	0,050 — 0,20	100 — 800	0,050 — 0,20
	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20
	100 — 1500	0,10 — 0,40	100 — 1500	0,10 — 0,40	—	—	—	—
	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20
	100 — 800	0,050 — 0,20	100 — 800	0,050 — 0,20	100 — 800	0,050 — 0,20	100 — 800	0,050 — 0,20
	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20
	100 — 1500	0,10 — 0,20	100 — 1500	0,10 — 0,20	—	—	—	—

PCD, Finishing a_p < 0,5 mm

	PCD05		PCD20		PCD30		PCD30M	
SMG	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
	100 — 1500	0,10 — 0,40	100 — 1500	0,10 — 0,40	—	—	—	—
	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20
	100 — 800	0,050 — 0,20	100 — 800	0,050 — 0,20	100 — 800	0,050 — 0,20	100 — 800	0,050 — 0,20
	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20
	100 — 1500	0,10 — 0,40	100 — 1500	0,10 — 0,40	—	—	—	—
	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20
	100 — 800	0,050 — 0,20	100 — 800	0,050 — 0,20	100 — 800	0,050 — 0,20	100 — 800	0,050 — 0,20
	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20	400 — 800	0,10 — 0,20
	100 — 1500	0,10 — 0,20	100 — 1500	0,10 — 0,20	—	—	—	—

Cutting data calculation

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

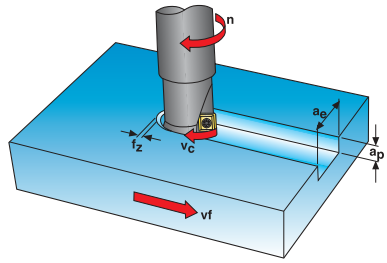
$$Q = \frac{a_e \cdot a_p \cdot v_f}{1000} \quad \text{(cm}^3\text{/min)}$$

Cutting speed and RPM for copying

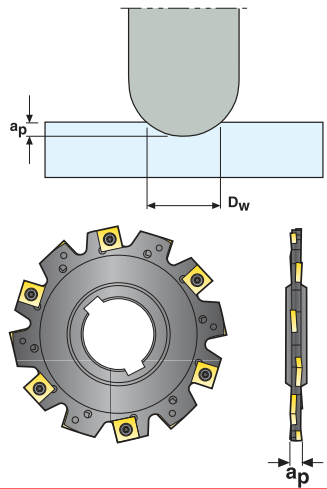
$$v_c = \frac{n \cdot \pi \cdot D_w}{1000} \quad \text{(m/min)}$$

$$D_w = 2 \cdot \sqrt{a_p (D_c - a_p)} \quad \text{(mm)}$$

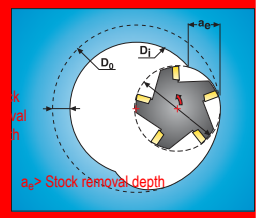
$$n = \frac{v_c \cdot 1000}{\pi \cdot D_w} \quad \text{(RPM)}$$



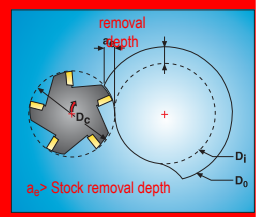
a_e	=	Width of cut mm/radial depth of cut	mm
a_p	=	Depth of cut mm/axial depth of cut	mm
DC	=	Cutter diameter	mm
f	=	Feed per revolution	mm/rev
f_z	=	Feed per tooth	mm/tooth
ZEFP	=	Effective No. of teeth for calculation of feed speed or feed per rev (see below)	
n	=	RPM	rev/min
Q	=	Material removal rate	cm3/min
V_c	=	Cutting speed	m/min
v_f	=	Feed speed	mm/min

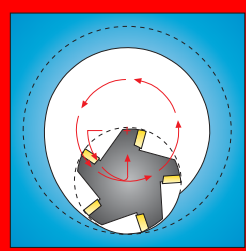


$$a_e = \frac{D_o^2 - D_i^2}{4\,(D_o - D_c)}$$

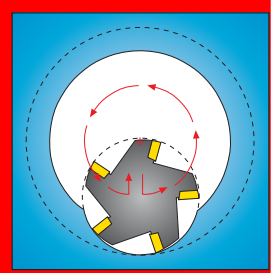


$$a_e = \frac{D_o^2 - D_i^2}{4\,(D_i + D_c)}$$





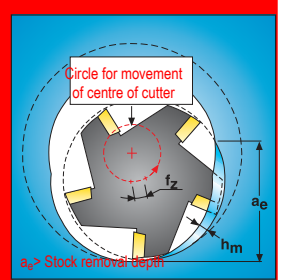
Successive increase of width of cut – recommended method.



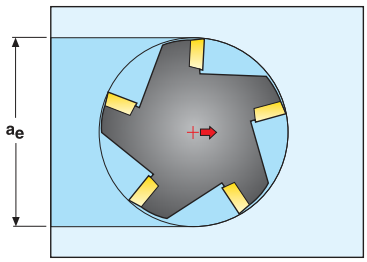
Radial infeed – Reduce feed/tooth.

$$v_f = \frac{(D_0 - D_c) \cdot n \cdot z_c \cdot f_z}{D_0}$$

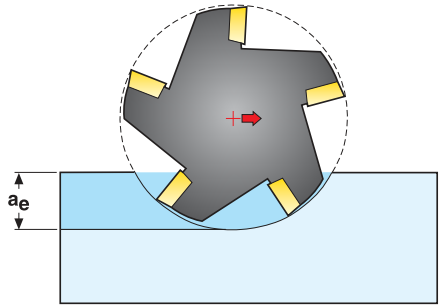
$$v_f = \frac{(D_i + D_c) \cdot n \cdot z_c \cdot f_z}{D_i}$$



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.

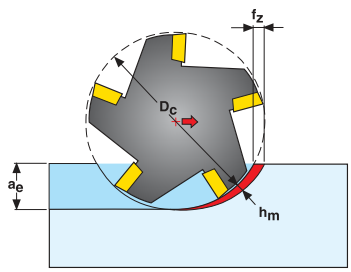
This table can be used for cutters with cutting edge angle = 90º

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 (hm)													
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

Instead of using the table above for calculating hm and fz, 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 = 45º

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 (hm)													
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.

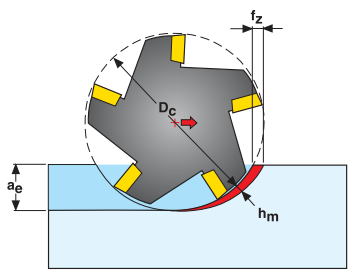
This table can be used for cutters with cutting edge angle = 60º

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 (hm)													
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

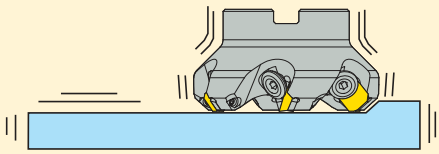
Instead of using the table above for calculating hm and f_z, the following formula could be used if a_e/DC < 30%.

$$h_m = f_z \cdot \sqrt{\frac{a_e}{D_c}} \cdot \sin \kappa$$

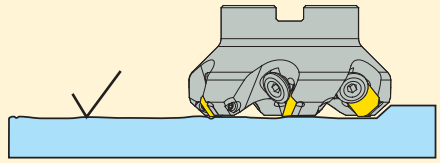
$$f_z = h_m \cdot \sqrt{\frac{D_c}{a_e}} \cdot \frac{1}{\sin \kappa}$$



Trouble shooting carbide milling

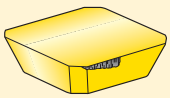


- Improve the stability of cutter and workpiece.
- Change cutter positioning.
- Minimize tool overhang.
- Reduce the cutting speed.
- Increase the feed rate.
- Reduce the depth of cut.
- Select a different insert geometriy, see page Insert geometry
- Use Steadyline antivibration bar



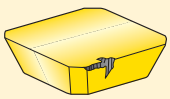
- Improve the stability of cutter and workpiece.
- Minimize tool overhang.
- Reduce the feed rate.
- Incease the cutting speed
- Use coolant.
- Use wiper inserts.
- Keep feed/rev value within wiper width
- Use Steadyline antivibration bar

Rapid flank wear



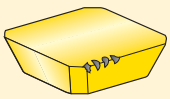
- Reduce the cutting speed.
- Increase the feed rate.
- Climb milling.

Rapid notch wear



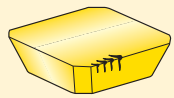
- Reduce the cutting speed.
- Increase the feed rate.
- Increase the depth of cut.
- Climb milling.
- Change cutter positioning

Chipping



- Increase the cutting speed.
- reduce the feed rate.
- Conventional milling.
- Improve chip evacuation.
- Change cutter positioning.
- Minimize tool overhang.
- Improve stability.

Comb cracks



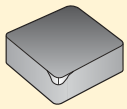
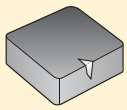
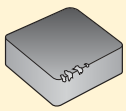
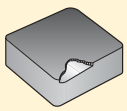
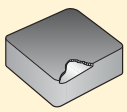
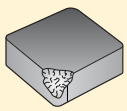
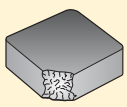
- Reduce the cutting speed.
- Reduce the feed rate.
- No coolant
- Change cutter positioning.

Built-up edge (BUE)



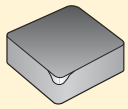
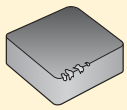
- Increase the cutting speed.
- Increase the feed rate
- No coolant.
- Climb milling.
- Change cutter positioning

Trouble shooting PCBN milling

Problem	Cause	Suggested action(s)
Flank wear 	Not correct edge temperature	• 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	• 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	• 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	• 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	• 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	• 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	• 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	• Check insert seating • Check insert shim and insert clamp • Check cutting tool centre height

Trouble shooting PCD milling

Troubleshooting

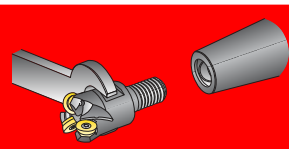
Problem	Cause	Suggested action(s)
Flank wear 	Wrong grade Precense of Fe/Ni/Co	• Change to coarser PCD grade • Check material composition • Reduce cutting speed • Use coolant
Built-up edge 	Not correct edge temperature Wrong grade	• Decrease or increase cutting speed • Choose a sharper insert • Change to a finer grade
Edge chipping 	Poor rigidity Wrong grade Incorrect cutting data High run-out	• 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	• Change to a finer PCD grade • Reduce cutting speed and feed rate • Check wiper position
Flaking of work-piece	Too high depth of cut	• Decrease depth of cut • Add entry chamfer on component

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
T00-08P20	T00-08P	T08P	2,0 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
T00-10P35	T00-10P	T10P	3,5 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	Hexagonial 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-5050	H00T-5,0	–	5,0 Nm	5 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-50100	H00T-5,0	–	10,0 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 712 - 715.

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 unambigious 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
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
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

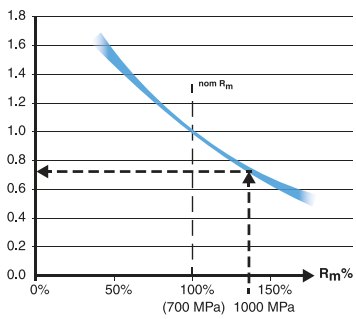
SMG	Description	Properties	Reference
H5	Quenched & Tempered steels	38 < HRC < 56	42 CrMo 4 50 HRC

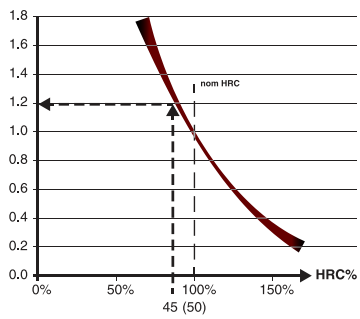
Focusing specifically on EN 42 CrMo 4 in annealed condition, the ultimate tensile strength R_m may typically vary between Rm = 630 N/mm^2 and R_m = 780 N/mm^2, which provide a reference level for SMG P5. In Quenched & Tempered condition, the ultimate tensile strength R_m may typically be between R_m = 900 N/mm^2 and R_m = 1100 N/mm^2 thus still belongs to SMG P5. However, if hardened above R_m = 1200 N/mm^2 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/mm^2 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 x 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 x 1,2 = 60 m/min.

For further workpiece material details please see page(s) 716-723 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 $R_m = 385$ 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 $R_m = 420$ 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 $R_m = 550$ 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 $R_m = 660$ 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 $R_m = 700$ 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 $R_m = 600$ 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 $R_m = 650$ N/mm^2	2160	0,17
P8	Tool steels High Speed Steels (HSS)	$600 < R_m < 1200$	X 40 CrMoV 5 1 $R_m = 700$ N/mm^2	2400	0,20
P11	Ferritic & martensitic stainless steels	$415 < R_m < 1200$	X 20 Cr 13 $R_m = 675$ N/mm^2	2000	0,15
P12	Maraging and precipitation-hardening stainless steels	$500 < R_m < 1200$	X 5 CrNiCuNb 16 4 $R_m = 1100$ 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		Discalloy		
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, (α+β)		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 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
	Low-alloy PM-materials		F-0008 Fe-0.7C		
	Medium-alloy PM-materials		FLC-4608 Fe2Cu1.8Ni 0.5Mo0.2Mn0.8C		
	High-alloy PM-materials Exhaust valve seat materials, etc.				
	Hardfacing alloys Welded or plasma-deposited iron-based alloys				
	Hardfacing alloys Welded or plasma-deposited cobalt- and nickel-based alloys				
	Sintered tungsten carbide		G50		

Plastics and Composites

SMG	Description	Properties	Reference	$k_{c1.1}$	m_c
	Thermosetting polymers		Urea formaldehyde (UF)		
	Thermosetting carbon-fibre composites		T300 T700 T800 HTA-S IMA - Epoxy (M21)...		
	Thermosetting glass-fibre composites		Epoxy - HX..(42..)/E glass (7781...)...		
	Thermosetting aramide-fibre composites		Kevlar 49		
	Thermoplastic polymers		Polycarbonate (PC)		
	Thermoplastic carbon-fibre composites		PPS/PEEK - T300..		
	Thermoplastic glass-fibre composites		PPS/PEEK - E glass or A glass...		
	Thermoplastic aramide-fibre composites				

Graphite

SMG	Description	Properties	Reference	$k_{c1.1}$	m_c
	Graphite		R 8500		

SMG

SMG	EN	EN-Nr	W.-Nr	DIN	AFNOR	BS	UNI	JIS	SS	UNS
	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			
P1	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
P2			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			
P3	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
	C35		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
	C40		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	
	C60	1.0601	1.0601	C 60	CC 55	080 A 62	C 60			G10600
P4			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
P5	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
P6	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	St14kP	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 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
	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 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 09-08-04	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 WKCV 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 WCV 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
M2	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
	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 CrNiSiNCe 21 11 2	1.4835	1.4893	X 9 CrNiSiNCe 21 11 2		310 S 31			2368	S30815
	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
M4	X 2 CrNiMoN 22 5 3	1.4462	1.4462	X 2 CrNiMoN 22 5	Z 2 CND 22.05 Az	332 S 15	X 2 CrNiMoN 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
	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
M5	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 CrNiMoN 25 22 8	1.4652	1.4652	X 2 CrNiMoN 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
	EN-GJL-150	0.6150	0.6150	GG-15	Ft 15 D	Grade 150	G15	FC 150	01 15-00	F11601
	EN-GJL-200	0.6200	0.6200	GG-20	Ft 20 D	Grade 220	G20	FC 200	01 20-00	F12101
K1	EN-GJL-250	0.6250	0.6250	GG-25	Ft 25 D	Grade 260	G25	FC 250	01 25-00	F12401
	EN-GJL-350	0.6350	0.6350	GG-35	Ft 35 D	Grade 350	G35	FC 350	01 35-00	F13502
	EN-GJL-215			GG-220 HB					02 19	
	EN-GJV-300			GJV-300						
	EN-GJV-350			GJV-350						
K2	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
	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
K4	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
										ADI grade 5
	EN-GJS-1000-5			GJS-1000-5						ADI grade 2
K5	EN-GJS-1200-2			GJS-1200-2						ADI grade 3
	EN-GJS-1400-1			GJS-1400-1						ADI grade 4
	EN-GJS-800-8			GJS-800-8						ADI grade 1
	EN-GJLA-XNiCr 20-2	0.6660	0.6660	GGL-NiCr 20 2	FGL Ni20 Cr2	Grade F2			05 23-00	F41002
K6	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
	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
K7	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
	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
N1	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
	AC-43400	AlSi10Mg(Fe)	3.2381	G-AlSi10Mg	A-S10G	LM9			4253	A13600
N2	AC-44200	AlSi12	3.2382	GD-AlSi12						
	AW-6082	AlMgSi1	3.2315	AlMgSi1	A-SGM0.7/6082	H30			4212	AA6082
N3		AlSi17Cu5						ADC14		
	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
N11			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	CuZn29Sn1				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

U.N.E./ I.H.A.	AISI / ASTM	GOST	ČSN	Misc. Brands	Condition	Structure
	A48 25 B	Sc 15	422 415			Grey cast iron (GCI)
	A48 30 B	Sc 20	422 420			Grey cast iron (GCI)
	A48 35 B	Sc 25	422 425			Grey cast iron (GCI)
	A48 50 B	Sc 35				Grey cast iron (GCI)
	G 3500					Grey cast iron (GCI)
	Grade 350					Compacted graphite iron (CGI)
	Grade 400					Compacted graphite iron (CGI)
	Grade 400-15					Compacted graphite iron (CGI)
	Grade 450					Compacted graphite iron (CGI)
	Grade 500					Compacted graphite iron (CGI)
	A220 60004				Tempered	Malleable cast iron (MCI)
						Nodular cast iron (SGI)
FGE 38-17	60-40-18	Vc 42-12	422 304			Nodular cast iron (SGI)
	60-40-18	Vc 42-12				Nodular cast iron (SGI)
FGE 50-7	A536, 80-55-06	Vc 50-2	422 305			Nodular cast iron (SGI)
FGE 60-2	A476, 80-60-03	Vc 60-2	422 306			Nodular cast iron (SGI)
FGE 70-2	A536, 100-70-03	Vc 70-2				Nodular cast iron (SGI)
	1600/1300/-					Austempered ductile iron (ADI)
	1050/700/7					Austempered ductile iron (ADI)
	1200/850/4					Austempered ductile iron (ADI)
	1400/1100/1					Austempered ductile iron (ADI)
	850/550/10					Austempered ductile iron (ADI)
	A436 Type 2			Ni-Resist 2		Austenitic lamellar cast iron
	A436 Type 3			Ni-Resist 3		Austenitic lamellar cast iron
	A436 Type 1			Ni-Resist 1		Austenitic lamellar cast iron
				Nodumag		Austenitic nodular cast iron
	A436 Type D-2			Ni-Resist D-2		Austenitic nodular cast iron
	A439 Type D-2M			Ni-Resist D-2M		Austenitic nodular cast iron
	A436 Type D-3			Ni-Resist D-3		Austenitic nodular cast iron
	A439 Type D-5			Ni-Resist D-5		Austenitic nodular cast iron
	B26					
	A380					
	AZ61A					
	AZ80A					
	AMS 4442					
	B85					
	A413.2					
	B390.0					
	CA952	BrA9ZH3L				
	CA955	BrA10ZH4N4L				
	CA937					
		BrOF6.5-0.15				
		L90				
		LOMsh70-1-0.05				
		LO60-1				
		LAMsh77-2-0.05				

SMG

SMG	EN	EN-Nr	W.-Nr	DIN	AFNOR	BS	UNI	JIS	SS	UNS
S1										
S2										
	NiMo30		2.4810							N10002
	NiMo16Cr15W		2.4819							N10276
	NiCr19Fe19Nb5Mo3		2.4668							N07718
S3			2.4669							N07750
	NiCr20TiAl		2.4631							N07080
	NiCr19Co18Mo4Ti3Al3									N07500
	NiCr20Co13Mo4Ti3Al		2.4654							N07001
S11			3.7024							
										R54620
S12										R56320
	TiAl6V4		3.7164							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
	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
H5	C 105U	1.1545	1.1545	C 105 W1	Y1 105		C 100 KU		1880	
			1.2550	60 WCrV 7	55 WC 20		55 WCrV 8 KU			
	55 Cr 3	1.7176	1.7176	55 Cr 3	55 C 3	527 A 60	55 Cr 3	SUP 9 (A)	2253	G51550
	42 CrMo 4	1.7225	1.7225	42 CrMo 4	42 CD 4	708 M 40	42 CrMo 4	SCM 440 (H)	2244	G41400
	107 CrV 3	1.2210	1.2210	115 CrV 3	100 C 3		107 CrV 3 KU			T61202
H7			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
	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	
H8			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
	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
H11	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 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
H12	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	
	EN-GJN-HV520	0.9620	0.9620	G-X330 NiCr 4 2	FB Ni4 Cr2 BC	Grade 2 A			05 12-00	F45001
H31	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 (α+β)
	AMS 4920, Grade 5	VT6		Ti 6Al-4V	Annealed	Ti (α+β)
	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

Declaration of conformity

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.

Declaration of conformity

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 then 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.

Declaration of conformity

SECO

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	■				■	■			■			■	■	■	■	■		
MP1501	■		■	■	■				■			■	■	■	■	■		
MP2050	■				■						■	■	■		■		■	
MP2501	■		■	■	■				■			■	■	■	■	■		
MP3000	■				■	■			■			■	■		■			
MS2500	■		■	■	■				■			■	■	■	■	■		
MS2050	■				■	■			■			■	■		■			■
RX1500	■		■		■		■	■	■			■	■		■			
RX2000	■		■		■	■			■			■	■		■			
RM2020	■				■				■			■						
RM2090	■				■	■			■			■	■				■	
RN2010	■				■	■			■									
RS2090	■				■	■			■			■	■				■	
T350M	■		■	■	■				■			■	■	■	■	■		
T25M	■		■	■	■				■			■		■	■			
TGH1050	■				■	■			■			■	■		■		■	
TGK1500	■		■		■				■			■	■	■	■	■		
TGP25	■	■	■	■	■				■			■	■	■	■	■		
TGP35	■		■	■	■				■			■	■	■	■	■		
TGP45	■		■	■	■				■			■	■	■	■	■		
TH1000	■				■	■			■			■	■		■		■	
TH1500	■				■	■			■			■	■	■	■	■		
TK0501	■				■	■			■			■	■	■	■	■		
TK1501	■		■		■	■			■			■	■	■	■	■		
TM1501	■	■	■	■	■	■			■	■		■	■	■	■	■		
TM2000	■	■	■	■	■				■	■		■	■	■	■	■		
TM2501	■	■	■	■	■				■	■		■	■	■	■	■		
TM3501	■				■				■			■	■	■	■	■		
TM4000	■	■	■	■	■				■	■		■	■	■	■	■		
TP0501	■	■	■	■	■	■			■			■	■	■	■	■		
TP1020	■	■	■	■	■				■	■								
TP1030	■	■	■	■	■				■	■		■	■		■		■	
TP1501	■	■	■	■	■				■	■		■	■	■	■	■		
TP25	■	■	■	■	■	■			■	■		■	■	■	■	■		
TP200	■	■	■	■	■				■	■		■	■	■	■	■		
TP2501	■	■	■	■	■	■			■	■		■	■	■	■	■		
TP3501	■	■	■	■	■				■	■		■	■	■	■	■		
TP40	■		■	■	■				■			■		■	■			
TS2000	■				■	■			■			■	■		■			
TS2050	■				■	■			■			■	■		■		■	
TS2500	■		■		■				■			■	■		■			
T250D	■				■	■			■			■	■		■			
T400D	■				■	■			■			■	■		■			
T100R	■		■		■	■			■			■	■		■			
T60M	■	■	■	■	■				■			■	■		■			
883	■		■		■				■									
890	■				■	■			■									

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