



UPDATE 2015-2



SOLUTIONS & SUPPORT

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

Globally headquartered in Fagersta, Sweden and present in more than 50 countries, Seco develops cutting tools, processes and services for high productivity and profitability. Our team of over 5,000 dedicated employees maintains partnerships around the world to identify and overcome the challenges faced by today's manufacturers.

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

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Milling

Solid end mills

Turning

Threading

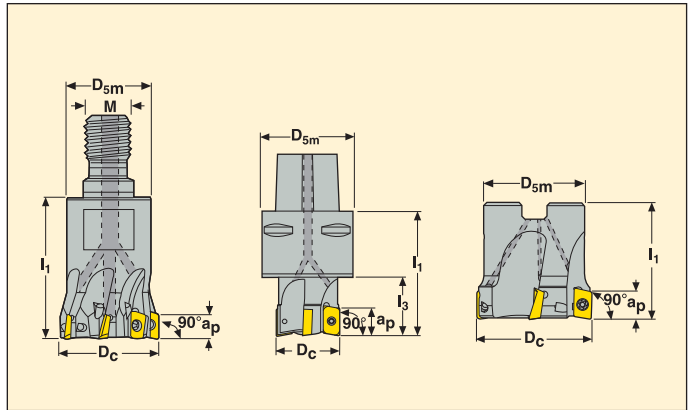
Holemaking

Tooling

* SMG = Seco Material Group

Turbo 10 – R217/220.69-10

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 4-5
- For complete insert programme, see page(s) 178
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm								α° max				Insert
		a_p	D_c	D_{5m}	d_{m_m}	M	l_1	l_3						
R217.69 -0816.RE-10-2A	Combimaster	9	16	14	–	M8	23	–	7,5	2	0,1	29400	XO.X10T3..	
R217.69 -1020.RE-10-2A	Combimaster	9	20	19	–	M10	28	–	4,5	2	0,1	26300	XO.X10T3..	
R217.69 -1225.RE-10-3A	Combimaster	9	25	23	–	M12	30	–	3,0	3	0,1	23500	XO.X10T3..	
R217.69 -1632.RE-10-3A	Combimaster	9	32	30	–	M16	40	–	2,0	3	0,2	20800	XO.X10T3..	
R220.69 -0032-10-4A	Arbor	9	32	30	16	–	35	–	2,0	4	0,2	20800	XO.X10T3..	
R217.69 -2040.RE-10-4A	Combimaster	9	40	36,5	–	M20	40	–	1,5	4	0,4	18600	XO.X10T3..	
R220.69 -0040-10-4A	Arbor	9	40	35	16	–	40	–	1,5	4	0,2	18600	XO.X10T3..	
C4-R217.69 -044-10-4A	Seco-Capto	9	44	40	–	–	60	60	1,3	4	0,6	28000	XO.X10T3..	
R220.69 -0050-10-5A	Arbor	9	50	47	22	–	40	–	1,0	5	0,4	16600	XO.X10T3..	
C5-R217.69 -054-10-5A	Seco-Capto	9	54	50	–	–	60	60	1,2	5	0,9	14200	XO.X10T3..	
R220.69 -0063-10-5A	Arbor	9	63	52	27	–	40	–	0,5	5	0,6	14800	XO.X10T3..	
C6-R217.69 -066-10-5A	Seco-Capto	9	66	63	–	–	60	60	0,9	5	1,5	7700	XO.X10T3..	
R220.69 -0080-10-8A	Arbor	9	80	62	27	–	50	–	0,5	8	1,1	13200	XO.X10T3..	

Ramping angle = α° Spigot size = d_{m_m}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
R217.69-..	C02506-T07P	T07P-3	–
R220.69-0032	C02506-T07P	T07P-3	220.17-688
R220.69-0040-0044	C02506-T07P	T07P-3	MC6S8X30
Cx-R217.69-..	C02506-T07P	T07P-3	–
R220.69-0050-0052	C02506-T07P	T07P-3	220.17-692
R220.69-0063	C02506-T07P	T07P-3	220.17-693
R220.69-0080	C02506-T07P	T07P-3	–

Please check availability in current price and stock-list

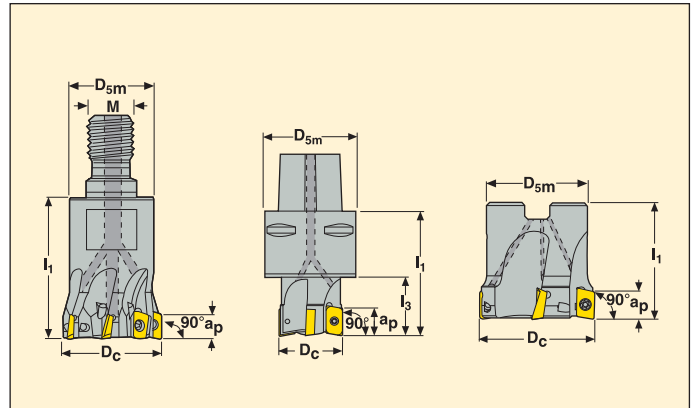
Torque value 1,2. For dimension of mounting and torque keys, see page 672 MN2015 Milling

Turbo 10 – R217/220.69-10

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 4-5
- For complete insert programme, see page(s) 178
- For helical interpolation, see page(s) 664-665 MN2015 Milling



Part No.	Type of mounting	Dimensions in mm								α° max				Insert
		a_p	D_c	D_{sm}	d_{m_m}	M	l_1	l_2	l_3					
R217.69 -1020.RE-10-3A	Combimaster	9	20	19	–	M10	28	–	4,5	3	0,1	26300	XO.X10T3..	
R217.69 -1225.RE-10-4A	Combimaster	9	25	23	–	M12	30	–	3,0	4	0,1	23500	XO.X10T3..	
R217.69 -1632.RE-10-5A	Combimaster	9	32	30	–	M16	40	–	2,0	5	0,2	20800	XO.X10T3..	
R220.69 -0032-10-5A	Arbor	9	32	30	16	–	35	–	2,0	5	0,2	20800	XO.X10T3..	
R217.69 -2040.RE-10-6A	Combimaster	9	40	36,5	–	M20	40	–	1,5	6	0,4	18600	XO.X10T3..	
R220.69 -0040-10-6A	Arbor	9	40	35	16	–	40	–	1,5	6	0,2	18600	XO.X10T3..	
C4-R217.69 -044-10-6A	Seco-Capto	9	44	40	–	–	60	60	1,3	6	0,6	28000	XO.X10T3..	
R220.69 -0050-10-7A	Arbor	9	50	47	22	–	40	–	1,0	7	0,4	16600	XO.X10T3..	
C5-R217.69 -054-10-7A	Seco-Capto	9	54	50	–	–	60	60	1,2	7	1,0	14200	XO.X10T3..	
R220.69 -0063-10-8A	Arbor	9	63	52	27	–	40	–	0,5	8	0,6	14800	XO.X10T3..	
C6-R217.69 -066-10-8A	Seco-Capto	9	66	63	–	–	60	60	0,9	8	1,6	7700	XO.X10T3..	
R220.69 -0080-10-10A	Arbor	9	80	62	27	–	50	–	0,5	10	1,1	13200	XO.X10T3..	
R220.69 -0100-10-12A	Arbor	9	100	77	32	–	50	–	0,5	12	1,8	11800	XO.X10T3..	

Ramping angle = α° Spigot size = d_{m_m}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
R217.69-..	C02506-T07P	T07P-3	–
R220.69-0032	C02506-T07P	T07P-3	220.17-688
R220.69-0040	C02506-T07P	T07P-3	MC6S8X30
Cx-R217.69-..	C02506-T07P	T07P-3	–
R220.69-0050	C02506-T07P	T07P-3	220.17-692
R220.69-0063-0066	C02506-T07P	T07P-3	220.17-693
R220.69-0080-0100	C02506-T07P	T07P-3	–

Please check availability in current price and stock-list

Torque value 1,2. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R217/220.69-10 – Insert selection

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

SMG = Seco material group

f_z = mm/tooth

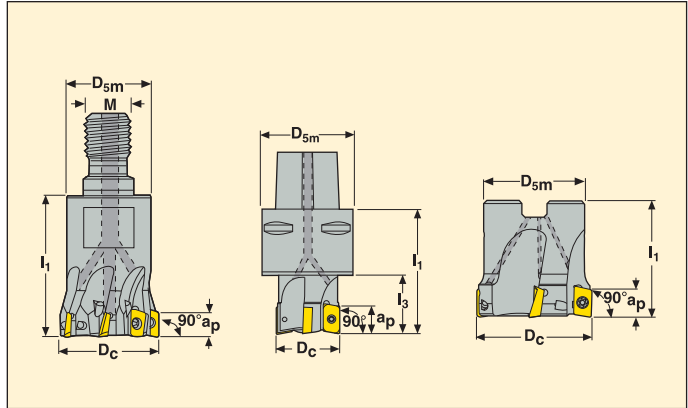
v_c = m/min

a_p/D_c = %

All cutting data are start values

Turbo 12 – R217/220.69-12

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 8-9
- For complete insert programme, see page(s) 178
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm								α° max				Insert
		a_p	D_c	D_{5m}	d_{m_m}	M	l_1	l_3						
R217.69 -1020.RE-12-2AN	Combimaster	11	20	18	–	M10	28	–	8,0	2	0,1	23200	XO.X12..	
R217.69 -1225.RE-12-3AN	Combimaster	11	25	23	–	M12	30	–	5,0	3	0,1	20800	XO.X12..	
R217.69 -1632.RE-12-3AN	Combimaster	11	32	30	–	M16	40	–	3,0	3	0,2	18400	XO.X12..	
R220.69 -0032-12-3AN	Arbor	11	32	30	16	–	35	–	3,0	3	0,3	18400	XO.X12..	
R217.69 -1640.RE-12-4AN	Combimaster	11	40	30	–	M16	40	–	2,5	4	0,3	16400	XO.X12..	
R217.69 -2040.RE-12-4AN	Combimaster	11	40	36,5	–	M20	40	–	4,5	4	0,4	16400	XO.X12..	
R220.69 -0040-12-4AN	Arbor	11	40	35	16	–	40	–	2,5	4	0,4	16400	XO.X12..	
C5-R217.69 -040-12-4AN	Seco-Capto	11	40	50	–	–	80	57	2,5	4	0,9	16400	XO.X12..	
R220.69 -0050-12-5AN	Arbor	11	50	47	22	–	40	–	2,0	5	0,4	14800	XO.X12..	
C5-R217.69 -054-12-5AN	Seco-Capto	11	54	50	–	–	60	60	1,5	5	1,0	14200	XO.X12..	
R220.69 -0063-12-6AN	Arbor	11	63	52	27	–	40	–	1,5	6	0,5	13200	XO.X12..	
R220.69 -0080-12-7AN	Arbor	11	80	62	27	–	50	–	1,0	7	1,1	11600	XO.X12..	
R220.69 -0100-12-8AN	Arbor	11	100	77	32	–	50	–	0,5	8	1,7	10400	XO.X12..	
R220.69 -0125-12-10AN	Arbor	11	125	90	40	–	63	–	0,5	10	3,2	9200	XO.X12..	

Ramping angle = α° Spigot size = d_{m_m}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

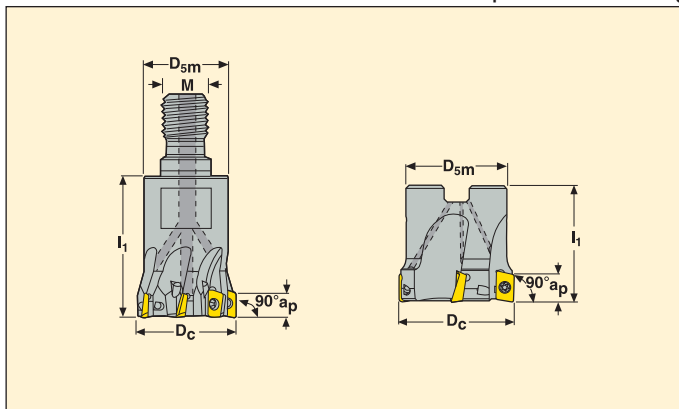
For cutter	Insert screw	Insert key	Arbor screw
R217.69-.. Ø20-25	C03507-T10P	T10P-3	–
R217.69-.. Ø32	C03508-T10P	T10P-3	–
R220.69-0032	C03508-T10P	T10P-3	220.17-688
R217.69-Ø40	C03509-T10P	T10P-3	–
R220.69-0040	C03509-T10P	T10P-3	MC6S8X30
C5-R217.69-..	C03509-T10P	T10P-3	–
R220.69-0050	C03509-T10P	T10P-3	220.17-692
R220.69-0063	C03509-T10P	T10P-3	220.17-693
R220.69-0080-0125	C03509-T10P	T10P-3	–

Please check availability in current price and stock-list

Torque value 2,0. For dimension of mounting and torque keys, see page 672 MN2015 Milling

Turbo 12 – R217/220.69-12

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 8-9
- For complete insert programme, see page(s) 178
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm						α° max				Insert
		a_p	D_c	D_{sm}	d_{m_m}	M	I_1					
R217.69 -1632.RE-12-4AN	Combimaster	11	32	30	–	M16	40	3,0	4	0,2	18400	XO.X12..
R220.69 -0032-12-4AN	Arbor	11	32	30	16	–	35	3,0	4	0,3	18400	XO.X12..
R217.69 -1640.RE-12-5AN	Combimaster	11	40	40	–	M16	40	2,5	5	0,3	16400	XO.X12..
-2040.RE-12-5AN	Combimaster	11	40	36,5	–	M20	40	4,5	5	0,4	16400	XO.X12..
R220.69 -0040-12-5AN	Arbor	11	40	35	16	–	40	2,5	5	0,2	16400	XO.X12..
R220.69 -0050-12-7AN	Arbor	11	50	47	22	–	40	2,0	7	0,4	14800	XO.X12..
R220.69 -0063-12-8AN	Arbor	11	63	52	27	–	40	1,5	8	0,6	13200	XO.X12..
R220.69 -0080-12-10AN	Arbor	11	80	62	27	–	50	1,0	10	1,0	11600	XO.X12..
R220.69 -0100-12-12AN	Arbor	11	100	77	32	–	50	0,5	12	1,7	10400	XO.X12..
R220.69 -0125-12-14AN	Arbor	11	125	90	40	–	63	0,5	14	3,2	9200	XO.X12..

Ramping angle = α° Spigot size = d_{m_m}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
R217.69- Ø32	C03508-T10P	T10P-3	–
R220.69-0032	C03507-T10P	T10P-3	220.17-688
R217.69- Ø40	C03509-T10P	T10P-3	–
R220.69-0040	C03509-T10P	T10P-3	MC6S8X30
R220.69-0050	C03509-T10P	T10P-3	220.17-692
R220.69-0063	C03509-T10P	T10P-3	220.17-693
R220.69-0080-0125	C03509-T10P	T10P-3	–

Please check availability in current price and stock-list

Torque value 2,0. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R217/220.69-12 – Insert selection

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

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

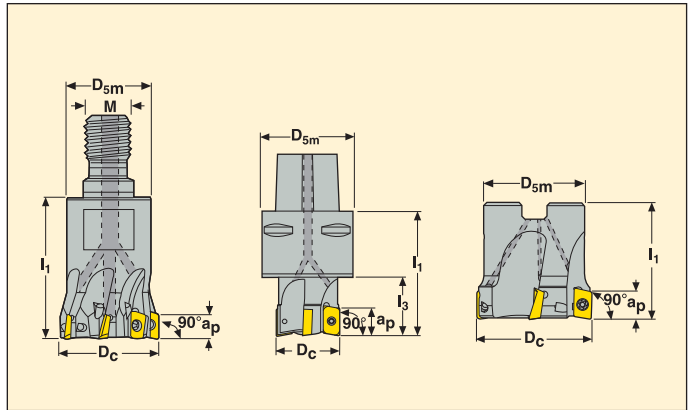
a_e/D_c = %

All cutting data are start values

Square shoulder and slot milling cutters

Turbo 18 – R217/220.69-18

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 12 – 13
- For complete insert programme, see page(s) 180
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm								α° max				Insert
		a_p	D_c	D_{5m}	d_{m_m}	M	l_1	l_3						
R217.69 -1632.RE-18-2AN	Combimaster	17	32	30	–	M16	45	–	7,0	2	0,2	11100	XO.X18..	
R217.69 -1640.RE-18-3AN	Combimaster	17	40	30	–	M16	45	–	4,5	3	0,3	9900	XO.X18..	
-2040.RE-18-4AN	Combimaster	17	40	36,5	–	M20	45	–	4,5	4	0,4	9900	XO.X18..	
C6-R217.69 -040-18-3AN	Seco-Capto	17	40	63	–	–	80	55	4,5	3	1,1	9900	XO.X18..	
R220.69 -0050-18-4AN	Arbor	17	50	47	22	–	40	–	3,0	4	0,3	8900	XO.X18..	
R220.69 -0063-18-4AN	Arbor	17	63	52	27	–	40	–	2,0	4	0,5	7900	XO.X18..	
-0063-18-5AN	Arbor	17	63	52	27	–	40	–	2,0	5	0,5	7900	XO.X18..	
C6-R217.69 -066-18-5AN	Seco-Capto	17	66	63	–	–	60	60	2,4	5	1,4	7700	XO.X18..	
R220.69 -0080-18-5AN	Arbor	17	80	62	27	–	50	–	1,5	5	1,0	7000	XO.X18..	
-0080-18-6AN	Arbor	17	80	62	27	–	50	–	1,5	6	1,0	7000	XO.X18..	
C6-R217.69 -080-18-6AN	Seco-Capto	17	80	63	–	–	60	60	1,5	6	1,7	7000	XO.X18..	
R220.69 -0100-18-6AN	Arbor	17	100	77	32	–	50	–	1,0	6	1,6	6300	XO.X18..	
-0100-18-7AN	Arbor	17	100	77	32	–	50	–	1,0	7	1,6	6300	XO.X18..	
R220.69 -0125-18-7AN	Arbor	17	125	90	40	–	63	–	1,0	7	3,1	5600	XO.X18..	
-0125-18-8AN	Arbor	17	125	90	40	–	63	–	1,0	8	3,0	5600	XO.X18..	
R220.69 -8160-18-7N	Arbor	17	160	90	40	–	63	–	0,5	7	4,5	5000	XO.X18..	
-8160-18-9N	Arbor	17	160	90	40	–	63	–	0,5	9	4,6	5000	XO.X18..	

Ramping angle = α° Spigot size = d_{m_m}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

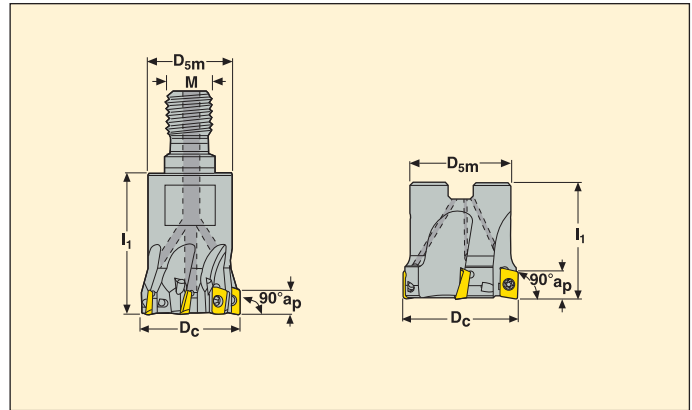
For cutter	Insert screw	Insert key	Arbor screw
R217.69-..	C04510-T20P	T20P-3	–
R220.69-0050	C04510-T20P	T20P-3	220.17-692
R220.69-0063	C04510-T20P	T20P-3	220.17-693
R220.69-0080-8160	C04510-T20P	T20P-3	–

Please check availability in current price and stock-list

Torque value 5,0. For dimension of mounting and torque keys, see page 672 MN2015 Milling

Turbo 18 – R217/220.69-18

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 12 – 13
- For complete insert programme, see page(s) 180
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm						α° max				Insert
		a_p	D_c	D_{sm}	d_{m_m}	M	L_1					
R217.69 -1632.RE-18-3AN	Combimaster	17	32	30	–	M16	45	7,0	3	0,2	11100	XO.X18..
R217.69 -1640.RE-18-4AN	Combimaster	17	40	30	–	M16	45	4,5	4	0,3	9900	XO.X18..
-2040.RE-18-3AN	Combimaster	17	40	36,5	–	M20	45	4,5	3	0,4	9900	XO.X18..
R220.69 -0050-18-5AN	Arbor	17	50	47	22	–	40	3,0	5	0,3	8900	XO.X18..
-0063-18-6AN	Arbor	17	63	52	27	–	40	2,0	6	0,5	7900	XO.X18..
-0080-18-8AN	Arbor	17	80	62	27	–	50	1,5	8	1,0	7000	XO.X18..
-0100-18-9AN	Arbor	17	100	77	32	–	50	1,0	9	1,6	6300	XO.X18..
-0125-18-11AN	Arbor	17	125	90	40	–	63	1,0	11	3,0	5600	XO.X18..
-8160-18-12N	Arbor	17	160	90	40	–	63	0,5	12	4,6	5000	XO.X18..

Ramping angle = α° Spigot size = d_{m_m}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
R217.69-..	C04510-T20P	T20P-3	–
R220.69-0050	C04510-T20P	T20P-3	220.17-692
R220.69-0063	C04510-T20P	T20P-3	220.17-693
R220.69-0080-0100	C04510-T20P	T20P-3	–
R220.69-0125-8160	C04510-T20P	T20P-3	–

Please check availability in current price and stock-list
 Torque value 5,0. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R217/220.69-18 – Insert selection

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

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/D_c = %

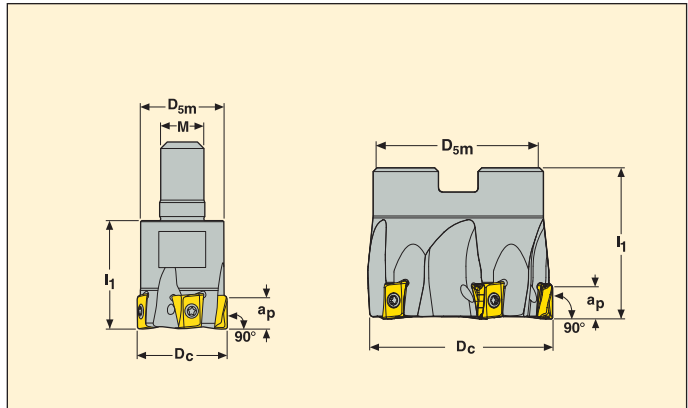
All cutting data are start values

Square T4 – R217/220.94-08

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 16–17
- For complete insert programme, see page(s) 168



Part No.	Type of mounting	Dimensions in mm						I ₁				Insert
		a _p	D _c	D _{sm}	dm _m	M						
R217.94 -0816.RE-08-2A	Combimaster	8,6	16	13,5	–	M8	23,0	2	0,1	20600	LOEX08..	
R217.94 -1020.RE-08-2A	Combimaster	8,6	20	18,5	–	M10	28,0	2	0,1	18400	LOEX08..	
R217.94 -1225.RE-08-3A	Combimaster	8,6	25	23,0	–	M12	30,0	3	0,1	16500	LOEX08..	
R217.94 -1632.RE-08-3A	Combimaster	8,6	32	30,0	–	M16	35,0	3	0,2	14600	LOEX08..	
R220.94 -0032-08-3A	Arbor	8,6	32	29,3	16	–	35,0	3	0,2	13000	LOEX08..	
R217.94 -2040.RE-08-4A	Combimaster	8	40	36,5	–	M20	40,0	6	0,4	14600	LOEX08..	
R220.94 -0040-08-4A	Arbor	8,6	40	35	16	–	40	4	0,3	13000	LOEX08..	
R220.94 -0050-08-5A	Arbor	8,6	50	45,0	22	–	40	5	0,4	11700	LOEX08..	
R220.94 -0063-08-6A	Arbor	8,6	63	56,0	27	–	40	6	0,6	10400	LOEX08..	

Spigot size = dm_m

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
R217.94-.. Ø16	C02707-T08P	T08P-3	–
R217.94-.. Ø20-40	C02708-T08P	T08P-3	–
R220.94-0032-0040	C02708-T08P	T08P-2	TCEI0825
R220.94-0050	C02708-T08P	T08P-2	220.17-692
R220.94-0063	C02708-T08P	T08P-2	MLC6S12X30

Please check availability in current price and stock-list
 Torque value 1,2. For dimension of mounting and torque keys, see page 672 MN2015 Milling

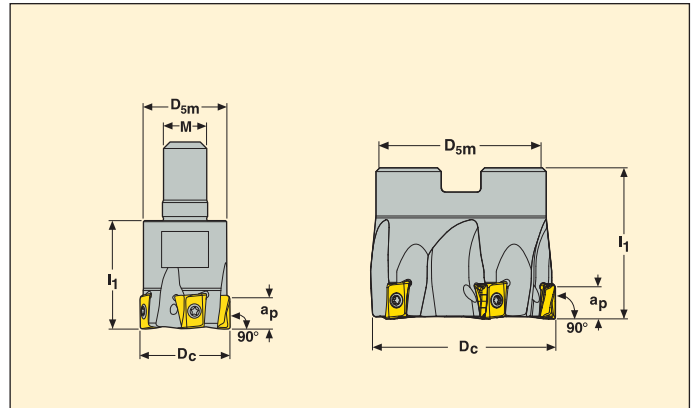
Square shoulder and slot milling cutters

Square T4 – R217/220.94-08

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 16–17
- For complete insert programme, see page(s) 168



Part No.	Type of mounting	Dimensions in mm						Number of inserts	KG	Insert	
		a_p	D_c	D_{5m}	d_{m_m}	M	I_1				
R217.94 -1020.RE-08-3A	Combimaster	8,6	20	18,5	–	M10	28,0	3	0,1	18400	LOEX08..
R217.94 -1225.RE-08-4A	Combimaster	8	25	23,0	–	M12	30,0	4	0,1	16500	LOEX08..
R217.94 -1632.RE-08-5A	Combimaster	8,6	32	30,0	–	M16	35,0	5	0,2	14600	LOEX08..
R220.94 -0032-08-5A	Arbor	8,6	32	29,3	16	–	35,0	5	0,2	13000	LOEX08..
R217.94 -2040.RE-08-6A	Combimaster	8	40	36,5	–	M20	40,0	6	0,4	14600	LOEX08..
R220.94 -0040-08-6A	Arbor	8,6	40	35	16	–	40	6	0,3	13000	LOEX08..
R220.94 -0050-08-7A	Arbor	8,6	50	45,0	22	–	40	7	0,4	11700	LOEX08..
R220.94 -0063-08-9A	Arbor	8,6	63	56,0	27	–	40	9	0,6	10400	LOEX08..

Spigot size = d_{m_m}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
R217.94-..	C02708-T08P	T08P-3	–
R220.94-0032-0040	C02708-T08P	T08P-2	TCEI0825
R220.94-0050	C02708-T08P	T08P-2	220.17-692
R220.94-0063	C02708-T08P	T08P-3	MLC6S12X30

Please check availability in current price and stock-list
 Torque value 1,2. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R217/220.94-08 – Insert selection

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

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

Square shoulder and slot milling cutters



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

SMG	MP1500			MP2500			MP3000			T350M			F40M		
	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	355	470	550	315	415	485	300	390	460	275	360	420	235	310	365
P2	340	445	530	300	395	470	285	375	445	260	345	410	230	295	355
P3	300	390	465	265	345	410	250	330	390	230	300	360	195	260	310
P4	260	345	410	230	305	360	220	290	345	200	265	315	175	230	270
P5	250	330	390	220	290	345	210	275	330	195	255	300	170	225	260
P6	290	380	445	255	335	395	240	315	375	220	290	345	190	250	295
P7	270	355	420	240	315	370	230	300	350	210	275	325	180	235	280
P8	250	330	390	220	290	345	210	275	330	195	255	300	165	220	260
P11	265	345	410	235	305	360	220	290	340	205	270	315	175	230	270
M1	—	—	—	215	285	340	210	280	335	200	265	315	185	240	285
M2	—	—	—	180	235	280	175	230	275	165	220	260	155	200	235
M3	—	—	—	145	190	225	145	185	220	135	180	210	120	160	190
K1	270	355	420	235	315	375	225	295	355	—	—	—	180	235	280
K2	240	315	370	210	275	330	200	260	310	—	—	—	160	210	245
K3	200	265	315	180	235	280	170	220	265	—	—	—	135	180	210
K4	190	255	300	170	225	265	160	210	250	—	—	—	130	170	200
K5	120	155	185	105	140	165	100	130	155	—	—	—	80	105	120
K6	170	225	265	150	195	235	140	185	220	—	—	—	115	150	175
K7	150	200	235	135	180	210	125	170	195	—	—	—	100	135	155
S1	—	—	—	—	—	—	50	70	80	50	65	75	44	60	70
S2	—	—	—	—	—	—	42	55	65	40	55	60	36	47	55
S3	—	—	—	—	—	—	37	48	55	35	46	55	31	41	49
S11	—	—	—	—	—	—	75	95	110	70	90	105	60	80	95
S12	—	—	—	—	—	—	42	55	65	40	50	60	36	47	55

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

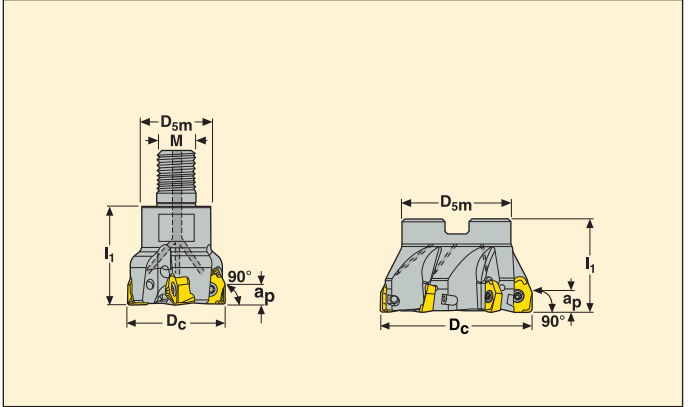
SMG	MK 1500			MK2050			MM4500			MS2050		
	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	305	400	465	195	260	300	—	—	—
P2	—	—	—	290	380	455	190	245	295	—	—	—
P3	—	—	—	255	335	395	165	215	255	—	—	—
P4	—	—	—	225	295	350	145	190	225	—	—	—
P5	—	—	—	215	280	335	140	180	215	—	—	—
P6	—	—	—	245	325	380	160	210	245	210	245	265
P7	—	—	—	235	305	360	150	195	230	200	230	250
P8	—	—	—	215	280	335	140	180	215	190	225	240
P11	—	—	—	225	295	350	145	190	225	190	225	245
M1	—	—	—	—	—	—	160	210	250	230	275	295
M2	—	—	—	—	—	—	135	175	205	185	220	235
M3	—	—	—	—	—	—	110	140	165	130	150	160
K1	345	450	540	315	410	490	—	—	—	—	—	—
K2	305	400	470	280	365	430	—	—	—	—	—	—
K3	255	335	400	235	310	365	—	—	—	—	—	—
K4	245	320	380	225	295	350	—	—	—	—	—	—
K5	150	200	235	140	185	215	—	—	—	—	—	—
K6	215	285	335	200	260	305	—	—	—	—	—	—
K7	195	255	300	180	235	275	—	—	—	—	—	—
S1	—	—	—	—	—	—	26	34	40	—	—	—
S2	—	—	—	—	—	—	21	27	32	—	—	—
S3	—	—	—	—	—	—	18	24	28	—	—	—
S11	—	—	—	—	—	—	36	47	55	70	85	100
S12	—	—	—	—	—	—	28	36	43	55	65	75

Square shoulder and slot milling cutters



Square 6™ – R217/220.96-04

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 20-21
- For complete insert programme, see page(s) 182

Part No.	Type of mounting	Dimensions in mm									Insert
		a_p	D_c	D_{sm}	d_{m_m}	M	l_1				
R217.96 -1020.RE-04-2A	Combimaster	4	20	18,3	–	M10	28	2	1,9	29400	XNEX04..
R217.96 -1225.RE-04-4A	Combimaster	4	25	23	–	M12	30	4	0,1	26300	XNEX04..
R217.96 -1632.RE-04-5A	Combimaster	4	32	30	–	M16	40	5	0,3	23200	XNEX04..
R220.96 -0032-04-4A	Arbor	4	32	35	16	–	40	4	0,2	23200	XNEX04..
R217.96 -2040.RE-04-6A	Combimaster	4	40	37	–	M20	40	6	0,4	20700	XNEX04..
R220.96 -0040-04-5A	Arbor	4	40,0	35	16	–	40	5	0,3	20700	XNEX04..
R220.96 -0050-04-6A	Arbor	4	50	47	22	–	40	6	0,4	18600	XNEX04..
R220.96 -0063-04-7A	Arbor	4	63	52	27	–	40	7	0,7	150000	XNEX04..

Spigot size = d_{m_m}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
R217.96-..	C02506-T08P	T08P-3	–
R220.96-0032-0040	C02506-T08P	T08P-2	TCEI0825
R220.96-0050	C02506-T08P	T08P-2	220.17-692
R220.96-0063	C02506-T08P	T08P-2	–

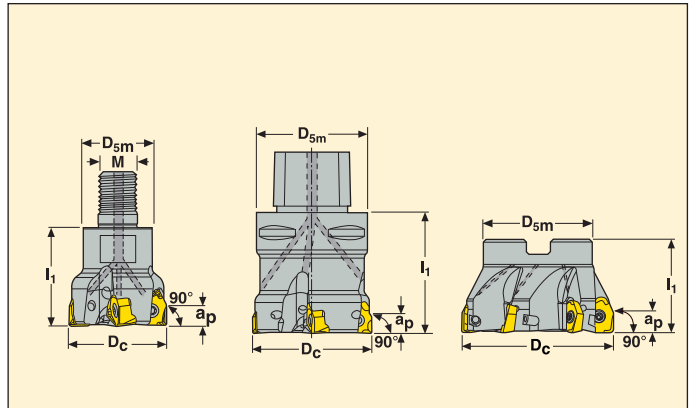
Square shoulder and slot milling cutters

Square 6™ – R217/220.96-04

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 20-21
- For complete insert programme, see page(s) 182



Part No.	Type of mounting	Dimensions in mm										Insert
		a_p	D_c	D_{sm}	d_{m_m}	M	I_1	I_3				
R217.96 -1020.RE-04-3A	Combimaster	4	20	18,3	–	M10	28	–	3	0,1	29400	XNEX04..
R217.96 -1225.RE-04-5A	Combimaster	4	25	23	–	M12	30	–	5	0,1	26300	XNEX04..
R217.96 -1632.RE-04-6A	Combimaster	4	32	30	–	M16	40	–	6	0,3	23200	XNEX04..
R220.96 -0032-04-6A	Arbor	4	32	35	16	–	40	–	6	0,2	23200	XNEX04..
R217.96 -2040.RE-04-7A	Combimaster	4	40	37	–	M20	40	–	7	0,4	20700	XNEX04..
R220.96 -0040-04-6A	Arbor	4	40	35	16	–	40	–	6	0,3	20700	XNEX04..
-0040-04-7A	Arbor	4	40	35	16	–	40	–	7	0,3	20700	XNEX04..
C4-R217.96 -044-04-6A	Seco-Capto	4	44	40	–	–	50	50	6	0,5	19800	XNEX04..
R220.96 -0050-04-8A	Arbor	4	50	47	22	–	40	–	8	0,4	18600	XNEX04..
-0050-04-9A	Arbor	4	50	47	22	–	40	–	9	0,4	18600	XNEX04..
C5-R217.96 -054-04-8A	Seco-Capto	4	54	50	–	–	50	50	8	0,8	17900	XNEX04..
R220.96 -0063-04-9A	Arbor	4	63	52	27	–	40	–	9	0,7	16500	XNEX04..
-0063-04-10A	Arbor	4	63	52	27	–	40	–	10	0,7	16500	XNEX04..
C6-R217.96 -066-04-9A	Seco-Capto	4	66	63	–	–	60	60	9	1,5	16200	XNEX04..

Spigot size = d_{m_m}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
R217.96-..	C02506-T08P	T08P-3	–
R220.96-0032	C02506-T08P	T08P-3	TCEI0825
R220.96-0040	C02506-T08P	T08P-2	TCEI0825
Cx-R217.96-..	C02506-T08P	T08P-3	–
R220.96-0050	C02506-T08P	T08P-2	220.17-692
R220.96-0063	C02506-T08P	T08P-2	–

Please check availability in current price and stock-list

Torque value 1,2. For dimension of mounting and torque keys, see page 672 MN2015 Milling

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	0,20
P3	XNEX040304TR-M08 MP2500	2,0	0,11	0,12	0,19
P4	XNEX040304TR-M08 MP2500	2,0	0,11	0,12	0,18
P5	XNEX040304TR-M08 MP2500	2,0	0,11	0,12	0,18
P6	XNEX040304TR-M08 MP2500	2,0	0,10	0,11	0,18
P7	XNEX040304TR-M08 MP2500	2,0	0,10	0,11	0,18
P8	XNEX040304TR-M08 MP2500	2,0	0,11	0,12	0,19
P11	XNEX040304TR-M08 MP3000	2,0	0,10	0,11	0,18
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	1,5	0,065	0,070	0,11
M4	XNEX040304R-M06 F40M	1,2	0,060	0,065	0,095
M5	XNEX040304R-M06 MM4500	1,2	0,060	0,065	0,095
K1	XNEX040304TR-M08 MK2050	2,0	0,12	0,13	0,20
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	0,095
S2	XNEX040304R-M06 F40M	1,2	0,060	0,065	0,095
S3	XNEX040304R-M06 F40M	1,2	0,055	0,060	0,090
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	0,095
H5	XNEX040304TR-M08 MP2500	1,5	0,075	0,080	0,12
H8	XNEX040304TR-M08 MP3000	1,4	0,055	0,060	0,095
H11	XNEX040304TR-M08 MP2500	1,5	0,075	0,080	0,12
H12	XNEX040304TR-M08 MP2500	1,5	0,075	0,080	0,12

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/D_c = %

All cutting data are start values

Square shoulder and slot milling cutters



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

SMG	MP1020			MP1500			MP2500			MP3000			F40M		
	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	405	455	480	350	455	540	310	405	480	325	430	510	235	305	365
P2	395	445	465	335	445	530	295	395	465	320	415	485	225	300	355
P3	340	380	405	295	390	460	260	345	405	275	365	425	200	260	310
P4	305	340	355	260	345	405	230	305	360	245	320	380	175	230	270
P5	295	325	340	250	330	385	220	290	340	235	310	365	165	220	260
P6	330	365	380	285	375	440	255	335	390	260	345	405	190	250	295
P7	310	345	360	270	355	415	240	315	370	245	330	385	180	240	280
P8	285	320	340	250	330	385	220	290	340	230	305	355	165	220	260
P11	300	335	350	260	345	405	230	305	355	240	320	375	175	230	270
M1	—	—	—	—	—	—	215	285	335	240	310	365	180	240	285
M2	—	—	—	—	—	—	175	235	275	195	260	305	150	200	235
M3	—	—	—	—	—	—	145	190	225	155	205	240	125	160	190
M4	—	—	—	—	—	—	115	145	175	120	160	185	95	125	145
M5	—	—	—	—	—	—	95	120	145	100	135	155	80	105	120
K1	—	—	—	265	350	415	235	310	370	250	330	385	180	235	280
K2	—	—	—	235	310	365	210	275	325	220	295	345	160	210	245
K3	—	—	—	200	265	310	175	235	275	190	250	290	135	175	210
K4	—	—	—	190	250	295	170	225	260	180	235	280	130	170	200
K5	—	—	—	120	155	180	105	140	160	110	145	170	80	105	120
K6	—	—	—	170	220	260	150	195	230	160	210	245	110	150	175
K7	—	—	—	150	200	230	135	175	205	140	185	215	100	135	155
N1	—	—	—	—	—	—	870	1175	1375	930	1225	1425	660	880	1050
N2	—	—	—	—	—	—	710	940	1100	750	1000	1150	540	710	840
N3	—	—	—	—	—	—	470	630	740	500	660	770	355	475	560
N11	—	—	—	—	—	—	540	720	850	580	760	880	410	540	640
S1	—	—	—	—	—	—	55	70	85	55	75	85	45	60	70
S2	—	—	—	—	—	—	44	60	70	45	60	70	36	47	55
S3	—	—	—	—	—	—	39	50	60	40	50	60	32	41	48
S11	—	—	—	—	—	—	75	100	115	80	105	120	60	80	95
S12	—	—	—	—	—	—	44	60	70	46	60	70	36	47	55
S13	—	—	—	—	—	—	35	46	55	36	48	55	29	38	44
H5	—	—	—	55	75	85	45	60	70	48	65	75	37	49	55
H8	—	—	—	60	80	90	48	65	75	50	65	75	40	50	60
H11	—	—	—	70	95	110	55	75	90	60	80	95	47	60	75
H12	—	—	—	105	140	165	85	115	135	95	120	140	70	95	110

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

SMG	MK1500			MK2050			MM4500			MS2050		
	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	—	—	—	305	400	470	210	280	330	255	290	305
P2	—	—	—	295	385	460	205	270	315	245	280	310
P3	—	—	—	260	340	400	180	235	275	210	235	255
P4	—	—	—	225	300	355	160	205	245	180	205	215
P5	—	—	—	215	285	335	150	200	235	175	190	205
P6	—	—	—	250	330	385	170	225	265	195	215	230
P7	—	—	—	235	310	360	160	215	250	185	200	215
P8	—	—	—	215	285	335	150	200	230	180	195	215
P11	—	—	—	230	300	350	155	205	240	180	195	210
M1	—	—	—	—	—	—	175	230	270	215	245	270
M2	—	—	—	—	—	—	145	190	225	170	185	200
M3	—	—	—	—	—	—	115	155	180	115	125	135
M4	—	—	—	—	—	—	90	120	140	80	75	85
M5	—	—	—	—	—	—	75	100	115	65	65	70
K1	335	440	520	315	420	495	—	—	—	250	285	310
K2	295	390	460	280	370	435	—	—	—	210	230	245
K3	250	330	390	235	315	370	—	—	—	180	195	210
K4	240	315	370	225	300	350	—	—	—	170	185	200
K5	150	195	230	140	185	215	—	—	—	95	105	110
K6	210	280	330	200	265	310	—	—	—	150	165	175
K7	190	250	290	180	240	275	—	—	—	120	135	145
N1	—	—	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	—	—	—	27	37	42	55	70	80
S2	—	—	—	—	—	—	22	29	34	46	60	65
S3	—	—	—	—	—	—	19	25	30	41	50	55
S11	—	—	—	—	—	—	39	50	60	80	100	110
S12	—	—	—	—	—	—	30	39	45	60	75	85
S13	—	—	—	—	—	—	24	31	37	49	60	70
H5	—	—	—	—	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—	—	—	—	—
H11	—	—	—	—	—	—	—	—	—	—	—	—
H12	—	—	—	—	—	—	—	—	—	—	—	—

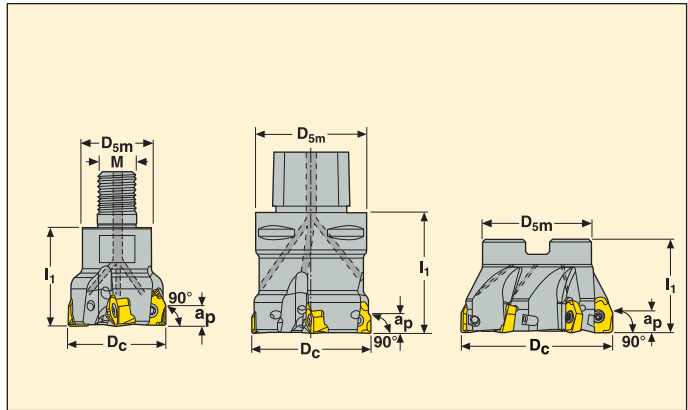
Square shoulder and slot milling cutters

Square 6™ – R217/220.96-08

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 24–25
- For complete insert programme, see page(s) 182



Part No.	Type of mounting	Dimensions in mm									Insert
		a_p	D_c	D_{sm}	d_{m_m}	M	I_1				
R217.96 -1640.RE-08-3A	Combimaster	7,5	40	28	–	M16	40	3	0,3	11800	XNEX08..
-2040.RE-08-3A	Combimaster	7,5	40	36,5	–	M20	40	3	0,4	11800	XNEX08..
C4-R217.96 -044-08-3A	Seco-Capto	7,5	44	40	–	–	60	3	0,6	11300	XNEX08..
R220.96 -0050-08-4A	Arbor	7,5	50	47	22	–	40	4	0,3	10600	XNEX08..
C5-R217.96 -054-08-4A	Seco-Capto	7,5	54	50	–	–	60	4	0,9	10200	XNEX08..
R220.96 -0063-08-4A	Arbor	7,5	63	47	22	–	40	4	0,5	9400	XNEX08..
-0063-08-6A	Arbor	7,5	63	47	22	–	40	6	0,5	9400	XNEX08..
-0063-08-6A-27	Arbor	7,5	63	62	27	–	40	6	0,6	9400	XNEX08..
C5-R217.96 -063-08-6A	Seco-Capto	7,5	63	50	–	–	60	6	1,0	9400	XNEX08..
C6-R217.96 -066-08-6A	Seco-Capto	7,0	66	63	–	–	60	6	1,3	9400	XNEX08..
-066-08-7A	Seco-Capto	7,0	66	63	–	–	60	7	1,4	9400	XNEX08..
R220.96 -0080-08-5A	Arbor	7,5	80	62	27	–	50	5	1,1	8400	XNEX08..
-0080-08-7A	Arbor	7,5	80	62	27	–	50	7	1,0	8400	XNEX08..
C6-R217.96 -080-08-7A	Seco-Capto	7,5	80	63	–	–	60	7	1,7	8400	XNEX08..
R220.96 -0100-08-6A	Arbor	7,5	100	77	32	–	50	6	1,6	7500	XNEX08..
-0100-08-8A	Arbor	7,5	100	77	32	–	50	8	1,5	7500	XNEX08..
-0125-08-7A	Arbor	7,5	125	90	40	–	63	7	2,9	6700	XNEX08..
-0125-08-11A	Arbor	7,5	125	90	40	–	63	11	2,8	6700	XNEX08..
-8160-08-12	Arbor	7,5	160	90	40	–	63	12	4,8	5900	XNEX08..

Spigot size = d_{m_m}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
R217.96..	C04011-T15P	T15P-4	–
C-R217.96..	C04011-T15P	T15P-4	–
R220.96-0050	C04011-T15P	T15P-4	220.17-696
R220.96-0063	C04011-T15P	T15P-4	220.17-692
R220.96-0080	C04011-T15P	T15P-4	MC6S12X35
R220.96-0100-8160	C04011-T15P	T15P-4	–

Please check availability in current price and stock-list

Torque value 3,5. For dimension of mounting and torque keys, see page 672 MN2015 Milling

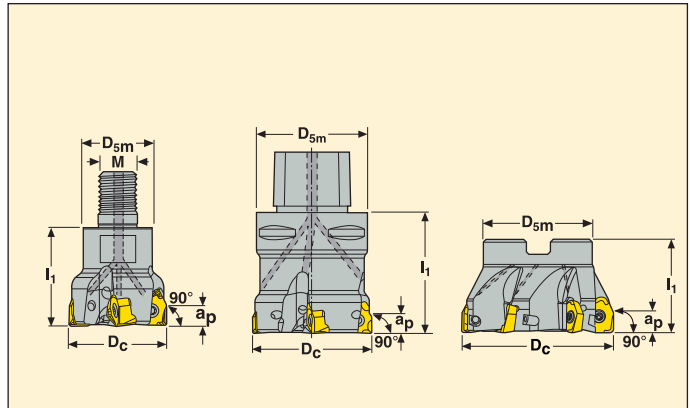
Square shoulder and slot milling cutters

Square 6™ – R217/220.96-08

Optimized for contouring



- For insert selection and cutting data recommendations, see page(s) 24–25
- For complete insert programme, see page(s) 182



Part No.	Type of mounting	Dimensions in mm										Insert
		ap	Dc	Dsm	dm _m	M	I ₁					
R217.96 -1640.RE-08-4A	Combimaster	7,5	40	28	–	M16	40	4	0,2	11800	XNEX08..	
R217.96 -2040.RE-08-4A	Combimaster	7,5	40	36,5	–	M20	40	4	0,4	11800	XNEX08..	
C4-R217.96 -044-08-4A	Seco-Capto	7,5	44	40	–	–	60	4	0,5	11300	XNEX08..	
R220.96 -0050-08-5A	Arbor	7,5	50	47	22	–	40	5	0,3	10600	XNEX08..	
C5-R217.96 -054-08-5A	Seco-Capto	7,5	54	50	–	–	60	5	0,9	10200	XNEX08..	
R220.96 -0063-08-7A	Arbor	7,5	63	47	22	–	40	7	0,7	9400	XNEX08..	
-0063-08-7A-27	Arbor	7,5	63	62	27	–	40	7	0,6	9400	XNEX08..	
C5-R217.96 -063-08-7A	Seco-Capto	7,5	63	50	–	–	60	7	1,0	9400	XNEX08..	
R220.96 -0080-08-9A	Arbor	7,5	80	62	27	–	50	9	1,0	8400	XNEX08..	
C6-R217.96 -080-08-9A	Seco-Capto	7,5	80	63	–	–	60	9	1,2	8400	XNEX08..	
R220.96 -0100-08-11A	Arbor	7,5	100	77	32	–	50	11	1,5	7500	XNEX08..	
-0125-08-14A	Arbor	7,5	125	90	40	–	63	14	2,7	6700	XNEX08..	
-8160-08-16	Arbor	7,5	160	90	40	–	63	16	4,8	5900	XNEX08..	

Spigot size = dm_m

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
R217.96-..	C04011-T15P	T15P-4	–
C.-R217.96-..	C04011-T15P	T15P-4	–
R220.96-0050	C04011-T15P	T15P-4	220.17-696
R220.96-0063	C04011-T15P	T15P-4	220.17-692
R220.96-0080	C04011-T15P	T15P-4	MC6S12X35
R220.96-0100-8160	C04011-T15P	T15P-4	–

Please check availability in current price and stock-list

Torque value 3,5. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R217/220.96-08 – Insert selection

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

SMG = Seco material group

f_z = mm/tooth

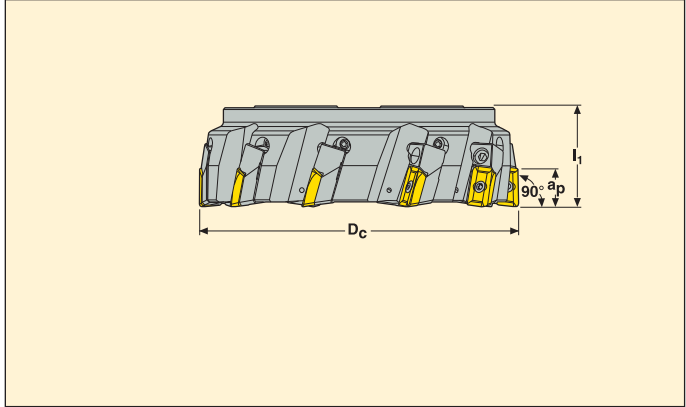
v_c = m/min

a_g/D_c = %

All cutting data are start values

Square shoulder and slot milling cutters

R220.90 ABEX



- For insert selection and cutting data recommendations, see page(s) 27
- For complete insert programme, see page(s) 166
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm					α° max				Insert	
		a_p	D_c	D_{5m}	dm_m	l_1						
R220.90	-8160-26-8CAN	Arbor	20	160	90	40	63	0,5	8	5,9	4200	ABEX26..
	-8200-26-10CAN	Arbor	20	200	130	60	63	0,35	10	8,6	3800	ABEX26..
	-8250-26-12CAN	Arbor	20	250	130	60	63	0,3	12	15,0	3400	ABEX26..
	-8315-26-14CAN	Arbor	20	315	225	60	80,0	0,3	14	30,4	3000	ABEX26..

Ramping angle = α Spigot size = dm_m

Spare Parts

For cutter	Setting gauge	Key	Insert screw	Insert key	Cassette screw	Cassette
R220.90-..	AU1114T-T15P	H05-4	C04510-T20P	T20P-4	FS96018	XO18PRN

Please check availability in current price and stock-list
 Torque value 5,0. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R220.90-26 ABEX – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	ABEX2606ZFFR-M15 F40M	10,0	0,22	0,24	0,36
P2	ABEX2606ZFFR-M15 F40M	10,0	0,22	0,24	0,36
P3	ABEX2606ZFFR-M15 MP2500	10,0	0,20	0,22	0,34
P4	ABEX2606ZFFR-M15 MP2500	10,0	0,20	0,22	0,34
P5	ABEX2606ZFFR-M15 MP2500	10,0	0,20	0,22	0,34
P6	ABEX2606ZFFR-M15 MP2500	10,0	0,20	0,22	0,32
P7	ABEX2606ZFFR-M15 MP2500	10,0	0,20	0,22	0,32
P8	ABEX2606ZFFR-M15 MP2500	10,0	0,20	0,22	0,34
P11	ABEX2606ZFFR-M15 T350M	10,0	0,20	0,22	0,32
M1	ABEX2606ZFFR-M15 F40M	10,0	0,22	0,24	0,36
M2	ABEX2606ZFFR-M15 F40M	10,0	0,20	0,22	0,34
M3	ABEX2606ZFFR-M15 F40M	8,0	0,16	0,17	0,26
M4	ABEX2606ZFFR-M15 T350M	6,0	0,14	0,15	0,24
M5	ABEX2606ZFFR-M15 MM4500	6,0	0,14	0,15	0,24
K1	ABEX2606ZFFR-M15 MK1500	10,0	0,22	0,24	0,36
K2	ABEX2606ZFFR-M15 MK1500	10,0	0,20	0,22	0,34
K3	ABEX2606ZFFR-M15 MK1500	10,0	0,20	0,22	0,34
K4	ABEX2606ZFFR-M15 MK1500	10,0	0,20	0,22	0,34
K5	ABEX2606ZFFR-M15 T350M	10,0	0,18	0,19	0,30
K6	ABEX2606ZFFR-M15 T350M	10,0	0,20	0,22	0,34
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_p/D_c = %

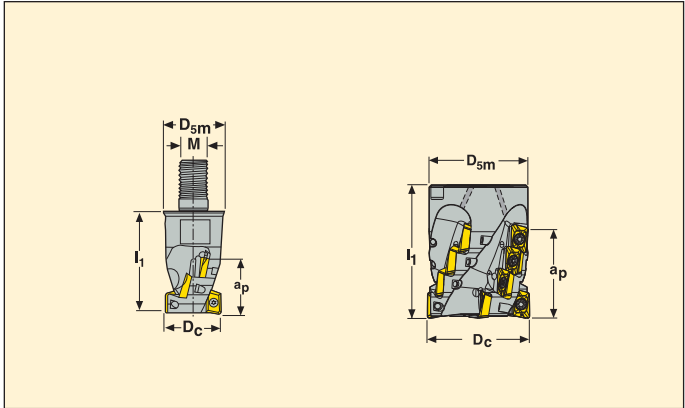
All cutting data are start values

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

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

Turbo 10 – R217/220.69-10

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 30–31
- For complete insert programme, see page(s) 178
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm						α° max	Z_c^*				Insert
		a_p	D_c	D_{sm}	d_{m_m}	M	l_1						
R217.69 -1020.RE-017-10.2A	Combimaster	17	20	18,5	–	M10	28	4,5	2	4	0,1	26300	XO.X10T3..**
R217.69 -1225.RE-017-10.3A	Combimaster	17	25	23	–	M12	35	3	3	6	0,1	23500	XO.X10T3..***
	Combimaster	25	25	23	–	M12	40	3	2	6	0,1	23500	XO.X10T3..**
R217.69 -1632.RE-025-10.3A	Combimaster	25	32	30	–	M16	45	2	3	9	0,2	20800	XO.X10T3..**
R217.69 -2040.RE-034-10.4A	Combimaster	34	40	36,5	–	M20	55	1,5	4	16	0,4	18600	XO.X10T3..**
R220.69 -00040-034-10.4A	Arbor	34	40	35	16	–	55	1,5	4	16	0,3	18600	XO.X10T3..**
R220.69 -00050-042-10.5A	Arbor	42	50	48	27	–	65	1,2	5	25	0,5	16600	XO.X10T3..**

*Effective number of flutes
Ramping angle = α° . Spigot size = d_{m_m}

**All corner radii can be used in front row insert, modification of the body needed for radii > 2,0mm
***Maxi corner radii 1,6mm can be used in front row insert

Spare Parts

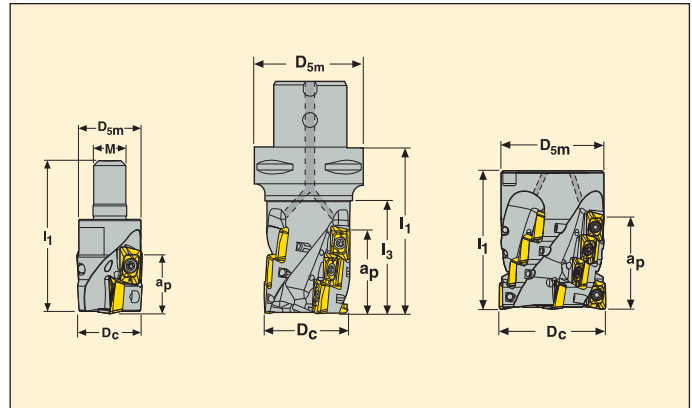
For cutter	Insert screw	Insert key	Arbor screw
R217.69-..	C02506-T07P	T07P-3	–
R220.69-00040	C02506-T07P	T07P-3	950D0850
R220.69-00050	C02506-T07P	T07P-3	MC6S12X60

Please check availability in current price and stock-list
Torque value 1,2. For dimension of mounting and torque keys, see page 672 MN2015 Milling
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For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Turbo 10 – R217/220.69-10

Contouring only



- For insert selection and cutting data recommendations, see page(s) 30–31
- For complete insert programme, see page(s) 178
- For helical interpolation, see page(s) 664–665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm								α° max	Z_c^*				Insert
		a_p	D_c	D_{sm}	d_{m_m}	M	I_1	I_3							
R217.69 -1632.RE-034-10.4A	Combimaster	34	32	30	–	M16	50	–	2	4	16	0,3	20800	XO.X10T3..**	
R217.69 -2040.RE-034-10.5A	Combimaster	34	40	36,5	–	M20	55	–	1,5	5	20	0,4	18600	XO.X10T3..**	
R220.69 -00040-034-10.5A	Arbor	34	40	35	16	–	55	–	1,5	5	20	0,3	18600	XO.X10T3..**	
C4-R217.69 -044-058-10.5A	Seco-Capto	58	44	40	–	–	90	70	1,0	5	35	0,7	16600	XO.X10T3..**	
R220.69 -00050-042-10.6A	Arbor	42	50	48	27	–	65	–	1,2	6	30	0,5	16600	XO.X10T3..**	
C5-R217.69 -054-066-10.6A	Seco-Capto	66	54	50	–	–	98	78	1,0	6	48	1,3	16600	XO.X10T3..**	

*Effective number of flutes
Ramping angle = α° . Spigot size = d_{m_m}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling
**Maxi corner radii 1,6mm can be used in front row insert

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
R217.69-..	C02506-T07P	T07P-3	–
R220.69-00040	C02506-T07P	T07P-3	950D0850
Cx-R217.69-..	C02506-T07P	T07P-3	–
R220.69-00050	C02506-T07P	T07P-3	MC6S12X60

Please check availability in current price and stock-list
Torque value 1,2. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R217/220.69-10 – Insert selection

SMG		f _z		
		100%	30%	10%
P1	XOMX10T308TR-ME07 F40M	0,090	0,10	0,15
P2	XOMX10T308TR-ME07 F40M	0,090	0,10	0,15
P3	XOMX10T308TR-ME07 MP2500	0,085	0,095	0,15
P4	XOMX10T308TR-M09 MP2500	0,095	0,10	0,16
P5	XOMX10T308TR-M09 MP2500	0,095	0,10	0,16
P6	XOMX10T308TR-M09 MP2500	0,095	0,10	0,16
P7	XOMX10T308TR-M09 MP2500	0,095	0,10	0,16
P8	XOMX10T308TR-M09 MP2500	0,095	0,11	0,16
P11	XOMX10T308TR-M09 MP3000	0,095	0,10	0,16
M1	XOEX10T308R-M06 F40M	0,070	0,075	0,12
M2	XOEX10T308R-M06 F40M	0,060	0,070	0,10
M3	XOEX10T308R-M06 F40M	0,050	0,055	0,085
M4	XOEX10T308R-M06 T350M	0,044	0,048	0,075
M5	XOEX10T308R-M06 T350M	0,044	0,048	0,075
K1	XOMX10T308TR-M09 MK2050	0,10	0,11	0,17
K2	XOMX10T308TR-M09 MK2050	0,095	0,10	0,16
K3	XOMX10T308TR-M09 MK2050	0,095	0,10	0,16
K4	XOMX10T308TR-M09 MK2050	0,095	0,10	0,16
K5	XOMX10T308TR-M09 MK2050	0,085	0,090	0,14
K6	XOMX10T308TR-M09 MK2050	0,095	0,10	0,16
K7	XOMX10T308TR-M09 MK2050	0,085	0,090	0,14
N1	XOEX10T308FR-E05 H15	0,085	0,095	0,15
N2	XOEX10T308FR-E05 H15	0,085	0,095	0,15
N3	XOEX10T308FR-E05 H15	0,085	0,095	0,15
N11	XOEX10T308FR-E05 H15	0,085	0,095	0,15
S1	XOEX10T308R-M06 F40M	0,044	0,048	0,075
S2	XOEX10T308R-M06 F40M	0,044	0,048	0,075
S3	XOEX10T308R-M06 F40M	0,040	0,044	0,070
S11	XOEX10T308R-M06 MS2050	0,050	0,055	0,085
S12	XOEX10T308R-M06 MS2050	0,050	0,055	0,085
S13	XOEX10T308R-M06 MS2050	0,044	0,048	0,075
H5	XOMX10T308TR-M09 MP1500	0,065	0,070	0,11
H11	XOMX10T308TR-M09 MP1500	0,065	0,070	0,11
H12	XOMX10T308TR-M09 MP1500	0,065	0,070	0,11

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

Helical milling cutters



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

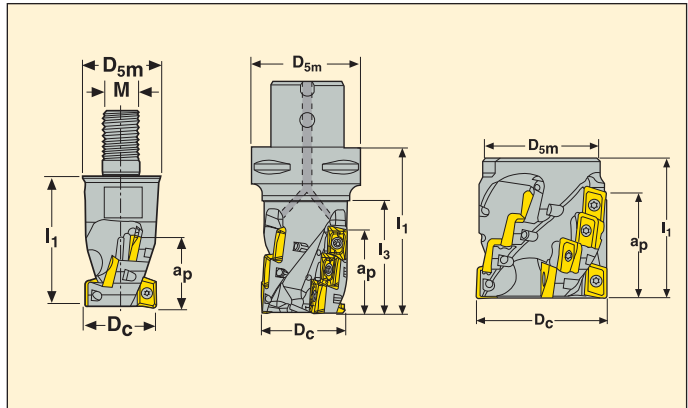
SMG	MP1500			MP2500			MP3000			T350M			F40M			MK1500		
	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	160	175	190	155	170	180	150	165	175	145	160	170	135	155	165	—	—	—
P2	160	175	185	150	170	180	150	165	175	145	160	170	135	150	160	—	—	—
P3	150	165	175	145	160	170	140	155	165	135	150	160	125	145	155	—	—	—
P4	145	160	170	135	150	165	135	150	160	130	145	155	120	135	145	—	—	—
P5	140	160	170	135	150	160	130	145	155	125	140	150	115	135	145	—	—	—
P6	150	165	175	140	155	165	140	155	165	135	150	160	125	140	150	—	—	—
P7	145	160	170	140	155	165	135	150	160	130	145	155	120	135	145	—	—	—
P8	140	155	165	135	150	160	130	145	155	125	140	150	115	135	145	—	—	—
P11	145	160	170	135	150	160	135	150	160	130	145	155	120	135	145	—	—	—
M1	—	—	—	130	150	160	130	150	160	130	145	155	120	140	150	—	—	—
M2	—	—	—	120	135	145	120	135	145	115	135	145	110	125	135	—	—	—
M3	—	—	—	110	125	135	105	125	135	105	120	130	100	115	125	—	—	—
M4	—	—	—	90	110	120	90	105	115	85	105	115	80	100	110	—	—	—
M5	—	—	—	80	100	105	80	95	105	75	95	105	70	90	95	—	—	—
K1	145	160	170	140	155	165	135	150	160	130	145	155	120	140	150	155	170	180
K2	140	155	165	130	145	155	125	145	155	120	140	150	115	130	140	145	165	175
K3	130	145	155	120	135	145	115	135	145	110	130	140	105	120	130	135	155	165
K4	125	140	150	115	135	145	115	130	140	110	125	135	100	120	130	135	150	160
K5	95	110	120	90	105	115	85	100	110	80	95	105	70	90	95	105	120	130
K6	115	135	145	110	125	135	105	125	135	100	120	130	95	110	120	125	145	155
K7	110	125	135	105	120	130	100	115	125	95	110	120	85	105	110	120	135	145
N1	—	—	—	215	235	245	215	230	240	—	—	—	200	215	225	—	—	—
N2	—	—	—	205	220	230	200	215	225	—	—	—	185	205	215	—	—	—
N3	—	—	—	180	195	205	175	190	205	—	—	—	160	180	190	—	—	—
N11	—	—	—	185	205	215	185	200	210	—	—	—	170	185	195	—	—	—
S1	—	—	—	49	65	75	47	60	70	44	60	70	40	55	60	—	—	—
S2	—	—	—	40	55	60	38	50	60	36	47	55	32	43	50	—	—	—
S3	—	—	—	35	46	55	33	44	50	31	41	49	28	38	44	—	—	—
S11	—	—	—	70	85	95	65	80	90	65	80	90	55	75	85	—	—	—
S12	—	—	—	40	55	65	38	50	60	36	47	55	33	43	50	—	—	—
S13	—	—	—	32	42	49	30	40	47	29	38	44	26	34	40	—	—	—
H5	50	65	75	41	55	65	40	55	60	39	50	60	34	45	50	—	—	—
H11	65	80	90	55	70	80	50	65	75	50	65	75	44	60	65	—	—	—
H12	95	110	120	80	95	105	80	95	105	80	95	105	70	85	95	—	—	—

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

SMG	MK2050			MM4500			MS2050			MS2500			H15		
	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	150	165	175	125	140	150	130	140	140	160	175	185	—	—	—
P2	145	165	175	125	140	150	130	135	135	160	175	185	—	—	—
P3	140	155	165	115	130	140	120	125	125	150	165	175	—	—	—
P4	130	150	155	105	125	135	110	115	120	140	160	170	—	—	—
P5	130	145	155	105	120	130	105	115	110	140	155	165	—	—	—
P6	135	150	160	110	130	140	115	115	120	150	165	175	—	—	—
P7	130	150	160	110	125	135	110	115	115	145	160	170	—	—	—
P8	130	145	155	105	120	130	110	115	115	140	155	165	—	—	—
P11	130	145	155	105	125	135	110	110	115	140	160	170	—	—	—
M1	—	—	—	115	130	140	120	130	130	140	155	165	—	—	—
M2	—	—	—	100	120	130	105	110	110	125	145	155	—	—	—
M3	—	—	—	90	105	115	80	85	85	115	130	140	—	—	—
M4	—	—	—	75	90	100	55	60	60	100	115	125	—	—	—
M5	—	—	—	60	80	90	47	48	50	85	105	110	—	—	—
K1	150	170	180	—	—	—	130	135	135	145	160	170	—	—	—
K2	145	160	170	—	—	—	115	125	125	140	155	165	—	—	—
K3	135	150	160	—	—	—	105	115	115	125	145	155	—	—	—
K4	130	150	155	—	—	—	105	110	110	125	140	150	—	—	—
K5	100	120	130	—	—	—	70	75	75	95	110	120	—	—	—
K6	125	140	150	—	—	—	95	105	105	115	135	145	—	—	—
K7	115	135	145	—	—	—	85	90	90	110	125	135	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—	200	220	225
N2	—	—	—	—	—	—	—	—	—	—	—	—	190	205	215
N3	—	—	—	—	—	—	—	—	—	—	—	—	165	180	190
N11	—	—	—	—	—	—	—	—	—	—	—	—	170	190	200
S1	—	—	—	23	30	35	49	60	65	55	70	80	—	—	—
S2	—	—	—	18	24	28	39	48	55	44	60	65	—	—	—
S3	—	—	—	16	21	25	35	42	46	39	50	60	—	—	—
S11	—	—	—	32	42	50	70	80	85	75	90	100	—	—	—
S12	—	—	—	25	32	38	50	65	70	44	60	70	—	—	—
S13	—	—	—	20	26	30	42	50	55	35	47	55	—	—	—
H5	—	—	—	—	—	—	—	—	—	45	60	70	—	—	—
H11	—	—	—	—	—	—	—	—	—	55	75	85	—	—	—
H12	—	—	—	—	—	—	—	—	—	85	100	110	—	—	—

Turbo 12 – R217/220.69-12

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 34–35
- For complete insert programme, see page(s) 179
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm								α° max	Zc*				Insert
		ap	Dc	D5m	dm	M	l1	l3	l4						
R217.69 -1225.RE-022-12.2AN	Combimaster	22	25	23	-	M12	40	-	3	2	4	0,1	20800	XO.X12..**	
R217.69 -1632.RE-022-12.3AN	Combimaster	22	32	30	-	M16	40	-	2	3	6	0,2	18400	XO.X12..**	
R217.69 -2040.RE-033-12.3AN	Combimaster	33	40	36,5	-	M20	50	-	2,5	3	9	0,4	16400	XO.X12..***	
C4-R217.69 -044-033-12.3AN	Seco-Capto	33	44	40	-	-	68	48	2,0	3	9	0,6	15500	XO.X12..***	
R220.69 -00050-033-12.4AN	Arbor	33	50	48	27	-	55	-	2	4	12	0,4	14800	XO.X12..***	
-00050-044-12.4AN	Arbor	44	50	48	27	-	65	-	2	4	16	0,5	14800	XO.X12..***	
C5-R217.69 -054-044-12.4AN	Seco-Capto	44	54	50	-	-	79	59	1,5	4	16	1,2	13900	XO.X12..***	
R220.69 -00063-033-12.5AN	Arbor	33	63	62	27	-	63	-	1,5	5	15	1,0	13200	XO.X12..***	
C6-R217.69 -066-044-12.5AN	Seco-Capto	44	66	63	-	-	81	59	1,0	5	20	1,9	12000	XO.X12..***	

*Effective number of flutes
Ramping angle = α° . Spigot size = dm_m

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

***Maxi corner radii 1,6mm can be used in front row insert

Spare Parts

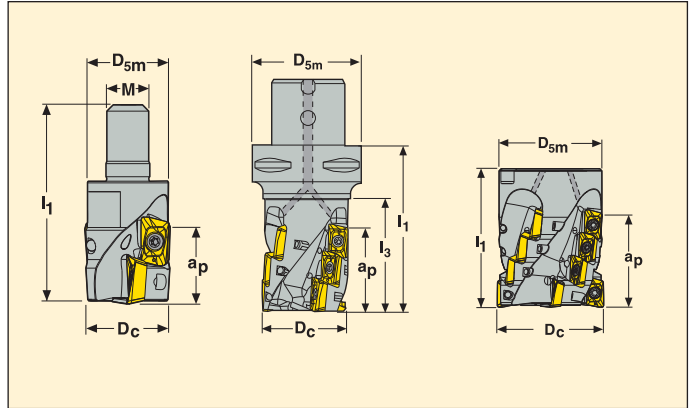
For cutter	Insert screw	Insert key	Arbor screw
217.69-.Ø25	C03507-T10P	T10P-3	-
217.69-.Ø32-40	C03508-T10P	T10P-3	-
Cx217.69-.Ø40-66	C03509-T10P	T10P-3	-
R220.69-00050	C03509-T10P	T10P-3	MC6S12X40
R220.69-00063	C03509-T10P	T10P-3	MC6S12X50

Please check availability in current price and stock-list
Torque value 2,0. For dimension of mounting and torque keys, see page 672 MN2015 Milling

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Turbo 12 – R217/220.69-12

Contouring only



- For insert selection and cutting data recommendations, see page(s) 34–35
- For complete insert programme, see page(s) 179
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm								α° max	Z_c^*				Insert
		a_p	D_c	D_{5m}	d_{m_m}	M	l_1	l_3							
C5-R217.69 -032-044-12.3AN	Seco-Capto	44	32	50	–	–	79	56	3,0	3	12	0,7	18400	XO.X12..**	
-032-055-12.3AN	Seco-Capto	55	32	50	–	–	90	67	3,0	3	15	0,7	18400	XO.X12..**	
C6-R217.69 -040-055-12.3AN	Seco-Capto	55	40	63	–	–	92	67	2,5	3	15	1,1	16400	XO.X12..***	
-040-066-12.3AN	Seco-Capto	65,5	40	63	–	–	103	79,9	2,5	3	18	1,2	16400	XO.X12..***	
R217.69 -2040.RE-044-12.4AN	Combimaster	44	40	36,5	–	M20	61	–	2,5	4	16	0,4	16400	XO.X12..***	
R220.69 -00050-044-12.5AN	Arbor	44	50	48	27	–	65	–	2	5	20	0,5	14800	XO.X12..***	
C6-R217.69 -050-055-12.4AN	Seco-Capto	55	50	63	–	–	92	67	2,0	4	20	1,4	14800	XO.X12..**	
R220.69 -00063-055-12.5AN	Arbor	55	63	60	27	–	75	–	1,5	5	25	1,0	13200	XO.X12..***	
R220.69 -00080-064-12.6AN	Arbor	64	80	77	32	–	85	–	1	6	36	2,0	7000	XO.X12..***	

*Effective number of flutes
Ramping angle = α° . Spigot size = d_{m_m}

**Maxi corner radii 1,6mm can be used in front row insert
***All corner radii can be used in front row insert, modification of the body needed for radii > 3,1 mm

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
C5-R217.69-032	C03508-T10P	T10P-3	–
C6-R217.69-040	C03509-T10P	T10P-3	–
R217.69-.Ø40	C03509-T10P	T10P-3	–
R220.69-00050	C03509-T10P	T10P-3	MC6S12X50
C6-R217.69-Ø50	C03509-T10P	T10P-3	–
R220.69-00063	C03509-T10P	T10P-3	MC6S12X60
R220.69-00080	C03509-T10P	T10P-3	–

Please check availability in current price and stock-list
Torque value 2,0. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R217/220.69-12 – Insert selection

SMG		f _z		
		100%	30%	10%
P1	XOMX120408TR-ME08 F40M	0,12	0,13	0,20
P2	XOMX120408TR-ME08 F40M	0,12	0,13	0,20
P3	XOMX120408TR-ME08 MP2500	0,12	0,13	0,19
P4	XOMX120408TR-M12 MP2500	0,14	0,15	0,22
P5	XOMX120408TR-M12 MP2500	0,13	0,15	0,22
P6	XOMX120408TR-M12 MP2500	0,13	0,15	0,22
P7	XOMX120408TR-M12 MP2500	0,13	0,15	0,22
P8	XOMX120408TR-M12 MP2500	0,14	0,15	0,24
P11	XOMX120408TR-M12 T350M	0,13	0,15	0,22
M1	XOEX120408R-M07 F40M	0,10	0,11	0,16
M2	XOEX120408R-M07 F40M	0,090	0,10	0,15
M3	XOEX120408R-M07 F40M	0,070	0,080	0,12
M4	XOEX120408R-M07 T350M	0,065	0,070	0,10
M5	XOEX120408R-M07 T350M	0,065	0,070	0,10
K1	XOMX120408TR-M12 MK2050	0,15	0,16	0,24
K2	XOMX120408TR-M12 MK2050	0,13	0,15	0,22
K3	XOMX120408TR-M12 MK2050	0,13	0,15	0,22
K4	XOMX120408TR-M12 MK2050	0,13	0,15	0,22
K5	XOMX120408TR-MD13 MK2050	0,13	0,14	0,22
K6	XOMX120408TR-MD13 MK2050	0,15	0,16	0,24
K7	XOMX120408TR-MD13 MK2050	0,13	0,14	0,22
N1	XOEX120408FR-E06 H15	0,11	0,12	0,18
N2	XOEX120408R-M07 MP3000	0,13	0,14	0,22
N3	XOEX120408R-M07 MP3000	0,13	0,14	0,22
N11	XOEX120408FR-E06 H15	0,11	0,12	0,18
S1	XOEX120408R-M07 F40M	0,065	0,070	0,10
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 MP1500	0,10	0,11	0,17
H11	XOMX120412TR-MD13 MP3000	0,10	0,11	0,17
H12	XOMX120408TR-MD13 MP1500	0,10	0,11	0,17

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

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

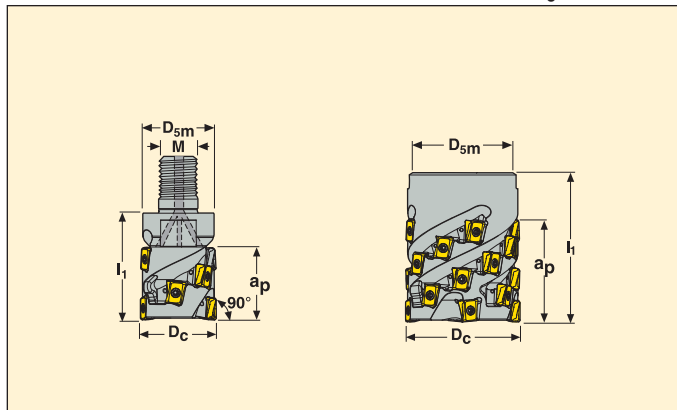
SMG	MP1500			MP2500			MP3000			T350M			F40M			MK1500		
	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	160	175	190	150	170	180	145	165	175	140	160	170	130	150	160	—	—	—
P2	155	175	185	150	165	175	145	165	175	140	160	170	130	150	160	—	—	—
P3	145	165	175	140	160	170	135	155	165	130	150	160	120	140	150	—	—	—
P4	140	160	170	130	150	160	125	145	155	120	140	150	110	130	140	—	—	—
P5	135	155	165	130	145	160	125	145	155	120	135	150	110	130	140	—	—	—
P6	145	165	175	135	155	165	135	150	165	130	145	160	120	135	150	—	—	—
P7	140	160	170	135	150	165	130	150	160	125	145	155	115	135	145	—	—	—
P8	135	155	165	130	145	155	125	145	155	120	135	150	110	130	140	—	—	—
P11	140	160	170	130	150	160	125	145	155	120	140	150	115	130	145	—	—	—
M1	—	—	—	125	145	155	125	145	155	120	140	150	115	135	145	—	—	—
M2	—	—	—	115	130	145	115	130	145	110	125	140	105	120	135	—	—	—
M3	—	—	—	100	120	130	100	115	130	95	115	125	90	105	120	—	—	—
M4	—	—	—	85	100	110	80	100	110	80	95	110	70	90	100	—	—	—
M5	—	—	—	70	90	100	70	90	100	65	85	95	60	80	90	—	—	—
K1	140	160	170	130	150	160	130	150	160	125	140	155	115	135	145	155	175	185
K2	135	150	165	125	145	155	120	140	150	115	135	145	105	125	135	150	165	180
K3	125	140	155	115	130	145	110	130	140	105	125	135	95	115	125	140	155	170
K4	120	135	150	110	130	140	110	125	140	100	120	130	95	110	125	135	150	165
K5	85	105	115	80	95	110	75	95	105	70	90	100	60	80	90	100	120	130
K6	110	130	140	105	120	135	100	115	130	95	110	125	85	100	115	125	145	155
K7	105	120	130	95	115	125	90	110	120	85	105	115	75	95	105	120	135	145
N1	—	—	—	220	240	250	215	235	245	—	—	—	200	220	230	—	—	—
N2	—	—	—	205	225	235	200	220	230	—	—	—	185	205	215	—	—	—
N3	—	—	—	180	195	210	175	195	205	—	—	—	160	180	190	—	—	—
N11	—	—	—	185	205	215	185	200	215	—	—	—	170	190	200	—	—	—
S1	—	—	—	42	55	65	39	50	60	37	49	55	34	45	50	—	—	—
S2	—	—	—	34	44	50	32	42	49	30	40	46	27	36	42	—	—	—
S3	—	—	—	29	39	45	28	37	43	26	35	41	24	32	37	—	—	—
S11	—	—	—	60	75	85	55	70	85	50	70	80	47	60	75	—	—	—
S12	—	—	—	33	44	50	31	42	49	30	40	46	27	36	42	—	—	—
S13	—	—	—	27	36	42	25	34	39	24	32	37	22	29	34	—	—	—
H5	42	55	65	34	45	55	33	44	50	33	43	50	28	37	44	—	—	—
H11	55	70	85	44	55	70	42	55	65	42	55	65	36	48	55	—	—	—
H12	85	105	115	70	90	100	70	85	100	65	85	95	60	75	90	—	—	—

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

SMG	MK2050			MM4500			MS2050			MS2500			H15		
	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%	100%	30%	10%
P1	150	170	180	125	145	155	150	155	160	170	185	200	—	—	—
P2	145	165	175	125	145	155	145	155	160	165	185	195	—	—	—
P3	140	155	170	115	135	145	135	145	155	155	175	185	—	—	—
P4	130	150	160	105	125	135	125	135	140	150	165	180	—	—	—
P5	130	145	160	105	125	135	125	130	135	145	165	175	—	—	—
P6	135	155	165	110	130	140	130	140	145	155	175	185	—	—	—
P7	130	150	160	110	125	140	125	135	140	150	170	180	—	—	—
P8	125	145	155	105	120	135	125	135	135	145	165	175	—	—	—
P11	130	150	160	105	125	135	125	135	140	150	165	180	—	—	—
M1	—	—	—	115	135	145	135	145	150	145	160	175	—	—	—
M2	—	—	—	100	120	130	120	130	135	130	150	160	—	—	—
M3	—	—	—	85	105	115	95	105	105	115	135	145	—	—	—
M4	—	—	—	70	90	100	75	80	80	100	120	130	—	—	—
M5	—	—	—	60	75	85	60	65	65	85	105	115	—	—	—
K1	150	170	180	—	—	—	145	155	160	150	170	180	—	—	—
K2	145	165	175	—	—	—	135	145	150	140	160	170	—	—	—
K3	135	150	165	—	—	—	125	135	135	130	150	160	—	—	—
K4	130	150	160	—	—	—	120	130	135	130	145	160	—	—	—
K5	100	115	125	—	—	—	85	90	95	95	115	125	—	—	—
K6	120	140	155	—	—	—	115	120	125	120	140	150	—	—	—
K7	115	135	145	—	—	—	100	110	115	110	130	140	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—	215	235	245
N2	—	—	—	—	—	—	—	—	—	—	—	—	200	220	230
N3	—	—	—	—	—	—	—	—	—	—	—	—	175	195	205
N11	—	—	—	—	—	—	—	—	—	—	—	—	185	200	215
S1	—	—	—	21	28	33	45	55	65	55	70	80	—	—	—
S2	—	—	—	17	23	27	37	46	55	43	55	65	—	—	—
S3	—	—	—	15	20	24	33	41	46	38	50	60	—	—	—
S11	—	—	—	30	40	47	65	75	85	75	95	105	—	—	—
S12	—	—	—	23	31	36	49	60	70	43	55	65	—	—	—
S13	—	—	—	18	24	29	39	49	55	34	45	55	—	—	—
H5	—	—	—	—	—	—	—	—	—	44	60	65	—	—	—
H11	—	—	—	—	—	—	—	—	—	55	75	85	—	—	—
H12	—	—	—	—	—	—	—	—	—	85	105	115	—	—	—

R217/220.94-08

Slotting and contouring



- For insert selection and cutting data recommendations, see page(s) 38-39
- For complete insert programme, see page(s) 168
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm							Z_c^*				Insert
		a_p	D_c	D_{5m}	d_{m_m}	M	I_1						
R217.94 -1225.RE-022-08.2A	Combimaster	22	25	23	-	M12	35	2	6	0,1	20800	LOEX08..**	
R217.94 -1632.RE-029-08.2A	Combimaster	29	32	30	-	M16	45	2	8	0,2	18400	LOEX08..**	
R217.94 -2040.RE-036-08.3A	Combimaster	36	40	36,5	-	M20	55	3	15	0,4	16400	LOEX08..**	
R220.94 -00050-043-08.4A	Arbor	43	50	48	27	-	65	4	24	0,6	14800	LOEX08..**	

*Effective number of flutes. Spigot size = d_{m_m}

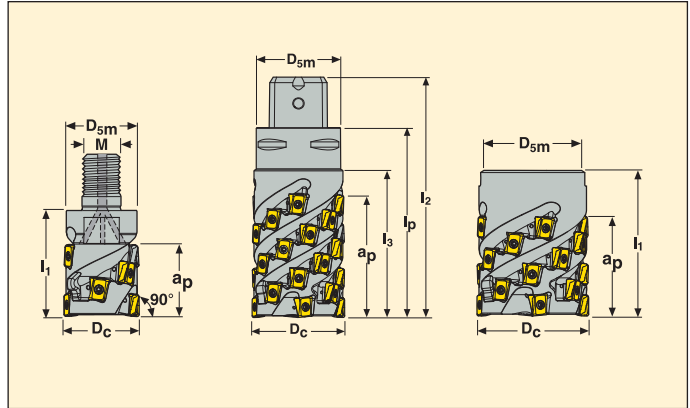
**All corner radii can be used in front row insert

Spare Parts

For cutter	Insert screw	Insert key
R217.94-..	C02708-T08P	T08P-3

R217/220.94-08

Contouring only



- For insert selection and cutting data recommendations, see page(s) 38-39
- For complete insert programme, see page(s) 168
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm											Zc*	Flute icon	KG icon	Insert icon	Insert
		ap	Dc	D5m	dm	M	I1	I2	I3	Ip							
R217.94 -1225.RE-029-08.2A	Combimaster	29	25	23	-	M12	40	-	-	-	2	8	0,1	20800	LOEX08..**		
R217.94 -1632.RE-036-08.3A	Combimaster	36	32	30	-	M16	55	-	-	-	3	15	0,3	18400	LOEX08..**		
R217.94 -2040.RE-043-08.4A	Combimaster	43	40	36,5	-	M20	60	-	-	-	4	20	0,45	16400	LOEX08..**		
C4-R217.94 -044-057-08.4A	Seco-Capto	57	44	40	-	-	90	114	70	-	4	32	0,8	15500	LOEX08..**		
R220.94 -00050-057-08.5A	Arbor	57	50	48	27	-	70	-	-	-	5	40	0,6	14800	LOEX08..**		
C5-R217.94 -054-064-08.5A	Seco-Capto	64	54	50	-	-	78	128	98	-	5	45	1,4	14800	LOEX08..**		

*Effective number of flutes. Spigot size = dm_m

**All corner radii can be used in front row insert

Spare Parts

For cutter	Insert screw	Insert key
R217.94-..	C02708-T08P	T08P-3
Cx-R217.94-08	C02708-T08P	T08P-3

Please check availability in current price and stock-list
Torque value 1,2. For dimension of mounting and torque keys, see page 672 MN2015 Milling

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

R217/220.94-08 – Insert selection

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

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

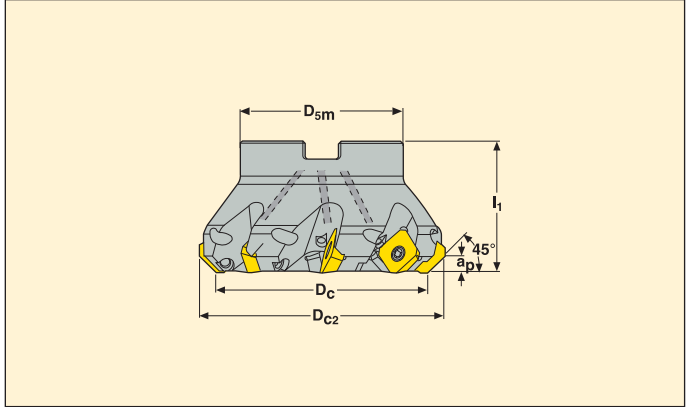
R217/220.94-08 – Cutting data $v_c =$ (m/min)

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

R220.53-12



- For insert selection and cutting data recommendations, see page(s) 41–42
- For complete insert programme, see page(s) 179



Pitch	Part No.	Type of mounting	Dimensions in mm									Insert
			ap	Dc	Dc2	Dsm	dm	l1				
Close	R220.53 -0063-12-9A	Arbor	6	63	75	47	22	40	9	0,6	13200	SE.X1204
	-0080-12-11A	Arbor	6	80	92	62	27	50	11	1,1	11700	SE.X1204
	-0100-12-12A	Arbor	6	100	112	77	32	50	12	1,7	10500	SE.X1204
	-0125-12-14A	Arbor	6	125	137	90	40	63	14	3,1	9400	SE.X1204
	-8160-12-17	Arbor	6	160	172	130	40	63	17	5,3	8300	SE.X1204
	-8200-12-20	Arbor	6	200	212	160	60	63	20	7,2	7400	SE.X1204

Spigot size = dm_m

Spare Parts

For cutter	Insert screw	Insert key	
R220.53-...0063	C04008-H3	H6B-H3.0	
R220.53- Dia 80-160	C04008-H3	H6B-H3.0	
R220.53- Dia 200	C04008-H3	H6B-H3.0	

Please check availability in current price and stock-list
 Torque value 3,5. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R220.53-12 – Insert selection

SMG		a_p	f_z		
			100%	30%	10%
P1	SEM1204AFTN-M15 MP2500	3,5	0,30	0,32	0,50
P2	SEM1204AFTN-M15 MP2500	3,5	0,30	0,34	0,50
P3	SEM1204AFTN-M15 MP2500	3,5	0,28	0,32	0,48
P4	SEM1204AFTN-M15 MP2500	3,5	0,28	0,30	0,48
P5	SEM1204AFTN-M15 MP2500	3,5	0,28	0,30	0,46
P6	SEM1204AFTN-M15 MP2500	3,5	0,28	0,30	0,46
P7	SEM1204AFTN-M15 T350M	3,5	0,28	0,30	0,46
P8	SEM1204AFTN-M15 T350M	3,5	0,28	0,32	0,48
P11	SEM1204AFTN-M15 T350M	3,5	0,28	0,30	0,46
M1	SEEX1204AFN-M10 MS2050	3,5	0,20	0,22	0,34
M2	SEEX1204AFN-M10 MS2050	3,5	0,18	0,20	0,30
M3	SEEX1204AFN-M10 MS2050	3,0	0,15	0,16	0,24
M4	SEEX1204AFN-M10 T350M	2,0	0,13	0,14	0,22
M5	SEEX1204AFN-M14 MM4500	2,0	0,18	0,20	0,30
K1	SEM1204AFTN-M15 MK2050	3,5	0,30	0,34	0,50
K2	SEM1204AFTN-M15 MK2050	3,5	0,28	0,30	0,46
K3	SEM1204AFTN-M15 MK2050	3,5	0,28	0,30	0,46
K4	SEM1204AFTN-M15 MK2050	3,5	0,28	0,30	0,46
K5	SEM1204AFTN-M15 MK2050	3,5	0,24	0,28	0,42
K6	SEM1204AFTN-M15 MK2050	3,5	0,28	0,30	0,46
K7	SEM1204AFTN-M15 T350M	3,5	0,24	0,28	0,42
N1	SEEX1204AFN-E08 H25	3,5	0,20	0,22	0,34
N2	SEEX1204AFN-E08 H25	3,5	0,20	0,22	0,34
N3	SEEX1204AFN-E08 F40M	3,5	0,20	0,22	0,34
N11	SEEX1204AFN-E08 H25	3,5	0,20	0,22	0,34
S1	SEEX1204AFTN-ME11 T350M	2,0	0,14	0,15	0,24
S2	SEEX1204AFTN-ME11 T350M	2,0	0,14	0,15	0,24
S3	SEEX1204AFTN-ME11 T350M	2,0	0,13	0,14	0,22
S11	SEEX1204AFN-M10 MS2050	2,5	0,15	0,16	0,24
S12	SEEX1204AFN-M10 MS2050	2,5	0,15	0,16	0,24
S13	SEEX1204AFN-M10 MS2050	2,0	0,13	0,14	0,22
H5	SEM1204AFTN-MD19 MP1500	3,0	0,22	0,24	0,38
H8	SEM1204AFTN-MD19 MP1500	2,5	0,17	0,19	0,28
H11	SEM1204AFTN-MD19 MP1500	3,0	0,22	0,24	0,38
H12	SEM1204AFTN-MD19 MP1500	3,0	0,22	0,24	0,38
H21	SEM1204AFTN-MD19 MP1500	2,5	0,17	0,19	0,28

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

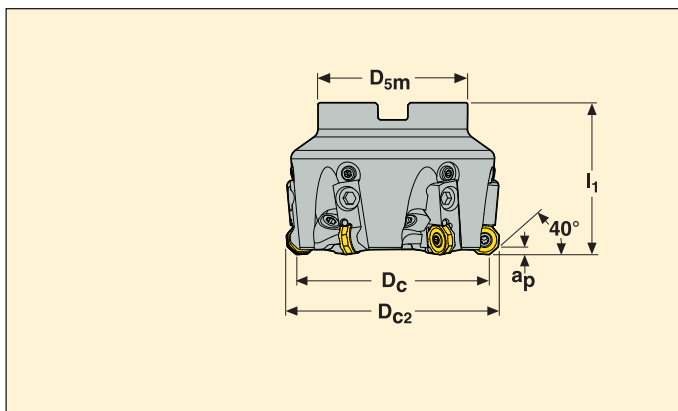
a_p/D_c = %

All cutting data are start values

Double Octomill™ 217.48-05



- For insert selection and cutting data recommendations, see page(s) 44-45
- For complete insert programme, see page(s) 171



Part No.	Type of mounting	Dimensions in mm									Insert
		ap	Dc	Dc2	Dsm	dm	I1				
R220.48 -0080-05-6CS	Arbor	3	80	88	62	27	63	6	1,7	11400	ON..05
-0100-05-8CS	Arbor	3	100	108	77	32	63	8	3,0	10200	ON..05
-0125-05-10CS	Arbor	3	125	133	90	40	63	10	4,0	9100	ON..05
-8160-05-14CS	Arbor	3	160	168	140	40	63	14	6,5	8000	ON..05
-8200-05-18CS	Arbor	3	200	208	160	60	63	18	9,0	7200	ON..05

Spigot size = dm_m

Spare Parts

For cutter	Wedge screw	Wedge clamp axial adj.	Wedge clamp	Insert screw	Insert key	Cassette screw	Cassette
R220.48-..	LD8020-T25P	AU1114T-T15P	CW0810	C04009-T15P	T15P-3	FS96018	ON05AR

Please check availability in current price and stock-list
 Torque value 3.5. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R220.48-05 – Insert selection

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

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

The 335.25 disc milling cutter has been expanded to include two new sizes of insert to now cover width of cut from 13.5 to 32mm

To complement the 335.19 and 335.18 LNK, the 335.25 has been developed for the larger width of slot.

The innovative design brings features that increase productivity and reduce costs per part:

- An optimum cutting geometry reducing cutting forces and noise level
- Maximum stability even with long overhang
- Strong, reliable and secure locked connection between insert and cutter body
- 4 cutting edges available whatever the corner radius value (from 0.4 to 6.0mm)
- Excellent surface finish thanks to built-in wiper flat
- Geometries and grades available for all types of material
- Fixed pocket cutter with integrated through coolant or adjustable pockets for maximum flexibility



4 sizes of inserts are now available to cover width of cut from 13.5 to 32mm

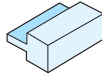
Each size of insert is available with a broad range of corner radii to cover all industry applications, from radius 0,4 up to radius 6 mm



Cutter 335.25

First choice for slotting and half side application - large width of cut

Applications:



Cutter bodies:



B Type - Fixed Pockets - Width 15 -20 - 25 mm
From Ø 80 to 250 mm
Internal coolant up to dia 160 mm



A Type - Fixed Pockets - Width 15 -20 -25 mm
From Ø 160 to 250 mm



B Type - Adjustable in width from 13.5 to 32 mm
From Ø 100 to 315 mm
Also available in half side and face configuration (Right or left hand)



A Type - Adjustable in width from 13.5 to 32 mm
From Ø 125 to 315 mm
Also available in half side and face configuration (Right or left hand)



A full range of cassettes fitting 335.25 adjustable disc milling cutter bodies are available:

- For insert XNHQ size 09 / 12 / 14 and 17 (both with regular and enlarged chip space)
- For Round insert dia 16mm (both with regular and enlarged chip space)
- For Round insert dia 20mm (enlarged chip space)

Cutter 335.25 - Insert XNHQ and LNHQ

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

B type for stub arbor (B)

A type for milling arbor (A)

- For insert selection and cutting data recommendations, see page(s) 58-61, 64-65
- For complete insert programme, see page(s) 167, 183
- For spare parts and technical information, see page(s) 55-56

Part No.	Type of mounting	Dimensions in mm									Zc *	KG		Insert: First choice	Insert: Alternative choice
		ap	Dc	ar	dmm	D5m	l1	lb	E						
R335.25 -080.15.22-4NA	B	15	80	22,7	22	40	50	21,4	-	8	4	0,6	10200	XNHQ09...	-
-100.15.27-5NA	B	15	100	25,3	27	48	50	-	-	10	5	1,0	9200	XNHQ09...	-
-125.15.32-6NA	B	15	125	32,8	32	58	50	-	-	12	6	1,5	8200	XNHQ09...	-
-160.15.40-7NA	B	15	160	44,3	40	70	50	-	-	14	7	2,4	7200	XNHQ09...	-
335.25 -160.15.40-7N	A	15	160	51,5	40	55	-	-	15	14	7	1,7	7200	XNHQ09...	-
R335.25 -200.15.40-8N	B	15	200	54,3	40	90	50	-	-	16	8	3,6	6500	XNHQ09...	-
335.25 -200.15.50-8N	A	15	200	64,5	50	69	-	-	15	16	8	2,6	6500	XNHQ09...	-
R335.25 -100.20.27-4NA	B	20	100	25,3	27	48	50	-	-	8	4	1,2	7200	XNHQ12...	-
-125.20.32-5NA	B	20	125	32,8	32	58	50	-	-	10	5	1,8	6500	XNHQ12...	-
-160.20.40-6NA	B	20	160	44,3	40	70	50	-	-	12	6	2,9	5700	XNHQ12...	-
335.25 -160.20.40-6N	A	20	160	51,5	40	55	-	-	20	12	6	2,2	5600	XNHQ12...	-
R335.25 -200.20.40-7N	B	20	200	54,3	40	90	50	-	-	14	7	4,3	5100	XNHQ12...	-
335.25 -200.20.50-7N	A	20	200	64,3	50	69	-	-	20	14	7	3,5	5100	XNHQ12...	-
R335.25 -250.20.60-9N	B	20	250	59,3	60	130	50	-	-	18	9	7,2	4600	XNHQ12...	-
335.25 -250.20.50-9N	A	20	250	88,5	50	71	-	-	20	18	9	5,8	4600	XNHQ12...	-
R335.25 -125.25.32-5NA	B	25	125	33,0	32	58	50	-	-	10	5	1,9	4900	XNHQ14...	LNHQ14...
-160.25.40-6NA	B	25	160	44,4	40	70	50	-	-	12	6	3,1	4400	XNHQ14...	LNHQ14...
335.25 -160.25.40-6N	A	25	160	50,7	40	55	-	-	32	12	6	2,7	4400	XNHQ14...	LNHQ14...
R335.25 -200.25.40-7N	B	25	200	54,5	40	90	50	-	-	14	7	5,0	3900	XNHQ14...	LNHQ14...
335.25 -200.25.50-7N	A	25	200	62,7	50	71	-	-	32	14	7	4,3	3900	XNHQ14...	LNHQ14...
-250.25.50-9N	A	25	250	87,7	50	71	-	-	32	18	9	7,3	3500	XNHQ14...	LNHQ14...
R335.25 -250.25.60-9N	B	25	250	59,5	60	130	50	-	-	18	9	8,3	3500	XNHQ14...	LNHQ14...

Please check availability in current price and stock-list

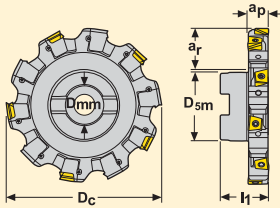
*Effective number of teeth

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

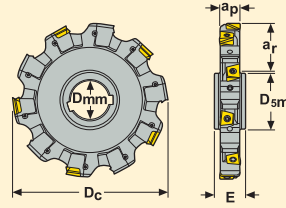
Cutter 335.25 - Insert XNHQ

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

B type for stub arbor (B)



A type for milling arbor (A)



- For insert selection and cutting data recommendations, see page(s) 58-61
- For complete insert programme, see page(s) 183
- For spare parts and technical information, see page(s) 55-56

Part No.	Type of mounting	Dimensions in mm									Zc*			Insert
		ap	Dc	ar	dmm	Dsm	I1	E						
R335.25 -100.1317.27-3N	B	13,5-17,0	100	24,8	27	48	50	-	6	3	1,0	9200	XNHQ09..	
R335.25 -125.1317.32-4N	B	13,5-17,0	125	32,3	32	58	50	-	8	4	1,4	8200	XNHQ09..	
335.25 -125.1317.40-4N	A	13,5-17,0	125	32,9	40	55	-	17	8	4	0,9	8200	XNHQ09..	
R335.25 -160.1317.40-6N	B	13,5-17,0	160	43,8	40	70	50	-	12	6	2,3	7200	XNHQ09..	
335.25 -160.1317.40-6N	A	13,5-17,0	160	50,5	40	55	-	17	12	6	1,5	7200	XNHQ09..	
R335.25 -200.1317.40-7N	B	13,5-17,0	200	54,0	40	90	50	-	14	7	3,6	6500	XNHQ09..	
335.25 -200.1317.50-7N	A	13,5-17,0	200	63,5	50	69	-	17	14	7	2,5	6500	XNHQ09..	
R335.25 -250.1317XL.60-8N	B	13,5-17,0	250	59,0	60	130	50	-	16	8	6,0	5800	XNHQ09..	
335.25 -250.1317XL.50-8N	A	13,5-17,0	250	88,5	50	69	-	17	16	8	3,9	5800	XNHQ09..	
R335.25 -315.1317XL.60-10N	B	13,5-17,0	315	91,5	60	130	50	-	20	10	8,6	5200	XNHQ09..	
335.25 -315.1317XL.50-10N	A	13,5-17,0	315	121,0	50	69	-	17	20	10	6,5	5200	XNHQ09..	
R335.25 -100.1721.27-3N	B	17,0-21,0	100	24,8	27	48	50	-	6	3	1,1	7200	XNHQ12..	
R335.25 -125.1721.32-4N	B	17,0-21,0	125	32,3	32	58	50	-	8	4	1,6	6500	XNHQ12..	
335.25 -125.1721.40-4N	A	17,0-21,0	125	32,9	40	55	-	21	8	4	1,1	8200	XNHQ12..	
R335.25 -160.1721.40-5N	B	17,0-21,0	160	43,8	40	70	50	-	10	5	2,7	5700	XNHQ12..	
335.25 -160.1721.40-5N	A	17,0-21,0	160	50,5	40	55	-	21	10	5	1,9	7200	XNHQ12..	
R335.25 -200.1721.40-6N	B	17,0-21,0	200	54,0	40	90	50	-	12	6	4,1	5100	XNHQ12..	
335.25 -200.1721.50-6N	A	17,0-21,0	200	63,5	50	69	-	21	12	6	3,2	6500	XNHQ12..	
R335.25 -250.1721XL.60-8N	B	17,0-21,0	250	59,0	60	130	50	-	16	8	6,7	4600	XNHQ12..	
335.25 -250.1721XL.50-8N	A	17,0-21,0	250	88,5	50	69	-	21	16	8	4,9	5800	XNHQ12..	
R335.25 -315.1721XL.60-10N	B	17,0-21,0	315	91,5	60	130	50	-	20	10	10,0	4100	XNHQ12..	
335.25 -315.1721XL.50-10N	A	17,0-21,0	315	121,0	50	69	-	21	20	10	8,2	5200	XNHQ12..	

Please check availability in current price and stock-list

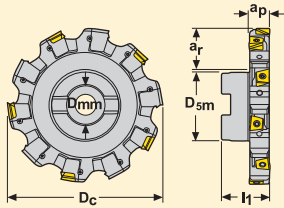
*Effective number of teeth

Adjustable cutter may be ordered with the cutting width set to any value within its range, see MN2015 Milling for more info.
All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

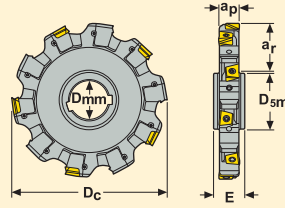
Cutter 335.25 - Insert XNHQ and LNHQ

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

B type for stub arbor (B)



A type for milling arbor (A)



- For insert selection and cutting data recommendations, see page(s) 62-65
- For complete insert programme, see page(s) 167, 183
- For spare parts and technical information, see page(s) 55-56

Part No.	Type of mounting	Dimensions in mm									Z_c^*				Insert: First choice	Insert: Alternative choice
		a_p	D_c	a_r	dm_m	D_{sm}	l_1	E								
R335.25 -125.2126.32-4N	B	21-26	125	32,3	32	58	50	-	8	4	1,7	4900	XNHQ1407...	LNHQ1407...		
335.25 -125.2126.40-4N	A	21-26	125	32,7	40	55	-	32	8	4	1,3	4900	XNHQ1407...	LNHQ1407...		
R335.25 -160.2126.40-5N	B	21-26	160	43,8	40	70	50	-	10	5	2,9	4400	XNHQ1407...	LNHQ1407...		
335.25 -160.2126.40-5N	A	21-26	160	50,3	40	55	-	32	10	5	2,3	4400	XNHQ1407...	LNHQ1407...		
R335.25 -200.2126.40-6N	B	21-26	200	54	40	90	50	-	12	6	4,6	3900	XNHQ1407...	LNHQ1407...		
335.25 -200.2126.50-6N	A	21-26	200	63,3	50	69	-	32	12	6	3,9	3900	XNHQ1407...	LNHQ1407...		
R335.25 -250.2126XL.60-7N	B	21-26	250	59	60	130	50	-	14	7	7,3	3500	XNHQ1407...	LNHQ1407...		
335.25 -250.2126XL.50-7N	A	21-26	250	88,3	50	69	-	32	14	7	6,0	3500	XNHQ1407...	LNHQ1407...		
R335.25 -315.2126XL.60-9N	B	21-26	315	91,5	60	130	50	-	18	9	11,3	3100	XNHQ1407...	LNHQ1407...		
335.25 -315.2126XL.60-9N	A	21-26	315	113,3	60	84	-	32	18	9	10,0	3100	XNHQ1407...	LNHQ1407...		
R335.25 -160.2632.40-5N	B	26-32	160	43,8	40	70	50	-	10	5	3,4	4600	XNHQ1707...	LNHQ1707...		
335.25 -160.2632.40-5N	A	26-32	160	50,3	40	55	-	32	10	5	2,9	4600	XNHQ1707...	LNHQ1707...		
R335.25 -200.2632.40-6N	B	26-32	200	54	40	90	50	-	12	6	5,3	4100	XNHQ1707...	LNHQ1707...		
335.25 -200.2632.50-6N	A	26-32	200	63,3	50	69	-	32	12	6	4,8	4100	XNHQ1707...	LNHQ1707...		
R335.25 -250.2632XL.60-7N	B	26-32	250	59	60	130	50	-	14	7	8,4	3700	XNHQ1707...	LNHQ1707...		
335.25 -250.2632XL.50-7N	A	26-32	250	88,3	50	69	-	32	14	7	7,4	3700	XNHQ1707...	LNHQ1707...		
R335.25 -315.2632XL.60-9N	B	26-32	315	91,5	60	130	50	-	18	9	13,4	3300	XNHQ1707...	LNHQ1707...		
335.25 -315.2632XL.60-9N	A	26-32	315	113,3	60	84	-	32	18	9	12,3	3300	XNHQ1707...	LNHQ1707...		

Please check availability in current price and stock-list

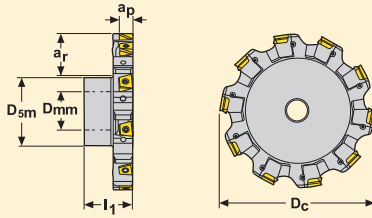
*Effective number of teeth

Adjustable cutter may be ordered with the cutting width set to any value within its range, see MN2015 Milling for more info.
All adj. cutters are set to the minimum cutter width, +/- 0,02 mm.

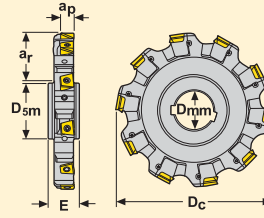
Cutter 335.25 - Insert XNHQ

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

B type for stub arbor – (B)



A type for milling arbor – (A)



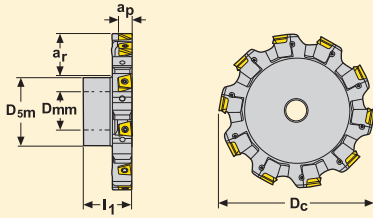
- For insert selection and cutting data recommendations, see page(s) 58-61
- For complete insert programme, see page(s) 183
- For spare parts and technical information, see page(s) 55-56

Part No.	Type of mounting	Dimensions in mm								Zc*			Insert
		ap	Dc	ar	dmm	Dsm	l1	E					
R335.25 -100.1317.27-6R	B	8,5	100	24,8	27	48	50	–	6	6	1,0	9200	XNHQ09..
R335.25 -125.1317.32-8R	B	8,5	125	32,3	32	58	50	–	8	8	1,4	8200	XNHQ09..
335.25 -125.1317.40-8R	A	8,5	125	32,9	40	55	–	17	8	4	0,9	8200	XNHQ09..
R335.25 -160.1317.40-12R	B	8,5	160	43,8	40	70	50	–	12	12	2,3	7200	XNHQ09..
335.25 -160.1317.40-12R	A	8,5	160	50,5	40	55	–	17	12	12	1,5	7200	XNHQ09..
R335.25 -200.1317.40-14R	B	8,5	200	54,0	40	90	50	–	14	14	3,6	6500	XNHQ09..
335.25 -200.1317.50-14R	A	8,5	200	63,5	50	69	–	17	14	14	2,5	6500	XNHQ09..
R335.25 -250.1317XL.60-16R	B	8,5	250	59,0	60	130	50	–	16	16	6,0	5800	XNHQ09..
335.25 -250.1317XL.50-16R	A	8,5	250	88,5	50	69	–	17	16	8	3,9	5800	XNHQ09..
R335.25 -315.1317XL.60-20R	B	8,5	315	91,5	60	130	50	–	20	20	8,6	5200	XNHQ09..
335.25 -315.1317XL.50-20R	A	8,5	315	121,0	50	69	–	17	20	10	6,5	5200	XNHQ09..
R335.25 -100.1721.27-6R	B	11	100	24,8	27	48	50	–	6	6	1,1	7200	XNHQ12..
R335.25 -125.1721.32-8R	B	11	125	32,3	32	58	50	–	8	8	1,6	6500	XNHQ12..
335.25 -125.1721.40-8R	A	11	125	32,9	40	55	–	21	8	4	1,0	6500	XNHQ12..
R335.25 -160.1721.40-10R	B	11	160	43,8	40	70	50	–	10	10	2,7	5700	XNHQ12..
335.25 -160.1721.40-10R	A	11	160	50,5	40	55	–	21	10	5	1,9	5700	XNHQ12..
R335.25 -200.1721.40-12R	B	11	200	54,0	40	90	50	–	12	12	4,1	5100	XNHQ12..
335.25 -200.1721.50-12R	A	11	200	63,5	50	69	–	21	12	6	3,2	5100	XNHQ12..
R335.25 -250.1721XL.60-16R	B	11	250	59,0	60	130	50	–	16	16	6,7	4600	XNHQ12..
335.25 -250.1721XL.50-16R	A	11	250	88,5	50	69	–	21	16	8	8,2	4600	XNHQ12..
R335.25 -315.1721XL.60-20R	B	11	315	91,5	60	130	50	–	20	20	10,0	4100	XNHQ12..
335.25 -315.1721XL.50-20R	A	11	315	121,0	50	69	–	21	20	10	8,2	4100	XNHQ12..

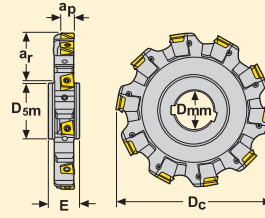
Please check availability in current price and stock-list

*Effective number of teeth

B type for stub arbor – (B)



A type for milling arbor – (A)



- For insert selection and cutting data recommendations, see page(s) 62-65
- For complete insert programme, see page(s) 167, 183
- For spare parts and technical information, see page(s) 55-56

Part No.	Type of mounting	Dimensions in mm									Zc *			Insert: First choice	Insert: Alternative choice
		ap	Dc	ar	dm _m	D _{sm}	l ₁	E							
R335.25 -125.2126.32-8R	B	13	125	32,3	32	58	50	-	8	8	1,7	4900	XNHQ1407...	LNHQ1407...	
335.25 -125.2126.40-8R	A	13	125	32,7	40	55	-	32	8	8	1,3	4900	XNHQ1407...	LNHQ1407...	
R335.25 -160.2126.40-10R	B	13	160	43,8	40	70	50	-	10	10	2,9	4400	XNHQ1407...	LNHQ1407...	
335.25 -160.2126.40-10R	A	13	160	50,3	40	55	-	32	10	10	2,3	4400	XNHQ1407...	LNHQ1407...	
R335.25 -200.2126.40-12R	B	13	200	54	40	90	50	-	12	12	4,6	3900	XNHQ1407...	LNHQ1407...	
335.25 -200.2126.50-12R	A	13	200	63,3	50	69	-	32	12	12	3,9	3900	XNHQ1407...	LNHQ1407...	
R335.25 -250.2126XL.60-14R	B	13	250	59	60	130	50	-	14	14	7,3	3500	XNHQ1407...	LNHQ1407...	
335.25 -250.2126XL.50-14R	A	13	250	88,3	50	69	-	32	14	14	6,0	3500	XNHQ1407...	LNHQ1407...	
R335.25 -315.2126XL.60-18R	B	13	315	91,5	60	130	50	-	18	18	11,3	3100	XNHQ1407...	LNHQ1407...	
335.25 -315.2126XL.60-18R	A	13	315	113,3	60	84	-	32	18	18	10,0	3100	XNHQ1407...	LNHQ1407...	
R335.25 -160.2632.40-10R	B	16	160	43,8	40	70	50	-	10	10	3,4	4600	XNHQ1707...	LNHQ1707...	
335.25 -160.2632.40-10R	A	16	160	50,3	40	55	-	32	10	10	2,9	4600	XNHQ1707...	LNHQ1707...	
R335.25 -200.2632.40-12R	B	16	200	54	40	90	50	-	12	12	5,4	4100	XNHQ1707...	LNHQ1707...	
335.25 -200.2632.50-12R	A	16	200	63,3	50	69	-	32	12	12	4,8	4100	XNHQ1707...	LNHQ1707...	
R335.25 -250.2632XL.60-14R	B	16	250	59	60	130	50	-	14	14	8,4	3700	XNHQ1707...	LNHQ1707...	
335.25 -250.2632XL.50-14R	A	16	250	88,3	50	69	-	32	14	14	7,4	3700	XNHQ1707...	LNHQ1707...	
R335.25 -315.2632XL.60-18R	B	16	315	91,5	60	130	50	-	18	18	13,4	3300	XNHQ1707...	LNHQ1707...	
335.25 -315.2632XL.60-18R	A	16	315	113,3	60	84	-	32	18	18	12,3	3300	XNHQ1707...	LNHQ1707...	

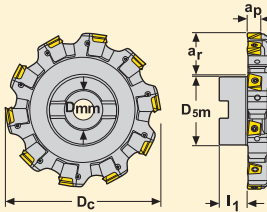
Please check availability in current price and stock-list

*Effective number of teeth

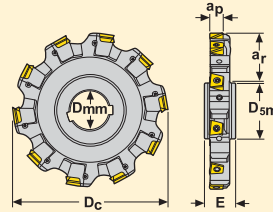
Cutter 335.25 - Insert XNHQ

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

Type B for stub arbor (B)



Type A for milling arbor (A)



- For insert selection and cutting data recommendations, see page(s) 58-61
- For complete insert programme, see page(s) 183
- For spare parts and technical information, see page(s) 55-56

Part No.	Type of mounting	Dimensions in mm								Zc*				Insert
		ap	Dc	ar	dmm	Dsm	l1	E						
R335.25 -100.1317.27-6L	B	8,5	100	24,8	27	48	50	–	6	6	1,0	9200	XNHQ09..	
R335.25 -125.1317.32-8L	B	8,5	125	32,3	32	58	50	–	8	8	1,4	8200	XNHQ09..	
335.25 -125.1317.40-8L	A	8,5	125	32,9	40	55	–	17	8	4	0,9	8200	XNHQ09..	
R335.25 -160.1317.40-12L	B	8,5	160	43,8	40	70	50	–	12	12	2,3	7200	XNHQ09..	
335.25 -160.1317.40-12L	A	8,5	160	50,5	40	55	–	17	12	12	1,5	7200	XNHQ09..	
R335.25 -200.1317.40-14L	B	8,5	200	54,0	40	90	50	–	14	14	3,6	6500	XNHQ09..	
335.25 -200.1317.50-14L	A	8,5	200	63,5	50	69	–	17	14	14	2,5	6500	XNHQ09..	
R335.25 -250.1317XL.60-16L	B	8,5	250	59,0	60	130	50	–	16	16	6,0	5800	XNHQ09..	
335.25 -250.1317XL.50-16L	A	8,5	250	88,5	50	69	–	17	16	8	3,9	5800	XNHQ09..	
R335.25 -315.1317XL.60-20L	B	8,5	315	91,5	60	130	50	–	20	20	8,6	5200	XNHQ09..	
335.25 -315.1317XL.50-20L	A	8,5	315	121,0	50	69	–	17	20	10	6,5	5200	XNHQ09..	
R335.25 -100.1721.27-6L	B	11	100	24,8	27	48	50	–	6	6	1,1	7200	XNHQ12..	
R335.25 -125.1721.32-8L	B	11	125	32,3	32	58	50	–	8	8	1,6	6500	XNHQ12..	
335.25 -125.1721.40-8L	A	11	125	32,9	40	55	–	21	8	4	1,1	6500	XNHQ12..	
R335.25 -160.1721.40-10L	B	11	160	43,8	40	70	50	–	10	10	2,7	5700	XNHQ12..	
335.25 -160.1721.40-10L	A	11	160	50,5	40	55	–	21	10	5	1,9	5700	XNHQ12..	
R335.25 -200.1721.40-12L	B	11	200	54,0	40	90	50	–	12	12	4,1	5100	XNHQ12..	
335.25 -200.1721.50-12L	A	11	200	63,5	50	69	–	21	12	6	3,3	5100	XNHQ12..	
R335.25 -250.1721XL.60-16L	B	11	250	59,0	60	130	50	–	16	16	6,7	4600	XNHQ12..	
335.25 -250.1721XL.50-16L	A	11	250	88,5	50	69	–	21	16	8	4,9	4600	XNHQ12..	
R335.25 -315.1721XL.60-20L	B	11	315	91,5	60	130	50	–	20	20	10,0	4100	XNHQ12..	
335.25 -315.1721XL.50-20L	A	11	315	121,0	50	69	–	21	20	10	8,2	4100	XNHQ12..	

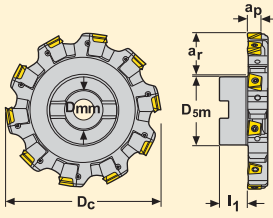
Please check availability in current price and stock-list

*Effective number of teeth

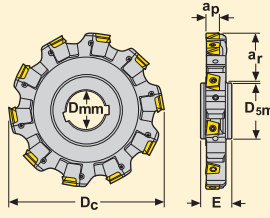
Cutter 335.25 - Insert XNHQ and LNHQ

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

Type B for stub arbor (B)



Type A for milling arbor (A)



- For insert selection and cutting data recommendations, see page(s) 62-65
- For complete insert programme, see page(s) 167, 183
- For spare parts and technical information, see page(s) 55-56

Part No.	Type of mounting	Dimensions in mm									Zc*				Insert: First choice	Insert: Alternative choice
		ap	Dc	ar	dm	Dsm	l1	E								
R335.25 -125.2126.32-8L	B	13	125	32,3	32	58	29	–	8	8	1,7	4900	XNHQ1407...	LNHQ1407...		
335.25 -125.2126.40-8L	A	13	125	32,7	40	55	–	32	8	8	1,3	4900	XNHQ1407...	LNHQ1407...		
R335.25 -160.2126.40-10L	B	13	160	43,8	40	70	29	–	10	10	2,9	4400	XNHQ1407...	LNHQ1407...		
335.25 -160.2126.40-10L	A	13	160	50,3	40	55	–	32	10	10	2,3	4400	XNHQ1407...	LNHQ1407...		
R335.25 -200.2126.40-12L	B	13	200	54	40	90	29	–	12	12	4,6	3900	XNHQ1407...	LNHQ1407...		
335.25 -200.2126.50-12L	A	13	200	63,3	50	69	–	32	12	12	3,9	3900	XNHQ1407...	LNHQ1407...		
R335.25 -250.2126XL.60-14L	B	13	250	59	60	130	29	–	14	14	7,3	3500	XNHQ1407...	LNHQ1407...		
335.25 -250.2126XL.50-14L	A	13	250	88,3	50	69	–	32	14	14	6,0	3500	XNHQ1407...	LNHQ1407...		
R335.25 -315.2126XL.60-18L	B	13	315	91,5	60	130	29	–	18	18	11,3	3100	XNHQ1407...	LNHQ1407...		
335.25 -315.2126XL.60-18L	A	13	315	113,3	60	84	–	32	18	18	10,0	3100	XNHQ1407...	LNHQ1407...		
R335.25 -160.2632.40-10L	B	16	160	43,8	40	70	24	–	10	10	3,4	4600	XNHQ1707...	LNHQ1707...		
335.25 -160.2632.40-10L	A	16	160	50,3	40	55	–	32	10	10	2,9	4600	XNHQ1707...	LNHQ1707...		
R335.25 -200.2632.40-12L	B	16	200	54	40	90	24	–	12	12	5,4	4100	XNHQ1707...	LNHQ1707...		
335.25 -200.2632.50-12L	A	16	200	63,3	50	69	–	32	12	12	4,8	4100	XNHQ1707...	LNHQ1707...		
R335.25 -250.2632XL.60-14L	B	16	250	59	60	130	24	–	14	14	8,4	3700	XNHQ1707...	LNHQ1707...		
335.25 -250.2632XL.50-14L	A	16	250	88,3	50	69	–	32	14	14	7,4	3700	XNHQ1707...	LNHQ1707...		
R335.25 -315.2632XL.60-18L	B	16	315	91,5	60	130	24	–	18	18	13,4	3300	XNHQ1707...	LNHQ1707...		
335.25 -315.2632XL.60-18L	A	16	315	113,3	60	84	–	32	18	18	12,3	3300	XNHQ1707...	LNHQ1707...		

Please check availability in current price and stock-list

*Effective number of teeth

Spare parts for fixed pockets and adjustable cutter (R)335.25

For fixed pocket cutter	Insert type	Locking screw/Nm	Key
15 mm	XNHQ09	C03509-T10P/3 Nm	T10P-3
20 mm	XNHQ12	C03511-T10P/3 Nm	T10P-3
25 mm	XNHQ14/LNHQ14	C04013-T15P/5 Nm	T15P-4

For adjustable cutter	Insert type	Locking screw/Nm	Key	Wedge	Wedge screw	Key for wedge screw	Adjusting screw	Key for adjusting screw	Cassettes	
									Right	Left
1317	XNHQ09	C03509-T10P/3Nm	T10P-3	335.25-612	LD6018F-T20P	T20P-4	SH6005-T09P	T09P-3	R335.25-...	L335.25-...
1317XL									1317-09*	1317-09*
1721	XNHQ12	C03511-T10P/3Nm	T10P-3	335.25-616	LD6018F-T20P	T20P-4	SH6005-T09P	T09P-3	1721-12**	1721-12**
1721XL									1721XL-12	1721XL-12
2126	XNHQ14 / LNHQ14	C04013-T15P/5 Nm	T15P-4	335.25-620	LD6018F-T20P	T20P-4	SH6005-T09P	T09P-3	2126-14***	2126-14***
2126XL									2126XL-14	2126XL-14
2632	XNHQ17 / LNHQ17	C05013-T20P/5 Nm	T20P-4	335.25-625	LD6018F-T20P	T20P-4	SH6005-T09P	T09P-3	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 "D_c" 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 "D_c" 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 "D_c" 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 "D_c" diameter

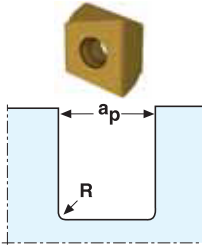
Arbor screw for B type cutter

Fixed pocket cutter	Arbor screw	dm _m
80	MLC6S10X45	22
100	MC6S12X40	27
125	950E1645	32
160	MLC6S20X40	40

Adjustable cutter	Arbor screw	dm _m
100	MC6S12X40	27
125	MC6S16X40	32
160	MLC6S20X40	40

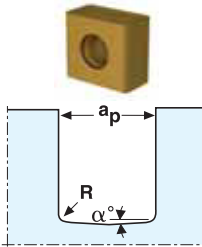
Dimension of mounting: See Machining Navigator 2015 Milling - Page 247

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



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

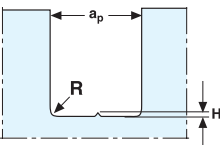
Width and profile generated by LNHQ * insert with fixed pocket cutter $a_p = 25\text{mm}$



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

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

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



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

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

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_r/D_c = %

All cutting data are start values

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

SMG	F40M			MP2500			MK2050		
	30%	20%	10%	30%	20%	10%	30%	20%	10%
P1	185	195	215	240	260	285	240	255	280
P2	180	190	210	235	255	280	230	250	275
P3	155	170	185	205	220	245	205	220	240
P4	140	150	165	180	195	215	180	190	210
P5	130	140	155	175	185	205	170	185	205
P6	150	160	180	195	210	235	195	205	230
P7	140	150	170	185	195	220	180	195	220
P8	130	140	155	175	185	205	170	185	205
P11	135	145	165	180	190	215	175	190	210
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	520	560	620	—	—	—	—	—	—
N2	420	455	500	—	—	—	—	—	—
N3	280	305	330	—	—	—	—	—	—
N11	320	345	380	—	—	—	—	—	—
S1	35	37	41	—	—	—	—	—	—
S2	28	30	33	—	—	—	—	—	—
S3	24	26	29	—	—	—	—	—	—
S11	49	50	55	—	—	—	—	—	—
S12	34	36	40	—	—	—	—	—	—
S13	27	29	32	—	—	—	—	—	—
H5	30	31	35	35	38	42	—	—	—
H8	31	33	37	38	40	44	—	—	—
H11	38	40	44	45	48	55	—	—	—
H12	55	60	65	70	70	80	—	—	—
H21	31	33	37	38	40	44	—	—	—

335.25 XN12 - Insert selection

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

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_r/D_c = %

All cutting data are start values

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

SMG	F40M			MP2500			MK2050		
	30%	20%	10%	30%	20%	10%	30%	20%	10%
P1	175	190	210	235	250	275	230	250	275
P2	170	185	205	225	240	270	225	240	265
P3	150	160	180	200	210	235	195	210	235
P4	135	145	160	175	190	210	175	185	205
P5	125	135	150	165	180	200	165	175	195
P6	145	155	170	190	200	225	190	200	220
P7	135	145	160	180	190	210	180	190	210
P8	125	135	150	165	175	200	165	175	195
P11	135	140	155	175	185	205	175	185	200
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	500	530	590	—	—	—	—	—	—
N2	405	430	480	—	—	—	—	—	—
N3	270	285	320	—	—	—	—	—	—
N11	305	325	365	—	—	—	—	—	—
S1	34	36	40	—	—	—	—	—	—
S2	27	29	32	—	—	—	—	—	—
S3	24	25	28	—	—	—	—	—	—
S11	48	50	55	—	—	—	—	—	—
S12	33	35	39	—	—	—	—	—	—
S13	26	28	31	—	—	—	—	—	—
H5	28	31	34	34	37	41	—	—	—
H8	31	32	36	37	39	43	—	—	—
H11	36	39	43	43	47	50	—	—	—
H12	55	60	65	65	70	80	—	—	—
H21	31	32	36	37	39	43	—	—	—

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 MP2500	LNHQ170708TN4-M13 F40M	0,18	0,20	0,28
P8	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,19	0,22	0,30
P11	LNHQ140708TN4-M11 F40M	LNHQ170708TN4-M13 F40M	0,18	0,20	0,28
M1	LNHQ140708TN4-M11 F40M	LNHQ170708TN4-M13 F40M	0,20	0,24	0,32
M2	LNHQ140708TN4-M11 F40M	LNHQ170708TN4-M13 F40M	0,18	0,22	0,28
M3	LNHQ140708TN4-M11 F40M	LNHQ170708TN4-M13 F40M	0,15	0,17	0,22
M4	LNHQ140708TN4-M11 F40M	LNHQ170708TN4-M13 F40M	0,13	0,15	0,20
M5	LNHQ140708TN4-M11 F40M	LNHQ170708TN4-M13 F40M	0,13	0,15	0,20
K1	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,20	0,24	0,32
K2	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,18	0,22	0,28
K3	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,18	0,22	0,28
K4	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,18	0,22	0,28
K5	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,17	0,19	0,26
K6	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,18	0,22	0,28
K7	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,17	0,19	0,26
S1	LNHQ140708TN4-M11 F40M	LNHQ170708TN4-M13 F40M	0,13	0,15	0,20
S2	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,13	0,15	0,20
S3	LNHQ140708TN4-M11 F40M	LNHQ170708TN4-M13 F40M	0,12	0,14	0,18
S11	LNHQ140708TN4-M11 F40M	LNHQ170708TN4-M13 F40M	0,15	0,17	0,22
S12	LNHQ140708TN4-M11 F40M	LNHQ170708TN4-M13 F40M	0,15	0,17	0,22
S13	LNHQ140708TN4-M11 F40M	LNHQ170708TN4-M13 F40M	0,13	0,15	0,20
H5	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,13	0,14	0,19
H8	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,095	0,11	0,15
H11	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,13	0,14	0,19
H12	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,13	0,14	0,19
H21	LNHQ140708TN4-M11 MP2500	LNHQ170708TN4-M13 F40M	0,095	0,11	0,15

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_r/D_c = %

All cutting data are start values

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

SMG	MP2500			F40M		
	30%	20%	10%	30%	20%	10%
P1	225	245	270	170	185	205
P2	220	235	260	165	175	195
P3	195	205	225	145	155	170
P4	170	180	205	130	135	155
P5	165	175	195	125	130	145
P6	185	200	220	140	150	165
P7	175	190	205	130	145	155
P8	160	175	190	125	130	145
P11	170	185	200	130	140	150
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	640	680	760	480	520	570
N2	510	550	610	390	415	460
N3	340	365	405	260	280	310
N11	390	420	465	295	315	350
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	39	42	47	32	34	38
S13	32	34	37	26	28	30
H5	33	36	39	27	30	33
H8	36	38	42	30	32	35
H11	42	46	50	35	38	42
H12	70	75	80	55	60	70
H21	36	38	42	30	32	35

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

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_r/D_c = %

All cutting data are start values

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

SMG	MP2500			F40M			MK2050			H25		
	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%
P1	230	250	275	175	190	210	225	245	270	—	—	—
P2	225	235	260	170	180	200	220	235	260	—	—	—
P3	195	210	230	150	160	175	190	205	225	—	—	—
P4	170	185	205	130	140	155	170	180	205	—	—	—
P5	165	175	195	125	135	150	165	175	195	—	—	—
P6	185	205	220	140	155	170	185	200	220	—	—	—
P7	175	190	210	135	145	160	175	190	205	—	—	—
P8	165	175	195	125	135	145	160	175	190	—	—	—
P11	170	185	205	130	140	155	170	185	200	—	—	—
M1	160	170	190	135	145	160	—	—	—	—	—	—
M2	135	140	160	115	120	135	—	—	—	—	—	—
M3	110	115	130	90	100	110	—	—	—	—	—	—
M4	85	90	100	70	75	85	—	—	—	—	—	—
M5	70	75	85	60	65	70	—	—	—	—	—	—
K1	175	185	210	135	140	155	235	250	280	—	—	—
K2	160	165	185	120	125	140	210	225	250	—	—	—
K3	135	140	160	100	105	120	180	190	210	—	—	—
K4	130	135	150	95	100	115	170	180	205	—	—	—
K5	75	85	90	60	65	70	105	110	125	—	—	—
K6	115	120	135	85	90	100	150	160	180	—	—	—
K7	100	105	120	75	80	90	135	145	160	—	—	—
N1	640	690	770	490	520	580	—	—	—	495	530	600
N2	520	560	620	395	420	470	—	—	—	400	430	480
N3	345	370	410	265	280	310	—	—	—	270	285	320
N11	395	425	470	300	320	355	—	—	—	305	325	365
S1	41	44	48	33	36	39	—	—	—	—	—	—
S2	33	35	39	27	29	32	—	—	—	—	—	—
S3	29	31	35	24	25	28	—	—	—	—	—	—
S11	55	60	70	46	50	55	—	—	—	—	—	—
S12	40	43	48	32	35	39	—	—	—	—	—	—
S13	32	34	38	26	28	31	—	—	—	—	—	—
H5	33	36	40	28	30	33	—	—	—	—	—	—
H8	36	38	42	30	32	35	—	—	—	—	—	—
H11	43	46	50	36	39	43	—	—	—	—	—	—
H12	70	75	85	55	60	70	—	—	—	—	—	—
H21	36	38	42	30	32	35	—	—	—	—	—	—

335.291 - 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 MP2500	0,12	0,14	0,19
P8	RPHT1204M0T-6-M08 MP2500	0,13	0,15	0,19
P11	RPHT1204M0T-6-M08 F40M	0,12	0,14	0,19
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 T350M	0,14	0,15	0,20
H12	RPHT1204M0T-6-M13 T350M	0,14	0,15	0,20
H21	RPHW1204M0T-6-MD12 MH1000	0,095	0,11	0,15

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_r/D_c = %

All cutting data are start values

335.29I - Cutting data $v_c =$ (m/min)

SMG	MP2500			MP3000			T350M			F40M		
	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%
P1	285	305	340	265	285	315	250	265	295	220	230	255
P2	280	300	330	260	280	305	245	260	290	210	225	250
P3	240	255	285	225	240	265	210	225	250	180	195	220
P4	215	230	255	200	215	235	190	200	220	165	175	190
P5	205	220	240	190	205	225	180	190	210	155	165	185
P6	230	245	270	215	230	250	200	215	235	175	185	205
P7	220	230	255	205	215	235	190	205	225	165	175	195
P8	200	215	240	190	205	225	175	190	210	155	165	185
P11	210	225	250	200	210	230	185	195	215	160	170	190
M1	200	215	240	195	210	230	190	200	220	170	180	200
M2	165	175	195	160	170	185	155	165	180	140	150	165
M3	130	140	155	125	135	150	125	130	145	110	120	130
M4	100	110	120	95	105	115	95	100	110	85	90	100
M5	85	90	100	80	85	95	80	85	95	70	75	85
K1	220	235	260	205	220	240	—	—	—	170	180	200
K2	195	210	230	180	195	215	—	—	—	150	160	175
K3	165	175	195	155	165	180	—	—	—	125	135	145
K4	160	170	185	145	155	170	—	—	—	120	125	140
K5	95	100	115	90	95	105	—	—	—	75	75	85
K6	140	150	165	130	135	150	—	—	—	105	110	125
K7	125	130	145	115	120	135	—	—	—	95	100	110
N1	—	—	—	—	—	—	—	—	—	620	660	740
N2	—	—	—	—	—	—	—	—	—	500	530	590
N3	—	—	—	—	—	—	—	—	—	335	355	395
N11	—	—	—	—	—	—	—	—	—	380	405	450
S1	—	—	—	45	49	55	44	47	50	40	43	48
S2	—	—	—	36	39	43	36	38	42	33	35	38
S3	—	—	—	32	34	38	31	33	37	28	30	34
S11	—	—	—	65	70	75	60	65	75	55	60	65
S12	—	—	—	45	48	55	43	47	50	40	43	47
S13	—	—	—	35	38	42	35	37	41	32	34	37
H5	41	44	48	39	41	45	39	42	46	34	36	40
H8	43	46	50	40	43	47	41	44	49	36	38	42
H11	50	55	60	50	50	60	50	55	60	43	46	50
H12	80	85	90	75	80	85	75	80	90	65	70	75
H21	43	46	50	40	43	47	41	44	49	36	38	42

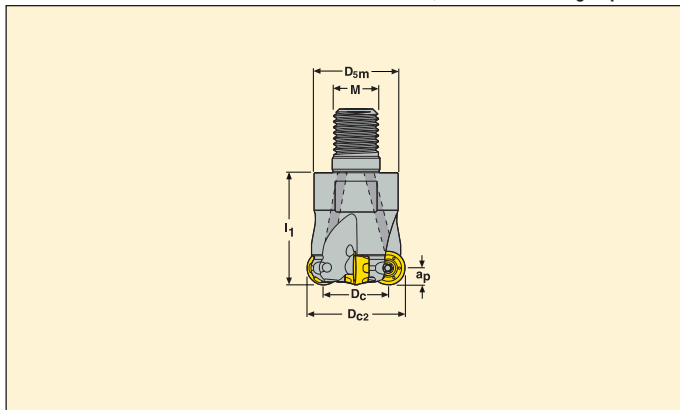
335.29I - Cutting data $v_c =$ (m/min)

SMG	MK2050			MM4500			MS2050			H25		
	30%	20%	10%	30%	20%	10%	30%	20%	10%	30%	20%	10%
P1	235	255	280	175	190	210	—	—	—	—	—	—
P2	230	245	270	170	185	205	—	—	—	—	—	—
P3	200	215	240	150	160	175	—	—	—	—	—	—
P4	175	190	210	135	140	155	—	—	—	—	—	—
P5	170	180	200	125	135	150	—	—	—	—	—	—
P6	190	205	225	140	150	165	—	—	—	—	—	—
P7	180	195	210	135	145	155	—	—	—	—	—	—
P8	170	180	200	125	135	150	—	—	—	—	—	—
P11	175	190	205	130	140	155	—	—	—	—	—	—
M1	—	—	—	145	155	175	160	165	170	—	—	—
M2	—	—	—	120	130	140	125	130	135	—	—	—
M3	—	—	—	95	105	115	85	85	85	—	—	—
M4	—	—	—	75	80	90	55	55	55	—	—	—
M5	—	—	—	60	65	75	47	48	47	—	—	—
K1	245	265	290	—	—	—	—	—	—	—	—	—
K2	220	235	260	—	—	—	—	—	—	—	—	—
K3	185	200	220	—	—	—	—	—	—	—	—	—
K4	180	190	210	—	—	—	—	—	—	—	—	—
K5	110	115	125	—	—	—	—	—	—	—	—	—
K6	155	165	185	—	—	—	—	—	—	—	—	—
K7	140	150	165	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	670	730	800
N2	—	—	—	—	—	—	—	—	—	540	590	650
N3	—	—	—	—	—	—	—	—	—	365	390	435
N11	—	—	—	—	—	—	—	—	—	415	450	495
S1	—	—	—	23	24	27	55	55	60	—	—	—
S2	—	—	—	18	20	22	44	45	49	—	—	—
S3	—	—	—	16	17	19	38	40	43	—	—	—
S11	—	—	—	32	34	38	75	80	85	—	—	—
S12	—	—	—	25	26	29	55	60	65	—	—	—
S13	—	—	—	20	21	23	47	49	55	—	—	—
H5	—	—	—	—	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—	—	—	—	—
H11	—	—	—	—	—	—	—	—	—	—	—	—
H12	—	—	—	—	—	—	—	—	—	—	—	—
H21	—	—	—	—	—	—	—	—	—	—	—	—

				Indexing possibility	
Before 2012				No	
Present				No	Yes +
Next generation				Yes	No -

R217.291-06

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



- For insert selection and cutting data recommendations, see page(s) 73-74
- For complete insert programme, see page(s) 173
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm							a (°)*				Insert
		ap	Dc2	Dc	D5m	I1	M						
R217.291 -1225.RE-06.2A	Combimaster	6	25	13	23	35	M16	13	2	1,0	17700	RP..1204	
R217.291 -1232.RE-06.3A	Combimaster	6	32	20	23	40	M16	7	3	0,2	15600	RP..1204	
-1632.RE-06.3A	Combimaster	6	32	20	30	40	M16	7	3	0,2	15600	RP..1204	
R217.291 -1635.RE-06.3A	Combimaster	6	35	23	30	40	M16	10	3	0,2	15000	RP..1204	
-1635.RE-06.4A	Combimaster	6	35	23	30	40	M16	6	4	0,2	15000	RP..1204	
R217.291 -1640.RE-06.3A	Combimaster	6	40	28	30	40	M16	8	3	0,2	14000	RP..1204	
-1640.RE-06.4A	Combimaster	6	40	28	30	40	M16	8	4	0,2	14000	RP..1204	
R217.291 -2040.RE06.4A	Combimaster	6	40	28	36,5	45	M20	8	4	0,4	14000	RP..1204	
R217.291 -1642.RE-06.5A	Combimaster	6	42	30	30	40	M16	4	5	0,3	13600	RP..1204	
R217.291 -2042.RE-06.5A	Combimaster	6	42	30	36,5	45	M20	4,2	5	0,4	13600	RP..1204	

Ramping angle = α°

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

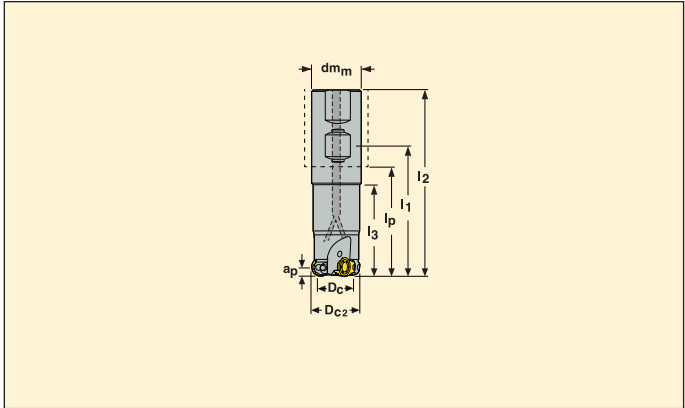
For cutter	Screw	Key	Insert screw	Insert key
R217.291-25/35-4A/42	SX2035-T05P	T05P-2	C03508-T15P	T15P-4
R217.291-32/35-3A/40	SX2035-T05P	T05P-2	C03509-T15P	T15P-4

Please check availability in current price- and stock-list

Torque value 3,0 Nm. Torque keys, see page 672 MN2015 Milling

R217.29I-06

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



- For insert selection and cutting data recommendations, see page(s) 73-74
- For complete insert programme, see page(s) 173
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm										a (°)*				Insert
		a _p	D _{c2}	D _c	dm _m	l ₁	l ₂	l ₃	l _p	l _c						
R217.29I -2525.3-06.2.050A	Cyl.-Weldon	6	25	13	25	74	106	21,6	50,5	46	13	2	0,4	17700	RP..1204	
R217.29I -3232.3-06.3.060A	Cyl.-Weldon	6	32	20	32	84	120	26,6	60,5	60	7	3	0,7	15600	RP..1204	
R217.29I -3240.3-06.4.075A	Cyl.-Weldon	6	40	28	32	99	135	72	75,5	60	8	4	0,8	14000	RP..1204	

Ramping angle = α°

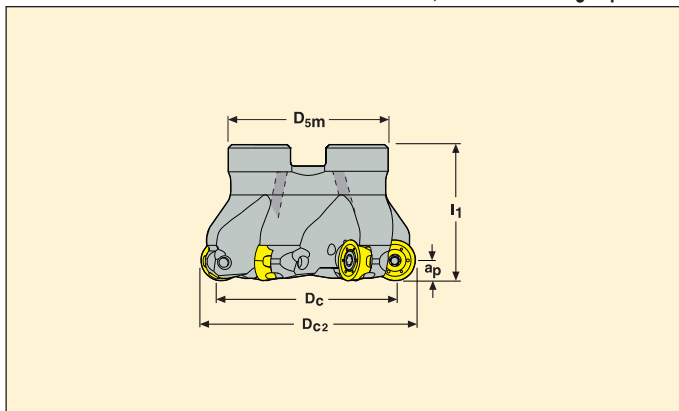
Spare Parts

For cutter	Screw	Key	Insert screw	Insert key
R217.29I-...ø 25	SX2035-T05P	T05P-2	C03508-T15P	T15P-4
R217.29I-...ø 32-40	SX2035-T05P	T05P-2	C03509-T15P	T15P-4

Please check availability in current price- and stock-list
 Torque value 3,0 Nm. Torque keys, see page 672 MN2015 Milling

R220.291-06

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



- For insert selection and cutting data recommendations, see page(s) 73-74
- For complete insert programme, see page(s) 173
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm						a (°)*				Insert
		ap	Dc2	Dc	Dsm	dm	I1					
R220.291 -0040-06.4A	Arbor	6	40	28	35	16	40	8	4	0,2	14000	RP..1204
R220.291 -0044-06.4A	Arbor	6	44	32	35	16	40	7,9	4	0,2	13300	RP..1204
R220.291 -0050-06.4A	Arbor	6	50	38	42	22	40	5,5	4	0,3	12500	RP..1204
-0050-06.5A	Arbor	6	50	38	42	22	40	5,5	5	0,3	12500	RP..1204
R220.291 -0052-06.4A	Arbor	6	52	40	42	22	40	5	4	0,3	12300	RP..1204
-0052-06.5A	Arbor	6	52	40	42	22	40	5	5	0,3	12300	RP..1204
R220.291 -0063-06.5A	Arbor	6	63	51	47	22	40	4	5	0,4	11200	RP..1204
-0063-06.6A	Arbor	6	63	51	47	22	40	4	6	0,5	11200	RP..1204
-0063-06.7A	Arbor	6	63	51	47	22	40	3	7	0,5	11200	RP..1204

Ramping angle = α°. Spigot size = dm_m

Spare Parts

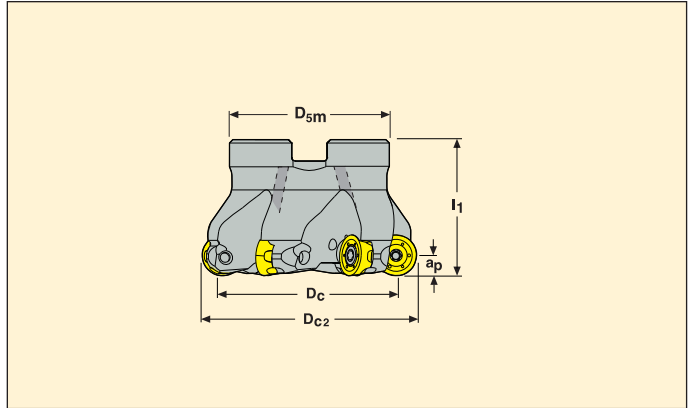
For cutter	Screw	Key	Insert screw	Insert key	Arbor screw
R220.291-...ø 40	SX2035-T05P	T05P-2	C03509-T15P	T15P-4	220.17-689
R220.291-...ø 44	SX2035-T05P	T05P-2	C03509-T15P	T15P-4	220.17-689
R220.291-...ø 50-63	SX2035-T05P	T05P-2	C03509-T15P	T15P-4	220.17-692

Please check availability in current price- and stock-list

Torque value ???. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R220.29I-06

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



- For insert selection and cutting data recommendations, see page(s) 73-74
- For complete insert programme, see page(s) 173
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm							a (°)*		KG		Insert
		ap	Dc2	Dc	Dsm	dm	l1						
R220.29I -0066-06.6A	Arbor	6	66	54	50	27	50	3,5	6	0,6	10900	RP..1204	
R220.29I -0080-06.6A	Arbor	6	80	68	62	27	50	3	6	1,0	10000	RP..1204	
-0080-06.7A	Arbor	6	80	68	62	27	50	3	7	1,0	10000	RP..1204	
-0080-06.8A	Arbor	6	80	68	62	27	50	2	8	1,0	10000	RP..1204	
R220.29I -0092-06.7A	Arbor	6	92	80	77	32	50	2,5	7	1,4	9200	RP..1204	
R220.29I -0100-06.9A	Arbor	6	100	88	77	32	50	2	9	1,6	8800	RP..1204	
R220.29I -0112-06.7A	Arbor	6	112	100	77	32	63	1,5	7	1,8	8400	RP..1204	
R220.29I -0125-06.11A	Arbor	6	125	113	90	40	63	1,5	11	3,1	8000	RP..1204	
R220.29I -0137-06.8A	Arbor	6	137	125	90	40	63	1,5	8	3,3	7600	RP..1204	

Ramping angle = α° . Spigot size = dm_m

Spare Parts

For cutter	Screw	Key	Insert screw	Insert key	Arbor screw
R220.29I-.ø 66-80	SX2035-T05P	T05P-2	C03509-T15P	T15P-4	MC6S12X35
R220.29I-.ø 92-112	SX2035-T05P	T05P-2	C03509-T15P	T15P-4	950E1645
R220.29I-.ø 125-137	SX2035-T05P	T05P-2	C03509-T15P	T15P-4	MC6S20X50

Please check availability in current price- and stock-list
Torque value ???. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R217/220.29-06 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	RPHT1204M0T-6-M08 T350M	2,5	0,24	0,26	0,42	0,60
P2	RPHT1204M0T-6-M08 T350M	2,5	0,26	0,28	0,42	0,60
P3	RPHT1204M0T-6-M08 T350M	2,5	0,24	0,26	0,40	0,55
P4	RPHT1204M0T-6-M08 T350M	2,5	0,24	0,26	0,40	0,55
P5	RPKT1204M0T-6-M15 MP2500	2,5	0,42	0,46	0,75	1,0
P6	RPKT1204M0T-6-M15 MP2500	2,5	0,42	0,46	0,70	1,0
P7	RPKT1204M0T-6-M15 MP2500	2,5	0,42	0,46	0,70	1,0
P8	RPKT1204M0T-6-M15 MP2500	2,5	0,44	0,48	0,75	1,1
P11	RPHT1204M0T-6-M08 MP2500	2,5	0,22	0,24	0,38	0,55
M1	RPHT1204M0T-6-ME07 T350M	2,5	0,22	0,24	0,36	0,50
M2	RPHT1204M0T-6-ME07 T350M	2,5	0,20	0,22	0,34	0,46
M3	RPHT1204M0T-6-ME07 T350M	1,9	0,18	0,20	0,30	0,42
M4	RPHT1204M0T-6-M08 T350M	1,5	0,20	0,22	0,34	0,48
M5	RPHT1204M0T-6-M08 T350M	1,5	0,20	0,22	0,34	0,48
K1	RPKT1204M0T-6-M15 MK2050	2,5	0,46	0,50	0,80	1,1
K2	RPKT1204M0T-6-M15 MK2050	2,5	0,42	0,46	0,75	1,0
K3	RPKT1204M0T-6-M15 MK2050	2,5	0,42	0,46	0,75	1,0
K4	RPKT1204M0T-6-M15 MK2050	2,5	0,42	0,46	0,75	1,0
K5	RPKT1204M0T-6-M15 MK2050	2,5	0,38	0,42	0,65	0,90
K6	RPKT1204M0T-6-M15 MK2050	2,5	0,42	0,46	0,75	1,0
K7	RPKT1204M0T-6-M15 MK2050	2,5	0,38	0,42	0,65	0,90
N1	RPHT1204M0-6-E05 H25	2,5	0,20	0,22	0,34	0,46
N2	RPHT1204M0-6-E05 H25	2,5	0,20	0,22	0,34	0,46
N3	RPHT1204M0-6-E05 H25	2,5	0,20	0,22	0,34	0,46
N11	RPHT1204M0-6-E05 H25	2,5	0,20	0,22	0,34	0,46
S1	RPHT1204M0T-6-M13 MS2500	1,5	0,34	0,36	0,55	0,80
S2	RPHT1204M0T-6-M13 MS2500	1,5	0,34	0,36	0,55	0,80
S3	RPHT1204M0T-6-M13 MS2500	1,5	0,32	0,34	0,55	0,75
S11	RPHT1204M0T-6-M13 MS2050	1,7	0,36	0,40	0,60	0,85
S12	RPHT1204M0T-6-M13 MS2050	1,7	0,36	0,40	0,60	0,85
S13	RPHT1204M0T-6-M13 MS2050	1,5	0,34	0,36	0,55	0,80
H5	RPHW1204M0T-6-MD12 MH1000	1,9	0,26	0,30	0,46	0,65
H8	RPHW1204M0T-6-MD12 MH1000	1,7	0,22	0,24	0,36	0,50
H11	RPHW1204M0T-6-MD12 MH1000	1,9	0,26	0,30	0,46	0,65
H12	RPHT1204M0T-6-M13 T350M	1,9	0,28	0,32	0,48	0,70
H21	RPHW1204M0T-6-MD12 MH1000	1,7	0,22	0,24	0,36	0,50

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/D_c = %

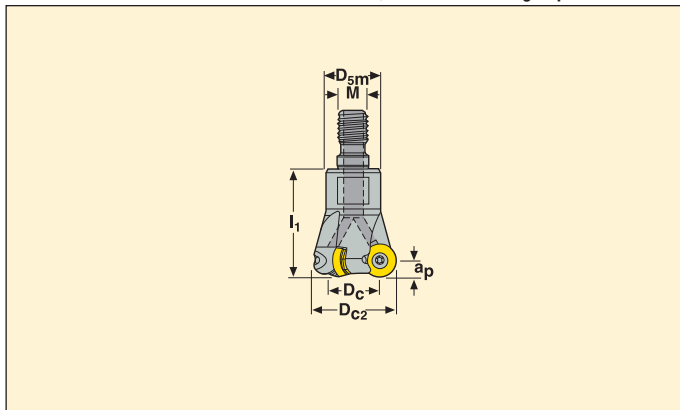
All cutting data are start values

R217/220.29-04/05/08/10

Cutters with round inserts, max. axial cutting depth 4/5/8/10 mm



- For insert selection and cutting data recommendations, see page(s) 76-83
- For complete insert programme, see page(s) 172, 174
- For helical interpolation, see page(s) 664 - 665 MN2015 Milling



Part No.	Type of mounting	Dimensions in mm						α° max				Insert
		a_p	D_{c2}	D_c	D_{5m}	I_1	M					
R217.29 -2040.RE-04.6A	Combimaster	4	40	32	36,5	40	M20	4,66	6	0,4	23300	RD..0803
R217.29 -2040.RE-05.5A	Combimaster	5	40	30	36,5	40	M20	6,81	5	0,3	19300	RD..10T3
-2042.RE-05.5A	Combimaster	5	42	32	36,5	40	M20	6,31	5	0,4	18800	RD..10T3
-2042.RE-05.6A	Combimaster	5	42	32	36,5	40	M20	6,31	6	0,4	18800	RD..10T3
R217.29 -2040.RE08.3A	Combimaster	8	40	24	36,5	45	M20	20	3	0,3	10900	RP..1605
R217.29 -2040.RE-10.2A	Combimaster	10	40	20	36,5	40	M20	40	2	0,3	8400	RP..2006

Ramping angle = α° . Spigot size = dm_m

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key
R217.29-2040-04	C02506-T08P	T08P-3
R217.29-2040-2042-05	C03007-T09P	T09P-3
R217.29-2040-08	C05013-T20P	T20P-3
R217.29-2040-10	C05013-T20P	T20P-4

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

R217220.29-04 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	RDHT0803M0-E03 T350M	1,6	0,095	0,10	0,16	0,22
P2	RDHT0803M0-E03 T350M	1,6	0,095	0,10	0,16	0,22
P3	RDHT0803M0-E03 T350M	1,6	0,090	0,10	0,15	0,22
P4	RDKW0803M0T-MD05 MS2500	1,6	0,15	0,16	0,24	0,34
P5	RDKW0803M0T-MD05 MS2500	1,6	0,15	0,16	0,24	0,34
P6	RDKW0803M0T-MD05 MS2500	1,6	0,14	0,16	0,24	0,34
P7	RDKW0803M0T-MD05 MS2500	1,6	0,14	0,16	0,24	0,34
P8	RDKW0803M0T-MD05 MP2500	1,6	0,15	0,17	0,26	0,36
P11	RDKW0803M0T-MD05 MS2500	1,6	0,14	0,16	0,24	0,34
M1	RDHW0803M0-MD03 F40M	1,6	0,13	0,14	0,22	0,30
M2	RDHW0803M0-MD03 F40M	1,6	0,12	0,13	0,19	0,26
M3	RDHW0803M0-MD03 F40M	1,3	0,10	0,11	0,17	0,24
M4	RDHW0803M0-MD03 F40M	0,95	0,11	0,12	0,18	0,24
M5	RDHW0803M0-MD03 F40M	0,95	0,11	0,12	0,18	0,24
K1	RDKW0803M0T-MD05 MK2050	1,6	0,16	0,17	0,26	0,38
K2	RDKW0803M0T-MD05 MK2050	1,6	0,15	0,16	0,24	0,34
K3	RDKW0803M0T-MD05 MK2050	1,6	0,15	0,16	0,24	0,34
K4	RDKW0803M0T-MD05 MK2050	1,6	0,15	0,16	0,24	0,34
K5	RDKW0803M0T-MD05 MK2050	1,6	0,13	0,14	0,22	0,30
K6	RDKW0803M0T-MD05 MK2050	1,6	0,15	0,16	0,24	0,34
K7	RDKW0803M0T-MD05 MK2050	1,6	0,13	0,14	0,22	0,30
N1	RDHT0803M0-E03 H25	1,6	0,12	0,13	0,20	0,28
N2	RDHT0803M0-E03 H25	1,6	0,12	0,13	0,20	0,28
N3	RDHT0803M0-E03 H25	1,6	0,12	0,13	0,20	0,28
N11	RDHT0803M0-E03 H25	1,6	0,12	0,13	0,20	0,28
S1	RDHW0803M0-MD03 F40M	0,95	0,11	0,12	0,18	0,24
S2	RDHW0803M0-MD03 F40M	0,95	0,11	0,12	0,18	0,24
S3	RDHW0803M0-MD03 F40M	0,95	0,10	0,11	0,16	0,22
S11	RDHW0803M0-MD03 MS2050	1,1	0,11	0,12	0,19	0,26
S12	RDHW0803M0-MD03 MS2050	1,1	0,11	0,12	0,19	0,26
S13	RDHW0803M0-MD03 MS2050	0,95	0,11	0,12	0,18	0,24
H5	RDKW0803M0T-MD05 F15M	1,3	0,11	0,12	0,18	0,26
H8	RDKW0803M0T-MD05 F15M	1,1	0,090	0,10	0,15	0,22
H11	RDKW0803M0T-MD05 F15M	1,3	0,11	0,12	0,18	0,26
H12	RDHW0803M0-MD03 F40M	1,3	0,090	0,095	0,15	0,20
H21	RDKW0803M0T-MD05 F15M	1,1	0,090	0,10	0,15	0,22

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

R217/220.29-05 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	RDHT10T3M0T-M05 T350M	2,0	0,16	0,17	0,26	0,36
P2	RDHT10T3M0T-M05 T350M	2,0	0,16	0,17	0,26	0,38
P3	RDHT10T3M0T-M05 T350M	2,0	0,15	0,17	0,26	0,36
P4	RDHT10T3M0T-M05 MS2500	2,0	0,15	0,16	0,24	0,34
P5	RDHT10T3M0T-M05 MS2500	2,0	0,15	0,16	0,24	0,34
P6	RDHT10T3M0T-M05 MS2500	2,0	0,14	0,16	0,24	0,34
P7	RDKW10T3M0T-MD06 MS2500	2,0	0,17	0,19	0,30	0,40
P8	RDKW10T3M0T-MD06 MP2500	2,0	0,18	0,20	0,30	0,42
P11	RDKW10T3M0T-MD06 MS2500	2,0	0,17	0,19	0,30	0,40
M1	RDHT10T3M0T-M05 T350M	2,0	0,16	0,17	0,26	0,38
M2	RDHT10T3M0T-M05 T350M	2,0	0,15	0,16	0,24	0,34
M3	RDHT10T3M0T-M05 T350M	1,6	0,13	0,14	0,22	0,30
M4	RDHT10T3M0T-M05 T350M	1,2	0,13	0,14	0,22	0,30
M5	RDHT10T3M0T-M05 T350M	1,2	0,13	0,14	0,22	0,30
K1	RDKW10T3M0T-MD06 MK2050	2,0	0,19	0,20	0,32	0,44
K2	RDKW10T3M0T-MD06 MK2050	2,0	0,17	0,19	0,30	0,40
K3	RDKW10T3M0T-MD06 MK2050	2,0	0,17	0,19	0,30	0,40
K4	RDKW10T3M0T-MD06 MK2050	2,0	0,17	0,19	0,30	0,40
K5	RDKW10T3M0T-MD06 MK2050	2,0	0,16	0,17	0,26	0,36
K6	RDKW10T3M0T-MD06 MP1500	2,0	0,17	0,19	0,30	0,40
K7	RDKW10T3M0T-MD06 MP1500	2,0	0,16	0,17	0,26	0,36
N1	RDHT10T3M0-E04 H25	2,0	0,16	0,18	0,28	0,38
N2	RDHT10T3M0-E04 H25	2,0	0,16	0,18	0,28	0,38
N3	RDHT10T3M0-E04 H25	2,0	0,16	0,18	0,28	0,38
N11	RDHT10T3M0-E04 H25	2,0	0,16	0,18	0,28	0,38
S1	RDHT10T3M0T-M07 MS2500	1,2	0,18	0,20	0,30	0,44
S2	RDHT10T3M0T-M07 MS2500	1,2	0,18	0,20	0,30	0,44
S3	RDHT10T3M0T-M05 MS2500	1,2	0,12	0,13	0,20	0,28
S11	RDHT10T3M0T-M05 MS2050	1,4	0,14	0,15	0,24	0,32
S12	RDHT10T3M0T-M05 MS2050	1,4	0,14	0,15	0,24	0,32
S13	RDHT10T3M0T-M05 MS2050	1,2	0,13	0,14	0,22	0,30
H5	RDHW10T3M0T-MD06 MH1000	1,6	0,13	0,14	0,22	0,30
H8	RDHW10T3M0T-MD06 MH1000	1,4	0,11	0,12	0,18	0,26
H11	RDHW10T3M0T-MD06 MH1000	1,6	0,13	0,14	0,22	0,30
H12	RDHT10T3M0T-M07 T350M	1,6	0,15	0,17	0,26	0,36
H21	RDHW10T3M0T-MD06 MH1000	1,4	0,11	0,12	0,18	0,26

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

R217/220.29-08 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	RPHT1605M0T-ME11 T350M	3,0	0,36	0,38	0,60	0,85
P2	RPHT1605M0T-ME11 T350M	3,0	0,36	0,40	0,60	0,85
P3	RPHT1605M0T-ME11 T350M	3,0	0,34	0,38	0,60	0,80
P4	RPHT1605M0T-M18 MS2500	3,0	0,46	0,50	0,80	1,1
P5	RPHT1605M0T-M18 MS2500	3,0	0,46	0,50	0,75	1,1
P6	RPHT1605M0T-M18 MS2500	3,0	0,44	0,48	0,75	1,1
P7	RPHT1605M0T-M18 MS2500	3,0	0,44	0,48	0,75	1,1
P8	RPHT1605M0T-M18 MP2500	3,0	0,46	0,50	0,80	1,1
P11	RPHT1605M0T-M18 MS2500	3,0	0,44	0,48	0,75	1,1
M1	RPHT1605M0T-M12 T350M	3,0	0,40	0,44	0,65	0,95
M2	RPHT1605M0T-M12 T350M	3,0	0,36	0,40	0,60	0,85
M3	RPHT1605M0T-M12 T350M	2,5	0,32	0,34	0,55	0,75
M4	RPHT1605M0T-M12 T350M	1,9	0,32	0,34	0,55	0,75
M5	RPHT1605M0T-M12 T350M	1,9	0,32	0,34	0,55	0,75
K1	RPHT1605M0T-M18 MK2050	3,0	0,50	0,55	0,85	1,2
K2	RPHT1605M0T-M18 MK2050	3,0	0,46	0,50	0,75	1,1
K3	RPHT1605M0T-M18 MK2050	3,0	0,46	0,50	0,75	1,1
K4	RPHT1605M0T-M18 MK2050	3,0	0,46	0,50	0,75	1,1
K5	RPHT1605M0T-M18 MK2050	3,0	0,40	0,44	0,70	1,0
K6	RPHT1605M0T-M18 MK2050	3,0	0,46	0,50	0,75	1,1
K7	RPHT1605M0T-M18 MK2050	3,0	0,40	0,44	0,70	1,0
N1	RPHT1605M0T-ME11 F40M	3,0	0,46	0,50	0,80	1,1
N2	RPHT1605M0T-ME11 F40M	3,0	0,46	0,50	0,80	1,1
N3	RPHT1605M0T-ME11 F40M	3,0	0,46	0,50	0,80	1,1
N11	RPHT1605M0T-ME11 F40M	3,0	0,46	0,50	0,80	1,1
S1	RPHT1605M0T-M12 MS2500	1,9	0,32	0,34	0,55	0,75
S2	RPHT1605M0T-M12 MS2500	1,9	0,32	0,34	0,55	0,75
S3	RPHT1605M0T-M12 MS2500	1,9	0,30	0,32	0,50	0,70
S11	RPHT1605M0T-M12 MS2050	2,5	0,32	0,34	0,55	0,75
S12	RPHT1605M0T-M12 MS2050	2,5	0,32	0,34	0,55	0,75
S13	RPHT1605M0T-M12 MS2050	1,9	0,32	0,34	0,55	0,75
H5	RPKW1605M0T-MD20 F15M	2,5	0,44	0,48	0,75	1,1
H8	RPKW1605M0T-MD20 F15M	2,5	0,34	0,38	0,60	0,80
H11	RPKW1605M0T-MD20 F15M	2,5	0,44	0,48	0,75	1,1
H12	RPHT1605M0T-M12 T350M	2,5	0,26	0,30	0,46	0,65
H21	RPKW1605M0T-MD20 F15M	2,5	0,34	0,38	0,60	0,80

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

R217/220.29-10 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	RPHT2006M0T-ME12 T350M	4,0	0,38	0,42	0,65	0,90
P2	RPHT2006M0T-ME12 T350M	4,0	0,38	0,42	0,65	0,90
P3	RPHT2006M0T-ME12 T350M	4,0	0,36	0,40	0,60	0,85
P4	RPKT2006M0T-M20 MS2500	4,0	0,44	0,48	0,75	1,1
P5	RPKT2006M0T-M20 MS2500	4,0	0,44	0,48	0,75	1,0
P6	RPKT2006M0T-M20 MS2500	4,0	0,44	0,48	0,75	1,0
P7	RPKT2006M0T-M20 MS2500	4,0	0,44	0,48	0,75	1,0
P8	RPKT2006M0T-M20 MP2500	4,0	0,46	0,50	0,75	1,1
P11	RPKT2006M0T-M20 MS2500	4,0	0,44	0,48	0,75	1,0
M1	RPHT2006M0T-ME12 T350M	4,0	0,38	0,42	0,65	0,90
M2	RPHT2006M0T-ME12 T350M	4,0	0,34	0,38	0,60	0,85
M3	RPHT2006M0T-ME12 T350M	3,0	0,32	0,36	0,55	0,75
M4	RPHT2006M0T-ME12 T350M	2,5	0,30	0,34	0,50	0,75
M5	RPHT2006M0T-ME12 T350M	2,5	0,30	0,34	0,50	0,75
K1	RPKT2006M0T-M20 MK2050	4,0	0,48	0,50	0,80	1,2
K2	RPKT2006M0T-M20 MK2050	4,0	0,44	0,48	0,75	1,0
K3	RPKT2006M0T-M20 MK2050	4,0	0,44	0,48	0,75	1,0
K4	RPKT2006M0T-M20 MK2050	4,0	0,44	0,48	0,75	1,0
K5	RPKT2006M0T-M20 MK2050	4,0	0,40	0,42	0,65	0,95
K6	RPKT2006M0T-M20 MK2050	4,0	0,44	0,48	0,75	1,0
K7	RPKT2006M0T-M20 MK2050	4,0	0,40	0,42	0,65	0,95
S1	RPHT2006M0T-ME12 MS2500	2,5	0,30	0,34	0,50	0,75
S2	RPHT2006M0T-ME12 MS2500	2,5	0,30	0,34	0,50	0,75
S3	RPKT2006M0T-M15 MS2500	2,5	0,36	0,40	0,60	0,85
S11	RPHT2006M0T-ME12 MS2050	3,0	0,32	0,36	0,55	0,75
S12	RPHT2006M0T-ME12 MS2050	3,0	0,32	0,36	0,55	0,75
S13	RPHT2006M0T-ME12 MS2050	2,5	0,30	0,34	0,50	0,75
H5	RPKW2006M0T-MD22 F15M	3,0	0,50	0,55	0,85	1,2
H8	RPKW2006M0T-MD22 F15M	3,0	0,38	0,42	0,65	0,90
H11	RPKW2006M0T-MD22 F15M	3,0	0,50	0,55	0,85	1,2
H12	RPKT2006M0T-M15 T350M	3,0	0,34	0,38	0,60	0,80
H21	RPKW2006M0T-MD22 F15M	3,0	0,38	0,42	0,65	0,90

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

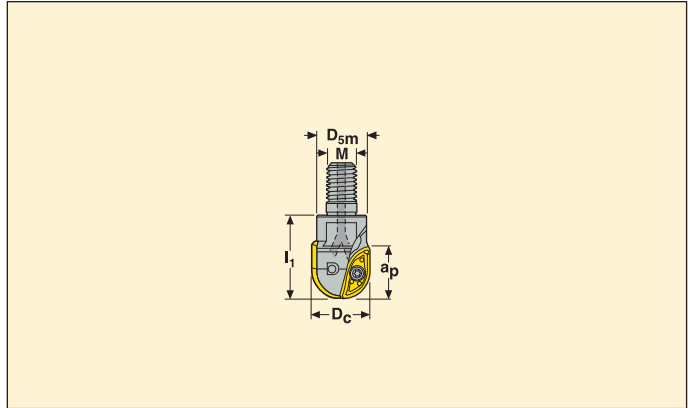
All cutting data are start values

R218.20

90° ball nose cutters dia 16-40



- For insert selection and cutting data recommendations, see page(s) 85-105
- For complete insert programme, see page(s) 185



Part No.	Type of mounting	Dimensions in mm						Zc*			() = No of inserts
		ap	Dc	Dsm	I1	M					
R218.20 -0816.RE-14A	Combimaster	14	16	13,5	23	M8	2	2	0,1	28500	-080(2)
-1016.RE-14A	Combimaster	14	16	18	28	M10	2	2	0,1	28500	-080(2)
R218.20 -1020.RE-18A	Combimaster	18	20	18	28	M10	2	2	0,1	20200	-100(2)
-1220.RE-18A	Combimaster	18	20	21,5	35	M12	2	2	0,2	20200	-100(2)
R218.20 -1225.RE-22A	Combimaster	22	25	21,5	35	M12	2	2	0,1	16900	-125(2)
R218.20 -1630.RE-26A	Combimaster	27	30	28,5	40	M16	2	2	0,2	12500	-150(2)
R218.20 -1632.RE-28A	Combimaster	28	32	28,5	40	M16	2	2	0,3	10900	-160(2)
R218.20 -1640.RE-35A	Combimaster	35	40	34	50	M16	2	2	0,3	7200	-200(2)
-2040.RE-35A	Combimaster	35	40	36,5	54,9	M20	2	2	0,3	7200	-200(2)
R218.20 -2050.RE-44A	Combimaster	44	50	36,5	64,87	M20	2	2	0,4	5000	-250(2)

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key
R218.20-.. Ø16	C02506-T08P	T08P-3
R218.20-.. Ø20	C03007-T09P	T09P-3
R218.20-.. Ø25-30	C04009-T15P	T15P-3
R218.20-.. Ø32	C04011-T15P	T15P-3
R218.20-..1640	C05013-T20P	T20P-4
R218.20-..2040	C05013-T20P	T20P-3
R218.20-.. Ø50	C06018-T25P	T25P-3

Please check availability in current price and stock-list

Torque value Dia 12 0,5 Nm, Dia 16 1,2 Nm, Dia 20 2,0 Nm and Dia 25-32 3,5 Nm, Dia 40 5,0 Nm. Torque keys, see page 672 MN2015 Milling

R218.20-080 – Insert selection – Roughing

SMG		f_z			
		100%	30%	20%	15%
P1	218.20-080ER-ME04 F40M	0,14	0,20	0,17	0,20
P2	218.20-080ER-ME04 F40M	0,14	0,20	0,18	0,20
P3	218.20-080ER-ME04 F40M	0,13	0,19	0,17	0,19
P4	218.20-080ER-M04 F25M	0,13	0,19	0,16	0,19
P5	218.20-080ER-M04 F25M	0,13	0,18	0,16	0,18
P6	218.20-080ER-M04 F25M	0,13	0,18	0,16	0,18
P7	218.20-080ER-M04 F25M	0,13	0,18	0,16	0,18
P8	218.20-080ER-M04 F25M	0,13	0,19	0,17	0,19
P11	218.20-080ER-M04 F25M	0,13	0,18	0,16	0,18
M1	218.20-080ER-ME04 F40M	0,14	0,20	0,18	0,20
M2	218.20-080ER-ME04 F40M	0,13	0,18	0,16	0,18
M3	218.20-080ER-ME04 F40M	0,10	0,15	0,13	0,15
M4	218.20-080ER-ME04 F40M	0,090	0,13	0,11	0,13
M5	218.20-080ER-M04 F40M	0,090	0,13	0,11	0,13
K1	218.20-080ER-M04 F25M	—	—	—	—
K2	218.20-080ER-M04 F25M	—	—	—	—
K3	218.20-080ER-M04 F25M	—	—	—	—
K4	218.20-080ER-M04 F25M	—	—	—	—
K5	218.20-080ER-M04 F25M	—	—	—	—
K6	218.20-080ER-M04 F25M	—	—	—	—
K7	218.20-080ER-M04 F25M	—	—	—	—
N1	218.20-080ER-ME04 F40M	0,18	0,26	0,22	0,26
N2	218.20-080ER-ME04 F40M	0,18	0,26	0,22	0,26
N3	218.20-080ER-ME04 F40M	0,18	0,26	0,22	0,26
N11	218.20-080ER-ME04 F40M	0,18	0,26	0,22	0,26
S1	218.20-080ER-ME04 T350M	0,090	0,13	0,11	0,13
S2	218.20-080ER-ME04 T350M	0,090	0,13	0,11	0,13
S3	218.20-080ER-ME04 T350M	0,085	0,12	0,10	0,12
S11	218.20-080ER-ME04 MS2050	0,060	0,085	0,075	0,085
S12	218.20-080ER-ME04 MS2050	0,060	0,085	0,075	0,085
S13	218.20-080ER-ME04 MS2050	0,050	0,070	0,065	0,070
H5	218.20-080ER-M04 F25M	0,090	0,12	0,11	0,12
H8	218.20-080ER-M04 F25M	0,065	0,095	0,085	0,095
H11	218.20-080ER-M04 F25M	0,090	0,12	0,11	0,12
H12	218.20-080ER-M04 F25M	0,090	0,12	0,11	0,12
H21	218.20-080ER-M04 F25M	0,065	0,095	0,085	0,095

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

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	0,20	0,22	0,24	0,26
P2	218.20-080ER-ME04 F40M	0,20	0,22	0,24	0,26
P3	218.20-080ER-ME04 F40M	0,19	0,20	0,22	0,26
P4	218.20-080ER-M04 F25M	0,19	0,20	0,22	0,24
P5	218.20-080ER-M04 F25M	0,18	0,20	0,22	0,24
P6	218.20-080ER-M04 F25M	0,18	0,20	0,22	0,24
P7	218.20-080ER-M04 F25M	0,18	0,20	0,22	0,24
P8	218.20-080ER-M04 F25M	0,19	0,20	0,22	0,26
P11	218.20-080ER-M04 F25M	0,18	0,20	0,22	0,24
M1	218.20-080ER-ME04 F40M	0,20	0,22	0,24	0,26
M2	218.20-080ER-ME04 F40M	0,18	0,20	0,22	0,24
M3	218.20-080ER-ME04 F40M	0,15	0,16	0,17	0,19
M4	218.20-080ER-ME04 F40M	0,13	0,14	0,15	0,17
M5	218.20-080ER-ME04 F40M	0,13	0,14	0,15	0,17
K1	218.20-080ER-M04 F25M	—	—	—	—
K2	218.20-080ER-M04 F25M	—	—	—	—
K3	218.20-080ER-M04 F25M	—	—	—	—
K4	218.20-080ER-M04 F25M	—	—	—	—
K5	218.20-080ER-M04 F25M	—	—	—	—
K6	218.20-080ER-M04 F25M	—	—	—	—
K7	218.20-080ER-M04 F25M	—	—	—	—
N1	218.20-080ER-ME04 F40M	0,26	0,28	0,30	0,34
N2	218.20-080ER-ME04 F40M	0,26	0,28	0,30	0,34
N3	218.20-080ER-ME04 F40M	0,26	0,28	0,30	0,34
N11	218.20-080ER-ME04 F40M	0,26	0,28	0,30	0,34
S1	218.20-080ER-ME04 T350M	0,13	0,14	0,15	0,17
S2	218.20-080ER-ME04 T350M	0,13	0,14	0,15	0,17
S3	218.20-080ER-ME04 T350M	0,12	0,13	0,14	0,16
S11	218.20-080ER-ME04 MS2050	0,085	0,090	0,10	0,11
S12	218.20-080ER-ME04 MS2050	0,085	0,090	0,10	0,11
S13	218.20-080ER-ME04 MS2050	0,070	0,080	0,085	0,095
H5	218.20-080ER-M04 F25M	0,12	0,14	0,15	0,16
H8	218.20-080ER-M04 F25M	0,095	0,10	0,11	0,12
H11	218.20-080ER-M04 F25M	0,12	0,14	0,15	0,16
H12	218.20-080ER-M04 F25M	0,12	0,14	0,15	0,16
H21	218.20-080ER-M04 F25M	0,095	0,10	0,11	0,12

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

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

SMG	T350M					F25M					F40M					MM4500					MS2050				
	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%
P1	295	425	410	450	490	270	395	380	415	455	255	370	355	390	425	200	290	280	305	335	205	215	220	220	240
P2	285	415	395	435	475	265	385	365	405	440	250	360	345	380	415	195	280	270	300	325	200	210	215	230	235
P3	250	360	345	385	415	230	335	320	355	385	215	315	300	335	360	170	245	235	260	285	160	180	175	180	190
P4	220	315	310	340	365	205	295	285	315	340	190	275	265	295	320	150	215	210	230	250	145	160	155	160	170
P5	210	305	295	320	355	195	285	275	300	330	185	265	255	280	310	145	210	200	220	245	135	140	140	140	150
P6	235	345	330	360	400	220	320	305	335	370	205	300	285	315	345	160	235	225	250	270	155	155	155	160	170
P7	225	325	310	340	375	205	300	290	315	350	195	280	270	295	325	150	220	215	235	255	145	145	145	150	160
P8	210	300	290	320	350	195	280	270	300	325	185	265	250	280	305	145	205	200	220	240	135	150	145	155	160
P11	215	315	300	330	365	200	295	280	310	340	190	275	265	290	320	150	215	205	225	250	140	140	145	145	155
M1	220	320	305	335	365	—	—	—	—	—	200	290	275	305	335	165	240	230	255	280	175	185	185	200	205
M2	180	265	255	280	305	—	—	—	—	—	165	240	230	250	280	140	200	190	210	230	135	135	135	135	145
M3	155	210	200	225	245	—	—	—	—	—	140	190	185	205	220	120	160	155	170	185	75	85	85	85	90
M4	135	160	155	175	185	—	—	—	—	—	120	145	145	155	170	100	125	120	130	140	27	49	50	50	55
M5	110	135	130	145	155	—	—	—	—	—	100	125	120	130	140	85	105	100	110	120	22	41	43	42	45
K1	—	—	—	—	—	—	—	—	—	—	195	285	270	300	330	—	—	—	—	—	—	—	—	—	—
K2	—	—	—	—	—	—	—	—	—	—	175	255	240	265	295	—	—	—	—	—	—	—	—	—	—
K3	—	—	—	—	—	—	—	—	—	—	145	215	205	225	250	—	—	—	—	—	—	—	—	—	—
K4	—	—	—	—	—	—	—	—	—	—	140	205	195	215	235	—	—	—	—	—	—	—	—	—	—
K5	—	—	—	—	—	—	—	—	—	—	85	125	120	130	145	—	—	—	—	—	—	—	—	—	—
K6	—	—	—	—	—	—	—	—	—	—	125	180	170	190	210	—	—	—	—	—	—	—	—	—	—
K7	—	—	—	—	—	—	—	—	—	—	110	160	150	165	185	—	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	730	1050	1025	1125	1225	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	590	850	820	910	980	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	390	570	550	610	650	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	445	650	630	690	750	—	—	—	—	—	—	—	—	—	—
S1	60	75	75	80	85	—	—	—	—	—	55	70	65	75	80	31	38	37	40	44	70	80	80	85	90
S2	50	60	60	65	70	—	—	—	—	—	46	55	55	60	65	25	30	29	32	35	55	65	65	65	70
S3	44	55	50	55	60	—	—	—	—	—	40	49	47	50	55	22	27	26	28	31	48	55	55	60	60
S11	85	105	100	115	125	—	—	—	—	—	75	95	95	105	110	42	55	50	55	60	100	115	110	120	125
S12	48	60	60	65	70	—	—	—	—	—	44	55	55	60	65	32	41	39	44	47	75	90	85	90	95
S13	40	49	47	50	55	—	—	—	—	—	37	44	43	47	50	27	32	31	35	37	60	70	70	70	75
H5	49	70	65	70	80	45	65	60	65	75	43	60	55	60	70	—	—	—	—	—	—	—	—	—	—
H8	55	70	70	75	80	50	65	65	70	75	48	60	60	65	70	—	—	—	—	—	—	—	—	—	—
H11	60	85	80	90	100	60	80	75	85	90	55	75	70	80	85	—	—	—	—	—	—	—	—	—	—
H12	95	130	125	135	150	85	120	115	125	140	80	115	110	120	130	—	—	—	—	—	—	—	—	—	—
H21	55	70	70	75	80	50	65	65	70	75	48	60	60	65	70	—	—	—	—	—	—	—	—	—	—

R218.20-100 – Insert selection – Roughing

SMG		f_z			
		100%	30%	20%	15%
P1	218.20-100ER-ME05 F40M	0,13	0,19	0,17	0,19
P2	218.20-100ER-ME05 F40M	0,14	0,19	0,17	0,19
P3	218.20-100ER-ME05 F40M	0,13	0,18	0,16	0,18
P4	218.20-100ER-M05 F25M	0,13	0,18	0,16	0,18
P5	218.20-100ER-M05 F25M	0,12	0,17	0,15	0,17
P6	218.20-100ER-M05 F25M	0,12	0,17	0,15	0,17
P7	218.20-100ER-M05 F25M	0,12	0,17	0,15	0,17
P8	218.20-100ER-M05 F25M	0,13	0,18	0,16	0,18
P11	218.20-100ER-M05 F25M	0,12	0,17	0,15	0,17
M1	218.20-100ER-ME05 F40M	0,14	0,19	0,17	0,19
M2	218.20-100ER-ME05 F40M	0,12	0,17	0,15	0,17
M3	218.20-100ER-ME05 F40M	0,10	0,14	0,13	0,14
M4	218.20-100ER-ME05 F40M	0,090	0,13	0,11	0,13
M5	218.20-100ER-M05 F40M	0,090	0,13	0,11	0,13
K1	218.20-100ER-M05 F25M	—	—	—	—
K2	218.20-100ER-M05 F25M	—	—	—	—
K3	218.20-100ER-M05 F25M	—	—	—	—
K4	218.20-100ER-M05 F25M	—	—	—	—
K5	218.20-100ER-M05 F25M	—	—	—	—
K6	218.20-100ER-M05 F25M	—	—	—	—
K7	218.20-100ER-M05 F25M	—	—	—	—
N1	218.20-100ER-ME05 F40M	0,17	0,24	0,22	0,24
N2	218.20-100ER-ME05 F40M	0,17	0,24	0,22	0,24
N3	218.20-100ER-ME05 F40M	0,17	0,24	0,22	0,24
N11	218.20-100ER-ME05 F40M	0,17	0,24	0,22	0,24
S1	218.20-100ER-ME05 F40M	0,090	0,13	0,11	0,13
S2	218.20-100ER-ME05 F40M	0,090	0,13	0,11	0,13
S3	218.20-100ER-ME05 F40M	0,085	0,12	0,10	0,12
S11	218.20-100ER-ME05 MS2050	0,075	0,10	0,090	0,10
S12	218.20-100ER-ME05 MS2050	0,075	0,10	0,090	0,10
S13	218.20-100ER-ME05 MS2050	0,065	0,090	0,080	0,090
H5	218.20-100ER-M05 F25M	0,090	0,12	0,11	0,12
H8	218.20-100ER-M05 F25M	0,065	0,095	0,085	0,095
H11	218.20-100ER-M05 F25M	0,090	0,12	0,11	0,12
H12	218.20-100ER-M05 F25M	0,090	0,12	0,11	0,12
H21	218.20-100ER-M05 F25M	0,065	0,095	0,085	0,095

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

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	0,19	0,20	0,22	0,24
P2	218.20-100ER-ME05 F40M	0,19	0,22	0,22	0,26
P3	218.20-100ER-ME05 F40M	0,18	0,20	0,22	0,24
P4	218.20-100ER-M05 F25M	0,18	0,19	0,22	0,24
P5	218.20-100ER-M05 F25M	0,17	0,19	0,20	0,24
P6	218.20-100ER-M05 F25M	0,17	0,19	0,20	0,22
P7	218.20-100ER-M05 F25M	0,17	0,19	0,20	0,22
P8	218.20-100ER-M05 F25M	0,18	0,20	0,22	0,24
P11	218.20-100ER-M05 F25M	0,17	0,19	0,20	0,22
M1	218.20-100ER-ME05 F40M	0,19	0,22	0,22	0,26
M2	218.20-100ER-ME05 F40M	0,17	0,19	0,20	0,24
M3	218.20-100ER-ME05 F40M	0,14	0,16	0,17	0,19
M4	218.20-100ER-ME05 F40M	0,13	0,14	0,15	0,17
M5	218.20-100ER-ME05 F40M	0,13	0,14	0,15	0,17
K1	218.20-100ER-M05 F25M	—	—	—	—
K2	218.20-100ER-M05 F25M	—	—	—	—
K3	218.20-100ER-M05 F25M	—	—	—	—
K4	218.20-100ER-M05 F25M	—	—	—	—
K5	218.20-100ER-M05 F25M	—	—	—	—
K6	218.20-100ER-M05 F25M	—	—	—	—
K7	218.20-100ER-M05 F25M	—	—	—	—
N1	218.20-100ER-ME05 F40M	0,24	0,26	0,30	0,32
N2	218.20-100ER-ME05 F40M	0,24	0,26	0,30	0,32
N3	218.20-100ER-ME05 F40M	0,24	0,26	0,30	0,32
N11	218.20-100ER-ME05 F40M	0,24	0,26	0,30	0,32
S1	218.20-100ER-ME05 F40M	0,13	0,14	0,15	0,17
S2	218.20-100ER-ME05 F40M	0,13	0,14	0,15	0,17
S3	218.20-100ER-ME05 F40M	0,12	0,13	0,14	0,16
S11	218.20-100ER-ME05 MS2050	0,10	0,11	0,12	0,14
S12	218.20-100ER-ME05 MS2050	0,10	0,11	0,12	0,14
S13	218.20-100ER-ME05 MS2050	0,090	0,10	0,11	0,12
H5	218.20-100ER-M05 F25M	0,12	0,14	0,15	0,16
H8	218.20-100ER-M05 F25M	0,095	0,10	0,11	0,12
H11	218.20-100ER-M05 F25M	0,12	0,14	0,15	0,16
H12	218.20-100ER-M05 F25M	0,12	0,14	0,15	0,16
H21	218.20-100ER-M05 F25M	0,095	0,10	0,11	0,12

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

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

SMG	F25M					F40M					MM4500					MS2050				
	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%
P1	270	390	375	420	455	250	360	345	385	415	200	290	280	310	335	225	250	250	260	270
P2	260	380	365	405	440	235	350	335	375	405	190	285	270	300	325	220	255	245	250	265
P3	225	335	320	350	385	210	305	290	320	355	170	245	235	260	285	185	205	195	205	225
P4	200	295	280	310	340	185	270	255	280	310	150	215	210	230	250	160	185	175	180	185
P5	195	285	270	300	325	180	260	250	275	295	145	210	200	225	240	155	165	165	175	175
P6	220	320	305	340	370	200	290	280	310	340	160	235	225	250	275	165	185	185	195	195
P7	205	300	290	320	350	190	275	265	290	320	155	225	215	235	260	155	175	175	185	185
P8	190	280	270	295	325	175	255	245	270	295	140	205	200	220	240	155	175	165	175	190
P11	200	290	280	310	340	185	265	255	285	310	150	215	210	230	250	155	170	170	180	180
M1	—	—	—	—	—	190	280	270	300	325	165	245	230	260	280	195	225	215	220	230
M2	—	—	—	—	—	160	235	225	250	265	140	200	195	215	230	150	160	160	170	170
M3	—	—	—	—	—	140	185	180	195	215	120	160	155	170	185	95	100	100	105	105
M4	—	—	—	—	—	120	145	135	155	165	105	125	120	130	145	38	65	60	65	65
M5	—	—	—	—	—	100	120	115	130	140	85	105	100	110	120	31	55	50	50	55
K1	—	—	—	—	—	190	275	265	295	320	—	—	—	—	—	—	—	—	—	—
K2	—	—	—	—	—	170	245	235	260	280	—	—	—	—	—	—	—	—	—	—
K3	—	—	—	—	—	145	210	200	220	240	—	—	—	—	—	—	—	—	—	—
K4	—	—	—	—	—	135	200	190	210	225	—	—	—	—	—	—	—	—	—	—
K5	—	—	—	—	—	85	120	115	125	140	—	—	—	—	—	—	—	—	—	—
K6	—	—	—	—	—	120	175	170	185	200	—	—	—	—	—	—	—	—	—	—
K7	—	—	—	—	—	105	155	150	165	180	—	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	700	1025	980	1075	1175	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	570	830	790	870	950	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	380	560	530	580	640	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	435	630	600	660	730	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	—	—	55	65	65	70	80	32	38	36	40	44	70	75	75	80	85
S2	—	—	—	—	—	45	55	50	60	65	26	31	29	33	35	55	60	60	65	70
S3	—	—	—	—	—	40	48	45	50	55	22	27	26	28	31	48	55	50	55	60
S11	—	—	—	—	—	75	95	90	100	110	41	55	50	55	60	95	110	105	115	120
S12	—	—	—	—	—	42	55	50	55	60	32	41	40	43	47	70	85	80	85	95
S13	—	—	—	—	—	36	43	41	46	50	27	33	31	35	38	60	65	65	70	75
H5	45	60	60	65	70	41	55	55	60	65	—	—	—	—	—	—	—	—	—	—
H8	50	65	65	70	75	46	60	55	65	70	—	—	—	—	—	—	—	—	—	—
H11	60	80	75	85	90	55	70	70	75	85	—	—	—	—	—	—	—	—	—	—
H12	85	120	115	125	135	80	110	105	115	125	—	—	—	—	—	—	—	—	—	—
H21	50	65	65	70	75	46	60	55	65	70	—	—	—	—	—	—	—	—	—	—

R218.20-125 – Insert selection – Roughing

SMG		f_z			
		100%	30%	20%	15%
P1	218.20-125ER-ME07 F40M	0,14	0,19	0,17	0,19
P2	218.20-125ER-ME07 F40M	0,14	0,20	0,17	0,20
P3	218.20-125ER-ME07 F40M	0,13	0,18	0,16	0,18
P4	218.20-125ER-M07 F25M	0,13	0,18	0,16	0,18
P5	218.20-125ER-M07 F25M	0,13	0,18	0,16	0,18
P6	218.20-125ER-M07 F25M	0,12	0,18	0,16	0,18
P7	218.20-125ER-M07 F25M	0,12	0,18	0,16	0,18
P8	218.20-125ER-M07 F25M	0,13	0,18	0,16	0,18
P11	218.20-125ER-M07 F25M	0,12	0,18	0,16	0,18
M1	218.20-125ER-ME07 F40M	0,14	0,20	0,17	0,20
M2	218.20-125ER-ME07 F40M	0,13	0,18	0,16	0,18
M3	218.20-125ER-ME07 F40M	0,10	0,14	0,13	0,14
M4	218.20-125ER-ME07 F40M	0,090	0,13	0,11	0,13
M5	218.20-125ER-M07 F40M	0,090	0,13	0,11	0,13
K1	218.20-125ER-M07 F25M	—	—	—	—
K2	218.20-125ER-M07 F25M	—	—	—	—
K3	218.20-125ER-M07 F25M	—	—	—	—
K4	218.20-125ER-M07 F25M	—	—	—	—
K5	218.20-125ER-M07 F25M	—	—	—	—
K6	218.20-125ER-M07 F25M	—	—	—	—
K7	218.20-125ER-M07 F25M	—	—	—	—
N1	218.20-125ER-ME07 F40M	0,18	0,24	0,22	0,24
N2	218.20-125ER-ME07 F40M	0,18	0,24	0,22	0,24
N3	218.20-125ER-ME07 F40M	0,18	0,24	0,22	0,24
N11	218.20-125ER-ME07 F40M	0,18	0,24	0,22	0,24
S1	218.20-125ER-ME07 F40M	0,090	0,13	0,11	0,13
S2	218.20-125ER-ME07 F40M	0,090	0,13	0,11	0,13
S3	218.20-125ER-ME07 F40M	0,085	0,12	0,10	0,12
S11	218.20-125ER-ME07 MS2050	0,10	0,14	0,13	0,14
S12	218.20-125ER-ME07 MS2050	0,10	0,14	0,13	0,14
S13	218.20-125ER-ME07 MS2050	0,090	0,13	0,11	0,13
H5	218.20-125ER-M07 F25M	0,090	0,12	0,11	0,12
H8	218.20-125ER-M07 F25M	0,065	0,095	0,085	0,095
H11	218.20-125ER-M07 F25M	0,090	0,12	0,11	0,12
H12	218.20-125ER-M07 F25M	0,090	0,12	0,11	0,12
H21	218.20-125ER-M07 F25M	0,065	0,095	0,085	0,095

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

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	0,19	0,22	0,22	0,26
P2	218.20-125ER-ME07 F40M	0,20	0,22	0,24	0,26
P3	218.20-125ER-ME07 F40M	0,18	0,20	0,22	0,24
P4	218.20-125ER-M07 F25M	0,18	0,20	0,22	0,24
P5	218.20-125ER-M07 F25M	0,18	0,20	0,22	0,24
P6	218.20-125ER-M07 F25M	0,18	0,19	0,22	0,24
P7	218.20-125ER-M07 F25M	0,18	0,19	0,22	0,24
P8	218.20-125ER-M07 F25M	0,18	0,20	0,22	0,24
P11	218.20-125ER-M07 F25M	0,18	0,19	0,22	0,24
M1	218.20-125ER-ME07 F40M	0,20	0,22	0,24	0,26
M2	218.20-125ER-ME07 F40M	0,18	0,20	0,22	0,24
M3	218.20-125ER-ME07 F40M	0,14	0,16	0,17	0,19
M4	218.20-125ER-ME07 F40M	0,13	0,14	0,15	0,17
M5	218.20-125ER-ME07 F40M	0,13	0,14	0,15	0,17
K1	218.20-125ER-M07 F25M	—	—	—	—
K2	218.20-125ER-M07 F25M	—	—	—	—
K3	218.20-125ER-M07 F25M	—	—	—	—
K4	218.20-125ER-M07 F25M	—	—	—	—
K5	218.20-125ER-M07 F25M	—	—	—	—
K6	218.20-125ER-M07 F25M	—	—	—	—
K7	218.20-125ER-M07 F25M	—	—	—	—
N1	218.20-125ER-ME07 F40M	0,24	0,28	0,30	0,34
N2	218.20-125ER-ME07 F40M	0,24	0,28	0,30	0,34
N3	218.20-125ER-ME07 F40M	0,24	0,28	0,30	0,34
N11	218.20-125ER-ME07 F40M	0,24	0,28	0,30	0,34
S1	218.20-125ER-ME07 F40M	0,13	0,14	0,15	0,17
S2	218.20-125ER-ME07 F40M	0,13	0,14	0,15	0,17
S3	218.20-125ER-ME07 F40M	0,12	0,13	0,14	0,16
S11	218.20-125ER-ME07 MS2050	0,14	0,16	0,17	0,19
S12	218.20-125ER-ME07 MS2050	0,14	0,16	0,17	0,19
S13	218.20-125ER-ME07 MS2050	0,13	0,14	0,15	0,17
H5	218.20-125ER-M07 F25M	0,12	0,14	0,15	0,16
H8	218.20-125ER-M07 F25M	0,095	0,10	0,11	0,12
H11	218.20-125ER-M07 F25M	0,12	0,14	0,15	0,16
H12	218.20-125ER-M07 F25M	0,12	0,14	0,15	0,16
H21	218.20-125ER-M07 F25M	0,095	0,10	0,11	0,12

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

R218.20-125 – Cutting data $v_c =$ (m/min)

SMG	F25M					F40M					MM4500					MS2050				
	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%
P1	270	395	375	420	455	260	385	370	410	445	210	315	300	335	360	280	335	325	340	365
P2	260	380	365	400	445	255	370	360	390	435	205	300	290	320	350	275	330	320	340	355
P3	230	335	320	350	390	225	325	315	345	380	180	265	255	280	305	230	270	265	285	295
P4	200	295	280	310	340	195	290	275	305	335	160	235	225	245	270	205	240	235	250	260
P5	190	280	270	295	325	190	275	265	290	320	155	225	215	235	260	195	230	225	240	250
P6	220	315	305	330	365	215	310	295	325	360	175	250	240	265	290	210	255	250	265	280
P7	210	300	285	315	345	205	290	280	305	340	165	235	225	250	275	200	240	240	250	265
P8	190	280	270	295	325	190	275	265	290	320	155	225	215	235	260	195	230	225	240	250
P11	200	290	280	305	335	200	285	270	300	330	160	230	220	240	265	195	235	230	245	255
M1	—	—	—	—	—	205	300	290	315	350	180	260	250	275	300	240	290	280	300	310
M2	—	—	—	—	—	170	250	235	260	285	145	215	205	225	245	190	225	220	235	245
M3	—	—	—	—	—	145	200	190	210	230	125	170	165	180	200	125	145	150	150	160
M4	—	—	—	—	—	125	155	150	160	180	110	135	125	140	155	65	95	100	100	105
M5	—	—	—	—	—	105	130	125	135	150	90	110	105	115	130	55	80	80	85	85
K1	—	—	—	—	—	200	295	285	310	345	—	—	—	—	—	—	—	—	—	—
K2	—	—	—	—	—	180	260	250	275	300	—	—	—	—	—	—	—	—	—	—
K3	—	—	—	—	—	150	220	210	235	255	—	—	—	—	—	—	—	—	—	—
K4	—	—	—	—	—	145	210	200	220	245	—	—	—	—	—	—	—	—	—	—
K5	—	—	—	—	—	90	130	125	135	150	—	—	—	—	—	—	—	—	—	—
K6	—	—	—	—	—	125	185	180	195	215	—	—	—	—	—	—	—	—	—	—
K7	—	—	—	—	—	115	165	160	175	190	—	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	750	1100	1050	1150	1275	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	600	900	850	940	1025	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	400	600	570	620	680	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	460	680	650	710	780	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	—	—	60	70	70	75	85	33	41	39	43	47	70	75	75	80	85
S2	—	—	—	—	—	47	60	55	60	65	27	33	31	34	38	55	60	60	65	70
S3	—	—	—	—	—	41	50	49	55	60	23	28	28	30	33	50	55	55	55	60
S11	—	—	—	—	—	80	100	95	105	115	45	55	55	60	65	95	105	100	110	115
S12	—	—	—	—	—	46	60	55	60	65	35	44	42	46	50	75	80	80	85	90
S13	—	—	—	—	—	38	47	44	49	55	29	35	34	37	41	60	65	65	70	75
H5	45	60	60	65	70	44	60	60	65	70	—	—	—	—	—	—	—	—	—	—
H8	50	65	65	70	75	50	65	60	70	75	—	—	—	—	—	—	—	—	—	—
H11	60	80	75	85	90	55	75	75	80	90	—	—	—	—	—	—	—	—	—	—
H12	85	120	115	125	140	85	115	110	125	135	—	—	—	—	—	—	—	—	—	—
H21	50	65	65	70	75	50	65	60	70	75	—	—	—	—	—	—	—	—	—	—

R218.20-150 – Insert selection – Roughing

SMG			f_z			
			100%	30%	20%	15%
P1	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,15	0,16	0,19	0,22
P2	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,15	0,17	0,19	0,22
P3	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,15	0,16	0,18	0,20
P4	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,14	0,16	0,18	0,20
P5	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,14	0,15	0,17	0,20
P6	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,14	0,15	0,17	0,19
P7	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,14	0,15	0,17	0,19
P8	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,15	0,16	0,18	0,20
P11	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,14	0,15	0,17	0,19
M1	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,15	0,17	0,19	0,22
M2	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,14	0,15	0,17	0,20
M3	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,12	0,13	0,15	0,17
M4	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,12	0,13	0,15	0,16
M5	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,12	0,13	0,15	0,16
K1	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,15	0,17	0,19	0,22
K2	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,14	0,15	0,17	0,20
K3	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,14	0,15	0,17	0,20
K4	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,14	0,15	0,17	0,20
K5	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,13	0,14	0,16	0,18
K6	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,14	0,15	0,17	0,20
K7	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,13	0,14	0,16	0,18
N1	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,20	0,22	0,24	0,28
N2	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,20	0,22	0,24	0,28
N3	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,20	0,22	0,24	0,28
N11	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,20	0,22	0,24	0,28
S1	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,12	0,13	0,15	0,16
S2	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,12	0,13	0,15	0,16
S3	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,11	0,12	0,13	0,15
S11	218.20-150ER-ME07 MS2050	SPMT100408T-M08 F40M	0,090	0,095	0,11	0,12
S12	218.20-150ER-ME07 MS2050	SPMT100408T-M08 F40M	0,090	0,095	0,11	0,12
S13	218.20-150ER-ME07 MS2050	SPMT100408T-M08 F40M	0,080	0,090	0,10	0,11

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

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	0,22	0,24	0,26	0,28
P2	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,22	0,24	0,26	0,28
P3	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,20	0,22	0,24	0,28
P4	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,20	0,22	0,24	0,26
P5	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,20	0,22	0,24	0,26
P6	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,19	0,22	0,24	0,26
P7	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,19	0,22	0,24	0,26
P8	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,20	0,22	0,24	0,28
P11	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,19	0,22	0,24	0,26
M1	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,22	0,24	0,26	0,28
M2	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,20	0,22	0,24	0,26
M3	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,17	0,18	0,20	0,22
M4	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,16	0,18	0,19	0,22
M5	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,16	0,18	0,19	0,22
K1	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,22	0,24	0,26	0,28
K2	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,20	0,22	0,24	0,26
K3	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,20	0,22	0,24	0,26
K4	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,20	0,22	0,24	0,26
K5	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,18	0,19	0,22	0,24
K6	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,20	0,22	0,24	0,26
K7	218.20-150ER-M08 F40M	SPMT100408T-M08 F40M	0,18	0,19	0,22	0,24
N1	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,28	0,30	0,32	0,36
N2	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,28	0,30	0,32	0,36
N3	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,28	0,30	0,32	0,36
N11	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,28	0,30	0,32	0,36
S1	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,16	0,18	0,19	0,22
S2	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,16	0,18	0,19	0,22
S3	218.20-150ER-ME07 F40M	SPMT100408T-M08 F40M	0,15	0,17	0,18	0,20
S11	218.20-150ER-ME07 MS2050	SPMT100408T-M08 F40M	0,12	0,14	0,15	0,16
S12	218.20-150ER-ME07 MS2050	SPMT100408T-M08 F40M	0,12	0,14	0,15	0,16
S13	218.20-150ER-ME07 MS2050	SPMT100408T-M08 F40M	0,11	0,13	0,14	0,15

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

R218.20-150 – Cutting data $v_c =$ (m/min)

SMG	F40M					MM4500					MS2050				
	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%
P1	230	335	325	360	390	175	255	245	275	295	265	320	315	325	350
P2	220	325	315	345	380	170	250	240	260	290	260	310	305	330	345
P3	195	285	270	300	330	145	220	205	230	250	220	260	255	275	285
P4	175	250	245	270	295	130	190	185	205	225	195	230	225	240	250
P5	165	240	235	255	280	125	185	180	195	215	180	220	215	220	240
P6	185	275	260	290	315	140	210	200	220	240	205	240	235	245	260
P7	175	260	245	270	295	135	200	190	205	225	195	225	220	230	245
P8	160	240	230	250	275	125	185	175	190	210	185	220	215	230	240
P11	170	250	240	265	290	130	195	185	200	220	185	220	215	225	240
M1	180	260	255	275	305	145	215	205	225	250	230	275	270	290	300
M2	150	215	210	230	250	120	175	170	190	205	180	215	210	215	235
M3	130	175	170	185	205	105	145	135	150	165	120	140	135	145	155
M4	110	135	130	145	155	90	110	105	120	130	65	95	95	100	100
M5	95	115	110	120	130	75	90	90	100	105	55	75	80	80	85
K1	175	260	250	270	300	—	—	—	—	—	—	—	—	—	—
K2	155	230	220	245	265	—	—	—	—	—	—	—	—	—	—
K3	135	195	185	205	225	—	—	—	—	—	—	—	—	—	—
K4	125	185	180	195	215	—	—	—	—	—	—	—	—	—	—
K5	80	115	110	120	130	—	—	—	—	—	—	—	—	—	—
K6	110	160	155	175	190	—	—	—	—	—	—	—	—	—	—
K7	100	145	140	155	170	—	—	—	—	—	—	—	—	—	—
N1	660	950	910	1000	1100	—	—	—	—	—	—	—	—	—	—
N2	530	770	730	820	890	—	—	—	—	—	—	—	—	—	—
N3	355	510	490	540	590	—	—	—	—	—	—	—	—	—	—
N11	405	580	560	620	680	—	—	—	—	—	—	—	—	—	—
S1	50	65	60	70	75	28	34	32	36	39	70	75	70	75	80
S2	42	50	49	55	60	22	27	26	29	31	55	60	55	60	65
S3	37	45	43	48	50	20	24	23	25	28	47	55	50	55	60
S11	70	90	85	95	105	37	47	45	50	55	90	100	100	105	110
S12	41	50	49	55	60	29	36	35	39	42	70	80	75	80	85
S13	34	41	39	44	47	24	29	28	31	34	60	65	60	65	70
H5	40	55	50	55	65	—	—	—	—	—	—	—	—	—	—
H8	45	55	55	60	65	—	—	—	—	—	—	—	—	—	—
H11	50	70	65	75	80	—	—	—	—	—	—	—	—	—	—
H12	75	105	100	110	120	—	—	—	—	—	—	—	—	—	—
H21	45	55	55	60	65	—	—	—	—	—	—	—	—	—	—

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	0,14	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 F25M	0,13	0,14	0,17	0,19
P5	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,13	0,14	0,16	0,18
P6	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,13	0,14	0,16	0,18
P7	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,13	0,14	0,16	0,18
P8	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,14	0,15	0,17	0,19
P11	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,13	0,14	0,16	0,18
M1	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,14	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	0,12	0,14	0,15
M4	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,11	0,12	0,13	0,15
M5	218.20-160ER-M08 F40M	SPMT100408T-M08 F40M	0,11	0,12	0,13	0,15
K1	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,14	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	0,11	0,12	0,13	0,15
S2	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,11	0,12	0,13	0,15
S3	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,10	0,11	0,12	0,14
S11	218.20-160ER-ME08 MS2050	SPMT100408T-M08 F40M	0,090	0,10	0,11	0,13
S12	218.20-160ER-ME08 MS2050	SPMT100408T-M08 F40M	0,090	0,10	0,11	0,13
S13	218.20-160ER-ME08 MS2050	SPMT100408T-M08 F40M	0,085	0,095	0,11	0,12
H5	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,095	0,10	0,12	0,13
H8	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,075	0,080	0,090	0,10
H11	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,095	0,10	0,12	0,13
H12	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,095	0,10	0,12	0,13
H21	218.20-160ER-M08 F25M	SPMT100408T-M08 F25M	0,075	0,080	0,090	0,10

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

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	0,26
P4	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,19	0,20	0,22	0,24
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	0,26
P11	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,18	0,20	0,22	0,24
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	0,17	0,18	0,20
M4	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,15	0,16	0,18	0,20
M5	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,15	0,16	0,18	0,20
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	0,15	0,16	0,18	0,20
S2	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,15	0,16	0,18	0,20
S3	218.20-160ER-ME08 F40M	SPMT100408T-M08 F40M	0,14	0,15	0,17	0,18
S11	218.20-160ER-ME08 MS2050	SPMT100408T-M08 F40M	0,13	0,14	0,15	0,17
S12	218.20-160ER-ME08 MS2050	SPMT100408T-M08 F40M	0,13	0,14	0,15	0,17
S13	218.20-160ER-ME08 MS2050	SPMT100408T-M08 F40M	0,12	0,13	0,14	0,16
H5	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,13	0,14	0,16	0,17
H8	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,10	0,11	0,12	0,14
H11	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,13	0,14	0,16	0,17
H12	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,13	0,14	0,16	0,17
H21	218.20-160ER-M08 F25M	SPMT100408T-M08 F40M	0,10	0,11	0,12	0,14

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

R218.20-160 – Cutting data $v_c =$ (m/min)

SMG	F25M					F40M					MM4500					MS2050				
	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%	100%	30%	20%	10%	5%
P1	240	345	335	370	405	230	335	325	360	390	185	270	260	290	315	270	340	330	350	370
P2	230	335	325	355	390	220	325	315	345	380	180	265	255	280	305	265	330	325	340	360
P3	200	295	280	310	340	195	285	270	300	330	155	230	220	245	265	230	275	275	285	305
P4	180	260	255	280	305	175	250	245	270	295	140	205	200	220	240	200	240	240	250	265
P5	170	250	240	265	290	165	240	235	255	280	135	195	190	210	230	190	230	225	240	255
P6	190	285	270	300	325	185	275	260	290	315	150	225	210	235	255	215	260	255	265	285
P7	180	270	255	280	310	175	260	245	270	300	140	210	200	220	240	200	245	240	250	270
P8	170	250	235	260	285	165	240	230	250	275	130	195	185	205	225	190	230	230	240	255
P11	175	260	250	275	300	170	255	240	265	290	140	205	195	215	235	195	235	235	245	260
M1	—	—	—	—	—	180	260	255	275	305	155	225	220	240	265	235	290	285	295	315
M2	—	—	—	—	—	150	215	210	230	255	130	185	180	200	220	185	225	220	235	250
M3	—	—	—	—	—	135	175	170	185	205	115	150	145	160	175	130	155	150	155	165
M4	—	—	—	—	—	115	135	130	145	155	100	115	110	125	135	70	105	105	110	115
M5	—	—	—	—	—	95	115	110	120	130	80	100	95	105	115	60	90	90	90	95
K1	—	—	—	—	—	175	260	250	270	300	—	—	—	—	—	—	—	—	—	—
K2	—	—	—	—	—	155	230	220	245	265	—	—	—	—	—	—	—	—	—	—
K3	—	—	—	—	—	135	195	185	205	225	—	—	—	—	—	—	—	—	—	—
K4	—	—	—	—	—	125	185	180	195	215	—	—	—	—	—	—	—	—	—	—
K5	—	—	—	—	—	80	115	110	120	130	—	—	—	—	—	—	—	—	—	—
K6	—	—	—	—	—	110	160	160	175	190	—	—	—	—	—	—	—	—	—	—
K7	—	—	—	—	—	100	145	140	155	170	—	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	660	950	910	1025	1100	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	530	770	730	820	890	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	355	510	490	550	590	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	405	580	560	620	680	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	—	—	55	65	60	70	75	30	36	34	39	41	65	70	65	75	80
S2	—	—	—	—	—	43	50	49	55	60	24	29	28	31	33	55	55	55	60	65
S3	—	—	—	—	—	37	45	43	48	50	21	26	24	27	29	47	50	48	50	55
S11	—	—	—	—	—	70	90	85	95	105	39	50	48	55	60	85	95	95	100	110
S12	—	—	—	—	—	40	50	49	55	60	30	39	37	41	45	65	75	75	80	85
S13	—	—	—	—	—	34	41	39	44	47	26	31	30	33	36	60	60	60	65	65
H5	42	55	55	60	65	41	55	50	55	65	—	—	—	—	—	—	—	—	—	—
H8	46	60	55	60	70	45	55	55	60	65	—	—	—	—	—	—	—	—	—	—
H11	55	70	70	75	85	50	70	65	75	80	—	—	—	—	—	—	—	—	—	—
H12	80	105	105	115	125	80	105	100	110	120	—	—	—	—	—	—	—	—	—	—
H21	46	60	55	60	70	45	55	55	60	65	—	—	—	—	—	—	—	—	—	—

R218.20-200 – Insert selection – Roughing

SMG			f_z			
			100%	30%	20%	15%
P1	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,20	0,22	0,26	0,28
P2	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,20	0,22	0,26	0,28
P3	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,19	0,22	0,24	0,28
P4	218.20-200ER-M10 F40M	SCET120612T-M11 MP2500	0,19	0,20	0,24	0,26
P5	218.20-200ER-M10 F40M	SCET120612T-M11 MP2500	0,19	0,20	0,24	0,26
P6	218.20-200ER-M10 F40M	SCET120612T-M11 MP2500	0,18	0,20	0,24	0,26
P7	218.20-200ER-M10 F40M	SCET120612T-M11 MP2500	0,18	0,20	0,24	0,26
P8	218.20-200ER-M10 F40M	SCET120612T-M11 MP2500	0,19	0,22	0,24	0,28
P11	218.20-200ER-M10 F40M	SCET120612T-M11 MP2500	0,18	0,20	0,24	0,26
M1	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,20	0,22	0,26	0,28
M2	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,19	0,20	0,24	0,26
M3	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,16	0,17	0,20	0,22
M4	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,15	0,17	0,19	0,22
M5	218.20-200ER-M10 F40M	SCET120612T-M14 T350M	0,15	0,17	0,19	0,22
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	0,15	0,17	0,19	0,22
S2	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,15	0,17	0,19	0,22
S3	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,14	0,16	0,18	0,20
S11	218.20-200ER-ME10 MS2050	SCET120612T-M14 MS2050	0,12	0,13	0,15	0,17
S12	218.20-200ER-ME10 MS2050	SCET120612T-M14 MS2050	0,12	0,13	0,15	0,17
S13	218.20-200ER-ME10 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/D_c = %

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	0,32	0,34	0,38
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	0,28	0,30	0,32	0,36
P4	218.20-200ER-M10 F40M	SCET120612T-M11 MP2500	0,26	0,30	0,32	0,36
P5	218.20-200ER-M10 F40M	SCET120612T-M11 MP2500	0,26	0,28	0,32	0,34
P6	218.20-200ER-M10 F40M	SCET120612T-M11 MP2500	0,26	0,28	0,32	0,34
P7	218.20-200ER-M10 F40M	SCET120612T-M11 MP2500	0,26	0,28	0,32	0,34
P8	218.20-200ER-M10 F40M	SCET120612T-M11 MP2500	0,28	0,30	0,32	0,36
P11	218.20-200ER-M10 F40M	SCET120612T-M11 MP2500	0,26	0,28	0,32	0,34
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	0,32	0,34
M3	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,22	0,24	0,26	0,30
M4	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,22	0,24	0,26	0,28
M5	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,22	0,24	0,26	0,28
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	0,22	0,24	0,26	0,28
S2	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,22	0,24	0,26	0,28
S3	218.20-200ER-ME10 F40M	SCET120612T-M14 T350M	0,20	0,22	0,24	0,26
S11	218.20-200ER-ME10 MS2050	SCET120612T-M14 MS2050	0,17	0,18	0,20	0,22
S12	218.20-200ER-ME10 MS2050	SCET120612T-M14 MS2050	0,17	0,18	0,20	0,22
S13	218.20-200ER-ME10 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/D_c = %

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	305	295	325	355	165	250	240	260	285	275	355	340	365	390
P2	200	300	285	315	345	165	240	230	255	280	265	345	335	355	380
P3	175	260	250	275	305	145	210	205	225	245	230	295	285	305	325
P4	155	230	220	240	265	125	185	180	195	215	205	260	250	265	285
P5	150	220	210	235	255	120	180	170	190	205	195	245	240	255	270
P6	170	245	235	265	285	140	200	190	215	230	220	275	270	285	305
P7	160	235	225	250	270	130	190	180	200	220	205	260	255	270	285
P8	150	220	210	230	255	120	180	170	185	205	195	245	240	255	275
P11	155	225	215	240	260	125	185	175	195	210	200	250	245	260	280
M1	160	240	230	255	275	140	210	200	220	240	230	300	290	310	330
M2	135	200	190	210	230	115	170	165	180	200	190	240	235	250	265
M3	120	160	155	170	185	105	140	130	145	160	145	170	170	180	190
M4	105	125	120	130	145	90	110	105	115	125	90	125	120	130	135
M5	85	105	100	110	120	75	90	85	95	105	75	105	100	105	110
N1	580	860	820	910	990	—	—	—	—	—	—	—	—	—	—
N2	465	690	670	730	800	—	—	—	—	—	—	—	—	—	—
N3	310	465	445	490	530	—	—	—	—	—	—	—	—	—	—
N11	355	530	510	560	610	—	—	—	—	—	—	—	—	—	—
S1	49	60	55	60	70	27	33	32	35	38	60	65	60	65	70
S2	39	48	45	50	55	22	27	26	28	31	49	50	50	55	60
S3	34	42	40	44	48	19	24	23	25	27	44	47	44	48	50
S11	65	80	75	85	95	37	46	44	49	55	75	85	85	90	95
S12	37	47	45	50	55	28	36	34	38	41	60	65	65	70	75
S13	31	38	36	40	44	24	29	27	30	33	55	55	55	55	60

R218.20-250 – Insert selection – Roughing

SMG			f_z			
			100%	30%	20%	15%
P1	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,18	0,19	0,22	0,24
P2	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,18	0,20	0,22	0,26
P3	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,17	0,18	0,22	0,24
P4	218.20-250TR-M14 F40M	SCET120612T-M11 MP2500	0,19	0,22	0,24	0,28
P5	218.20-250TR-M14 F40M	SCET120612T-M11 MP2500	0,19	0,20	0,24	0,26
P6	218.20-250TR-M14 F40M	SCET120612T-M11 MP2500	0,19	0,20	0,24	0,26
P7	218.20-250TR-M14 F40M	SCET120612T-M11 MP2500	0,19	0,20	0,24	0,26
P8	218.20-250TR-M14 F40M	SCET120612T-M11 MP2500	0,20	0,22	0,24	0,28
P11	218.20-250TR-M14 F40M	SCET120612T-M11 MP2500	0,19	0,20	0,24	0,26
M1	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,18	0,20	0,22	0,26
M2	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,16	0,18	0,20	0,22
M3	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,14	0,15	0,17	0,19
M4	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,14	0,15	0,17	0,19
M5	218.20-250TR-M14 F40M	SCET120612T-M14 T350M	0,16	0,18	0,20	0,22
N1	218.20-250ER-ME12 F40M	SCET120612T-M11 F40M	0,22	0,24	0,28	0,32
N2	218.20-250ER-ME12 F40M	SCET120612T-M11 F40M	0,22	0,24	0,28	0,32
N3	218.20-250ER-ME12 F40M	SCET120612T-M11 F40M	0,22	0,24	0,28	0,32
N11	218.20-250ER-ME12 F40M	SCET120612T-M11 F40M	0,22	0,24	0,28	0,32
S1	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,14	0,15	0,17	0,19
S2	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,14	0,15	0,17	0,19
S3	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,13	0,14	0,16	0,18
S11	218.20-250ER-ME12 MS2050	SCET120612T-M14 MS2050	0,15	0,16	0,18	0,20
S12	218.20-250ER-ME12 MS2050	SCET120612T-M14 MS2050	0,15	0,16	0,18	0,20
S13	218.20-250ER-ME12 MS2050	SCET120612T-M14 MS2050	0,14	0,15	0,17	0,19

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

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	0,28	0,30	0,32
P2	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,26	0,28	0,30	0,34
P3	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,24	0,26	0,28	0,32
P4	218.20-250TR-M14 F40M	SCET120612T-M11 MP2500	0,28	0,30	0,32	0,36
P5	218.20-250TR-M14 F40M	SCET120612T-M11 MP2500	0,26	0,30	0,32	0,36
P6	218.20-250TR-M14 F40M	SCET120612T-M11 MP2500	0,26	0,30	0,32	0,34
P7	218.20-250TR-M14 F40M	SCET120612T-M11 MP2500	0,26	0,30	0,32	0,34
P8	218.20-250TR-M14 F40M	SCET120612T-M11 MP2500	0,28	0,30	0,34	0,36
P11	218.20-250TR-M14 F40M	SCET120612T-M11 MP2500	0,26	0,30	0,32	0,34
M1	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,26	0,28	0,30	0,34
M2	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,22	0,26	0,28	0,30
M3	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,19	0,22	0,24	0,26
M4	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,19	0,22	0,24	0,26
M5	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,19	0,22	0,24	0,26
N1	218.20-250ER-ME12 F40M	SCET120612T-M14 F40M	0,32	0,36	0,38	0,42
N2	218.20-250ER-ME12 F40M	SCET120612T-M14 F40M	0,32	0,36	0,38	0,42
N3	218.20-250ER-ME12 F40M	SCET120612T-M14 F40M	0,32	0,36	0,38	0,42
N11	218.20-250ER-ME12 F40M	SCET120612T-M14 F40M	0,32	0,36	0,38	0,42
S1	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,19	0,22	0,24	0,26
S2	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,19	0,22	0,24	0,26
S3	218.20-250ER-ME12 F40M	SCET120612T-M14 T350M	0,18	0,20	0,22	0,24
S11	218.20-250ER-ME12 MS2050	SCET120612T-M14 MS2050	0,20	0,22	0,24	0,28
S12	218.20-250ER-ME12 MS2050	SCET120612T-M14 MS2050	0,20	0,22	0,24	0,28
S13	218.20-250ER-ME12 MS2050	SCET120612T-M14 MS2050	0,19	0,22	0,24	0,26

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

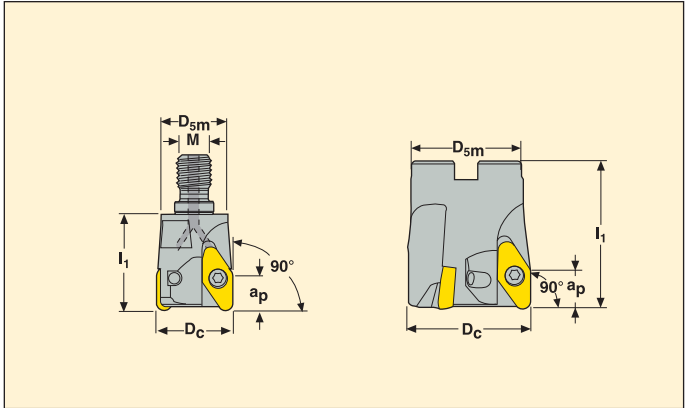
All cutting data are start values

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	210	315	300	330	365	170	255	245	265	295	250	325	320	340	360
P2	205	300	290	320	350	165	245	235	260	285	245	320	310	330	355
P3	180	265	250	280	305	145	215	205	230	250	210	275	265	285	305
P4	155	235	225	250	275	125	190	185	200	220	185	240	235	250	265
P5	155	230	215	235	260	125	185	175	190	210	180	230	225	240	255
P6	170	255	245	270	295	140	205	195	220	240	200	255	250	265	285
P7	160	240	230	255	275	130	195	185	205	225	190	240	235	250	270
P8	150	220	210	235	260	120	180	170	190	210	180	230	225	240	255
P11	155	235	225	250	270	125	190	180	200	220	185	235	230	245	260
M1	165	240	235	260	285	140	210	205	225	245	215	280	270	290	310
M2	135	205	195	215	235	120	175	170	185	205	175	225	220	235	245
M3	110	165	155	175	190	95	140	135	150	165	135	160	155	165	175
M4	90	125	120	135	150	80	110	105	115	125	105	115	110	120	125
M5	75	105	100	110	125	65	90	90	95	105	85	95	95	100	105
N1	600	890	850	940	1025	—	—	—	—	—	—	—	—	—	—
N2	485	720	690	760	820	—	—	—	—	—	—	—	—	—	—
N3	325	475	460	510	550	—	—	—	—	—	—	—	—	—	—
N11	370	550	520	580	630	—	—	—	—	—	—	—	—	—	—
S1	42	60	55	65	70	24	33	32	35	39	43	60	60	60	65
S2	34	48	46	50	55	19	27	26	29	31	34	48	46	50	55
S3	30	42	40	44	49	17	24	23	25	28	31	42	41	44	48
S11	55	85	80	85	95	32	47	45	49	55	55	80	80	85	90
S12	33	48	46	50	55	25	36	35	38	42	42	60	60	65	70
S13	27	38	37	41	45	20	29	28	31	34	37	50	50	55	60

R217/220.97-V22

Cavity milling in aluminium



- For insert selection and cutting data recommendations, see page(s) 107
- For complete insert programme, see page(s) 176
- For helical interpolation, see page(s) 664 - 665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm						α° max					Insert
		a_p	D_c	D_{5m}	dm_m	l_1	M						
R217.97 -1632.RE-V22.2A	Combimaster	10	32	30	–	40	M16	15	2	0,2	40000	VPGX2206	
R217.97 -1640.RE-V22.2A	Combimaster	10	40	30	–	40	M16	10	2	0,2	35000	VPGX2206	
R217.97 -2040.RE-V22.2A	Combimaster	10	40	36,5	–	45	M20	10	2	0,3	35000	VPGX2206	
R220.97 -0050-V22.2A	Arbor	10	50	47	22	57	–	8	2	0,5	30000	VPGX2206	
-0050-V22.3A	Arbor	10	50	47	22	57	–	8	3	0,5	30000	VPGX2206	
R220.97 -0063-V22.3A	Arbor	10	63	50	27	57	–	6	3	0,6	27000	VPGX2206	
-0063-V22.4A	Arbor	10	63	50	27	57	–	6	4	0,6	27000	VPGX2206	
R220.97 -0080-V22.4A	Arbor	10	80	60	32	57	–	5	4	1,0	25000	VPGX2206	
R220.97 -0100-V22.5A	Arbor	10	100	77	32	57	–	4	5	1,7	22000	VPGX2206	

Spigot size = dm_m

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw	
R217.97-1632-1640	C05010-T20P	T20P-4	–	
R217.97-2040	C05010-T20P	T20P-3	–	
R220.97-0050	C05010-T20P	T20P-4	MC6S10X40	
R220.97-0063	C05013-T20P	T20P-4	MC6S12X35	
R220.97-0080-0100	C05013-T20P	T20P-4	220.17-694	

Please check availability in current price and stock-list
Torque value 5,0. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R217/220.97-V22 – Insert selection

SMG		a _p	f _z			
			100%	30%	10%	5%
N1	VPGX220605ER-E 10 H25	5,0	0,18	0,20	0,30	0,42
N2	VPGX220605ER-E 10 H25	5,0	0,18	0,20	0,30	0,42
N3	VPGX220605ER-E 10 H25	5,0	0,18	0,20	0,30	0,42
N11	VPGX220605ER-E 10 H25	5,0	0,18	0,20	0,30	0,42
S11	VPGX220605ER-E 10 H25	3,5	0,10	0,11	0,18	0,24
S12	VPGX220605ER-E 10 H25	3,5	0,10	0,11	0,18	0,24

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

R217/220.97-V22 – Cutting data v_c = (m/min)

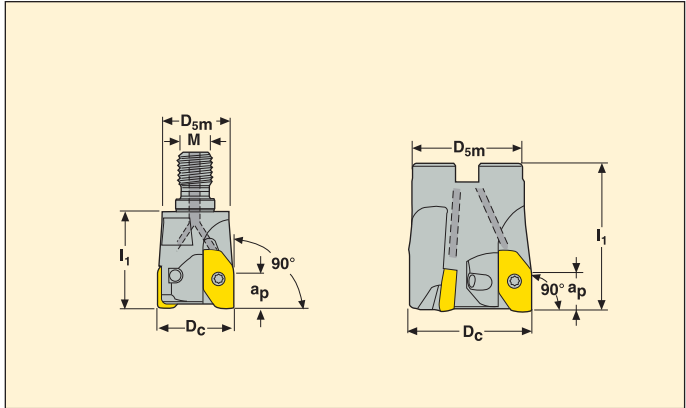
SMG	H15				H25			
	100%	30%	10%	5%	100%	30%	10%	5%
N1	740	990	1175	1275	640	850	1025	1100
N2	600	800	950	1025	520	690	820	900
N3	400	530	630	680	345	460	550	600
N11	455	610	720	780	395	530	630	680
S11	—	—	—	—	39	50	60	65
S12	—	—	—	—	30	40	47	50

R217/220.97-X12

Cavity milling in aluminium



- For insert selection and cutting data recommendations, see page(s) 109
- For complete insert programme, see page(s) 181
- For helical interpolation, see page(s) 664 - 665 MN2015 Milling



Part No.	Type of mounting	Dimensions in mm						α° max				Insert
		a_p	D_c	D_{5m}	d_{m_m}	I_1	M					
R217.97 -1225.RE-X12.2A	Combimaster	7,5	25	23	–	30	M12	10	2	0,1	40000	XP..12
R217.97 -1632.RE-X12.2A	Combimaster	7,5	32	30	–	40	M16	8	2	0,2	40000	XP..12
-1632.RE-X12.3A	Combimaster	7,5	32	30	–	40	M16	8	3	0,2	40000	XP..12
R217.97 -1640.RE-X12.3A	Combimaster	7,5	40	30	–	40	M16	6	3	0,3	35000	XP..12
R217.97 -2040.RE-X12.3A	Combimaster	7,5	40	36,5	–	40	M20	6	3	0,3	35000	XP..12
R220.97 -0050-X12.4A	Arbor	7,5	50	47	22	45	–	5	4	0,4	30000	XP..12

Spigot size = d_{m_m}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
R217.97-.. Ø25	C03508-T10P	T10P-3	–
R217.97-.. Ø32-40	C03509-T10P	T10P-3	–
R220.97-0050	C03509-T10P	T10P-3	220.17-692

Please check availability in current price and stock-list
 Torque value 2,0. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R217/220.97-X12 – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
N1	XPKX12T304PDER-E08 H25	3,5	0,13	0,14	0,22	0,30
N2	XPKX12T304PDER-E08 H25	3,5	0,13	0,14	0,22	0,30
N3	XPKX12T304PDER-E08 H25	3,5	0,13	0,14	0,22	0,30
N11	XPKX12T304PDER-E08 H25	3,5	0,13	0,14	0,22	0,30
S11	XPKX12T304PDER-E08 H25	2,5	0,075	0,080	0,12	0,17
S12	XPKX12T304PDER-E08 H25	2,5	0,075	0,080	0,12	0,17

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

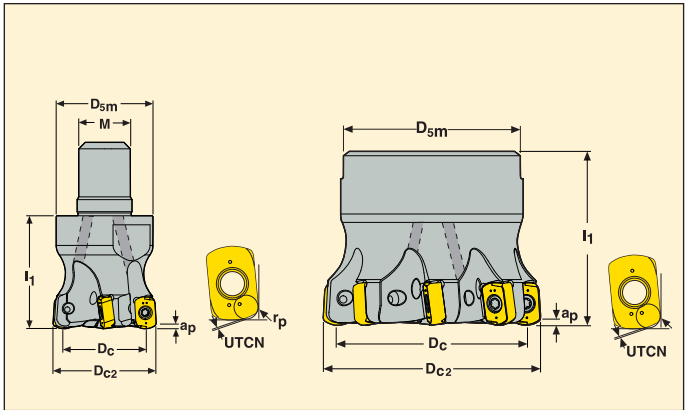
All cutting data are start values

R217/220.97-X12 – Cutting data v_c = (m/min)

SMG	H25			
	100%	30%	10%	5%
N1	690	910	1075	1175
N2	550	740	870	950
N3	370	495	580	640
N11	420	560	660	730
S11	40	55	65	70
S12	31	41	49	55

R217/220.21-LO06

High feed cutters - LO



- For insert selection and cutting data recommendations, see page(s) 111-112
- For complete insert programme, see page(s) 169
- For helical interpolation, see page(s) 664-665 MN2015 Milling

Part No.	Type of mounting	Dimensions in mm										α° max				Insert
		a_p	D_{c2}	D_c	D_{5m}	d_{m_m}	M	I_1	UTCN	r_p						
R217.21 -1225.RE-LO06.4A	Combimaster	0,9	25	18,3	23	-	M12	30	0,38	1,8	0,8	4	0,1	30000	LO..06	
R217.21 -1632.RE-LO06.4A	Combimaster	0,9	32	25,3	30	-	M16	35	0,38	1,8	0,5	4	0,2	27000	LO..06	
-1632.RE-LO06.5A	Combimaster	0,9	32	25,3	30	-	M16	35	0,38	1,8	0,5	5	0,2	27000	LO..06	
R217.21 -1635.RE-LO06.5A	Combimaster	0,9	35	28,3	30	-	M16	35	0,38	1,8	0,5	5	0,2	26000	LO..06	
R220.21 -0035-LO06.6A	Arbor	0,9	35	28,3	32	16	-	35	0,38	1,8	0,5	6	0,2	24500	LO..06	
R217.21 -1640.RE-LO06.5A	Combimaster	0,9	40	33,3	30	-	M16	35	0,38	1,8	0,4	5	0,2	18000	LO..06	
R217.21 -2040.RE-LO06.6A	Combimaster	0,9	40	33	36,5	-	M20	40	0,38	1,8	0,4	6	0,4	18000	LO..06	
R220.21 -0040-LO06.7A	Arbor	0,9	40	33,3	35	16	-	40	0,38	1,8	0,4	7	0,2	18000	LO..06	
R220.21 -0042-LO06.7A	Arbor	0,9	42	35,3	35	16	-	40	0,38	1,8	0,4	7	0,2	18000	LO..06	
R220.21 -0050-LO06.8A	Arbor	0,9	50	43,3	42	22	-	40	0,38	1,8	0,3	8	0,3	16000	LO..06	
R220.21 -0052-LO06.8A	Arbor	0,9	52	45,3	42	22	-	40	0,38	1,8	0,3	8	0,4	16000	LO..06	
R220.21 -0063-LO06.9A	Arbor	0,9	63	56,3	47	22	-	40	0,38	1,8	0,25	9	0,5	15000	LO..06	

UTCN = Uncut thickness, deviation between programmed corner radii (r_p) and generated machined profile.
Ramping angle = α° . Spigot size = d_{m_m}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
R217.21-..	C02508-T08P	T08P-3	-
R220.21- Dia 35	C02508-T08P	T08P-3	MC6S8X25
R220.21- Dia 40-42	C02508-T08P	T08P-3	220.17-689
R220.21- Dia 50-63	C02508-T08P	T08P-3	220.17-692

Please check availability in current price and stock-list

Torque value 1,0. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R217/220.21-L006 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	LOHT060310TR-ME06 T350M	0,90	0,50	0,50	0,55
P2	LOHT060310TR-ME06 T350M	0,90	0,50	0,50	0,55
P3	LOHT060310TR-ME06 T350M	0,90	0,48	0,48	0,55
P4	LOHT060310TR-M07 MP2500	0,90	0,55	0,55	0,60
P5	LOHT060310TR-M07 MP2500	0,90	0,55	0,55	0,60
P6	LOHT060310TR-M07 MP2500	0,90	0,55	0,55	0,60
P7	LOHT060310TR-M07 MP2500	0,90	0,55	0,55	0,60
P8	LOHT060310TR-MD07 MP2500	0,90	0,55	0,55	0,60
P11	LOHT060310TR-ME06 T350M	0,90	0,46	0,46	0,50
M1	LOHT060310TR-ME06 T350M	0,90	0,50	0,50	0,55
M2	LOHT060310TR-ME06 T350M	0,90	0,46	0,46	0,50
M3	LOHT060310TR-ME06 T350M	0,70	0,42	0,42	0,46
M4	LOHT060310TR-ME06 T350M	0,55	0,60	0,60	0,65
M5	LOHT060310TR-ME06 T350M	0,55	0,60	0,60	0,65
K1	LOHT060310TR-MD07 MK2050	0,90	0,60	0,60	0,65
K2	LOHT060310TR-MD07 MK2050	0,90	0,55	0,55	0,60
K3	LOHT060310TR-MD07 MK2050	0,90	0,55	0,55	0,60
K4	LOHW060310TR-D07 MP1500	0,90	0,55	0,55	0,60
K5	LOHW060310TR-D07 MP1500	0,90	0,48	0,48	0,55
K6	LOHT060310TR-MD07 MK2050	0,90	0,55	0,55	0,60
K7	LOHT060310TR-MD07 MK2050	0,90	0,48	0,48	0,55
S1	LOHT060310TR-ME06 MS2500	0,55	0,60	0,60	0,65
S2	LOHT060310TR-ME06 MS2500	0,55	0,60	0,60	0,65
S3	LOHT060310TR-M07 F40M	0,55	0,65	0,65	0,70
S11	LOHT060310TR-ME06 MS2050	0,65	0,60	0,60	0,70
S12	LOHT060310TR-ME06 MS2050	0,65	0,60	0,60	0,70
S13	LOHT060310TR-ME06 MS2050	0,55	0,60	0,60	0,65
H5	LOHW060310TR-D07 MH1000	0,55	0,40	0,40	0,44
H8	LOHW060310TR-D07 MH1000	0,48	0,34	0,34	0,36
H11	LOHT060310TR-M07 T350M	0,55	0,40	0,40	0,44
H12	LOHT060310TR-M07 T350M	0,55	0,40	0,40	0,44
H21	LOHW060310TR-D07 MH1000	0,48	0,34	0,34	0,36

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

R217/220.21-LO06 – Cutting data $v_c =$ (m/min)

SMG	MP1500			MP2500			MP3000			T350M			F40M			MM4500		
	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	280	315	385	270	305	375	260	290	355	260	295	360	205	235	285	185	210	255
P2	270	305	375	265	300	365	250	285	345	255	290	350	200	225	275	180	205	245
P3	240	270	330	235	265	320	220	250	305	220	250	300	175	200	245	155	175	210
P4	210	240	290	205	230	285	195	220	270	195	220	270	155	175	215	140	155	190
P5	200	225	275	195	220	270	185	210	255	190	215	260	150	170	205	135	150	185
P6	225	255	310	220	250	305	210	235	285	210	240	290	165	190	230	150	170	205
P7	215	240	295	210	235	285	195	220	270	200	225	275	160	180	215	140	160	195
P8	200	225	275	195	220	270	185	210	255	185	210	255	150	170	205	130	150	180
P11	205	235	285	200	230	280	190	215	265	195	220	265	155	175	210	135	155	190
M1	—	—	—	190	215	265	190	210	260	195	220	270	160	180	225	155	175	210
M2	—	—	—	160	180	220	155	175	215	165	185	225	135	150	185	130	145	175
M3	—	—	—	130	145	175	125	140	170	130	150	180	110	125	150	105	115	140
M4	—	—	—	100	115	135	100	110	135	105	115	140	85	95	115	80	90	110
M5	—	—	—	85	95	115	85	95	110	85	95	115	70	80	95	65	75	90
K1	215	245	295	210	235	290	200	225	275	—	—	—	160	180	220	—	—	—
K2	190	215	265	185	210	255	175	200	245	—	—	—	140	160	195	—	—	—
K3	160	185	225	160	180	215	150	170	205	—	—	—	120	135	165	—	—	—
K4	155	175	210	150	170	205	145	160	195	—	—	—	115	130	155	—	—	—
K5	95	110	130	95	105	125	90	100	120	—	—	—	70	80	95	—	—	—
K6	135	155	185	135	150	185	125	140	175	—	—	—	100	115	140	—	—	—
K7	120	140	165	120	135	160	115	130	155	—	—	—	90	100	125	—	—	—
S1	—	—	—	—	—	—	47	50	65	48	55	65	40	45	55	25	28	33
S2	—	—	—	—	—	—	37	42	50	39	43	50	32	36	44	20	22	27
S3	—	—	—	—	—	—	33	37	44	34	38	46	28	32	38	17	20	23
S11	—	—	—	—	—	—	65	75	90	70	75	90	55	65	75	35	39	46
S12	—	—	—	—	—	—	38	42	50	39	44	50	33	36	44	27	30	36
S13	—	—	—	—	—	—	30	34	41	31	35	42	26	29	35	21	24	29
H5	47	55	65	42	47	55	41	46	55	44	49	60	35	39	47	—	—	—
H8	50	55	70	44	50	60	43	49	60	47	50	60	37	42	50	—	—	—
H11	60	70	80	55	60	70	50	60	70	55	65	75	45	50	60	—	—	—
H12	90	100	125	80	90	110	80	90	105	85	95	115	65	75	90	—	—	—
H21	50	55	70	44	50	60	43	49	60	47	50	60	37	42	50	—	—	—

R217/220.21-LO06 – Cutting data $v_c =$ (m/min)

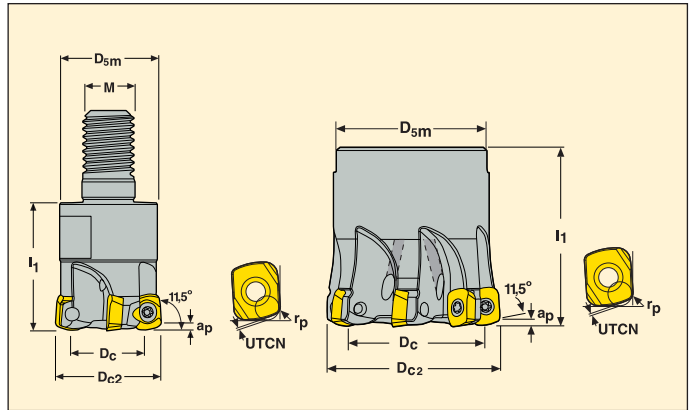
SMG	MK2050			MS2050			MS2500			MH1000		
	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	245	275	335	275	300	340	295	335	410	—	—	—
P2	235	265	325	265	290	330	290	325	400	—	—	—
P3	210	235	290	230	255	285	255	290	350	—	—	—
P4	185	210	255	205	225	250	225	255	310	—	—	—
P5	175	200	240	195	215	235	215	240	295	—	—	—
P6	195	225	270	220	240	265	240	270	330	—	—	—
P7	185	210	255	205	225	250	225	255	315	—	—	—
P8	175	200	240	195	215	240	215	240	295	—	—	—
P11	180	205	250	200	220	245	220	250	305	—	—	—
M1	—	—	—	230	255	290	205	235	285	—	—	—
M2	—	—	—	190	210	230	170	195	235	—	—	—
M3	—	—	—	145	160	170	140	155	190	—	—	—
M4	—	—	—	105	115	120	110	125	150	—	—	—
M5	—	—	—	90	100	100	90	100	125	—	—	—
K1	255	290	355	—	—	—	—	—	—	200	225	275
K2	225	255	315	—	—	—	—	—	—	175	200	240
K3	190	215	265	—	—	—	—	—	—	150	170	205
K4	185	205	250	—	—	—	—	—	—	140	160	195
K5	115	130	155	—	—	—	—	—	—	90	100	120
K6	160	180	220	—	—	—	—	—	—	125	140	170
K7	145	165	195	—	—	—	—	—	—	110	125	150
N1	—	—	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	45	48	60	55	60	75	—	—	—
S2	—	—	—	36	38	48	43	48	60	—	—	—
S3	—	—	—	33	35	43	38	42	50	—	—	—
S11	—	—	—	60	65	80	75	85	100	—	—	—
S12	—	—	—	47	50	60	44	49	60	—	—	—
S13	—	—	—	39	41	50	35	39	47	—	—	—
H5	—	—	—	—	—	—	—	—	—	44	49	60
H8	—	—	—	—	—	—	—	—	—	46	50	65
H11	—	—	—	—	—	—	—	—	—	55	60	75
H12	—	—	—	—	—	—	—	—	—	85	95	115
H21	—	—	—	—	—	—	—	—	—	46	50	65

R217/220.21-LP06

High feed cutters - LP



- For insert selection and cutting data recommendations, see page(s) 114-115
- For complete insert programme, see page(s) 170
- For helical interpolation, see page(s) 664-665 MN2015 Milling



Part No.	Type of mounting	Dimensions in mm										α° max		KG		Insert
		a_p	D_{c2}	D_c	D_{5m}	d_{m1}	M	I_1	UTCN	r_p						
R217.21 -0816.RE-LP06.2A	Combimaster	0,8	16	7,5	13,5	-	M8	20	0,45	1,8	5	2	0,3	39000	LP..06	
R217.21 -1020.RE-LP06.2A	Combimaster	0,8	20	11,5	18,5	-	M10	28	0,45	1,8	3	2	0,3	35000	LP..06	
-1020.RE-LP06.3A	Combimaster	0,8	20	11,5	18,5	-	M10	28	0,45	1,8	3	3	0,4	35000	LP..06	
R217.21 -1225.RE-LP06.3A	Combimaster	0,8	25	16,5	23	-	M12	30	0,45	1,8	2	3	0,3	30000	LP..06	
-1225.RE-LP06.4A	Combimaster	0,8	25	16,5	23	-	M12	30	0,45	1,8	2	4	0,4	30000	LP..06	
R217.21 -1632.RE-LP06.5A	Combimaster	0,8	32	23,5	30	-	M16	35	0,45	1,8	1,5	5	0,2	27000	LP..06	
R217.21 -1635.RE-LP06.5A	Combimaster	0,8	35	26,5	30	-	M16	35	0,45	1,8	1,5	5	0,3	26000	LP..06	
R220.21 -0035-LP06.6A	Arbor	0,8	35	26,5	32	16	-	35	0,45	1,8	1,29	6	0,4	26000	LP..06	
R217.21 -2040.RE-LP06.7A	Combimaster	0,8	40	31,5	36,5	-	M20	40	0,45	1,8	0,9	7	0,4	24000	LP..06	
R220.21 -0040-LP06.6A	Arbor	0,8	40	31,5	32	16	-	40	0,45	1,8	0,9	6	0,2	24000	LP..06	

UTCN = Uncut thickness, deviation between programmed corner radii (r_p) and generated machined profile.
 Ramping angle = α° . Spigot size = d_{m1}

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key	Arbor screw
Dia 16-20	C02555-T08P	T08P-3	-
Dia 25-40	C02506-T08P	T08P-3	-
R220.21-..	C02506-T08P	T08P-3	220.17-689

Please check availability in current price and stock-list

Torque value 1,2. For dimension of mounting and torque keys, see page 672 MN2015 Milling

R217/220.21-LP06 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	LPHT060310TR-M06 T350M	0,80	0,65	0,65	0,70
P2	LPHT060310TR-M06 T350M	0,80	0,65	0,65	0,70
P3	LPHT060310TR-M06 T350M	0,80	0,60	0,60	0,70
P4	LPHT060310TR-M06 MP2500	0,80	0,60	0,60	0,65
P5	LPHT060310TR-M06 MP2500	0,80	0,60	0,60	0,65
P6	LPHT060310TR-M06 MP2500	0,80	0,60	0,60	0,65
P7	LPHW060310TR-MD07 MP2500	0,80	0,70	0,70	0,75
P8	LPHW060310TR-MD07 MP2500	0,80	0,70	0,70	0,80
P11	LPHW060310TR-MD07 MP2500	0,80	0,70	0,70	0,75
M1	LPHT060310TR-ME05 F40M	0,80	0,55	0,55	0,60
M2	LPHT060310TR-ME05 F40M	0,80	0,50	0,50	0,55
M3	LPHT060310TR-ME05 F40M	0,65	0,60	0,60	0,70
M4	LPHT060310TR-M06 F40M	0,48	0,55	0,55	0,60
M5	LPHT060310TR-M06 F40M	0,48	0,55	0,55	0,60
K1	LPHW060310TR-D06 MP3000	0,80	0,65	0,65	0,70
K2	LPHW060310TR-D06 MP3000	0,80	0,60	0,60	0,65
K3	LPHW060310TR-D06 MP3000	0,80	0,60	0,60	0,65
K4	LPHW060310TR-D06 MP3000	0,80	0,60	0,60	0,65
K5	LPHW060310TR-D06 MP3000	0,80	0,55	0,55	0,60
K6	LPHW060310TR-D06 MP3000	0,80	0,60	0,60	0,65
K7	LPHW060310TR-D06 MP3000	0,80	0,55	0,55	0,60
N1	LPHT060310ER-E05 H25	0,80	0,70	0,70	0,75
N2	LPHT060310ER-E05 H25	0,80	0,70	0,70	0,75
N3	LPHT060310ER-E05 H25	0,80	0,70	0,70	0,75
N11	LPHT060310ER-E05 H25	0,80	0,70	0,70	0,75
S1	LPHT060310TR-M06 MS2500	0,48	0,55	0,55	0,60
S2	LPHT060310TR-M06 MS2500	0,48	0,55	0,55	0,60
S3	LPHT060310TR-M06 MS2500	0,48	0,50	0,50	0,55
S11	LPHT060310TR-M06 MS2050	0,55	0,55	0,55	0,65
S12	LPHT060310TR-M06 MS2050	0,55	0,55	0,55	0,65
S13	LPHT060310TR-M06 MS2050	0,48	0,55	0,55	0,60
H5	LPHW060310TR-D06 MH1000	0,50	0,44	0,44	0,48
H8	LPHW060310TR-D06 MH1000	0,44	0,36	0,36	0,40
H11	LPHW060310TR-D06 MP3000	0,50	0,44	0,44	0,48
H12	LPHT060310TR-M06 T350M	0,50	0,44	0,44	0,48
H21	LPHW060310TR-D06 MH1000	0,44	0,36	0,36	0,40

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

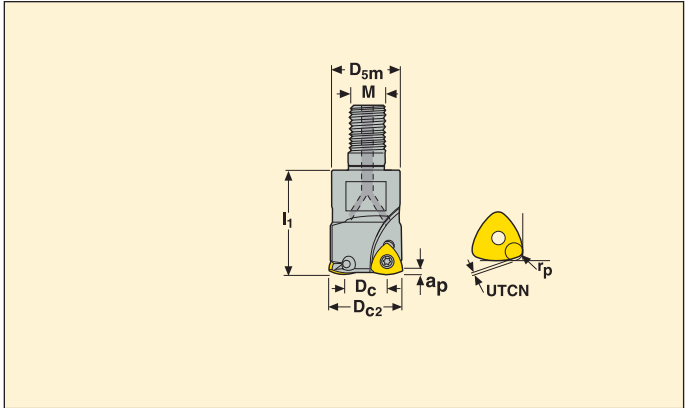
All cutting data are start values

R217/220.21-LP06 – Cutting data $v_c =$ (m/min)

SMG	MP2500			MP3000			T350M			F40M			MM4500			MS2050		
	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	300	345	420	285	325	395	260	300	365	225	260	315	200	230	275	—	—	—
P2	290	335	405	275	315	385	255	290	355	220	255	310	195	220	270	—	—	—
P3	255	295	350	240	280	330	225	255	305	195	220	265	170	195	235	—	—	—
P4	225	260	315	215	245	300	195	225	275	170	195	240	150	170	210	—	—	—
P5	215	245	300	205	235	285	185	215	260	165	185	230	145	165	200	—	—	—
P6	240	275	335	230	260	320	210	240	295	185	210	255	160	185	225	—	—	—
P7	230	260	320	215	250	300	200	230	275	175	200	240	150	175	210	—	—	—
P8	215	245	295	205	235	280	185	215	255	165	185	225	145	165	200	—	—	—
P11	220	255	310	210	240	295	195	220	270	170	190	235	150	170	205	—	—	—
M1	210	240	295	205	235	290	195	225	275	180	205	250	165	190	230	230	255	290
M2	175	200	240	170	195	240	160	185	225	145	170	205	140	160	190	190	210	230
M3	140	160	195	140	155	190	130	150	180	120	135	165	115	125	150	145	160	165
M4	110	125	150	105	120	145	100	115	140	90	105	125	85	100	115	105	120	120
M5	90	105	125	90	100	120	85	95	115	75	85	105	70	80	100	90	100	100
K1	230	265	325	220	250	305	—	—	—	175	200	245	—	—	—	—	—	—
K2	205	235	285	195	220	270	—	—	—	155	175	215	—	—	—	—	—	—
K3	175	200	240	165	190	230	—	—	—	130	150	185	—	—	—	—	—	—
K4	165	190	230	155	180	220	—	—	—	125	145	175	—	—	—	—	—	—
K5	100	115	140	95	110	135	—	—	—	75	85	105	—	—	—	—	—	—
K6	145	165	205	140	160	190	—	—	—	110	125	155	—	—	—	—	—	—
K7	130	150	180	120	140	170	—	—	—	95	110	135	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—	640	730	900	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	520	590	730	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—	345	395	485	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—	395	450	560	—	—	—	—	—	—
S1	—	—	—	50	55	70	47	55	65	43	49	60	26	30	36	44	47	60
S2	—	—	—	40	46	55	38	43	50	35	39	47	21	24	29	35	38	48
S3	—	—	—	35	40	48	34	38	46	30	35	42	19	21	25	32	34	43
S11	—	—	—	70	80	95	65	75	90	60	70	80	37	42	50	60	65	80
S12	—	—	—	41	46	55	39	44	50	35	40	47	28	32	39	46	50	60
S13	—	—	—	32	37	44	30	35	42	28	31	38	23	26	31	38	40	50
H5	45	50	60	44	50	60	43	49	60	38	43	50	—	—	—	—	—	—
H8	48	55	65	47	55	65	46	50	65	40	46	55	—	—	—	—	—	—
H11	60	65	80	55	65	75	55	65	75	48	55	65	—	—	—	—	—	—
H12	85	100	120	85	95	115	85	95	115	75	85	100	—	—	—	—	—	—
H21	48	55	65	47	55	65	46	50	65	40	46	55	—	—	—	—	—	—

R217/220.21-LP06 – Cutting data $v_c =$ (m/min)

SMG	MS2500			MH1000			H25		
	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	325	375	455	—	—	—	—	—	—
P2	315	365	445	—	—	—	—	—	—
P3	280	320	380	—	—	—	—	—	—
P4	245	280	345	—	—	—	—	—	—
P5	235	270	330	—	—	—	—	—	—
P6	265	300	370	—	—	—	—	—	—
P7	250	285	345	—	—	—	—	—	—
P8	235	270	320	—	—	—	—	—	—
P11	240	275	335	—	—	—	—	—	—
M1	225	260	320	—	—	—	—	—	—
M2	190	215	260	—	—	—	—	—	—
M3	155	175	210	—	—	—	—	—	—
M4	120	135	160	—	—	—	—	—	—
M5	100	110	135	—	—	—	—	—	—
K1	—	—	—	235	270	330	—	—	—
K2	—	—	—	205	240	290	—	—	—
K3	—	—	—	175	200	245	—	—	—
K4	—	—	—	165	190	235	—	—	—
K5	—	—	—	100	115	140	—	—	—
K6	—	—	—	145	170	205	—	—	—
K7	—	—	—	130	150	180	—	—	—
N1	—	—	—	—	—	—	660	760	930
N2	—	—	—	—	—	—	540	620	750
N3	—	—	—	—	—	—	360	410	500
N11	—	—	—	—	—	—	410	470	570
S1	55	65	80	—	—	—	—	—	—
S2	46	55	65	—	—	—	—	—	—
S3	41	46	55	—	—	—	—	—	—
S11	80	95	110	—	—	—	—	—	—
S12	47	55	65	—	—	—	—	—	—
S13	37	42	50	—	—	—	—	—	—
H5	—	—	—	50	60	70	—	—	—
H8	—	—	—	55	60	75	—	—	—
H11	—	—	—	65	75	90	—	—	—
H12	—	—	—	95	110	135	—	—	—
H21	—	—	—	55	60	75	—	—	—



- For insert selection and cutting data recommendations, see page(s) 117-124
- For complete insert programme, see page(s) 184

Part No.	Type of mounting	Dimensions in mm										α° max		KG		Insert
		a_p	D_{c2}	D_c	D_{sm}	dm_m	M	l_1	UTCN	r_p						
R217.21 -0816.RE-R080.2	Combimaster	0,6	16	9,25	13,5	-	M8	23	0,39	1	6,1	2	0,1	53400	218.19-080	
R217.21 -1020.RE-R100.2A	Combimaster	0,7	20	11,45	18,5	-	M10	28	0,45	1,47	5,71	2	0,1	32600	218.19-100	
-1020.RE-R100.2HA	Combimaster	1,0	20	10,44	18,5	-	M10	28	0,55	1,7	4,32	2	0,1	32600	218.19-100	
R217.21 -1225.RE-R100.3A	Combimaster	0,7	25	16,46	23	-	M12	35	0,45	1,47	3,48	3	0,1	29100	218.19-100	
-1225.RE-R125.2HA	Combimaster	1,5	25	12,36	23	-	M12	35	0,8	2,18	4,25	2	0,1	29100	218.19-125	
R217.21 -1632.RE-R125.2A	Combimaster	1,0	32	21,16	30	-	M16	40	0,61	1,74	3,67	2	0,2	19700	218.19-125	
-1632.RE-R125.3A	Combimaster	1,0	32	21,21	30	-	M16	40	0,61	1,74	3,7	3	0,3	19700	218.19-125	
-1632.RE-R160.2HA	Combimaster	1,8	32	16,09	30	-	M16	40	0,97	2,87	3,76	2	0,2	16200	218.19-160	
R217.21 -1635.RE-R125.3A	Combimaster	1,0	35	24,16	30	-	M16	40	0,61	1,74	3,1	3	0,2	18800	218.19-125	
R217.21 -1640.RE-R125.4A	Combimaster	1,0	40	29,25	30	-	M16	40	0,61	1,74	2,47	4	0,3	17600	218.19-125	
-1640.RE-R160.3HA	Combimaster	1,8	40	23,99	30	-	M16	40	0,97	2,87	2,18	3	0,2	14500	218.19-160	
-2040.RE-R125.4A	Combimaster	1	40	29,25	36,5	-	M20	40	0,61	1,74	2,47	4	0,3	17600	218.19-125	
-2040.RE-R160.3HA	Combimaster	1,8	40	23,99	36,5	-	M20	40	0,97	2,87	2,18	3	0,3	14500	218.19-160	

UTCN = Uncut thickness, deviation between programmed corner radii (r_p) and generated machined profile.
 Ramping angle = α° . Spigot size = dm_m

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key
R217.21-R080	C02205-T07P	T07P-3
R217.21-R100	C02506-T08P	T08P-3
R217.21-R125	C03007-T09P	T09P-3
R217.21-R160	C03510-T15P	T15P-3

Please check availability in current price and stock-list

Torque value, for insert 218.19-080 0,9 Nm, 218.19-100 1,0 Nm, 218.19-125 2,0 Nm, 218.19-160 3,0 Nm. Torque keys, see page 672

R217.21-080 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	218.19-080T-M04 T350M	0,60	0,50	0,50	0,55
P2	218.19-080T-M04 T350M	0,60	0,50	0,50	0,55
P3	218.19-080T-M04 T350M	0,60	0,48	0,48	0,50
P4	218.19-080T-MD04 MS2500	0,60	0,46	0,46	0,50
P5	218.19-080T-MD04 MS2500	0,60	0,46	0,46	0,50
P6	218.19-080T-MD04 MS2500	0,60	0,44	0,44	0,50
P7	218.19-080T-MD04 MS2500	0,60	0,44	0,44	0,50
P8	218.19-080T-MD04 MP2500	0,60	0,48	0,48	0,50
P11	218.19-080T-MD04 MS2500	0,60	0,44	0,44	0,50
M1	218.19-080T-M04 F40M	0,60	0,50	0,50	0,55
M2	218.19-080T-M04 F40M	0,60	0,46	0,46	0,50
M3	218.19-080T-M04 F40M	0,48	0,40	0,40	0,44
M4	218.19-080T-M04 F40M	0,36	0,42	0,42	0,46
M5	218.19-080T-M04 F40M	0,36	0,42	0,42	0,46
K1	218.19-080T-MD04 F25M	0,60	0,50	0,50	0,55
K2	218.19-080T-MD04 F25M	0,60	0,46	0,46	0,50
K3	218.19-080T-MD04 F25M	0,60	0,46	0,46	0,50
K4	218.19-080T-MD04 F25M	0,60	0,46	0,46	0,50
K5	218.19-080T-MD04 F25M	0,60	0,40	0,40	0,46
K6	218.19-080T-MD04 F25M	0,60	0,46	0,46	0,50
K7	218.19-080T-MD04 F25M	0,60	0,40	0,40	0,46
S1	218.19-080T-M04 F40M	0,36	0,42	0,42	0,46
S2	218.19-080T-M04 F40M	0,36	0,42	0,42	0,46
S3	218.19-080T-M04 F40M	0,36	0,38	0,38	0,42
S11	218.19-080T-M04 F40M	0,42	0,44	0,44	0,48
S12	218.19-080T-M04 F40M	0,42	0,44	0,44	0,48
S13	218.19-080T-M04 F40M	0,36	0,42	0,42	0,46
H5	218.19-080T-MD04 F15M	0,38	0,34	0,34	0,38
H8	218.19-080T-MD04 F15M	0,32	0,28	0,28	0,30
H11	218.19-080T-MD04 F15M	0,38	0,34	0,34	0,38
H12	218.19-080T-MD04 F25M	—	—	—	—
H21	218.19-080T-MD04 F15M	0,32	0,28	0,28	0,30

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

R217.21-080 – Cutting data $v_c =$ (m/min)

SMG	MP2500			T350M			F15M			F25M			F30M			F40M		
	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	355	425	510	310	370	445	—	—	—	285	335	405	285	335	405	270	320	385
P2	350	415	490	305	360	425	—	—	—	275	325	390	275	330	390	265	315	370
P3	305	360	430	265	315	375	—	—	—	240	285	340	240	285	340	230	275	325
P4	270	320	375	235	275	330	—	—	—	210	250	300	215	255	300	205	240	285
P5	255	305	365	225	265	320	—	—	—	205	240	290	205	240	290	195	230	275
P6	285	340	410	250	295	355	—	—	—	230	270	325	230	270	325	220	260	310
P7	270	320	385	235	280	335	—	—	—	215	255	305	215	255	310	205	245	295
P8	255	305	360	225	265	315	—	—	—	205	240	285	205	240	285	195	230	275
P11	265	310	375	230	270	330	—	—	—	210	250	300	210	250	300	200	235	285
M1	250	295	355	235	275	330	—	—	—	—	—	—	225	265	315	210	250	300
M2	205	245	295	190	230	275	—	—	—	—	—	—	185	215	260	175	205	250
M3	165	200	240	155	185	225	—	—	—	—	—	—	150	180	215	140	170	205
M4	125	150	180	120	140	170	—	—	—	—	—	—	115	135	160	110	130	155
M5	105	125	150	100	120	140	—	—	—	—	—	—	95	110	135	90	105	130
K1	275	325	390	—	—	—	240	285	335	220	260	310	220	260	310	210	250	295
K2	245	290	345	—	—	—	210	250	300	195	230	275	195	230	275	185	220	265
K3	205	245	295	—	—	—	180	210	255	165	195	235	165	195	235	155	185	220
K4	195	235	280	—	—	—	170	200	240	155	185	220	155	185	225	150	175	210
K5	120	140	170	—	—	—	105	120	145	95	110	135	95	110	135	90	105	130
K6	175	205	245	—	—	—	150	175	215	135	165	195	140	165	195	130	155	185
K7	150	180	215	—	—	—	130	155	185	120	145	170	120	145	170	115	135	165
N1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	780	920	1100
N2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	630	750	890
N3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	420	495	600
N11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	480	570	680
S1	—	—	—	55	65	80	—	—	—	—	—	—	55	65	75	50	60	70
S2	—	—	—	45	55	65	—	—	—	—	—	—	42	50	60	40	48	60
S3	—	—	—	39	47	55	—	—	—	—	—	—	37	45	55	36	43	50
S11	—	—	—	80	95	110	—	—	—	—	—	—	75	90	105	70	85	100
S12	—	—	—	45	55	65	—	—	—	—	—	—	43	50	60	41	49	60
S13	—	—	—	36	43	50	—	—	—	—	—	—	34	41	49	32	39	46
H5	55	65	75	50	60	70	50	60	70	—	—	—	46	55	65	44	50	60
H8	55	65	80	55	65	75	55	65	75	—	—	—	48	60	70	46	55	65
H11	65	80	95	65	75	90	65	75	90	—	—	—	60	70	85	55	65	80
H12	100	120	145	95	115	135	95	115	135	—	—	—	90	105	125	85	100	120
H21	55	65	80	55	65	75	55	65	75	—	—	—	48	60	70	46	55	65

R217.21-080 – Cutting data $v_c =$ (m/min)

SMG	MS2500		
	100%	70%	30%
P1	370	440	530
P2	360	430	510
P3	315	375	445
P4	280	330	390
P5	265	315	380
P6	300	355	425
P7	280	335	400
P8	265	315	375
P11	275	325	390
M1	260	305	365
M2	210	250	305
M3	170	205	245
M4	130	155	185
M5	110	130	155
K1	—	—	—
K2	—	—	—
K3	—	—	—
K4	—	—	—
K5	—	—	—
K6	—	—	—
K7	—	—	—
N1	—	—	—
N2	—	—	—
N3	—	—	—
N11	—	—	—
S1	65	75	90
S2	50	60	75
S3	45	55	65
S11	90	110	130
S12	50	60	75
S13	41	49	60
H5	—	—	—
H8	—	—	—
H11	—	—	—
H12	—	—	—
H21	—	—	—

R217.21-100 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	218.19-100T-M06 T350M	0,70	0,75	0,75	0,85
P2	218.19-100T-M06 T350M	0,70	0,80	0,80	0,85
P3	218.19-100T-M06 T350M	0,70	0,75	0,75	0,80
P4	218.19-100T-MD08 MS2500	0,70	0,95	0,95	1,1
P5	218.19-100T-MD08 MS2500	0,70	0,95	0,95	1,1
P6	218.19-100T-MD08 MS2500	0,70	0,95	0,95	1,0
P7	218.19-100T-MD08 MS2500	0,70	0,95	0,95	1,0
P8	218.19-100T-MD08 MP2500	0,70	1,0	1,0	1,1
P11	218.19-100T-MD08 MS2500	0,70	0,95	0,95	1,0
M1	218.19-100T-M06 F40M	0,70	0,80	0,80	0,85
M2	218.19-100T-M06 F40M	0,70	0,70	0,70	0,80
M3	218.19-100T-M06 F40M	0,55	0,65	0,65	0,70
M4	218.19-100T-M06 F40M	0,42	0,65	0,65	0,70
M5	218.19-100T-M06 F40M	0,42	0,65	0,65	0,70
K1	218.19-100T-MD08 MK2050	0,70	1,0	1,0	1,2
K2	218.19-100T-MD08 MK2050	0,70	0,95	0,95	1,1
K3	218.19-100T-MD08 MK2050	0,70	0,95	0,95	1,1
K4	218.19-100T-MD08 MK2050	0,70	0,95	0,95	1,1
K5	218.19-100T-MD08 MK2050	0,70	0,85	0,85	0,95
K6	218.19-100T-MD08 MK2050	0,70	0,95	0,95	1,1
K7	218.19-100T-MD08 MK2050	0,70	0,85	0,85	0,95
N1	218.19-100-E06 H25	0,70	1,0	1,0	1,1
N2	218.19-100-E06 H25	0,70	1,0	1,0	1,1
N3	218.19-100-E06 H25	0,70	1,0	1,0	1,1
N11	218.19-100-E06 H25	0,70	1,0	1,0	1,1
S1	218.19-100T-M06 MS2500	0,42	0,65	0,65	0,70
S2	218.19-100T-M06 MS2500	0,42	0,65	0,65	0,70
S3	218.19-100T-M06 MS2500	0,42	0,60	0,60	0,65
S11	218.19-100T-M06 MS2050	0,48	0,70	0,70	0,75
S12	218.19-100T-M06 MS2050	0,48	0,70	0,70	0,75
S13	218.19-100T-M06 MS2050	0,42	0,65	0,65	0,70
H5	218.19-100T-MD08 MH1000	0,44	0,70	0,70	0,80
H8	218.19-100T-MD08 MH1000	0,38	0,60	0,60	0,65
H11	218.19-100T-MD08 MH1000	0,44	0,70	0,70	0,80
H12	218.19-100T-M06 MP3000	0,44	0,55	0,55	0,60
H21	218.19-100T-MD08 MH1000	0,38	0,60	0,60	0,65

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/D_c = %

All cutting data are start values

R217/220.21-125 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	218.19-125T-T3-M07 T350M	1,0	0,85	0,85	0,90
P2	218.19-125T-T3-M07 T350M	1,0	0,85	0,85	0,95
P3	218.19-125T-T3-M07 T350M	1,0	0,80	0,80	0,90
P4	218.19-125T-T3-MD10 MS2500	1,0	1,1	1,1	1,2
P5	218.19-125T-T3-MD10 MS2500	1,0	1,1	1,1	1,2
P6	218.19-125T-T3-MD10 MS2500	1,0	1,1	1,1	1,2
P7	218.19-125T-T3-MD10 MS2500	1,0	1,1	1,1	1,2
P8	218.19-125T-T3-MD10 MP2500	1,0	1,1	1,1	1,3
P11	218.19-125T-T3-MD10 MS2500	1,0	1,1	1,1	1,2
M1	218.19-125T-T3-M07 F40M	1,0	0,85	0,85	0,95
M2	218.19-125T-T3-M07 F40M	1,0	0,75	0,75	0,85
M3	218.19-125T-T3-M07 F40M	0,80	0,70	0,70	0,75
M4	218.19-125T-T3-M07 F40M	0,60	0,70	0,70	0,75
M5	218.19-125T-T3-M07 F40M	0,60	0,70	0,70	0,75
K1	218.19-125T-T3-MD10 MK2050	1,0	1,2	1,2	1,3
K2	218.19-125T-T3-MD10 MK2050	1,0	1,1	1,1	1,2
K3	218.19-125T-T3-MD10 MK2050	1,0	1,1	1,1	1,2
K4	218.19-125T-T3-MD10 MK2050	1,0	1,1	1,1	1,2
K5	218.19-125T-T3-MD10 MK2050	1,0	1,0	1,0	1,1
K6	218.19-125T-T3-MD10 MK2050	1,0	1,1	1,1	1,2
K7	218.19-125T-T3-MD10 MK2050	1,0	1,0	1,0	1,1
N1	218.19-125-T3-E06 H25	1,0	0,95	0,95	1,0
N2	218.19-125-T3-E06 H25	1,0	0,95	0,95	1,0
N3	218.19-125-T3-E06 H25	1,0	0,95	0,95	1,0
N11	218.19-125-T3-E06 H25	1,0	0,95	0,95	1,0
S1	218.19-125T-T3-M07 MS2500	0,60	0,70	0,70	0,75
S2	218.19-125T-T3-M07 MS2500	0,60	0,70	0,70	0,75
S3	218.19-125T-T3-M07 MS2500	0,60	0,65	0,65	0,70
S11	218.19-125T-T3-M07 MS2050	0,70	0,75	0,75	0,80
S12	218.19-125T-T3-M07 MS2050	0,70	0,75	0,75	0,80
S13	218.19-125T-T3-M07 MS2050	0,60	0,70	0,70	0,75
H5	218.19-125T-T3-MD10 MH1000	0,60	0,85	0,85	0,90
H8	218.19-125T-T3-MD10 MH1000	0,55	0,65	0,65	0,75
H11	218.19-125T-T3-MD08 MP3000	0,60	0,65	0,65	0,75
H12	218.19-125T-T3-M07 T350M	0,60	0,60	0,60	0,65
H21	218.19-125T-T3-MD10 MH1000	0,55	0,65	0,65	0,75

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/D_c = %

All cutting data are start values

R217/220.21-125 – Cutting data $v_c =$ (m/min)

SMG	MP1500			MP2500			MP3000			T350M			F40M			MK2050		
	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	280	325	400	295	340	420	280	325	400	255	300	365	225	260	320	245	280	345
P2	270	315	390	285	335	405	270	315	385	250	290	350	215	250	305	235	275	340
P3	240	280	335	250	290	355	240	275	335	220	255	305	190	220	265	210	245	290
P4	210	245	300	220	255	315	210	245	300	195	225	275	170	195	240	185	215	260
P5	200	235	285	215	250	300	205	235	285	190	220	265	165	190	230	175	205	250
P6	225	265	320	240	280	340	230	265	320	210	245	295	185	215	255	200	230	280
P7	215	250	305	230	265	320	215	250	300	200	230	280	175	200	240	185	215	265
P8	200	235	280	210	245	295	200	230	280	185	215	260	160	185	225	175	205	245
P11	210	240	295	220	255	310	210	245	295	195	225	270	170	195	235	180	210	260
M1	—	—	—	205	240	290	205	235	285	195	225	270	175	205	245	—	—	—
M2	—	—	—	175	200	245	170	200	240	160	185	225	145	170	205	—	—	—
M3	—	—	—	140	160	195	135	160	190	130	150	180	120	135	165	—	—	—
M4	—	—	—	110	125	150	105	120	145	100	115	140	90	105	125	—	—	—
M5	—	—	—	90	105	125	90	100	120	85	95	115	75	85	105	—	—	—
K1	215	250	305	225	265	320	215	250	305	—	—	—	170	200	240	255	295	365
K2	190	220	275	205	235	285	195	225	270	—	—	—	155	180	215	230	265	325
K3	160	190	230	175	200	240	165	190	230	—	—	—	130	150	185	195	225	275
K4	155	180	220	165	190	230	155	180	220	—	—	—	125	145	175	185	215	260
K5	95	110	135	100	115	140	95	110	135	—	—	—	75	90	110	115	130	160
K6	135	160	195	145	170	205	140	160	195	—	—	—	110	130	155	160	190	230
K7	120	140	170	130	150	180	120	140	170	—	—	—	95	115	140	145	165	205
N1	—	—	—	—	—	—	—	—	—	—	—	—	630	730	900	—	—	—
N2	—	—	—	—	—	—	—	—	—	—	—	—	510	590	720	—	—	—
N3	—	—	—	—	—	—	—	—	—	—	—	—	340	395	485	—	—	—
N11	—	—	—	—	—	—	—	—	—	—	—	—	390	450	550	—	—	—
S1	—	—	—	—	—	—	50	55	70	47	55	65	43	49	60	—	—	—
S2	—	—	—	—	—	—	40	46	55	38	43	50	35	39	47	—	—	—
S3	—	—	—	—	—	—	36	40	48	34	38	46	31	35	42	—	—	—
S11	—	—	—	—	—	—	70	80	95	65	75	90	60	70	85	—	—	—
S12	—	—	—	—	—	—	40	46	55	38	43	55	34	39	48	—	—	—
S13	—	—	—	—	—	—	32	37	44	31	35	42	28	31	38	—	—	—
H5	47	55	65	45	50	60	44	50	60	43	49	60	37	43	50	—	—	—
H8	50	60	70	48	55	65	47	55	65	46	55	65	40	46	55	—	—	—
H11	60	70	85	55	65	80	55	65	75	55	65	75	48	55	65	—	—	—
H12	90	105	130	85	100	120	85	95	115	85	95	115	70	80	100	—	—	—
H21	50	60	70	48	55	65	47	55	65	46	55	65	40	46	55	—	—	—

R217/220.21-125 – Cutting data $v_c =$ (m/min)

SMG	MM4500			MS2050			MS2500			MH1000			H25		
	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%	100%	70%	30%
P1	180	210	260	—	—	—	320	375	460	—	—	—	—	—	—
P2	175	205	250	—	—	—	315	365	440	—	—	—	—	—	—
P3	155	180	215	—	—	—	275	320	385	—	—	—	—	—	—
P4	135	160	195	—	—	—	240	280	345	—	—	—	—	—	—
P5	130	155	185	—	—	—	235	275	330	—	—	—	—	—	—
P6	150	170	210	—	—	—	265	305	370	—	—	—	—	—	—
P7	140	165	195	—	—	—	250	290	350	—	—	—	—	—	—
P8	130	150	180	—	—	—	230	270	325	—	—	—	—	—	—
P11	135	160	190	—	—	—	240	280	340	—	—	—	—	—	—
M1	150	175	215	230	255	300	225	260	315	—	—	—	—	—	—
M2	125	145	175	190	215	245	190	220	265	—	—	—	—	—	—
M3	100	115	145	150	170	180	150	175	210	—	—	—	—	—	—
M4	80	90	110	110	125	130	120	135	160	—	—	—	—	—	—
M5	65	75	90	90	105	110	100	110	135	—	—	—	—	—	—
K1	—	—	—	—	—	—	—	—	—	210	245	300	—	—	—
K2	—	—	—	—	—	—	—	—	—	185	215	265	—	—	—
K3	—	—	—	—	—	—	—	—	—	160	185	225	—	—	—
K4	—	—	—	—	—	—	—	—	—	150	175	215	—	—	—
K5	—	—	—	—	—	—	—	—	—	90	105	130	—	—	—
K6	—	—	—	—	—	—	—	—	—	135	155	190	—	—	—
K7	—	—	—	—	—	—	—	—	—	120	135	165	—	—	—
N1	—	—	—	—	—	—	—	—	—	—	—	—	670	780	960
N2	—	—	—	—	—	—	—	—	—	—	—	—	540	630	780
N3	—	—	—	—	—	—	—	—	—	—	—	—	360	420	520
N11	—	—	—	—	—	—	—	—	—	—	—	—	410	480	590
S1	24	28	33	42	45	55	60	65	80	—	—	—	—	—	—
S2	20	22	27	34	36	46	46	55	65	—	—	—	—	—	—
S3	17	20	24	31	33	42	41	47	55	—	—	—	—	—	—
S11	34	39	47	55	60	80	80	90	110	—	—	—	—	—	—
S12	26	30	36	41	45	60	46	55	65	—	—	—	—	—	—
S13	21	24	29	36	39	49	37	42	50	—	—	—	—	—	—
H5	—	—	—	—	—	—	—	—	—	46	55	65	—	—	—
H8	—	—	—	—	—	—	—	—	—	50	55	70	—	—	—
H11	—	—	—	—	—	—	—	—	—	60	65	80	—	—	—
H12	—	—	—	—	—	—	—	—	—	90	100	125	—	—	—
H21	—	—	—	—	—	—	—	—	—	50	55	70	—	—	—

R217/220.21-160 – Insert selection

SMG		a_p	f_z		
			100%	70%	30%
P1	218.19-160T-04-M08 T350M	1,8	0,80	0,80	0,90
P2	218.19-160T-04-M08 T350M	1,8	0,80	0,80	0,90
P3	218.19-160T-04-M08 T350M	1,8	0,80	0,80	0,85
P4	218.19-160T-04-MD11 MS2500	1,8	1,0	1,0	1,1
P5	218.19-160T-04-MD11 MS2500	1,8	1,0	1,0	1,1
P6	218.19-160T-04-MD11 MS2500	1,8	1,0	1,0	1,1
P7	218.19-160T-04-MD11 MS2500	1,8	1,0	1,0	1,1
P8	218.19-160T-04-MD11 MP2500	1,8	1,1	1,1	1,2
P11	218.19-160T-04-MD11 MS2500	1,8	1,0	1,0	1,1
M1	218.19-160T-04-M08 F40M	1,8	0,80	0,80	0,90
M2	218.19-160T-04-M08 F40M	1,8	0,75	0,75	0,80
M3	218.19-160T-04-M08 F40M	1,4	0,70	0,70	0,75
M4	218.19-160T-04-M08 F40M	1,1	0,65	0,65	0,75
M5	218.19-160T-04-M08 F40M	1,1	0,65	0,65	0,75
K1	218.19-160T-04-MD11 MK2050	1,8	1,1	1,1	1,2
K2	218.19-160T-04-MD11 MK2050	1,8	1,0	1,0	1,1
K3	218.19-160T-04-MD11 MK2050	1,8	1,0	1,0	1,1
K4	218.19-160T-04-MD11 MK2050	1,8	1,0	1,0	1,1
K5	218.19-160T-04-MD11 MK2050	1,8	0,90	0,90	1,0
K6	218.19-160T-04-MD11 MK2050	1,8	1,0	1,0	1,1
K7	218.19-160T-04-MD11 MK2050	1,8	0,90	0,90	1,0
N1	218.19-160-04-E07 H25	1,8	0,90	0,90	1,0
N2	218.19-160-04-E07 H25	1,8	0,90	0,90	1,0
N3	218.19-160-04-E07 H25	1,8	0,90	0,90	1,0
N11	218.19-160-04-E07 H25	1,8	0,90	0,90	1,0
S1	218.19-160T-04-M08 MS2500	1,1	0,65	0,65	0,75
S2	218.19-160T-04-M08 MS2500	1,1	0,65	0,65	0,75
S3	218.19-160T-04-M08 MS2500	1,1	0,60	0,60	0,70
S11	218.19-160T-04-M08 MS2050	1,3	0,70	0,70	0,75
S12	218.19-160T-04-M08 MS2050	1,3	0,70	0,70	0,75
S13	218.19-160T-04-M08 MS2050	1,1	0,65	0,65	0,75
H5	218.19-160T-04-MD11 MH1000	1,1	0,75	0,75	0,85
H8	218.19-160T-04-MD11 MH1000	1,0	0,85	0,85	0,95
H11	218.19-160T-04-MD09 MP3000	1,1	0,65	0,65	0,70
H12	218.19-160T-04-M08 T350M	1,1	0,55	0,55	0,60
H21	218.19-160T-04-MD11 MH1000	1,0	0,85	0,85	0,95

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

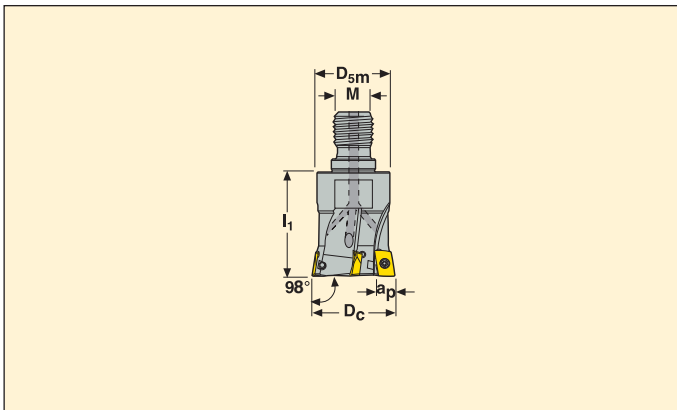
a_e/D_c = %

All cutting data are start values

R217.79-10/XO12



- For insert selection and cutting data recommendations, see page(s) 126-129
- For complete insert programme, see page(s)178-179



Part No.	Type of mounting	Dimensions in mm					Flutes	KG	Inserts	Insert
		a_p	D_c	D_{5m}	I_1	M				
R217.79 -2040.RE-10-5A	Combimaster	6,0	40,0	36,5	40,0	M20	5	0,4	150000	XO.X10T3
R217.79 -2040.RE-XO12.3A	Combimaster	7,0	40,0	36,5	40,0	M20	3	0,4	16400	XO.X12
-2040.RE-XO12.4A	Combimaster	7,0	40,0	36,5	40,0	M20	4	0,4	16400	XO.X12

For Combimaster shanks and dimensions, see pages 572-581 MN2015 Milling

Spare Parts

For cutter	Insert screw	Insert key
R217.79-10	C02506-T07P	T07P-3
R217.79-XO12	C03507-T10P	T10P-3

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

R217.79-10- Insert selection

SMG		f_z	a_{so}			
			100%	70%	50%	30%
P1	XOMX10T308TR-ME07 F40M	0,11	4,0	4,0	4,0	5,0
P2	XOMX10T308TR-ME07 F40M	0,12	4,0	4,0	4,0	5,0
P3	XOMX10T308TR-ME07 MP2500	0,11	4,0	4,0	4,0	5,0
P4	XOMX10T308TR-ME07 MP2500	0,11	4,0	4,0	4,0	5,0
P5	XOMX10T308TR-ME07 MP2500	0,11	4,0	4,0	4,0	5,0
P6	XOMX10T308TR-ME07 MP2500	0,10	4,0	4,0	4,0	5,0
P7	XOMX10T308TR-M09 MP2500	0,12	4,0	4,0	4,0	5,0
P8	XOMX10T308TR-M09 MP2500	0,12	4,0	4,0	4,0	5,0
P11	XOMX10T308TR-M09 MP2500	0,12	4,0	4,0	4,0	5,0
M1	XOMX10T308TR-ME07 MP2500	0,12	4,0	4,0	4,0	5,0
M2	XOMX10T308TR-ME07 MP2500	0,11	4,0	4,0	4,0	5,0
M3	XOMX10T308TR-ME07 MP2500	0,085	3,5	3,5	3,5	4,0
M4	XOMX10T308TR-M09 T350M	0,085	2,5	2,5	2,5	3,0
M5	XOMX10T308TR-M09 F40M	0,085	2,5	2,5	2,5	3,0
K1	XOMX10T308TR-M09 MK1500	0,13	4,0	4,0	4,0	5,0
K2	XOMX10T308TR-M09 MK1500	0,12	4,0	4,0	4,0	5,0
K3	XOMX10T308TR-M09 MK1500	0,12	4,0	4,0	4,0	5,0
K4	XOMX10T308TR-M09 MK1500	0,12	4,0	4,0	4,0	5,0
K5	XOMX10T308TR-M09 MK1500	0,11	4,0	4,0	4,0	5,0
K6	XOMX10T308TR-M09 MK1500	0,12	4,0	4,0	4,0	5,0
K7	XOMX10T308TR-M09 MP1500	0,11	4,0	4,0	4,0	5,0
N1	XOEX10T308FR-E05 H15	0,11	4,0	4,0	4,0	5,0
N2	XOEX10T308FR-E05 F40M	0,11	4,0	4,0	4,0	5,0
N3	XOEX10T308FR-E05 F40M	0,11	4,0	4,0	4,0	5,0
N11	XOEX10T308FR-E05 F40M	0,11	4,0	4,0	4,0	5,0
S1	XOMX10T308TR-ME07 T350M	0,075	2,5	2,5	2,5	3,0
S2	XOMX10T308TR-ME07 T350M	0,075	2,5	2,5	2,5	3,0
S3	XOMX10T308TR-M09 F40M	0,080	2,5	2,5	2,5	3,0
S11	XOMX10T308TR-ME07 F40M	0,085	3,0	3,0	3,0	3,5
S12	XOMX10T308TR-ME07 F40M	0,085	3,0	3,0	3,0	3,5
S13	XOMX10T308TR-ME07 F40M	0,075	2,5	2,5	2,5	3,0
H5	XOMX10T308TR-M09 MP1500	0,080	3,5	3,5	3,5	4,0
H8	XOMX10T308TR-M09 MP1500	0,065	3,0	3,0	3,0	3,5
H11	XOMX10T308TR-M09 MP1500	0,080	3,5	3,5	3,5	4,0
H12	XOMX10T308TR-M09 MP1500	0,080	3,5	3,5	3,5	4,0
H21	XOMX10T308TR-M09 MP1500	0,065	3,0	3,0	3,0	3,5

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

R217.79-XO12-Insert selection

SMG		f_z	a_{so}			
			100%	70%	50%	30%
P1	XOMX120408TR-ME08 F40M	0,14	5,0	5,0	5,0	6,0
P2	XOMX120408TR-ME08 F40M	0,14	5,0	5,0	5,0	6,0
P3	XOMX120408TR-ME08 MP2500	0,14	5,0	5,0	5,0	6,0
P4	XOMX120408TR-ME08 MP2500	0,13	5,0	5,0	5,0	6,0
P5	XOMX120408TR-ME08 MP2500	0,13	5,0	5,0	5,0	6,0
P6	XOMX120408TR-ME08 MP2500	0,13	5,0	5,0	5,0	6,0
P7	XOMX120408TR-M12 MP2500	0,15	5,0	5,0	5,0	6,0
P8	XOMX120408TR-M12 MP2500	0,16	5,0	5,0	5,0	6,0
P11	XOMX120408TR-M12 MP2500	0,15	5,0	5,0	5,0	6,0
M1	XOMX120408TR-ME08 MP2500	0,14	5,0	5,0	5,0	6,0
M2	XOMX120408TR-ME08 MP2500	0,13	5,0	5,0	5,0	6,0
M3	XOMX120408TR-ME08 MP2500	0,10	4,0	4,0	4,0	4,5
M4	XOEX120408R-M07 T350M	0,075	3,0	3,0	3,0	3,5
M5	XOEX120408R-M07 T350M	0,075	3,0	3,0	3,0	3,5
K1	XOMX120408TR-M12 MK1500	0,17	5,0	5,0	5,0	6,0
K2	XOMX120408TR-M12 MK1500	0,16	5,0	5,0	5,0	6,0
K3	XOMX120408TR-M12 MK1500	0,16	5,0	5,0	5,0	6,0
K4	XOMX120408TR-M12 MK1500	0,16	5,0	5,0	5,0	6,0
K5	XOMX120408TR-M12 MK1500	0,14	5,0	5,0	5,0	6,0
K6	XOMX120408TR-M12 MK1500	0,16	5,0	5,0	5,0	6,0
K7	XOMX120408TR-M12 MP1500	0,14	5,0	5,0	5,0	6,0
N1	XOEX120408FR-E06 F15M	0,13	5,0	5,0	5,0	6,0
N2	XOEX120408FR-E06 F40M	0,13	5,0	5,0	5,0	6,0
N3	XOEX120408FR-E06 F40M	0,13	5,0	5,0	5,0	6,0
N11	XOEX120408FR-E06 F40M	0,13	5,0	5,0	5,0	6,0
S1	XOEX120408R-M07 T350M	0,075	3,0	3,0	3,0	3,5
S2	XOEX120408R-M07 T350M	0,075	3,0	3,0	3,0	3,5
S3	XOEX120408R-M07 F40M	0,070	3,0	3,0	3,0	3,5
S11	XOEX120408R-M07 MS2050	0,085	3,5	3,5	3,5	4,0
S12	XOEX120408R-M07 MS2050	0,085	3,5	3,5	3,5	4,0
S13	XOEX120408R-M07 MS2050	0,075	3,0	3,0	3,0	3,5
H5	XOMX120408TR-D14 MP1500	0,12	4,0	4,0	4,0	4,5
H8	XOMX120408TR-D14 MP1500	0,095	3,5	3,5	3,5	4,0
H11	XOMX120408TR-D14 MP1500	0,12	4,0	4,0	4,0	4,5
H12	XOMX120408TR-D14 MP1500	0,12	4,0	4,0	4,0	4,5
H21	XOMX120408TR-D14 MP1500	0,095	3,5	3,5	3,5	4,0

SMG = Seco material group

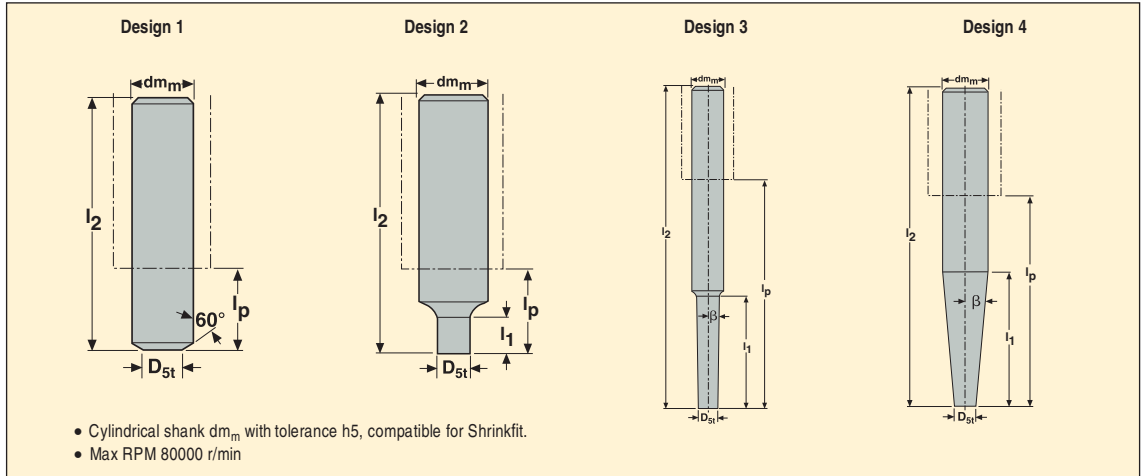
f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

MP10 Shanks



Part No.	Connecting size	Dimensions in mm							Design		
		D_{st}	dm_m	l_2	l_p	l_1	β°				
MP10 -10055-010.00	MP10	9,8	10	55	15	10	0	2	✓	0,1	
-16068-000.60	MP10	9,5	16	68	20	0	60	1	✓	0,1	
-16073-015.00	MP10	9,8	16	73	25	15	0	2	✓	0,1	
-16118-035.01	MP10	9,5	16	118	70	35	1	3	✓	0,2	
-16158-060.01	MP10	9,5	16	158	110	60	1	3	✓	0,2	
-20100-045.03	MP10	9,5	20	100	50	45	3	3	✓	0,2	
-20140-085.03	MP10	9,5	20	140	90	85	3	3	✓	0,3	
-20140-090.05	MP10	9,5	20	140	90	60	5	4	✓	0,3	
MP10 -12095-030.00-E	MP10	9,8	12	95	50	30	0	2	✓	0,2	
-12105-040.00-E	MP10	9,8	12	105	60	40	0	2	✓	0,2	
-12125-060.00-E	MP10	9,8	12	125	80	60	0	2	✓	0,2	
-16120-050.01-E	MP10	9,5	16	120	72	50	1	3	✓	0,3	
-16150-080.01-E	MP10	9,5	16	150	102	80	1	3	✓	0,3	
-16170-100.01-E	MP10	9,5	16	170	122	100	1	3	✓	0,4	
-16140-092.03-E	MP10	9,5	16	140	92	62	3	4	✓	0,4	
-16170-122.03-E	MP10	9,5	16	170	122	62	3	4	✓	0,4	

Accessories

Inserts	Torque key	Replacement blade	Key
MP10	MP00-10.110	MP00-10M	MP1016

Blades are included with the torque key

MP12 Shanks

Design 1

Design 2

Design 3

Design 4

- Cylindrical shank dm_m with tolerance h5, compatible for Shrinkfit.
- Max RPM 72700 r/min

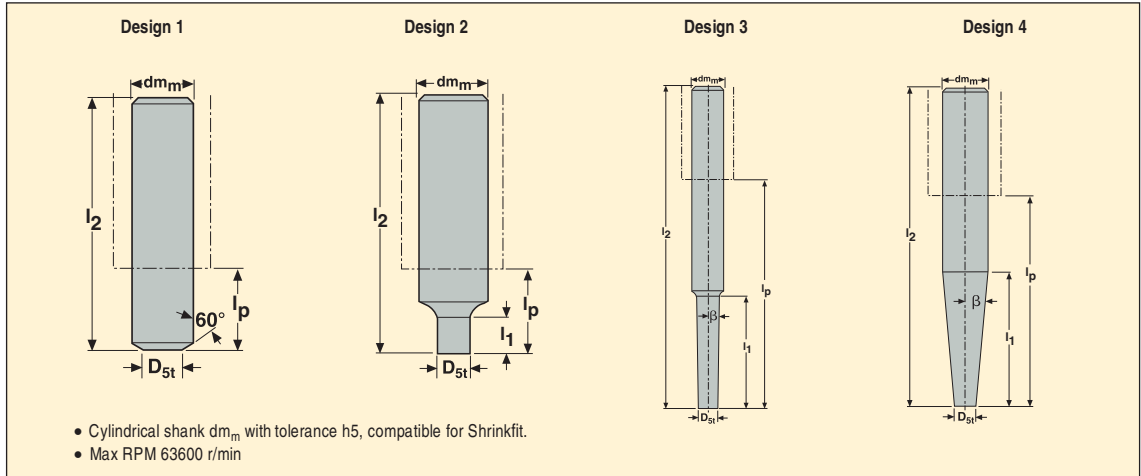
Part No.	Connecting size	Dimensions in mm							Design		
		D_{St}	dm_m	l_2	l_p	l_1	β°				
MP12 -12060-012.00	MP12	11,5	12	60	15	12	0	2	✓	0,1	
-16068-000.60	MP12	11,5	16	68	20	0	60	1	✓	0,1	
-16078-018.00	MP12	11,5	16	78	30	18	0	2	✓	0,1	
-16153-042.01	MP12	11,5	16	153	105	42	1	3	✓	0,2	
-20170-072.01	MP12	11,5	20	170	120	72	1	4	✓	0,3	
-20110-055.03	MP12	11,5	20	110	60	55	3	3	✓	0,2	
-20150-100.03	MP12	11,5	20	150	100	81,1	3	3	✓	0,3	
-20155-105.05	MP12	11,5	20	155	105	48,6	5	4	✓	0,4	
MP12 -16107-036.00-E	MP12	11,5	16	107	59	36	0	2	✓	0,3	
-16120-048.00-E	MP12	11,5	16	120	72	48	0	2	✓	0,3	
-16150-072.00-E	MP12	11,5	16	150	102	72	0	2	✓	0,3	
-16120-060.01-E	MP12	11,5	16	120	72	60	1	3	✓	0,3	
-16150-096.01-E	MP12	11,5	16	150	102	96	1	3	✓	0,4	
-16175-120.01-E	MP12	11,5	16	175	127	120	1	3	✓	0,4	
-16155-107.03-E	MP12	11,5	16	155	107	42,9	3	4	✓	0,4	
-16180-132.03-E	MP12	11,5	16	180	132	42,9	3	4	✓	0,5	

Accessories

Inserts	Torque key	Replacement blade	Key
MP12	MP00-12.150	MP00-12M	MP1016

Blades are included with the torque key

MP16 Shanks



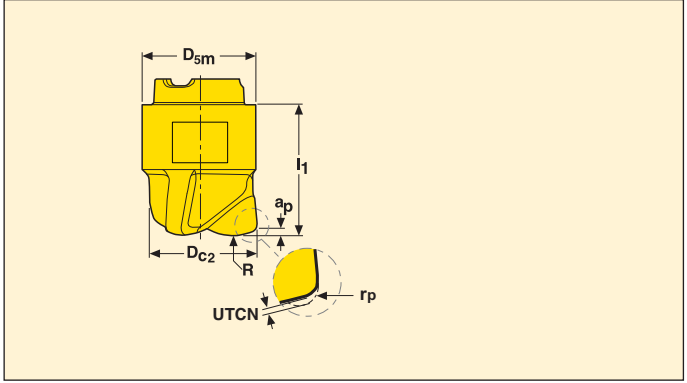
Part No.	Connecting size	Dimensions in mm							Design		
		D_{st}	dm_m	l_2	l_p	l_1	β°				
MP16 -16068-016.00	MP16	15,2	16	68	20	16	0	2	✓	0,1	
-20070-000.60	MP16	15,2	20	70	20	0	60	1	✓	0,2	
-20090-024.00	MP16	15,2	20	90	40	24	0	2	✓	0,2	
-20190-056.01	MP16	15,2	20	190	140	56	1	3	✓	0,4	
-20195-095.01	MP16	15,2	20	195	145	95	1	3	✓	0,4	
-25136-075.03	MP16	15,2	25	136	80	75	3	3	✓	0,4	
-25181-125.03	MP16	15,2	25	181	125	93,5	3	4	✓	0,6	
-25181-125.05	MP16	15,2	25	181	125	56	5	4	✓	0,6	
MP16 -16126-048.00-E	MP16	15,2	16	126	78	48	0	2	✓	0,4	
-16140-064.00-E	MP16	15,2	16	140	92	64	0	2	✓	0,4	
-16180-096.00-E	MP16	15,2	16	180	132	96	0	2	✓	0,5	
-20135-080.01-E	MP16	15,2	20	135	85	80	1	3	✓	0,5	
-20180-128.01-E	MP16	15,2	20	180	130	128	1	3	✓	0,7	
-20200-150.01-E	MP16	15,2	20	200	150	137,5	1	4	✓	0,8	
-20180-130.03-E	MP16	15,2	20	180	130	45,8	3	4	✓	0,8	
-20210-160.03-E	MP16	15,2	20	210	160	45,8	3	4	✓	0,9	

Accessories

Inserts	Torque key	Replacement blade	Key
MP16	MP00-16.190	MP00-16M	MP1016

Blades are included with the torque key

MP10 High feed



Z3

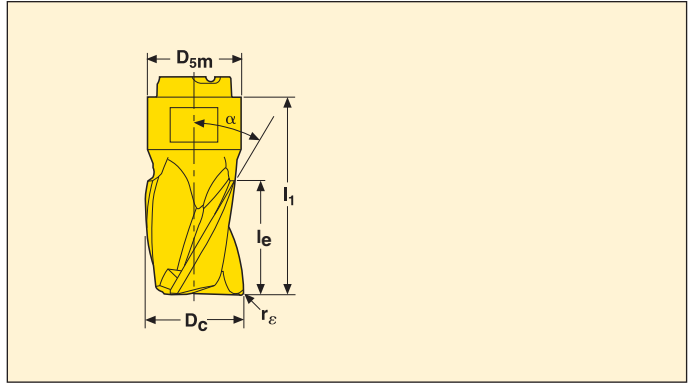


Part No.	Dimensions in mm							Zc [*]		Coated				
	a _p	D _{c2}	R	r _p	D _{sm}	l _c	UTCN			Grades				
										MP3000	F40M			
MP10 -1000.6HFZ3-MD08	0,6	10	6,2	1,13	9,6	11	0,32	3	✓	■				

*Effective number of flutes
 UTCN = Uncut thickness, deviation between programmed corner radii (r_p) and generated machined profile.

MP10 Square shoulder

Slotting and contouring



Z3

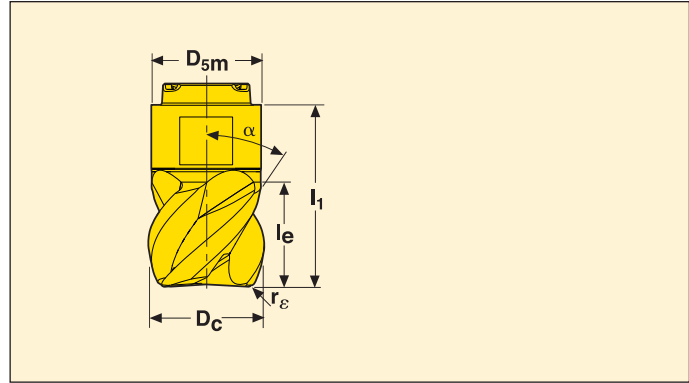


Part No.	Dimensions in mm						Z _c *		Coated			
	D _c	r _ε	l _e	D _{5m}	l ₁	α°			Grades			
									MP3000	F40M		
MP10 -09807KWZ3-E03	9,8	0,3	7,0	9,6	16,0	30	3	✓		■		
-10007R04Z3-E03	10,0	0,4	7,0	9,6	16,0	30	3	✓		■		
-10007R04Z3-M03	10,0	0,4	7,0	9,6	16,0	30	3	✓	■			
-10007R05Z3-E03	10,0	0,5	7,0	9,6	16,0	30	3	✓		■		
-10007R08Z3-E03	10,0	0,8	7,0	9,6	16,0	30	3	✓		■		
-10007R08Z3-M03	10,0	0,8	7,0	9,6	16,0	30	3	✓	■			
-10007R12Z3-E03	10,0	1,2	7,0	9,6	16,0	30	3	✓		■		
-10007R12Z3-M03	10,0	1,2	7,0	9,6	16,0	30	3	✓	■			
-10007R16Z3-E03	10,0	1,6	7,0	9,6	16,0	30	3	✓		■		
-10007R20Z3-E03	10,0	2,0	7,0	9,6	16,0	30	3	✓		■		
-10007R24Z3-E03	10,0	2,4	7,0	9,6	16,0	30	3	✓		■		
-10007R31Z3-E03	10,0	3,1	7,0	9,6	16,0	30	3	✓		■		
-09812KWZ3-E03	9,8	0,3	12,0	9,6	21,0	30	3	✓		■		
-10012R04Z3-E03	10	0,4	12,0	9,6	21,0	30	3	✓		■		
-10012R04Z3-M03	10	0,4	12,0	9,6	21,0	30	3	✓	■			
-10012R05Z3-E03	10	0,5	12,0	9,6	21,0	30	3	✓		■		
-10012R08Z3-E03	10	0,8	12,0	9,6	21,0	30	3	✓		■		
-10012R08Z3-M03	10	0,8	12,0	9,6	21,0	30	3	✓	■			
-10012R12Z3-E03	10	1,2	12,0	9,6	21,0	30	3	✓		■		
-10012R12Z3-M03	10	1,2	12,0	9,6	21,0	30	3	✓	■			
-10012R16Z3-E03	10	1,6	12,0	9,6	21,0	30	3	✓		■		
-10012R20Z3-E03	10	2,0	12,0	9,6	21,0	30	3	✓		■		
-10012R24Z3-E03	10	2,4	12,0	9,6	21,0	30	3	✓		■		
-10012R31Z3-E03	10	3,1	12,0	9,6	21,0	30	3	✓		■		

*Effective number of flutes

MP10 Square shoulder

Slotting and contouring



Z4

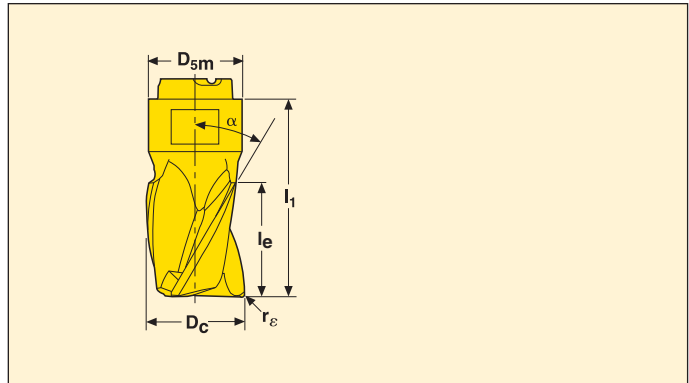


Part No.	Dimensions in mm						Z _c *		Coated			
	D _c	r _E	l _e	D _{5m}	l ₁	α°			Grades			
									MP3000	F40M		
MP10 -10007R04Z4-E02	10,0	0,4	7,0	11,52	16,0	50	4			■		
-10007R04Z4-M02	10,0	0,4	7,0	11,52	16,0	50	4		■			
-10007R05Z4-E02	10,0	0,5	7,0	11,52	16,0	50	4				■	
-10007R08Z4-E02	10,0	0,8	7,0	11,52	16,0	50	4				■	
-10007R08Z4-M02	10,0	0,8	7,0	11,52	16,0	50	4		■			
-10007R12Z4-E02	10,0	1,2	7,0	11,52	16,0	50	4				■	
-10007R12Z4-M02	10,0	1,2	7,0	11,52	16,0	50	4		■			
-10007R16Z4-E02	10,0	1,6	7,0	11,52	16,0	50	4				■	
-10007R16Z4-M02	10,0	1,6	7,0	11,52	16,0	50	4		■			
-10007R20Z4-E02	10,0	2,0	7,0	11,52	16,0	50	4				■	
MP10 -10012R04Z4-E02	10	0,4	12,0	9,6	21,0	50	4				■	
-10012R04Z4-M02	10	0,4	12,0	9,6	21,0	50	4		■			
-10012R05Z4-E02	10	0,5	12,0	9,6	21,0	50	4				■	
-10012R08Z4-E02	10	0,8	12,0	9,6	21,0	50	4				■	
-10012R08Z4-M02	10	0,8	12,0	9,6	21,0	50	4		■			
-10012R12Z4-E02	10	1,2	12,0	9,6	21,0	50	4				■	
-10012R12Z4-M02	10	1,2	12,0	9,6	21,0	50	4		■			
-10012R16Z4-E02	10	1,6	12,0	9,6	21,0	50	4				■	
-10012R20Z4-E02	10	2,0	12,0	9,6	21,0	50	4				■	

*Effective number of flutes


MP10 Square shoulder

Contouring only



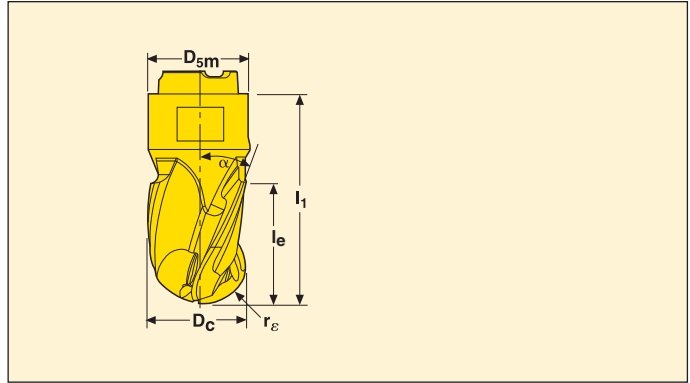
Z5



Part No.	Dimensions in mm							Z _c *		Coated				
	D _c	r _e	l _e	D _{5m}	l ₁	α°	Grades							
							MP3000			F40M				
MP10 -10012R04Z5-M02	10	0,4	12	9,6	21	40	5		■					


*Effective number of flutes

MP10 Ball nose design



Z3



Part No.	Dimensions in mm							Z _c [*]		Coated					
	D _c	r _E	l _e	D _{5m}	l ₁	α°	Grades								
							MP3000			F40M					
MP10 -10012B90Z3-E03	10,0	5	12,0	9,6	21,0	30	3	✓		■					
-10012B90Z3-M03	10,0	5	12,0	9,6	21,0	30	3	✓	■						
-10007B90Z3-E03	10,0	5,0	7,0	9,6	16,0	30	3	✓		■					
-10007B90Z3-M03	10,0	5,0	7,0	9,6	16,0	30	3	✓	■						

*Effective number of flutes

MP10 High feed milling – Insert selection

SMG		a_p	f_z			
			100%	70%	30%	20%
P1	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,60	0,60	0,70	0,85
P2	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,60	0,60	0,70	0,85
P3	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,60	0,60	0,65	0,80
P4	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,60	0,60	0,65	0,80
P5	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,55	0,55	0,65	0,80
P6	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,55	0,55	0,65	0,75
P7	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,55	0,55	0,65	0,75
P8	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,60	0,60	0,65	0,80
P11	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,55	0,55	0,65	0,75
M1	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,60	0,60	0,70	0,85
M2	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,55	0,55	0,65	0,80
M3	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,46	0,46	0,50	0,60
M4	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,40	0,40	0,44	0,50
M5	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,40	0,40	0,44	0,50
K1	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,60	0,60	0,70	0,85
K2	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,55	0,55	0,65	0,80
K3	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,55	0,55	0,65	0,80
K4	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,55	0,55	0,65	0,80
K5	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,50	0,50	0,55	0,70
K6	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,55	0,55	0,65	0,80
K7	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,50	0,50	0,55	0,70
N1	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,80	0,80	0,90	1,2
N2	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,80	0,80	0,90	1,2
N3	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,80	0,80	0,90	1,2
N11	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,80	0,80	0,90	1,2
S1	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,40	0,40	0,44	0,50
S2	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,40	0,40	0,44	0,50
S3	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,36	0,36	0,40	0,48
S11	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,46	0,46	0,50	0,60
S12	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,46	0,46	0,50	0,60
S13	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,40	0,40	0,44	0,50
H5	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,38	0,38	0,42	0,50
H8	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,30	0,30	0,32	0,38
H11	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,38	0,38	0,42	0,50
H12	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,38	0,38	0,42	0,50
H21	MP10-1000.6HFZ3-MD08 MP3000	0,42	0,30	0,30	0,32	0,38

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

MP10 High feed milling – Cutting data $v_c =$ (m/min)

SMG	MP3000			
	100%	70%	30%	20%
P1	245	300	360	375
P2	235	295	350	365
P3	205	255	305	320
P4	180	220	270	280
P5	175	215	255	270
P6	195	245	290	305
P7	185	230	270	290
P8	170	210	255	270
P11	180	225	265	280
M1	175	220	260	275
M2	145	180	215	225
M3	115	145	175	185
M4	90	110	135	140
M5	75	95	110	120
K1	185	235	275	290
K2	165	205	245	255
K3	140	175	205	215
K4	135	165	195	205
K5	80	100	120	125
K6	120	145	175	180
K7	105	130	155	160
N1	690	860	1025	1050
N2	560	690	830	860
N3	370	460	550	570
N11	425	530	630	650
S1	42	50	60	65
S2	34	42	50	55
S3	30	37	44	46
S11	60	75	85	90
S12	34	42	50	55
S13	27	34	40	43
H5	36	45	55	55
H8	38	47	55	60
H11	46	55	70	70
H12	70	85	100	110
H21	38	47	55	60

MP10 Slot milling – Insert selection

SMG		a _p	f _z			
			100%	30%	10%	5%
P1	MP10-10012R04Z3-M03 MP3000	3,0	0,042	0,046	0,070	0,10
P2	MP10-10012R04Z3-M03 MP3000	3,0	0,044	0,048	0,075	0,10
P3	MP10-10012R04Z3-M03 MP3000	3,0	0,040	0,044	0,070	0,095
P4	MP10-10012R04Z3-M03 MP3000	3,0	0,040	0,044	0,065	0,095
P5	MP10-10012R04Z3-M03 MP3000	3,0	0,040	0,042	0,065	0,090
P6	MP10-10012R04Z3-M03 MP3000	3,0	0,038	0,042	0,065	0,090
P7	MP10-10012R04Z3-M03 MP3000	3,0	0,038	0,042	0,065	0,090
P8	MP10-10012R04Z3-M03 MP3000	3,0	0,040	0,044	0,070	0,095
P11	MP10-10012R04Z3-M03 MP3000	3,0	0,038	0,042	0,065	0,090
M1	MP10-10012R04Z3-E03 F40M	3,0	0,044	0,048	0,075	0,10
M2	MP10-10012R04Z3-E03 F40M	3,0	0,040	0,042	0,065	0,090
M3	MP10-10012R04Z3-E03 F40M	2,5	0,032	0,034	0,055	0,075
M4	MP10-10012R04Z3-E03 F40M	1,9	0,028	0,030	0,046	0,065
M5	MP10-10012R04Z3-E03 F40M	1,9	0,028	0,030	0,046	0,065
K1	MP10-10012R04Z3-M03 MP3000	3,0	0,044	0,048	0,075	0,10
K2	MP10-10012R04Z3-M03 MP3000	3,0	0,040	0,042	0,065	0,090
K3	MP10-10012R04Z3-M03 MP3000	3,0	0,040	0,042	0,065	0,090
K4	MP10-10012R04Z3-M03 MP3000	3,0	0,040	0,042	0,065	0,090
K5	MP10-10012R04Z3-M03 MP3000	3,0	0,036	0,038	0,060	0,085
K6	MP10-10012R04Z3-M03 MP3000	3,0	0,040	0,042	0,065	0,090
K7	MP10-10012R04Z3-M03 MP3000	3,0	0,036	0,038	0,060	0,085
N1	MP10-10012R04Z3-M03 MP3000	3,0	0,055	0,060	0,095	0,13
N2	MP10-10012R04Z3-M03 MP3000	3,0	0,055	0,060	0,095	0,13
N3	MP10-10012R04Z3-M03 MP3000	3,0	0,055	0,060	0,095	0,13
N11	MP10-10012R04Z3-M03 MP3000	3,0	0,055	0,060	0,095	0,13
S1	MP10-10012R04Z3-E03 F40M	1,9	0,028	0,030	0,046	0,065
S2	MP10-10012R04Z3-E03 F40M	1,9	0,028	0,030	0,046	0,065
S3	MP10-10012R04Z3-E03 F40M	1,9	0,026	0,028	0,044	0,060
S11	MP10-10012R04Z3-E03 F40M	2,5	0,032	0,034	0,055	0,075
S12	MP10-10012R04Z3-E03 F40M	2,5	0,032	0,034	0,055	0,075
S13	MP10-10012R04Z3-E03 F40M	1,9	0,028	0,030	0,046	0,065
H5	MP10-10012R04Z3-M03 MP3000	2,5	0,026	0,030	0,044	0,060
H8	MP10-10012R04Z3-M03 MP3000	2,5	0,020	0,022	0,034	0,048
H11	MP10-10012R04Z3-M03 MP3000	2,5	0,026	0,030	0,044	0,060
H12	MP10-10012R04Z3-M03 MP3000	2,5	0,026	0,030	0,044	0,060
H21	MP10-10012R04Z3-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/D_c = %

All cutting data are start values

MP10 Slot milling – Cutting data $v_c =$ (m/min)

SMG	MP3000				F40M			
	100%	30%	10%	5%	100%	30%	10%	5%
P1	265	350	410	445	250	330	385	420
P2	260	340	400	435	245	320	375	410
P3	225	295	345	375	215	280	325	355
P4	200	260	305	330	185	245	290	315
P5	190	250	290	320	180	235	275	300
P6	215	280	330	360	205	265	310	340
P7	205	265	310	340	190	250	290	320
P8	190	250	290	315	180	235	275	300
P11	195	260	300	330	185	245	285	310
M1	195	255	300	325	200	255	305	330
M2	160	210	245	265	160	215	250	270
M3	125	165	195	210	130	170	195	215
M4	95	125	145	160	100	130	150	165
M5	80	105	125	135	80	110	125	135
K1	205	270	315	345	195	255	300	325
K2	180	235	275	305	170	225	260	285
K3	150	200	235	255	145	190	220	245
K4	145	190	225	245	135	180	210	230
K5	90	115	135	150	85	110	130	140
K6	130	170	195	215	120	160	185	205
K7	115	150	175	190	105	140	165	180
N1	770	1025	1200	1300	730	960	1125	1225
N2	620	820	960	1050	590	770	910	990
N3	415	550	640	700	390	520	610	660
N11	475	620	730	800	450	590	690	750
S1	45	60	70	75	46	60	70	75
S2	36	48	55	60	37	49	55	60
S3	32	41	48	55	32	42	49	55
S11	65	85	100	105	65	85	100	110
S12	37	48	55	60	37	49	60	60
S13	29	38	44	48	29	39	45	49
H5	38	50	60	65	38	50	60	65
H8	40	50	60	65	40	50	60	65
H11	49	65	75	80	49	65	75	80
H12	80	100	120	130	80	105	120	135
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	3,0	0,060	0,065	0,10	0,14	0,24
P2	MP10-10007B90Z3-M03 MP3000	3,0	0,060	0,065	0,10	0,14	0,24
P3	MP10-10007B90Z3-M03 MP3000	3,0	0,055	0,065	0,095	0,14	0,22
P4	MP10-10007B90Z3-M03 MP3000	3,0	0,055	0,060	0,095	0,13	0,22
P5	MP10-10007B90Z3-M03 MP3000	3,0	0,055	0,060	0,095	0,13	0,22
P6	MP10-10007B90Z3-M03 MP3000	3,0	0,055	0,060	0,090	0,13	0,20
P7	MP10-10007B90Z3-M03 MP3000	3,0	0,055	0,060	0,090	0,13	0,20
P8	MP10-10007B90Z3-M03 MP3000	3,0	0,055	0,065	0,095	0,14	0,22
P11	MP10-10007B90Z3-M03 MP3000	3,0	0,055	0,060	0,090	0,13	0,20
M1	MP10-10007B90Z3-E03 F40M	3,0	0,060	0,065	0,10	0,14	0,24
M2	MP10-10007B90Z3-E03 F40M	3,0	0,055	0,060	0,095	0,13	0,22
M3	MP10-10007B90Z3-E03 F40M	2,5	0,044	0,048	0,075	0,10	0,17
M4	MP10-10007B90Z3-E03 F40M	1,7	0,038	0,042	0,065	0,090	0,14
M5	MP10-10007B90Z3-E03 F40M	1,7	0,038	0,042	0,065	0,090	0,14
K1	MP10-10007B90Z3-M03 MP3000	3,0	0,060	0,065	0,10	0,14	0,24
K2	MP10-10007B90Z3-M03 MP3000	3,0	0,055	0,060	0,095	0,13	0,22
K3	MP10-10007B90Z3-M03 MP3000	3,0	0,055	0,060	0,095	0,13	0,22
K4	MP10-10007B90Z3-M03 MP3000	3,0	0,055	0,060	0,095	0,13	0,22
K5	MP10-10007B90Z3-M03 MP3000	3,0	0,050	0,055	0,085	0,12	0,19
K6	MP10-10007B90Z3-M03 MP3000	3,0	0,055	0,060	0,095	0,13	0,22
K7	MP10-10007B90Z3-M03 MP3000	3,0	0,050	0,055	0,085	0,12	0,19
N1	MP10-10007B90Z3-E03 F40M	3,0	0,075	0,085	0,13	0,18	0,30
N2	MP10-10007B90Z3-E03 F40M	3,0	0,075	0,085	0,13	0,18	0,30
N3	MP10-10007B90Z3-E03 F40M	3,0	0,075	0,085	0,13	0,18	0,30
N11	MP10-10007B90Z3-E03 F40M	3,0	0,075	0,085	0,13	0,18	0,30
S1	MP10-10007B90Z3-E03 F40M	1,7	0,038	0,042	0,065	0,090	0,14
S2	MP10-10007B90Z3-E03 F40M	1,7	0,038	0,042	0,065	0,090	0,14
S3	MP10-10007B90Z3-E03 F40M	1,7	0,036	0,040	0,060	0,085	0,13
S11	MP10-10007B90Z3-E03 F40M	2,0	0,044	0,048	0,075	0,10	0,17
S12	MP10-10007B90Z3-E03 F40M	2,0	0,044	0,048	0,075	0,10	0,17
S13	MP10-10007B90Z3-E03 F40M	1,7	0,038	0,042	0,065	0,090	0,14
H5	MP10-10007B90Z3-M03 MP3000	2,5	0,038	0,040	0,065	0,085	0,14
H8	MP10-10007B90Z3-M03 MP3000	2,0	0,028	0,032	0,048	0,065	0,11
H11	MP10-10007B90Z3-M03 MP3000	2,5	0,038	0,040	0,065	0,085	0,14
H12	MP10-10007B90Z3-M03 MP3000	2,5	0,038	0,040	0,065	0,085	0,14
H21	MP10-10007B90Z3-M03 MP3000	2,0	0,028	0,032	0,048	0,065	0,11

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

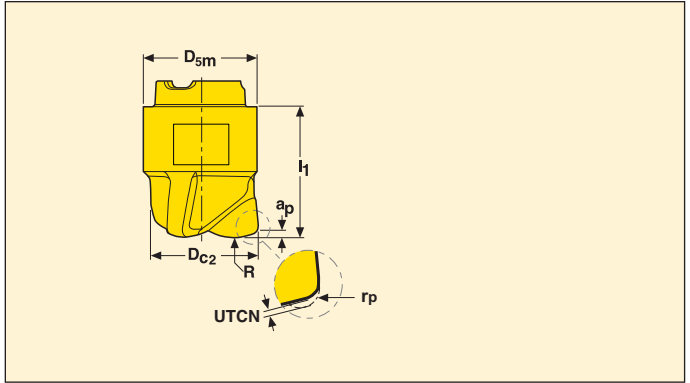
a_e/D_c = %

All cutting data are start values

MP10 Copy milling – Cutting data $v_c =$ (m/min)


SMG	MP3000					F40M				
	100%	30%	10%	5%	2%	100%	30%	10%	5%	2%
P1	360	415	485	530	590	340	395	460	500	560
P2	350	405	470	520	570	330	385	440	485	540
P3	305	350	405	445	500	290	330	385	420	470
P4	270	310	360	395	440	255	295	340	375	415
P5	255	295	345	380	420	245	280	325	360	400
P6	290	335	390	425	475	270	315	365	400	450
P7	270	315	365	400	450	255	295	345	380	425
P8	255	295	340	375	420	245	275	325	350	395
P11	265	305	355	390	435	250	290	335	370	410
M1	265	305	350	385	430	265	310	355	395	435
M2	215	250	290	315	355	220	250	295	320	360
M3	170	200	225	250	280	175	205	230	255	285
M4	135	155	175	190	215	135	160	180	195	220
M5	110	130	145	160	180	115	130	150	160	180
K1	280	320	370	410	455	265	305	350	385	430
K2	245	280	330	360	400	230	265	310	340	380
K3	205	240	275	305	340	195	225	260	285	320
K4	195	230	265	290	325	185	215	250	275	305
K5	120	135	160	175	195	110	130	150	165	185
K6	175	200	235	255	285	165	190	220	240	270
K7	150	175	205	225	250	145	165	195	210	240
N1	1075	1200	1400	1525	1700	1000	1150	1325	1450	1625
N2	860	970	1150	1225	1375	810	920	1075	1175	1300
N3	570	650	760	820	920	540	610	720	780	870
N11	650	740	870	940	1050	620	700	820	890	990
S1	60	75	80	90	100	65	75	85	90	100
S2	50	60	65	70	80	50	60	65	75	80
S3	43	50	55	65	70	44	50	60	65	70
S11	85	105	115	125	140	90	105	115	130	145
S12	50	60	65	75	80	50	60	65	75	85
S13	40	47	55	55	65	41	48	55	60	65
H5	50	60	70	75	85	50	60	70	75	85
H8	55	65	70	80	90	55	65	70	80	90
H11	65	80	90	95	110	65	80	90	95	110
H12	100	115	135	145	165	100	120	135	145	165
H21	55	65	70	80	90	55	65	70	80	90

MP12 High feed



Z3

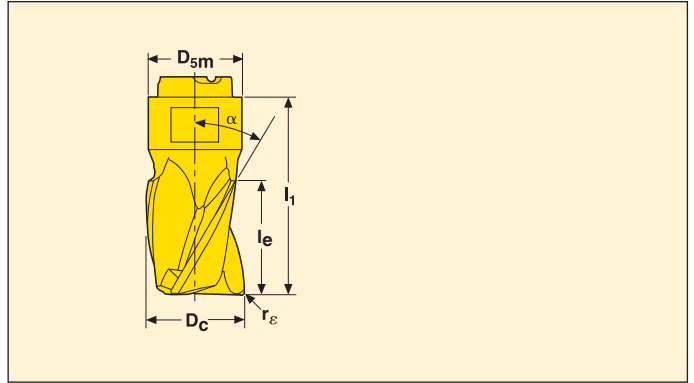


Part No.	Dimensions in mm							Z_c^*		Coated					
	a_p	D_{c2}	R	r_p	D_{sm}	l_1	UTCN			Grades					
										MP3000	F40M				
MP12 -1200.7HFZ3-MD10	0,7	12	7,5	1,66	11,5	13	0,33	3	✓	■					

*Effective number of flutes
 UTCN = Uncut thickness, deviation between programmed corner radii (r_p) and generated machined profile.

MP12 Square shoulder

Slotting and contouring



Z3

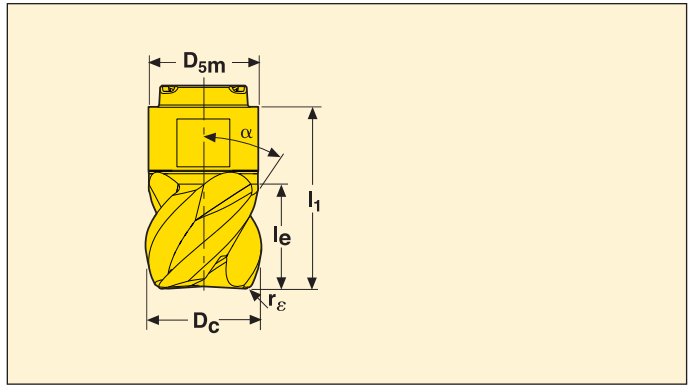


Part No.	Dimensions in mm						Zc*		Coated				
	Dc	re	le	D5m	l1	α°			Grades				
									MP3000	F40M			
MP12 -11714KWZ3-E04	11,7	0,3	14,0	11,5	24,0	30	3	✓		■			
-12014R04Z3-E04	12	0,4	14,0	11,5	24,0	30	3	✓		■			
-12014R04Z3-M04	12	0,4	14,0	11,5	24,0	30	3	✓	■				
-12014R05Z3-E04	12	0,5	14,0	11,5	24,0	30	3	✓			■		
-12014R08Z3-E04	12	0,8	14,0	11,5	24,0	30	3	✓			■		
-12014R08Z3-M04	12	0,8	14,0	11,5	24,0	30	3	✓	■				
-12014R12Z3-E04	12	1,2	14,0	11,5	24,0	30	3	✓			■		
-12014R12Z3-M04	12	1,2	14,0	11,5	24,0	30	3	✓	■				
-12014R16Z3-E04	12	1,6	14,0	11,5	24,0	30	3	✓			■		
-12014R20Z3-E04	12	2,0	14,0	11,5	24,0	30	3	✓			■		
-12014R24Z3-E04	12	2,4	14,0	11,5	24,0	30	3	✓			■		
-12014R31Z3-E04	12	3,1	14,0	11,5	24,0	30	3	✓			■		
MP12 -11708KWZ3-E04	11,7	0,3	8,0	11,5	18,8	30	3	✓			■		
-12008R04Z3-E04	12,0	0,4	8,0	11,5	18,8	30	3	✓			■		
-12008R04Z3-M04	12,0	0,4	8,0	11,5	18,8	30	3	✓	■				
-12008R05Z3-E04	12,0	0,5	8,0	11,5	18,8	30	3	✓			■		
-12008R08Z3-E04	12,0	0,8	8,0	11,5	18,8	30	3	✓			■		
-12008R08Z3-M04	12,0	0,8	8,0	11,5	18,8	30	3	✓	■				
-12008R12Z3-E04	12,0	1,2	8,0	11,5	18,8	30	3	✓			■		
-12008R12Z3-M04	12,0	1,2	8,0	11,5	18,8	30	3	✓	■				
-12008R16Z3-E04	12,0	1,6	8,0	11,5	18,8	30	3	✓			■		
-12008R20Z3-E04	12,0	2,0	8,0	11,5	18,8	30	3	✓			■		
-12008R24Z3-E04	12,0	2,4	8,0	11,5	18,8	30	3	✓			■		
-12008R31Z3-E04	12,0	3,1	8,0	11,5	18,8	30	3	✓			■		

*Effective number of flutes

MP12 Square shoulder

Slotting and contouring



Z4

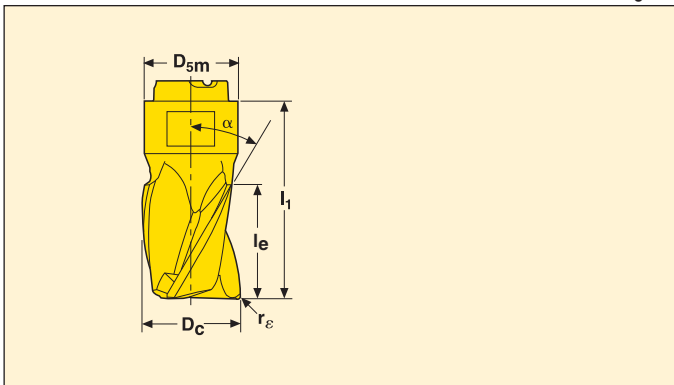


Part No.	Dimensions in mm						Zc*		Coated					
	Dc	r _e	l _e	D _{5m}	l ₁	α°			Grades					
									MP3000	F40M				
MP12 -12008R04Z4-E03	12,0	0,4	8,0	11,5	18,8	50	4			■				
-12008R04Z4-M03	12,0	0,4	8,0	11,5	18,8	50	4		■					
-12008R05Z4-E03	12,0	0,5	8,0	11,5	18,8	50	4				■			
-12008R08Z4-E03	12,0	0,8	8,0	11,5	18,8	50	4				■			
-12008R08Z4-M03	12,0	0,8	8,0	11,5	18,8	50	4		■					
-12008R12Z4-E03	12,0	1,2	8,0	11,5	18,8	50	4				■			
-12008R12Z4-M03	12,0	1,2	8,0	11,5	18,8	50	4		■					
-12008R16Z4-E03	12,0	1,6	8,0	11,5	18,8	50	4				■			
-12008R16Z4-M03	12,0	1,6	8,0	11,5	18,8	50	4		■					
-12008R20Z4-E03	12,0	2,0	8,0	11,5	18,8	50	4				■			
-12008R24Z4-E03	12,0	2,4	8,0	11,5	18,8	50	4				■			
MP12 -12014R04Z4-E03	12	0,4	14	11,5	24	50	4				■			
-12014R04Z4-M03	12	0,4	14	11,5	24	50	4		■					
-12014R05Z4-E03	12	0,5	14	11,5	24	50	4				■			
-12014R08Z4-E03	12	0,8	14	11,5	24	50	4				■			
-12014R08Z4-M03	12	0,8	14	11,5	24	50	4		■					
-12014R12Z4-E03	12	1,2	14	11,5	24	50	4				■			
-12014R12Z4-M03	12	1,2	14	11,5	24	50	4		■					
-12014R16Z4-E03	12	1,6	14	11,5	24	50	4				■			
-12014R20Z4-E03	12	2,0	14	11,5	24	50	4				■			
-12014R24Z4-E03	12	2,4	14	11,5	24	50	4				■			

*Effective number of flutes

MP12 Square shoulder

Contouring only



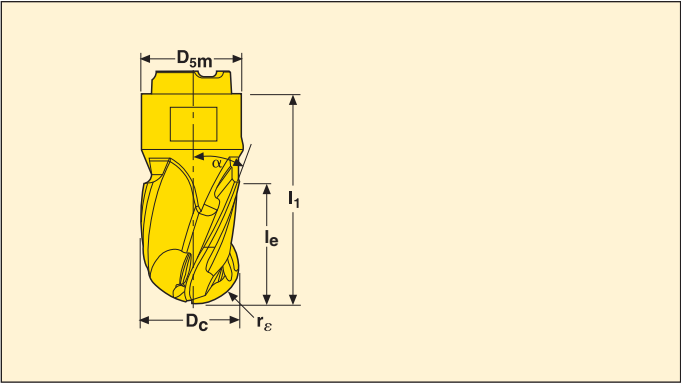
Z6



Part No.	Dimensions in mm							Zc*		Coated			
	Dc	re	le	D5m	l1	α°	Grades						
							MP3000			F40M			
MP12 -12014R04Z6-M03	12	0,4	14	11,5	24	40	6		■				

*Effective number of flutes

MP12 Ball nose design



Z3



Part No.	Dimensions in mm						Zc*		Coated				
	Dc	re	Ie	Dsm	I1	α°			Grades				
									MP3000	F40M			
MP12 -12008B90Z3-E04	12,0	6,0	8,0	11,5	18,8	30	3	✓		■			
-12008B90Z3-M04	12,0	6,0	8,0	11,5	18,8	30	3	✓	■				
-12014B90Z3-E04	12,0	6	14,0	11,5	24,0	30	3	✓		■			
-12014B90Z3-M04	12,0	6	14,0	11,5	24,0	30	3	✓	■				

*Effective number of flutes

MP12 High feed milling – Insert selection

SMG		a_p	f_z			
			100%	70%	30%	20%
P1	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,80	0,80	0,90	1,1
P2	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,80	0,80	0,90	1,1
P3	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,75	0,75	0,85	1,1
P4	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,75	0,75	0,85	1,0
P5	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,75	0,75	0,80	1,0
P6	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,70	0,70	0,80	1,0
P7	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,70	0,70	0,80	1,0
P8	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,75	0,75	0,85	1,1
P11	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,70	0,70	0,80	1,0
M1	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,80	0,80	0,90	1,1
M2	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,75	0,75	0,80	1,0
M3	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,60	0,60	0,65	0,80
M4	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,50	0,50	0,55	0,70
M5	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,50	0,50	0,55	0,70
K1	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,80	0,80	0,90	1,1
K2	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,75	0,75	0,80	1,0
K3	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,75	0,75	0,80	1,0
K4	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,75	0,75	0,80	1,0
K5	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,65	0,65	0,75	0,90
K6	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,75	0,75	0,80	1,0
K7	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,65	0,65	0,75	0,90
N1	MP12-1200.7HFZ3-MD10 MP3000	0,48	1,0	1,0	1,2	1,6
N2	MP12-1200.7HFZ3-MD10 MP3000	0,48	1,0	1,0	1,2	1,6
N3	MP12-1200.7HFZ3-MD10 MP3000	0,48	1,0	1,0	1,2	1,6
N11	MP12-1200.7HFZ3-MD10 MP3000	0,48	1,0	1,0	1,2	1,6
S1	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,50	0,50	0,55	0,70
S2	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,50	0,50	0,55	0,70
S3	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,48	0,48	0,50	0,65
S11	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,60	0,60	0,65	0,80
S12	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,60	0,60	0,65	0,80
S13	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,50	0,50	0,55	0,70
H5	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,50	0,50	0,55	0,65
H8	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,38	0,38	0,42	0,50
H11	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,50	0,50	0,55	0,65
H12	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,50	0,50	0,55	0,65
H21	MP12-1200.7HFZ3-MD10 MP3000	0,48	0,38	0,38	0,42	0,50

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_p/D_c = %

All cutting data are start values

MP12 High feed milling – Cutting data $v_c =$ (m/min)

SMG	MP3000			
	100%	70%	30%	20%
P1	225	280	335	355
P2	220	275	330	345
P3	195	240	285	295
P4	170	210	250	270
P5	160	200	245	255
P6	185	230	275	285
P7	175	215	260	270
P8	160	200	240	250
P11	170	210	250	265
M1	165	205	245	260
M2	135	170	205	215
M3	110	135	165	170
M4	85	105	125	135
M5	70	90	105	110
K1	175	215	260	275
K2	155	190	230	245
K3	130	160	195	205
K4	125	155	185	195
K5	75	95	115	120
K6	110	135	165	175
K7	100	120	145	155
N1	650	810	960	980
N2	520	650	770	790
N3	350	435	510	530
N11	400	495	590	610
S1	40	50	60	60
S2	32	40	48	50
S3	28	35	42	44
S11	55	70	85	85
S12	32	39	48	50
S13	26	32	38	40
H5	34	42	50	55
H8	36	45	55	55
H11	43	55	65	70
H12	65	80	95	105
H21	36	45	55	55

MP12 Slot milling – Insert selection

SMG		a_p	f_z			
			100%	30%	10%	5%
P1	MP12-12008R04Z3-M04 MP3000	3,5	0,055	0,060	0,095	0,13
P2	MP12-12008R04Z3-M04 MP3000	3,5	0,060	0,065	0,095	0,13
P3	MP12-12008R04Z3-M04 MP3000	3,5	0,055	0,060	0,090	0,13
P4	MP12-12008R04Z3-M04 MP3000	3,5	0,055	0,060	0,090	0,12
P5	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,090	0,12
P6	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,085	0,12
P7	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,085	0,12
P8	MP12-12008R04Z3-M04 MP3000	3,5	0,055	0,060	0,090	0,13
P11	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,085	0,12
M1	MP12-12008R04Z3-E04 F40M	3,5	0,060	0,065	0,095	0,13
M2	MP12-12008R04Z3-E04 F40M	3,5	0,050	0,055	0,090	0,12
M3	MP12-12008R04Z3-E04 F40M	2,5	0,042	0,046	0,070	0,10
M4	MP12-12008R04Z3-E04 F40M	2,0	0,038	0,040	0,060	0,085
M5	MP12-12008R04Z3-E04 F40M	2,0	0,038	0,040	0,060	0,085
K1	MP12-12008R04Z3-M04 MP3000	3,5	0,060	0,065	0,095	0,13
K2	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,090	0,12
K3	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,090	0,12
K4	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,090	0,12
K5	MP12-12008R04Z3-M04 MP3000	3,5	0,048	0,050	0,080	0,11
K6	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,090	0,12
K7	MP12-12008R04Z3-M04 MP3000	3,5	0,048	0,050	0,080	0,11
N1	MP12-12008R04Z3-E04 F40M	3,5	0,075	0,080	0,12	0,17
N2	MP12-12008R04Z3-E04 F40M	3,5	0,075	0,080	0,12	0,17
N3	MP12-12008R04Z3-E04 F40M	3,5	0,075	0,080	0,12	0,17
N11	MP12-12008R04Z3-E04 F40M	3,5	0,075	0,080	0,12	0,17
S1	MP12-12008R04Z3-E04 F40M	2,0	0,038	0,040	0,060	0,085
S2	MP12-12008R04Z3-E04 F40M	2,0	0,038	0,040	0,060	0,085
S3	MP12-12008R04Z3-E04 F40M	2,0	0,034	0,038	0,060	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	2,0	0,038	0,040	0,060	0,085
H5	MP12-12008R04Z3-M04 MP3000	2,5	0,036	0,040	0,060	0,085
H8	MP12-12008R04Z3-M04 MP3000	2,5	0,028	0,030	0,046	0,065
H11	MP12-12008R04Z3-M04 MP3000	2,5	0,036	0,040	0,060	0,085
H12	MP12-12008R04Z3-M04 MP3000	2,5	0,036	0,040	0,060	0,085
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/D_c = %

All cutting data are start values

MP12 Slot milling – Cutting data $v_c =$ (m/min)

SMG	MP3000				F40M			
	100%	30%	10%	5%	100%	30%	10%	5%
P1	255	330	385	425	240	315	365	400
P2	245	315	375	410	235	300	355	390
P3	210	275	325	355	200	260	310	335
P4	185	245	290	315	175	230	270	300
P5	180	235	280	305	170	225	260	285
P6	205	265	310	340	195	250	295	320
P7	195	250	295	320	180	235	280	305
P8	180	235	275	300	170	220	260	280
P11	185	245	285	310	175	230	270	295
M1	185	235	280	310	190	240	285	315
M2	150	200	230	255	155	200	235	255
M3	120	155	185	200	125	160	185	205
M4	95	120	140	155	95	125	145	155
M5	80	100	115	130	80	100	120	130
K1	195	250	295	325	185	235	280	310
K2	175	225	265	290	165	215	250	270
K3	145	190	225	245	140	180	210	230
K4	140	180	215	230	130	170	200	220
K5	85	110	130	140	80	105	120	135
K6	125	160	185	205	115	150	175	195
K7	105	140	165	180	100	135	155	170
N1	720	950	1125	1225	680	900	1050	1150
N2	580	770	900	990	550	720	850	930
N3	390	510	600	660	365	485	570	620
N11	445	580	690	750	420	550	650	710
S1	43	55	65	70	44	55	65	75
S2	35	45	55	60	36	46	55	60
S3	30	39	46	50	31	40	47	50
S11	60	80	95	100	60	80	95	105
S12	35	46	55	60	36	47	55	60
S13	28	36	42	46	29	37	43	47
H5	37	48	55	60	37	48	55	60
H8	38	50	60	65	39	50	60	65
H11	47	60	70	80	47	60	70	80
H12	70	90	105	120	70	95	110	120
H21	38	50	60	65	39	50	60	65

MP12 Copy milling – Insert selection

SMG		a_p	f_z				
			100%	30%	10%	5%	2%
P1	MP12-12008R04Z3-M04 MP3000	3,5	0,055	0,060	0,095	0,13	0,22
P2	MP12-12008R04Z3-M04 MP3000	3,5	0,060	0,065	0,095	0,13	0,22
P3	MP12-12008R04Z3-M04 MP3000	3,5	0,055	0,060	0,090	0,13	0,20
P4	MP12-12008R04Z3-M04 MP3000	3,5	0,055	0,060	0,090	0,12	0,20
P5	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,090	0,12	0,20
P6	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,085	0,12	0,20
P7	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,085	0,12	0,20
P8	MP12-12008R04Z3-M04 MP3000	3,5	0,055	0,060	0,090	0,13	0,20
P11	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,085	0,12	0,20
M1	MP12-12008R04Z3-E04 F40M	3,5	0,060	0,065	0,095	0,13	0,22
M2	MP12-12008R04Z3-E04 F40M	3,5	0,050	0,055	0,090	0,12	0,20
M3	MP12-12008R04Z3-E04 F40M	2,5	0,042	0,046	0,070	0,10	0,16
M4	MP12-12008R04Z3-E04 F40M	2,0	0,038	0,040	0,060	0,085	0,14
M5	MP12-12008R04Z3-E04 F40M	2,0	0,038	0,040	0,060	0,085	0,14
K1	MP12-12008R04Z3-M04 MP3000	3,5	0,060	0,065	0,095	0,13	0,22
K2	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,090	0,12	0,20
K3	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,090	0,12	0,20
K4	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,090	0,12	0,20
K5	MP12-12008R04Z3-M04 MP3000	3,5	0,048	0,050	0,080	0,11	0,18
K6	MP12-12008R04Z3-M04 MP3000	3,5	0,050	0,055	0,090	0,12	0,20
K7	MP12-12008R04Z3-M04 MP3000	3,5	0,048	0,050	0,080	0,11	0,18
N1	MP12-12008R04Z3-E04 F40M	3,5	0,075	0,080	0,12	0,17	0,28
N2	MP12-12008R04Z3-E04 F40M	3,5	0,075	0,080	0,12	0,17	0,28
N3	MP12-12008R04Z3-E04 F40M	3,5	0,075	0,080	0,12	0,17	0,28
N11	MP12-12008R04Z3-E04 F40M	3,5	0,075	0,080	0,12	0,17	0,28
S1	MP12-12008R04Z3-E04 F40M	2,0	0,038	0,040	0,060	0,085	0,14
S2	MP12-12008R04Z3-E04 F40M	2,0	0,038	0,040	0,060	0,085	0,14
S3	MP12-12008R04Z3-E04 F40M	2,0	0,034	0,038	0,060	0,080	0,13
S11	MP12-12008R04Z3-E04 F40M	2,5	0,042	0,046	0,070	0,10	0,16
S12	MP12-12008R04Z3-E04 F40M	2,5	0,042	0,046	0,070	0,10	0,16
S13	MP12-12008R04Z3-E04 F40M	2,0	0,038	0,040	0,060	0,085	0,14
H5	MP12-12008R04Z3-M04 MP3000	2,5	0,036	0,040	0,060	0,085	0,13
H8	MP12-12008R04Z3-M04 MP3000	2,5	0,028	0,030	0,046	0,065	0,10
H11	MP12-12008R04Z3-M04 MP3000	2,5	0,036	0,040	0,060	0,085	0,13
H12	MP12-12008R04Z3-M04 MP3000	2,5	0,036	0,040	0,060	0,085	0,13
H21	MP12-12008R04Z3-M04 MP3000	2,5	0,028	0,030	0,046	0,065	0,10

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

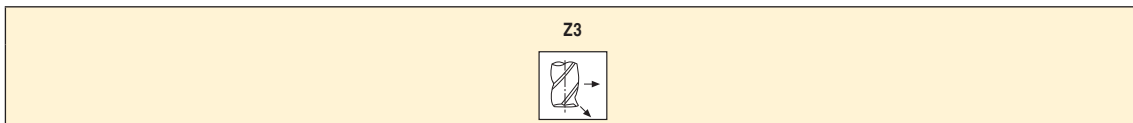
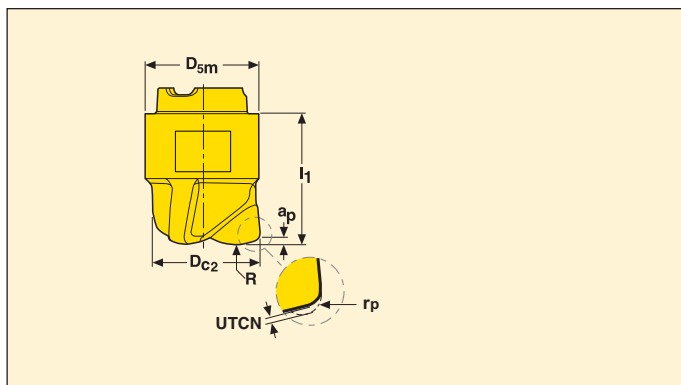
a_e/D_c = %

All cutting data are start values

MP12 Copy milling – Cutting data $v_c =$ (m/min)

SMG	MP3000					F40M				
	100%	30%	10%	5%	2%	100%	30%	10%	5%	2%
P1	340	400	455	495	550	320	380	430	470	520
P2	330	385	445	485	540	310	365	420	455	510
P3	285	335	390	420	470	270	315	365	400	445
P4	255	300	340	370	415	240	280	325	350	390
P5	240	285	325	360	400	230	270	310	340	380
P6	270	320	365	405	450	255	305	345	380	425
P7	255	300	345	380	425	240	285	325	360	400
P8	240	280	325	355	395	230	265	310	335	375
P11	250	295	335	370	415	235	280	320	350	390
M1	245	290	330	360	405	250	295	340	370	410
M2	200	240	275	300	335	205	245	280	305	340
M3	165	190	220	240	265	170	195	220	240	270
M4	130	150	165	180	205	130	155	170	185	210
M5	110	125	140	150	170	110	130	140	155	175
K1	260	305	350	385	425	245	290	330	360	405
K2	230	270	310	340	380	215	255	295	320	360
K3	195	230	260	290	325	185	215	250	270	305
K4	185	220	250	275	310	175	205	235	260	290
K5	115	135	150	165	185	105	125	145	155	175
K6	165	195	220	240	270	155	180	210	230	255
K7	145	170	195	210	240	135	160	185	200	225
N1	990	1150	1325	1425	1600	940	1100	1250	1350	1500
N2	800	940	1075	1150	1300	760	890	1000	1100	1225
N3	530	620	710	770	860	500	590	670	730	810
N11	610	710	820	880	980	580	670	770	830	930
S1	60	70	80	85	95	60	70	80	85	95
S2	49	55	65	70	75	49	60	65	70	80
S3	42	50	55	60	65	43	50	55	60	70
S11	85	100	110	120	135	85	100	110	120	135
S12	49	55	65	70	75	50	60	65	70	80
S13	39	46	50	55	60	40	47	50	55	65
H5	50	60	65	75	80	50	60	65	75	80
H8	50	60	70	75	85	55	60	70	75	85
H11	65	75	85	95	105	65	75	85	95	105
H12	95	110	125	140	155	95	115	130	140	155
H21	50	60	70	75	85	55	60	70	75	85

MP16 High feed

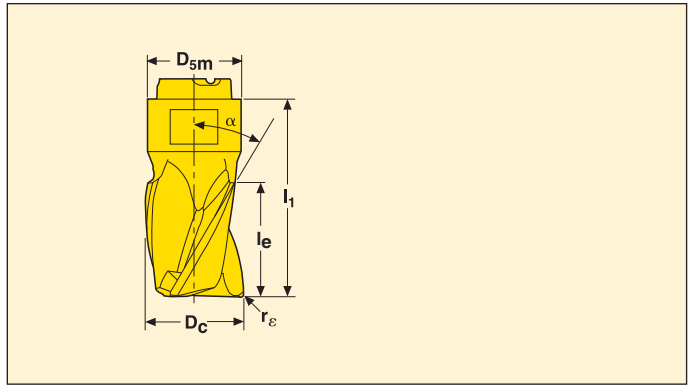


Part No.	Dimensions in mm							Z _c *		Coated				
	a _p	D _{c2}	R	r _p	D _{sm}	I ₁	UTCN			Grades				
										MP3000	F40M			
MP16 -1600.9HFZ3-MD12	0,9	16	7,8	1,79	15,4	19	0,46	3	✓	■				

*Effective number of flutes
UTCN = Uncut thickness, deviation between programmed corner radii (r_p) and generated machined profile.

MP16 Square shoulder

Slotting and contouring



Z3

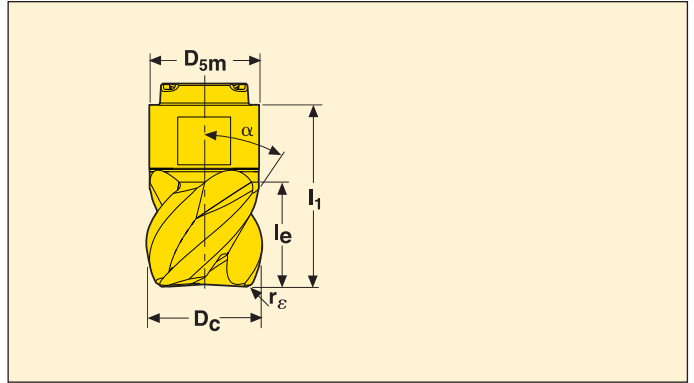


Part No.	Dimensions in mm						Zc*		Coated									
	Dc	rε	le	D5m	l1	α°			Grades									
									MP3000	F40M								
MP16 -15710KWZ3-E05	15,7	0,3	10,0	15,4	24,6	30	3	✓		■								
-16010R04Z3-E05	16,0	0,4	10,0	15,4	24,6	30	3	✓		■								
-16010R04Z3-M05	16,0	0,4	10,0	15,4	24,6	30	3	✓	■									
-16010R05Z3-E05	16,0	0,5	10,0	15,4	24,6	30	3	✓			■							
-16010R08Z3-E05	16,0	0,8	10,0	15,4	24,6	30	3	✓			■							
-16010R08Z3-M05	16,0	0,8	10,0	15,4	24,6	30	3	✓	■									
-16010R12Z3-E05	16,0	1,2	10,0	15,4	24,6	30	3	✓			■							
-16010R12Z3-M05	16,0	1,2	10,0	15,4	24,6	30	3	✓	■									
-16010R16Z3-E05	16,0	1,6	10,0	15,4	24,6	30	3	✓			■							
-16010R20Z3-E05	16,0	2,0	10,0	15,4	24,6	30	3	✓			■							
-16010R24Z3-E05	16,0	2,4	10,0	15,4	24,6	30	3	✓			■							
-16010R31Z3-E05	16,0	3,1	10,0	15,4	24,6	30	3	✓			■							
MP16 -15719KWZ3-E05	15,7	0,3	19	15,4	32,6	30	3	✓			■							
-16019R04Z3-E05	16	0,4	19	15,4	32,6	30	3	✓			■							
-16019R04Z3-M05	16	0,4	19	15,4	32,6	30	3	✓	■									
-16019R05Z3-E05	16	0,5	19	15,4	32,6	30	3	✓			■							
-16019R08Z3-E05	16	0,8	19	15,4	32,6	30	3	✓			■							
-16019R08Z3-M05	16	0,8	19	15,4	32,6	30	3	✓	■									
-16019R12Z3-E05	16	1,2	19	15,4	32,6	30	3	✓			■							
-16019R12Z3-M05	16	1,2	19	15,4	32,6	30	3	✓	■									
-16019R16Z3-E05	16	1,6	19	15,4	32,6	30	3	✓			■							
-16019R20Z3-E05	16	2,0	19	15,4	32,6	30	3	✓			■							
-16019R24Z3-E05	16	2,4	19	15,4	32,6	30	3	✓			■							
-16019R31Z3-E05	16	3,1	19	15,4	32,6	30	3	✓			■							

*Effective number of flutes

MP16 Square shoulder

Slotting and contouring



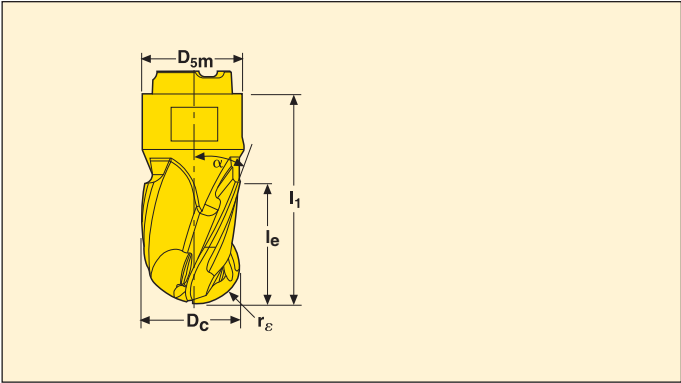
Z4



Part No.	Dimensions in mm						Zc*		Coated			
	Dc	rE	le	D5m	l1	α°			Grades			
									MP3000	F40M		
MP16 -16010R04Z4-E04	16,0	0,4	10,0	15,4	24,6	50	4		■			
-16010R04Z4-M04	16,0	0,4	10,0	15,4	24,6	50	4	■				
-16010R05Z4-E04	16,0	0,5	10,0	15,4	24,6	50	4			■		
-16010R08Z4-E04	16,0	0,8	10,0	15,4	24,6	50	4			■		
-16010R08Z4-M04	16,0	0,8	10,0	15,4	24,6	50	4	■				
-16010R12Z4-E04	16,0	1,2	10,0	15,4	24,6	50	4			■		
-16010R12Z4-M04	16,0	1,2	10,0	15,4	24,6	50	4	■				
-16010R16Z4-E04	16,0	1,6	10,0	15,4	24,6	50	4			■		
-16010R16Z4-M04	16,0	1,6	10,0	15,4	24,6	50	4	■				
-16010R20Z4-E04	16,0	2,0	10,0	15,4	24,6	50	4				■	
-16010R24Z4-E04	16,0	2,4	10,0	15,4	24,6	50	4				■	
-16010R31Z4-E04	16,0	3,1	10,0	15,4	24,6	50	4				■	
MP16 -16019R04Z4-E04	16	0,4	19	15,4	32,6	50	4				■	
-16019R04Z4-M04	16	0,4	19	15,4	32,6	50	4	■				
-16019R05Z4-E04	16	0,5	19	15,4	32,6	50	4				■	
-16019R08Z4-E04	16	0,8	19	15,4	32,6	50	4				■	
-16019R08Z4-M04	16	0,8	19	15,4	32,6	50	4	■				
-16019R12Z4-E04	16	1,2	19	15,4	32,6	50	4				■	
-16019R12Z4-M04	16	1,2	19	15,4	32,6	50	4	■				
-16019R16Z4-E04	16	1,6	19	15,4	32,6	50	4				■	
-16019R20Z4-E04	16	2,0	19	15,4	32,6	50	4				■	
-16019R24Z4-E04	16	2,4	19	15,4	32,6	50	4				■	


*Effective number of flutes

MP16 Ball nose design



Z3



Part No.	Dimensions in mm							Zc*		Coated			
	Dc	re	le	D5m	l1	α°	Grades						
							MP3000			F40M			
MP16 -16010B90Z3-E05	16,0	8,0	10,0	15,4	24,6	30	3	✓		■			
-16010B90Z3-M05	16,0	8,0	10,0	15,4	24,6	30	3	✓	■				
-16019B90Z3-E05	16	8	19,0	15,4	32,6	30	3	✓		■			
-16019B90Z3-M05	16	8	19,0	15,4	32,6	30	3	✓	■				

*Effective number of flutes

MP16 High feed milling – Insert selection

SMG		a_p	f_z			
			100%	70%	30%	20%
P1	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,85	0,85	0,90	1,1
P2	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,85	0,85	0,95	1,1
P3	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,80	0,80	0,90	1,1
P4	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,80	0,80	0,85	1,1
P5	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,75	0,75	0,85	1,0
P6	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,75	0,75	0,85	1,0
P7	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,75	0,75	0,85	1,0
P8	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,80	0,80	0,90	1,1
P11	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,75	0,75	0,85	1,0
M1	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,85	0,85	0,95	1,1
M2	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,75	0,75	0,85	1,0
M3	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,60	0,60	0,70	0,80
M4	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,55	0,55	0,60	0,70
M5	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,55	0,55	0,60	0,70
K1	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,85	0,85	0,95	1,1
K2	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,75	0,75	0,85	1,0
K3	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,75	0,75	0,85	1,0
K4	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,75	0,75	0,85	1,0
K5	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,70	0,70	0,75	0,90
K6	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,75	0,75	0,85	1,0
K7	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,70	0,70	0,75	0,90
N1	MP16-1600.9HFZ3-MD12 MP3000	0,65	1,1	1,1	1,2	1,5
N2	MP16-1600.9HFZ3-MD12 MP3000	0,65	1,1	1,1	1,2	1,5
N3	MP16-1600.9HFZ3-MD12 MP3000	0,65	1,1	1,1	1,2	1,5
N11	MP16-1600.9HFZ3-MD12 MP3000	0,65	1,1	1,1	1,2	1,5
S1	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,55	0,55	0,60	0,70
S2	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,55	0,55	0,60	0,70
S3	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,50	0,50	0,55	0,65
S11	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,60	0,60	0,70	0,80
S12	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,60	0,60	0,70	0,80
S13	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,55	0,55	0,60	0,70
H5	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,50	0,50	0,60	0,70
H7	MP16-1600.9HFZ3-MD12 MP3000	—	—	—	—	—
H11	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,50	0,50	0,60	0,70
H12	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,50	0,50	0,60	0,70
H21	MP16-1600.9HFZ3-MD12 MP3000	0,65	0,40	0,40	0,44	0,50

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

MP16 High feed milling – Cutting data $v_c =$ (m/min)

SMG	MP3000			
	100%	70%	30%	20%
P1	210	260	320	335
P2	205	255	305	325
P3	180	220	265	280
P4	160	195	240	245
P5	155	190	230	240
P6	175	210	255	270
P7	165	200	240	255
P8	150	185	225	235
P11	160	195	235	250
M1	155	190	230	245
M2	130	160	190	200
M3	105	130	150	165
M4	80	100	120	125
M5	65	80	100	105
K1	165	200	240	260
K2	145	180	215	230
K3	125	150	185	195
K4	120	145	175	185
K5	70	90	105	115
K6	105	130	155	165
K7	90	115	135	145
N1	600	730	900	940
N2	485	590	730	760
N3	320	395	485	510
N11	370	450	550	580
S1	37	46	55	60
S2	30	37	45	47
S3	27	33	39	42
S11	55	65	75	80
S12	30	37	44	47
S13	24	30	36	38
H5	32	40	47	50
H8	34	42	50	55
H11	41	50	60	65
H12	60	75	90	95
H21	34	42	50	55

MP16 Slot milling – Insert selection

SMG		a _p	f _z			
			100%	30%	10%	5%
P1	MP16-16010R04Z3-M05 MP3000	4,0	0,070	0,075	0,12	0,17
P2	MP16-16010R04Z3-M05 MP3000	4,0	0,070	0,080	0,12	0,17
P3	MP16-16010R04Z3-M05 MP3000	4,0	0,070	0,075	0,11	0,16
P4	MP16-16010R04Z3-M05 MP3000	4,0	0,065	0,075	0,11	0,16
P5	MP16-16010R04Z3-M05 MP3000	4,0	0,065	0,070	0,11	0,15
P6	MP16-16010R04Z3-M05 MP3000	4,0	0,065	0,070	0,11	0,15
P7	MP16-16010R04Z3-M05 MP3000	4,0	0,065	0,070	0,11	0,15
P8	MP16-16010R04Z3-M05 MP3000	4,0	0,070	0,075	0,11	0,16
P11	MP16-16010R04Z3-M05 MP3000	4,0	0,065	0,070	0,11	0,15
M1	MP16-16010R04Z3-E05 F40M	4,0	0,070	0,080	0,12	0,17
M2	MP16-16010R04Z3-E05 F40M	4,0	0,065	0,070	0,11	0,15
M3	MP16-16010R04Z3-E05 F40M	3,5	0,050	0,055	0,090	0,12
M4	MP16-16010R04Z3-E05 F40M	2,5	0,046	0,050	0,075	0,11
M5	MP16-16010R04Z3-E05 F40M	2,5	0,046	0,050	0,075	0,11
K1	MP16-16010R04Z3-M05 MP3000	4,0	0,070	0,080	0,12	0,17
K2	MP16-16010R04Z3-M05 MP3000	4,0	0,065	0,070	0,11	0,15
K3	MP16-16010R04Z3-M05 MP3000	4,0	0,065	0,070	0,11	0,15
K4	MP16-16010R04Z3-M05 MP3000	4,0	0,065	0,070	0,11	0,15
K5	MP16-16010R04Z3-M05 MP3000	4,0	0,060	0,065	0,10	0,14
K6	MP16-16010R04Z3-M05 MP3000	4,0	0,065	0,070	0,11	0,15
K7	MP16-16010R04Z3-M05 MP3000	4,0	0,060	0,065	0,10	0,14
N1	MP16-16010R04Z3-E05 F40M	4,0	0,090	0,10	0,15	0,22
N2	MP16-16010R04Z3-E05 F40M	4,0	0,090	0,10	0,15	0,22
N3	MP16-16010R04Z3-E05 F40M	4,0	0,090	0,10	0,15	0,22
N11	MP16-16010R04Z3-E05 F40M	4,0	0,090	0,10	0,15	0,22
S1	MP16-16010R04Z3-E05 F40M	2,5	0,046	0,050	0,075	0,11
S2	MP16-16010R04Z3-E05 F40M	2,5	0,046	0,050	0,075	0,11
S3	MP16-16010R04Z3-E05 F40M	2,5	0,042	0,046	0,070	0,10
S11	MP16-16010R04Z3-E05 F40M	3,0	0,050	0,055	0,090	0,12
S12	MP16-16010R04Z3-E05 F40M	3,0	0,050	0,055	0,090	0,12
S13	MP16-16010R04Z3-E05 F40M	2,5	0,046	0,050	0,075	0,11
H5	MP16-16010R04Z3-M05 MP3000	3,5	0,044	0,048	0,075	0,10
H8	MP16-16010R04Z3-M05 MP3000	3,0	0,034	0,038	0,055	0,080
H11	MP16-16010R04Z3-M05 MP3000	3,5	0,044	0,048	0,075	0,10
H12	MP16-16010R04Z3-M05 MP3000	3,5	0,044	0,048	0,075	0,10
H21	MP16-16010R04Z3-M05 MP3000	3,0	0,034	0,038	0,055	0,080

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

a_e/D_c = %

All cutting data are start values

MP16 Slot milling – Cutting data $v_c =$ (m/min)

SMG	MP3000				F40M			
	100%	30%	10%	5%	100%	30%	10%	5%
P1	240	315	365	405	225	295	345	380
P2	230	300	355	390	220	285	335	365
P3	200	265	310	340	190	250	295	320
P4	180	230	275	300	170	220	260	280
P5	170	225	260	290	160	210	245	270
P6	190	250	295	325	180	240	280	305
P7	180	235	280	305	170	225	260	290
P8	170	220	260	285	160	210	245	270
P11	175	230	270	295	165	220	255	280
M1	175	225	265	290	175	230	270	295
M2	145	185	220	240	145	190	225	245
M3	115	150	175	190	115	155	180	195
M4	90	115	135	145	90	115	135	150
M5	75	95	110	120	75	100	115	125
K1	185	240	280	305	175	225	265	290
K2	160	215	250	275	155	200	235	260
K3	135	180	210	230	130	170	200	220
K4	130	170	200	220	125	160	190	210
K5	80	105	120	135	75	100	115	125
K6	115	150	175	195	110	145	165	185
K7	100	135	155	170	95	125	145	160
N1	680	890	1050	1150	650	840	1000	1075
N2	550	720	850	920	520	680	810	870
N3	370	480	570	620	350	455	540	580
N11	420	550	650	700	400	520	610	660
S1	41	55	65	70	42	55	65	70
S2	33	43	50	55	34	44	50	55
S3	29	38	44	48	30	39	45	49
S11	60	75	90	95	60	75	90	100
S12	34	44	50	55	34	45	50	55
S13	27	35	41	44	27	35	41	45
H5	35	46	55	60	35	46	55	60
H8	37	48	55	60	37	48	55	60
H11	45	60	70	75	45	60	70	75
H12	65	90	105	115	70	90	105	115
H21	37	48	55	60	37	48	55	60

MP16 Copy milling – Insert selection

SMG		a_p	f_z				
			100%	30%	10%	5%	2%
P1	MP16-16010R04Z3-M05 MP3000	4.0	0.070	0.075	0.12	0.17	0.26
P2	MP16-16010R04Z3-M05 MP3000	4.0	0.070	0.080	0.12	0.17	0.28
P3	MP16-16010R04Z3-M05 MP3000	4.0	0.070	0.075	0.11	0.16	0.26
P4	MP16-16010R04Z3-M05 MP3000	4.0	0.065	0.075	0.11	0.16	0.26
P5	MP16-16010R04Z3-M05 MP3000	4.0	0.065	0.070	0.11	0.15	0.24
P6	MP16-16010R04Z3-M05 MP3000	4.0	0.065	0.070	0.11	0.15	0.24
P7	MP16-16010R04Z3-M05 MP3000	4.0	0.065	0.070	0.11	0.15	0.24
P8	MP16-16010R04Z3-M05 MP3000	4.0	0.070	0.075	0.11	0.16	0.26
P11	MP16-16010R04Z3-M05 MP3000	4.0	0.065	0.070	0.11	0.15	0.24
M1	MP16-16010R04Z3-E05 F40M	4.0	0.070	0.080	0.12	0.17	0.28
M2	MP16-16010R04Z3-E05 F40M	4.0	0.065	0.070	0.11	0.15	0.24
M3	MP16-16010R04Z3-E05 F40M	3.5	0.050	0.055	0.090	0.12	0.19
M4	MP16-16010R04Z3-E05 F40M	2.5	0.046	0.050	0.075	0.11	0.17
M5	MP16-16010R04Z3-E05 F40M	2.5	0.046	0.050	0.075	0.11	0.17
K1	MP16-16010R04Z3-M05 MP3000	4.0	0.070	0.080	0.12	0.17	0.28
K2	MP16-16010R04Z3-M05 MP3000	4.0	0.065	0.070	0.11	0.15	0.24
K3	MP16-16010R04Z3-M05 MP3000	4.0	0.065	0.070	0.11	0.15	0.24
K4	MP16-16010R04Z3-M05 MP3000	4.0	0.065	0.070	0.11	0.15	0.24
K5	MP16-16010R04Z3-M05 MP3000	4.0	0.060	0.065	0.10	0.14	0.22
K6	MP16-16010R04Z3-M05 MP3000	4.0	0.065	0.070	0.11	0.15	0.24
K7	MP16-16010R04Z3-M05 MP3000	4.0	0.060	0.065	0.10	0.14	0.22
N1	MP16-16010R04Z3-E05 F40M	4.0	0.090	0.10	0.15	0.22	0.36
N2	MP16-16010R04Z3-E05 F40M	4.0	0.090	0.10	0.15	0.22	0.36
N3	MP16-16010R04Z3-E05 F40M	4.0	0.090	0.10	0.15	0.22	0.36
N11	MP16-16010R04Z3-E05 F40M	4.0	0.090	0.10	0.15	0.22	0.36
S1	MP16-16010R04Z3-E05 F40M	2.5	0.046	0.050	0.075	0.11	0.17
S2	MP16-16010R04Z3-E05 F40M	2.5	0.046	0.050	0.075	0.11	0.17
S3	MP16-16010R04Z3-E05 F40M	2.5	0.042	0.046	0.070	0.10	0.16
S11	MP16-16010R04Z3-E05 F40M	3.0	0.050	0.055	0.090	0.12	0.20
S12	MP16-16010R04Z3-E05 F40M	3.0	0.050	0.055	0.090	0.12	0.20
S13	MP16-16010R04Z3-E05 F40M	2.5	0.046	0.050	0.075	0.11	0.17
H5	MP16-16010R04Z3-M05 MP3000	3.5	0.044	0.048	0.075	0.10	0.16
H8	MP16-16010R04Z3-M05 MP3000	3.0	0.034	0.038	0.055	0.080	0.13
H11	MP16-16010R04Z3-M05 MP3000	3.5	0.044	0.048	0.075	0.10	0.16
H12	MP16-16010R04Z3-M05 MP3000	3.5	0.044	0.048	0.075	0.10	0.16
H21	MP16-16010R04Z3-M05 MP3000	3.0	0.034	0.038	0.055	0.080	0.13

SMG = Seco material group

f_z = mm/tooth

v_c = m/min

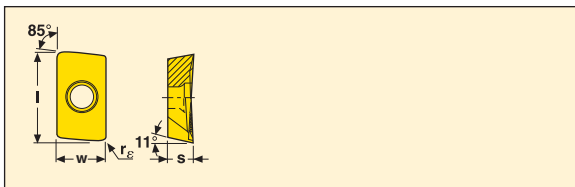
a_e/D_c = %

All cutting data are start values

MP16 Copy milling – Cutting data $v_c =$ (m/min)

SMG	MP3000					F40M				
	100%	30%	10%	5%	2%	100%	30%	10%	5%	2%
P1	330	375	435	480	530	310	355	410	455	500
P2	320	365	420	465	510	305	345	400	440	485
P3	280	320	370	400	450	265	305	350	380	425
P4	245	285	325	355	395	230	270	305	340	375
P5	235	270	310	340	385	225	255	295	320	360
P6	265	305	355	385	430	250	285	335	360	405
P7	250	285	335	360	405	235	270	315	340	385
P8	235	270	310	340	380	220	255	295	320	355
P11	245	280	325	350	395	230	265	305	330	370
M1	240	275	315	350	385	245	280	320	355	390
M2	195	225	260	285	320	200	230	265	290	325
M3	160	185	205	230	255	165	190	210	230	260
M4	125	145	160	175	195	130	150	165	180	200
M5	105	120	135	145	160	110	125	135	150	165
K1	255	290	335	370	410	240	275	315	350	385
K2	225	255	295	325	365	210	245	280	305	345
K3	190	215	250	275	310	180	205	235	260	290
K4	180	210	240	260	295	170	195	225	245	275
K5	110	125	145	160	175	105	120	140	150	165
K6	160	185	210	230	260	150	175	200	220	245
K7	140	160	185	205	225	130	155	175	195	215
N1	950	1100	1250	1375	1525	900	1025	1175	1300	1425
N2	770	880	1000	1100	1225	730	830	960	1050	1150
N3	510	590	670	740	820	485	550	640	700	770
N11	590	670	770	850	930	550	630	730	800	880
S1	60	70	75	80	90	60	70	75	85	90
S2	48	55	60	65	75	49	55	60	65	75
S3	42	48	50	60	65	42	49	55	60	65
S11	85	95	105	115	130	85	95	105	115	130
S12	48	55	60	65	75	49	55	60	70	75
S13	38	44	48	55	60	39	45	49	55	60
H5	49	55	65	70	80	49	55	65	70	80
H8	50	60	65	75	80	50	60	65	75	85
H11	60	70	80	90	100	60	70	80	90	100
H12	95	110	125	135	150	95	110	125	135	150
H21	50	60	65	75	80	50	60	65	75	85

ABEX26



Size	Dimensions in mm		
	W	l	s
ABEX26..	14	25,56	6,35
ABEX26..ZZFR	14,0	26,4	6,35

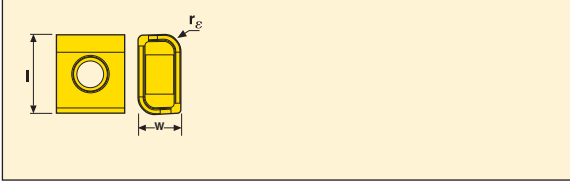
M15



Part No.	r _c	Cutting rake	Grades															
			Coated											Uncoated			Cermet	
			MP1500	MP2500	MP3000	MH1000	MN4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	H15	H25
ABEX 2606ZZFR-M15	1,6	17 °	■	■			■	■						■				
2606ZZFR-M15	1,6	17 °												■				

■ Stock standard
 Subject to change refer to current price- and stock-list

LNHQ14/17



Size	Dimensions in mm	
	l	W
14	14	7,5
17	17	7,5

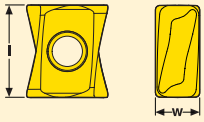
M11/M13



Part No.	r_e	Cutting rake	Grades																			
			Coated												Uncoated			Cermets				
			MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	H15	H25	MP1020			
LNHQ 140708TN4-M11	0,8	16 °		■																		
140731TN4-M11	3,1	16 °		■																		
140740TN4-M11	4	16 °		■																		
140750TN4-M11	5	16 °		■																		
140760TN4-M11	6	16 °		■																		
LNHQ 170708TN4-M13	0,8	16 °												■								
170731TN4-M13	3,1	16 °												■								
170740TN4-M13	4	16 °												■								
170750TN4-M13	5	16 °												■								
170760TN4-M13	6	16 °												■								

■ Stock standard
 Subject to change refer to current price- and stock-list

LOEX08



B = Wiper flat width

Size	Dimensions in mm	
	W	L
LOEX0804..	4,4	8,25

M08/MD08



Part No.	r_c	B	Cutting rake	Grades																
				Coated											Uncoated				Cermets	
				MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	NS2050	NS2500	T350M	F15M	F25M	F40M	HX	HX	H15	H25
LOEX 080404TR-M08	0,4	1,29	34 °	■	■	■		■		■										
080408TR-M08	0,8	0,92	34 °	■	■	■		■		■		■								
080412TR-M08	1,2	0,52	34 °	■	■	■		■		■		■								
080416TR-M08	1,6	0,13	34 °	■	■	■		■		■										
LOEX 080404TR-MD08	0,4	1,29	29,53 °		■					■	■									
080408TR-MD08	0,8	0,92	29,53 °	■	■					■	■									
080412TR-MD08	1,2	0,52	29,53 °		■					■	■									
080416TR-MD08	1,6	0,13	29,53 °		■					■	■									

■ Stock standard
 Subject to change refer to current price- and stock-list

LOH.06



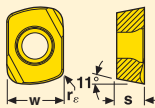
Size	Dimensions in mm	
	W	s
0603	6,35	3,57
0603	6,35	3,56
0603	6,35	3,45



Part No.	f _c	Cutting rake	Grades																		
			Coated														Uncoated			Cermet	
			MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	H15	H25	MP1020		
LOHT 060310TR-M07	1,0	20,0 °		■	■					■	■										
060310TR-MD07	1,0	7,0 °	■	■	■				■												
060310TR-ME06	1,0	27,0 °					■		■	■	■				■						
LOHW 060310TR-D07	1,0	0,0 °	■		■	■				■											

■ Stock standard
 Subject to change refer to current price- and stock-list

LPH.05/06



Size	Dimensions in mm	
	W	s
05T2	5,07	2,54
0603	6,35	3,18

E05/ME04/ME05/M05/M06



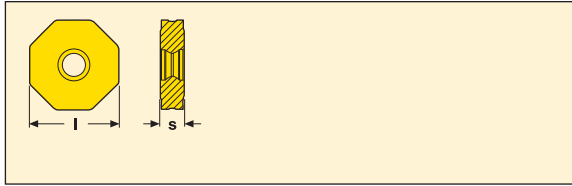
MD05/MD07/D06



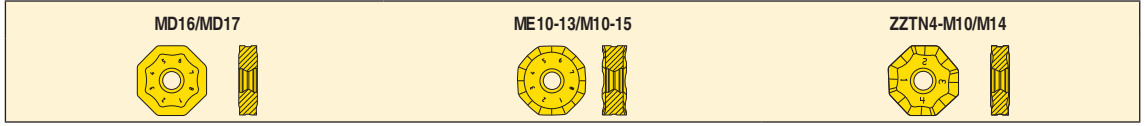
Part No.	r _c	Cutting rake	Grades																				
			Coated											Uncoated			Cermet						
			MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	H15	H25	MP1020				
LPHT 05T210TR-ME04	1,0	16,0 °					■					■											
LPKT 05T210TR-M05	1,0	11,0 °	■	■								■	■					■					
LPHW 05T210TR-MD05	1,0	0,0 °					■																
LPKW 05T210TR-MD05	1,0	0,0 °	■	■																			
LPHT 060310ER-E05	1	16 °						■											■				
060310TR-ME05	1	16 °											■						■				
060310TR-M06	1	11 °	■	■								■	■	■					■				
LPHW 060310TR-MD07	1	0 °	■																				
060310TR-D06	1	0 °		■	■								■										

■ Stock standard
 Subject to change refer to current price- and stock-list

ON.U05/09



Size	Dimensions in mm	
	l	s
ON..05	12	4
ON..09	22	5,8
ON..09	8,25	7,8



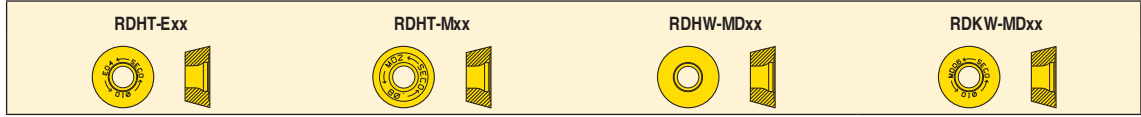
Part No.	Cutting rake	Grades																
		Coated											Uncoated			Cermet		
		MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	H15	H25	MP1020
ONMU 050410ANTN-M10	20°	■	■	■		■	■	■					■					■
050410ANTN-M11	20°	■	■	■		■	■	■					■					■
050410ANTN-ME10	20°	■	■	■		■	■		■				■					
050410ANTN-ME11	20°	■	■	■		■	■		■				■					
ONEU 050410ZZTN4-M10	20°		■	■		■	■	■					■					■
ONMU 090520ANTN-ME12	20°	■	■	■		■	■		■	■	■		■					
090520ANTN-ME13	20°	■	■	■		■	■	■	■	■	■		■					
090520ANTN-M12	20°	■	■			■	■	■	■	■	■		■					■
090520ANTN-M13	20°	■	■	■		■	■		■				■					■
090520ANTN-M14	15°	■	■	■		■	■	■	■	■	■		■					■
090520ANTN-M15	15°	■	■	■		■	■	■	■	■	■		■					■
090520ANTN-MD16	0°	■	■			■				■								
090520ANTN-MD17	0°	■	■			■												
ONEU 090520ZZTN4-M12	20,0°	■	■				■											
ONEU 090520ZZTN4-M14	15°	■	■	■		■	■	■		■			■					■

■ Stock standard
 Subject to change refer to current price- and stock-list

RD..05/06/07/08/10



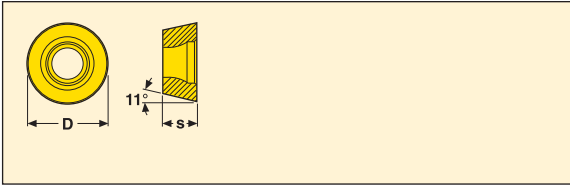
Size	Dimensions in mm	
	D	s
0501	5	1,51
06T1	6	2,18
0702	7	2,38
0803	8	3,18
10T3	10	3,97



Part No.	Cutting rake	Grades																
		Coated												Uncoated			Cermet	
		MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	H15	H25	MP1020
RDHT 06T1M0-E02	18 °												■				■	
0803M0-E03	20 °												■				■	
10T3M0-E04	20 °												■				■	
10T3M0T-M05	16 °		■			■		■	■				■					
10T3M0T-M07	11 °		■			■			■	■			■					
RDHW 0501M0-MD01	0 °			■									■					
06T1M0-MD02	0 °			■				■					■					
0702M0-MD03	0 °			■									■					
0702M0T-MD04	0 °							■					■					
0803M0-MD03	0 °			■					■				■					
10T3M0-MD04	0 °			■									■					
10T3M0T-MD06	0 °				■								■	■				
RDKW 0803M0T-MD05	0 °		■					■		■			■	■	■			
10T3M0T-MD06	0 °	■	■					■		■			■	■	■			

■ Stock standard
 Subject to change refer to current price- and stock-list

RP..16/20



Size	Dimensions in mm	
	D	s
1605	16	5,56
2006	20	6,35



Part No.	Cutting rake	Grades														Uncoated			Cermet	
		Coated																		
		MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	H15	H25	MP1020		
RPHT 1605M0T-ME11	21 °					■			■	■	■									
1605M0T-M12	15 °		■			■			■	■	■									
1605M0T-M18	15 °	■	■					■		■	■			■	■					
RPKT 1605M0T-ME11	21 °																		■	
RPKW 1605M0T-MD20	0 °	■						■		■				■	■					
RPHW 1605M0T-MD08	0 °																		■	
RPHT 2006M0T-ME12	20 °		■			■			■	■	■								■	
RPKT 2006M0T-M15	15 °		■							■	■								■	
2006M0T-M20	15 °	■	■					■		■	■			■	■				■	
RPKW 2006M0-MD10	0 °																		■	
2006M0T-MD22	0 °	■						■		■				■	■					

■ Stock standard
 Subject to change refer to current price- and stock-list

SEE.12



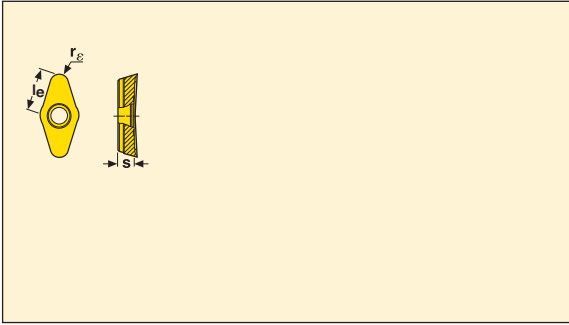
Size	Dimensions in mm	
	l	s
12	12,7	4,76

E08/MD18MD19 **ME11/ME12/M10/M14/M15**

Part No.	B	Cutting rake	Grades																
			Coated											Uncoated			Cermet		
			MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	H15	H25	MP1020
SEEX 1204AFN-E08	1,5	25 °													■		■		
1204AFTN-ME11	1,5	18 °		■			■					■			■				
1204AFN-M10	1,5	7 °		■	■			■		■					■				
1204AFTN-M14	1,5	7 °	■	■			■	■	■			■			■				■
1204ZZTN-M14	7,4	0 °	■	■				■				■			■				■
1204AFTN-MD18	1,5	0 °	■		■			■				■			■				■
SEMEX 1204AFTN-ME12	1,5	18 °		■				■				■			■				
1204AFTN-M15	1,5	7 °	■	■			■	■	■			■			■				
1204AFTN-MD19	1,5	0 °	■		■			■				■							

■ Stock standard
Subject to change refer to current price- and stock-list

VPGX



Size	Dimensions in mm	
	l_e	s
220605	14,2	6,35
220608	14,2	6,35
220616	13,7	6,35
220620	14,2	6,35
220624	14,2	6,35
220631	14,2	6,35
220640	14,2	6,35
220648	11,8	6,35
220663	11,8	6,35

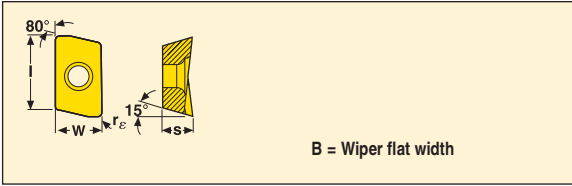
E06/E10



Part No.	r_e	Cutting rake	Grades														MP1020												
			Coated											Uncoated						Cermet									
			MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX					H15	H25							
VPGX 220605FR-E06	0,46	25°																			■								
220605ER-E10	0,46	25°																							■				
220608PDER-E10	0,85	25°																								■			
220616ER-E10	1,64	25°																								■			
220620ER-E10	2,05	25°																								■			
220624ER-E10	2,5	25°																								■			
220631EN-E10	3,18	25°																								■			
220631FN-E06	3,18	25°																									■		
220648ER-E10	4,99	25°																									■		
220663ER-E10	6,35	25°																									■		

■ Stock standard
Subject to change refer to current price- and stock-list

XO.X10



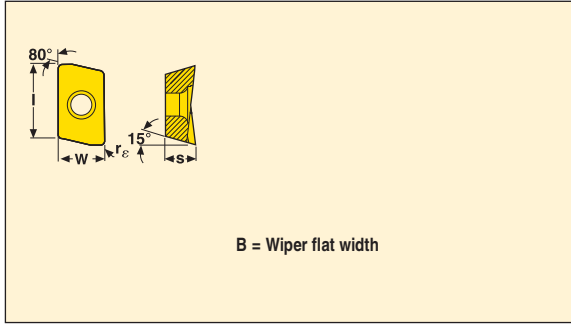
Size	Dimensions in mm		
	W	l	s
XOEX10..	6,87	9,5	3,8
XOMX10..	6,86	9,5	3,83



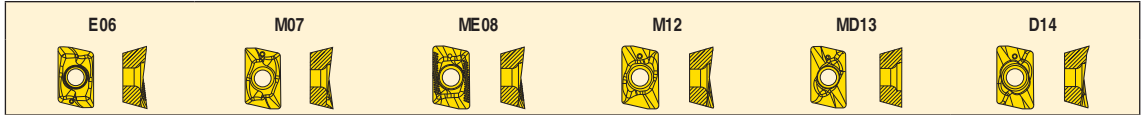
Part No.	r _c	B	Cutting rake	Grades																
				Coated										Uncoated				Cermets		
				MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	HX	H15	H25
XOEX 10T304FR-E05	0,4	1,3	21°													■			■	
10T308FR-E05	0,8	1,3	21°													■			■	
10T312FR-E05	1,2	1,3	21°													■			■	
10T316FR-E05	1,6	1,0	21°													■			■	
10T320FR-E05	2,0	0,6	21°													■			■	
10T324FR-E05	2,4	0,3	21°													■			■	
10T331FR-E05	3,1	0,3	21°													■			■	
XOEX 10T304R-M06	0,4	1,3	15°		■						■	■	■			■				■
10T308R-M06	0,8	1,3	15°		■			■			■	■	■			■				■
10T312R-M06	1,2	1,3	15°								■	■	■			■				
10T316R-M06	1,6	1,0	15°								■	■	■			■				
10T320R-M06	2,0	0,6	15°								■	■	■			■				
10T324R-M06	2,4	0,2	15°								■	■	■			■				
10T331R-M06	3,1	0,4	15°								■	■	■			■				
XOMX 10T304TR-ME07	0,4	1,3	22°	■	■	■		■	■			■	■			■				
10T308TR-ME07	0,8	1,3	22°	■	■	■		■	■			■	■			■				
10T312TR-ME07	1,2	1,3	20,0°		■	■		■				■	■			■				
10T316TR-ME07	1,6	1,0	20,0°		■	■		■				■	■			■				
10T320TR-ME07	2,0	0,6	20,0°		■	■		■				■	■			■				
10T324TR-ME07	2,4	0,2	20,0°		■	■		■				■	■			■				
10T331TR-ME07	3,1	0,4	20,0°		■	■		■				■	■			■				
XOMX 10T304TR-M09	0,4	1,3	15°	■	■	■		■	■	■		■	■			■				■
10T308TR-M09	0,8	1,3	15°	■	■	■		■	■	■		■	■			■				■
10T312TR-M09	1,2	1,3	10,0°					■		■		■	■			■				
10T316TR-M09	1,6	1,0	10,0°					■		■		■	■			■				
10T320TR-M09	2,0	0,6	10,0°					■		■		■	■			■				
10T324TR-M09	2,4	0,2	10,0°					■		■		■	■			■				
10T331TR-M09	3,1	0,4	10,0°					■		■		■	■			■				

■ Stock standard
Subject to change refer to current price- and stock-list

XO.X12



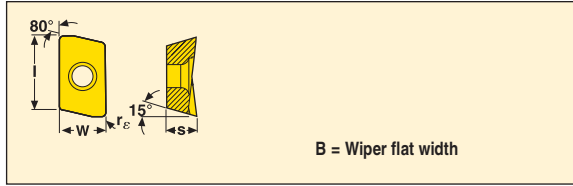
Size	Dimensions in mm		
	W	l	s
XOEX12..	8,18	12,0	5,03
XOEX120463R-M07	8,24	12,0	5,03
XOEX120450R-M07	8,24	12,0	5,03
XOEX12..ZZR	8,18	12,0	5,03
XOMX12..	8,18	12,0	5,05



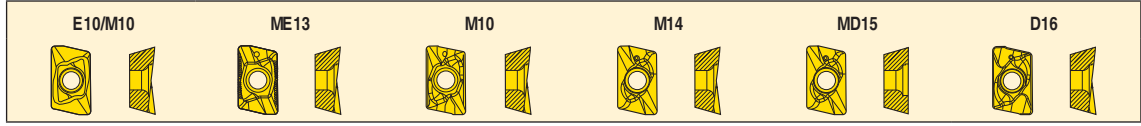
Part No.	r _c	B	Cutting rake	Grades																	
				Coated										Uncoated				Cermets			
				MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	HX	H15	H25	MP1020
XOEX 120404FR-E06	0,4	2,0	27°																		
120408FR-E06	0,8	1,6	27°																		
120420FR-E06	2,0	0,6	27°																		
120424FR-E06	2,4	0,6	24,0°																		
120416FR-E06	1,6	1,2	27°																		
120431FR-E06	3,1		27°																		
XOEX 120402R-M07	0,2	2,0	20°																		
120404R-M07	0,4	2,0	20°																		
120408R-M07	0,8	1,6	20°																		
120416R-M07	1,6	1,2	20°																		
120424R-M07	2,4	0,6	20°																		
120431R-M07	3,1		20°																		
120440R-M07	4,0		20°																		
120463R-M07	6,3		20°																		
120450R-M07	5,0		20°																		
120408ZZR-M07	0,8	6,6	20°																		
XOMX 120404TR-ME08	0,4	2,0	21°																		
120408TR-ME08	0,8	1,6	20°																		
120412TR-ME08	1,2	1,2	20°																		
120416TR-ME08	1,6	1,2	20°																		
120420TR-ME08	2,0	1,0	20°																		
120424TR-ME08	2,4	0,8	20°																		
120431TR-ME08	3,1	0,6	20°																		
120440TR-ME08	4,0	0,8	20°																		
XOMX 120408TR-M12	0,8	1,6	10°																		
120416TR-M12	1,6	1,2	10°																		
120431TR-M12	3,1	0,6	10°																		
XOMX 120408TR-MD13	0,8	1,6	14°																		
120404TR-MD13	0,4	2,0	14°																		
120412TR-MD13	1,2	1,2	14°																		
120416TR-MD13	1,6	1,2	14°																		
XOMX 120408TR-D14	0,8	1,6	1°																		
120431TR-D14	3,1	0,6	1°																		

■ Stock standard
 Subject to change refer to current price- and stock-list

XO.X18



Size	Dimensions in mm		
	W	l	s
XOEX18..	11,2	16,5	6,35
XOEX18..ZZ	11,2	16,5	6,4
XOMX18..	11,2	16,5	6,42



Part No.	r _c	B	Cutting rake	Grades																						
				Coated										Uncoated			Cermets									
				MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	HX	H15	H25	MP1020					
XOEX 180604FR-E10	0,4	2,4	29 °																							
180608FR-E10	0,8	2,4	29 °																							
180616FR-E10	1,6	2,3	29 °																							
180620FR-E10	2,0	2,2	29 °																							
180631FR-E10	3,1	2,2	29 °																							
XOEX 180608ZZR-M10	0,8	9,0	17 °																							
180616ZZR-M10	1,6	9,0	17 °																							
XOMX 180604TR-ME13	0,4	2,4	25 °		■																					
180608TR-ME13	0,8	2,4	25 °		■			■	■				■													
180616TR-ME13	1,6	2,3	25 °		■			■																		
180620TR-ME13	2,0	2,2	25 °		■																					
180631TR-ME13	3,1	2,2	25 °		■			■																		
180640TR-ME13	4,0	0,8	25 °		■																					
XOMX 180604R-M10	0,4	2,4	22 °									■														
180608R-M10	0,8	2,4	20 °		■			■					■												■	
180616R-M10	1,6	2,3	22 °					■						■												
180620R-M10	2,0	2,2	22 °											■												
180624R-M10	2,4	2,2	22 °											■												
180631R-M10	3,1	2,2	22 °						■																	
180640R-M10	4,0	0,8	22 °											■												
180650R-M10	5,0	0,3	22 °																							
180663R-M10	6,3	0,3	22 °																							
XOMX 180608TR-M14	0,8	2,4	15 °	■	■	■				■	■				■											■
180612TR-M14	1,2	2,4	15 °	■	■	■				■	■				■											
180616TR-M14	1,6	2,3	15 °			■									■											
180620TR-M14	2,0	2,2	15 °			■									■											
180624TR-M14	2,4	2,2	15 °			■									■											
180631TR-M14	3,1	2,2	15 °			■	■								■											
XOMX 180608TR-MD15	0,8	2,4	15 °	■	■	■				■	■				■											
180616TR-MD15	1,2	2,3	15 °			■				■	■				■											
180612TR-MD15	1,2	2,4	15 °	■		■				■	■				■											
XOMX 180608TR-D16	0,8	2,4	11 °	■	■					■					■											
180631TR-D16	3,1	2,2	11 °	■		■																				

■ Stock standard
 Subject to change refer to current price- and stock-list

XPKX



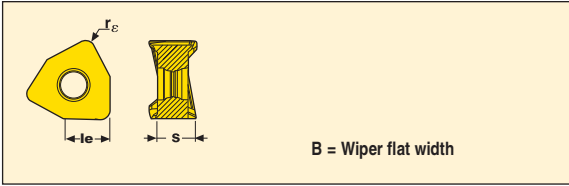
Size	Dimensions in mm		
	W	l _e	s
12T3	10,0	12,1	3,97



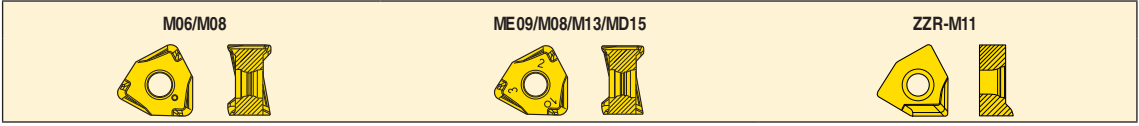
Part No.	r _e	Cutting rake	Grades																	
			Coated											Uncoated			Cermet			
			MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	H15	H25	MP1020	
XPKX 12T304PDER-E08	0,4	23,1 °															■			
12T308PDER-E08	0,8	23 °															■			
12T320PDER-E08	2,0	25 °															■			
12T324PDER-E08	2,4	25 °															■			
12T331PDER-E08	3,1	25 °															■			
12T340PDER-E08	4,2	25 °															■			

■ Stock standard
 Subject to change refer to current price- and stock-list

XNEX04/08



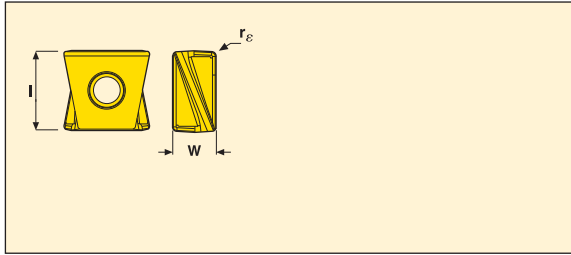
Size	Dimensions in mm	
	l_e	s
XN..08	7,5	6,45
XN..08..TL	7,5	6,45
XN..08 ZZ	7,5	6,45
XNEX04-M06	4,0	3,31
XNEX04-M08	4,0	3,29



Part No.	r_c	B	Cutting rake	Grades															
				Coated										Uncoated			Cermet		
				MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	H15	H25
XNEX 040304TR-M08	0,4	0,8	27 °	■	■	■		■	■	■									
040308TR-M08	0,8	0,4	27 °	■	■	■		■	■	■									■
040304R-M06	0,4	0,8	32,6 °		■	■					■								
040308R-M06	0,8	0,4	32,6 °		■	■					■								
XNEX 080604TR-M13	0,4	1,8	22,57 °			■		■											
080604TR-ME09	0,4	1,8	27 °		■	■		■											
080608R-M08	0,8	1,4	24 °			■		■			■							■	
080608TR-M13	0,8	1,3	22 °	■	■	■			■	■									
080608TR-MD15	0,8	1,4	17 °	■	■	■			■	■									
080608TR-ME09	0,8	1,4	27 °	■	■	■		■	■	■									
080612TR-M13	1,2	0,9	22 °		■				■	■									■
080612TR-MD15	1,2	1,0	17 °	■	■				■	■									■
080612TR-ME09	1,2	1,0	27 °		■			■											
080616TR-M13	1,6	0,5	22 °	■	■	■			■	■									
080616TR-MD15	1,6	0,7	17 °	■	■	■			■	■									
080616TR-ME09	1,6	0,6	27 °		■	■		■											
XNEX 080608ZZR-M11	0,8	6	19 °			■			■										
XNEX 080608TL-M13	0,8	1,3	22 °		■														
080616TL-M13	1,6	0,5	22 °		■														

■ Stock standard
 Subject to change refer to current price- and stock-list

XNHQ09/12/14/17



Size	Dimensions in mm	
	W	I
09	5,5	9,3
12	6,5	11,7
14	7,5	14
14	7,5	14,0
17	7,5	17

E07/E09/E10/E12/M08/M10/M11/M13

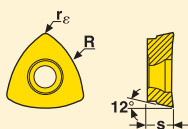


Part No.	r _e	Cutting rake	Grades																
			Coated												Uncoated			Cermet	
			MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	H15	H25	MP1020
XNHQ 090508EN4-E07	0,8	21,0°																	
090504TN4-M08	0,4	16,0°																	
090508TN4-M08	0,8	16,0°		■															
090512TN4-M08	1,2	16,0°		■															
090516TN4-M08	1,6	16,0°		■															
090520TN4-M08	2,0	16,0°		■															
090524TN4-M08	2,4	16,0°		■															
090531TN4-M08	3,1	16,0°		■															
090540TN4-M08	4,0	16,0°		■															
XNHQ 120608EN4-E09	0,8	21,0°																	
120608TN4-M10	0,8	16,0°		■															
120612TN4-M10	1,2	16,0°		■															
120616TN4-M10	1,6	16,0°		■															
120620TN4-M10	2,0	16,0°		■															
120624TN4-M10	2,4	16,0°		■															
120631TN4-M10	3,1	16,0°		■															
120640TN4-M10	4,0	16,0°		■															
120650TN4-M10	5,0	16,0°		■															
XNHQ 140708EN4-E10	0,8	22°																	
140708TN4-M11	0,8	16°		■															
140716TN4-M11	1,6	16°		■															
140720TN4-M11	2	16°		■															
140724TN4-M11	2,4	16°		■															
140731TN4-M11	3,1	16°		■															
140740TN4-M11	4	16°		■															
140750TN4-M11	5	16°		■															
140760TN4-M11	6	16°		■															
XNHQ 170708EN4-E12	0,8	16°																	
170708TN4-M13	0,8	16°		■															
170716TN4-M13	1,6	16°		■															
170720TN4-M13	2	16°		■															
170724TN4-M13	2,4	16°		■															
170731TN4-M13	3,1	16°		■															
170740TN4-M13	4	16°		■															
170750TN4-M13	5	16°		■															
170760TN4-M13	6	16°		■															

■ Stock standard

Subject to change refer to current price- and stock-list

218.19



Size	Dimensions in mm	
	d	s
080	5,50	2,38
100	7,06	2,78
-100.	7,06	2,78
125.T3	8,90	3,97
150.04	10,60	4,76
-160.	11,18	4,76
160.04	11,18	4,76
200.05	12,7	5,50
250.06	16,54	6,35

E04-E07



M04-M11



MD04-MD11



ME07-ME12

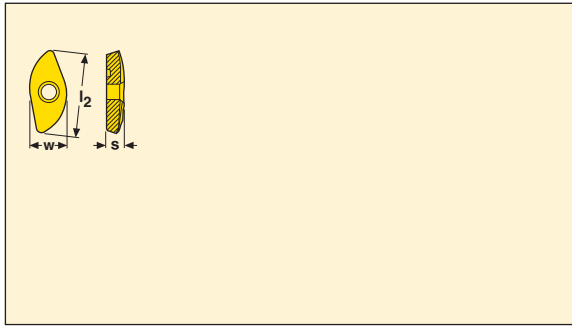


Part No.	R	r _ε	Cutting rake	Grades															
				Coated										Uncoated			Cermet		
				MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	H15	H25
218.19 -100-E06	10	0,8	20°																■
-125-T3-E06	12,5	0,8	20°																■
-160-04-E07	16	1,2	20°																■
218.19 -125T-T3-ME07	12,5	0,8	20°																■
-160T-04-ME08	16	1,2	20°																■
-200T-05-ME10	20	0,6	20°																■
-250T-06-ME12	25	1,2	20°																
218.19 -080T-M04	8	0,4	7°		■														■
-100T-M06	10	0,8	7°		■	■			■	■	■								■
-125T-T3-M07	12,5	0,8	10°		■	■			■	■	■								■
-150T-04-M08	15	1,2	10°																
-160T-04-M11	16	1,2	15°	■	■														
-160T-04-M08	16	1,2	10°		■	■			■	■	■								■
-200T-05-M10	20	0,6	10°																■
218.19 -080T-MD04	8	0,4	0°			■						■							■
-100T-MD08	10	0,8	0°	■	■			■				■							■
-125T-T3-MD10	12,5	0,8	0°	■	■			■				■							■
-125T-T3-MD08	12,5	0,8	0°			■													
-160T-04-MD11	16	1,2	0°	■	■			■				■							■
-160T-04-MD09	16	1,2	0°			■													

■ Stock standard

Subject to change refer to current price- and stock-list

218.20














Size	Dimensions in mm		
	W	l ₂	s
080	6,88	15,64	3,21
100	8,59	19,55	4,05
125	10,74	24,48	5,05
150	11,91	28,70	5,99
160	12,70	30,61	6,40
200	15,88	38,26	8,06
250	19,85	47,83	10,16

ME04/ME07/ME10/ME12/M04/M05/M07/M08



Part No.	Grades																	
	Coated											Uncoated			Cermet			
	MP1500	MP2500	MP3000	MH1000	MM4500	MK1500	MK2050	MS2050	MS2500	T350M	F15M	F25M	F40M	HX	H15	H25	MP1020	
218.20 -080ER-M04					■							■	■					
-080ER-ME04								■		■			■					
218.20 -100ER-M05					■							■	■					
-100ER-ME05					■			■					■					
218.20 -125ER-M07					■							■	■					
-125ER-ME07					■			■					■					
218.20 -150ER-M08					■													■
-150ER-ME07								■										■
218.20 -160ER-M08					■							■	■					
-160ER-ME08					■			■					■					
218.20 -200ER-M10					■								■					
-200ER-ME10					■			■					■					
218.20 -250ER-ME12					■			■					■					
-250TR-M14													■					

■ Stock standard
 Subject to change refer to current price- and stock-list

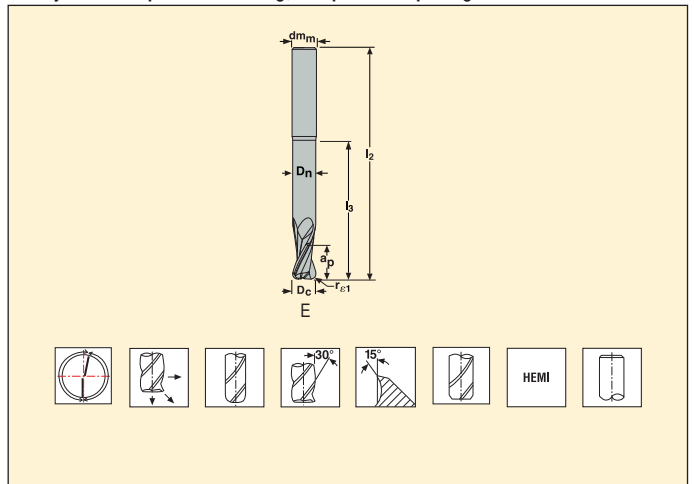
			
			
Name		JS452	JS554
Page		187-189	190-192
Family		JS ²	JS ²
Type of mill			
Shank	Cylindrical	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Weldon	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Number of flutes		2	4
ICC			
Diameter range	Metric	8-20	4-20
Lengths available, based on length index		 3	 2
Operation			
			
			
SMG			
P1-8			•
P11			•
M1-3			•
M4-5			•
K1-7			•
S1-3			•
S11-13			•
H5 H8 H11 H12 H21			•
N1		•	•
N2-3		•	•
N11			•
TS1		•	○
TP1		•	•
GR			○

■ Stock standard □ Weldon available, delivery time is 3 days. • Preferred choice, ○ Alternative choice

JS452 L – Solid carbide end mill for non ferrous materials – cylindrical – polished coating, unequal flute spacing



Tolerances:
 $dm_m = h5$
 $D_c = e7$
 Corner radius $+/- 0,02$



Part No.	Length index	Tool shape	Dimensions in mm						r_{e1}	z_n	Cylindrical
			D_c	dm_m	a_p	l_2	l_3	D_n			
JS452080E3R020.0Z2-HEMI	3	E	8	8	12	79	41	7,6	0,2	2	■
JS452080E3R050.0Z2-HEMI	3	E	8	8	12	79	41	7,6	0,5	2	■
JS452100E3R050.0Z2-HEMI	3	E	10	10	15	99	57	9,5	0,5	2	■
JS452100E3R100.0Z2-HEMI	3	E	10	10	15	99	57	9,5	1	2	■
JS452100E3R250.0Z2-HEMI	3	E	10	10	15	99	57	9,5	2,5	2	■
JS452100E3R300.0Z2-HEMI	3	E	10	10	15	99	57	9,5	3	2	■
JS452120E3R050.0Z2-HEMI	3	E	12	12	18	119	72	11,4	0,5	2	■
JS452120E3R100.0Z2-HEMI	3	E	12	12	18	119	72	11,4	1	2	■
JS452120E3R150.0Z2-HEMI	3	E	12	12	18	119	72	11,4	1,5	2	■
JS452120E3R200.0Z2-HEMI	3	E	12	12	18	119	72	11,4	2	2	■
JS452120E3R250.0Z2-HEMI	3	E	12	12	18	119	72	11,4	2,5	2	■
JS452120E3R300.0Z2-HEMI	3	E	12	12	18	119	72	11,4	3	2	■
JS452120E3R400.0Z2-HEMI	3	E	12	12	18	119	72	11,4	4	2	■
JS452160E3R050.0Z2-HEMI	3	E	16	16	24	129	79	15,2	0,5	2	■
JS452160E3R100.0Z2-HEMI	3	E	16	16	24	129	79	15,2	1	2	■
JS452160E3R200.0Z2-HEMI	3	E	16	16	24	129	79	15,2	2	2	■
JS452160E3R250.0Z2-HEMI	3	E	16	16	24	129	79	15,2	2,5	2	■
JS452160E3R300.0Z2-HEMI	3	E	16	16	24	129	79	15,2	3	2	■
JS452160E3R400.0Z2-HEMI	3	E	16	16	24	129	79	15,2	4	2	■
JS452160E3R600.0Z2-HEMI	3	E	16	16	24	129	79	15,2	6	2	■
JS452200E3R050.0Z2-HEMI	3	E	20	20	30	164	111	19	0,5	2	■
JS452200E3R200.0Z2-HEMI	3	E	20	20	30	164	111	19	2	2	■
JS452200E3R250.0Z2-HEMI	3	E	20	20	30	164	111	19	2,5	2	■
JS452200E3R300.0Z2-HEMI	3	E	20	20	30	164	111	19	3	2	■
JS452200E3R400.0Z2-HEMI	3	E	20	20	30	164	111	19	4	2	■
JS452200E3R500.0Z2-HEMI	3	E	20	20	30	164	111	19	5	2	■
JS452200E3R600.0Z2-HEMI	3	E	20	20	30	164	111	19	6	2	■

■ Stock standard. Subject to change refer to current price-and stock-list.

JS452 L – Solid carbide end mill for non ferrous materials – weldon – polished coating, unequal flute spacing

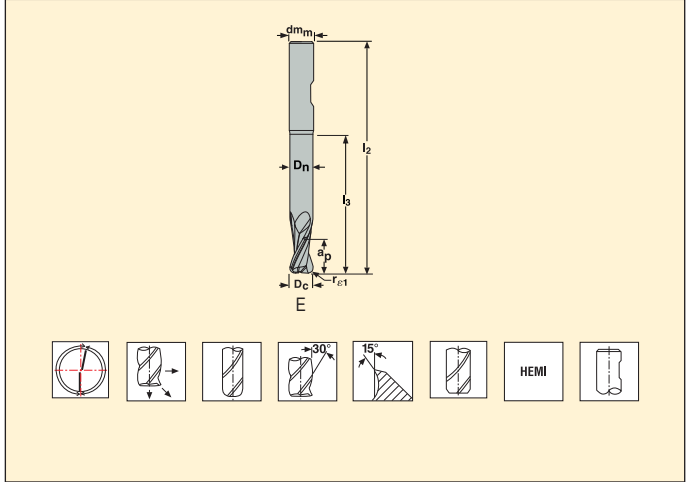


Tolerances:

$dm_m = h5$

$D_c = e7$

Corner radius $\pm 0,02$



Part No.	Length index	Tool shape	Dimensions in mm							$r_{\epsilon 1}$	z_n	Weldon
			D_c	dm_m	a_p	l_2	l_3	D_n				
JS452080E3R020.3Z2-HEMI	3	E	8	8	12	79	41	7,6	0,2	2	<input type="checkbox"/>	
JS452080E3R050.3Z2-HEMI	3	E	8	8	12	79	41	7,6	0,5	2	<input type="checkbox"/>	
JS452100E3R050.3Z2-HEMI	3	E	10	10	15	99	57	9,5	0,5	2	<input type="checkbox"/>	
JS452100E3R100.3Z2-HEMI	3	E	10	10	15	99	57	9,5	1	2	<input type="checkbox"/>	
JS452100E3R250.3Z2-HEMI	3	E	10	10	15	99	57	9,5	2,5	2	<input type="checkbox"/>	
JS452100E3R300.3Z2-HEMI	3	E	10	10	15	99	57	9,5	3	2	<input type="checkbox"/>	
JS452120E3R050.3Z2-HEMI	3	E	12	12	18	119	72	11,4	0,5	2	<input type="checkbox"/>	
JS452120E3R100.3Z2-HEMI	3	E	12	12	18	119	72	11,4	1	2	<input type="checkbox"/>	
JS452120E3R150.3Z2-HEMI	3	E	12	12	18	119	72	11,4	1,5	2	<input type="checkbox"/>	
JS452120E3R200.3Z2-HEMI	3	E	12	12	18	119	72	11,4	2	2	<input type="checkbox"/>	
JS452120E3R250.3Z2-HEMI	3	E	12	12	18	119	72	11,4	2,5	2	<input type="checkbox"/>	
JS452120E3R300.3Z2-HEMI	3	E	12	12	18	119	72	11,4	3	2	<input type="checkbox"/>	
JS452120E3R400.3Z2-HEMI	3	E	12	12	18	119	72	11,4	4	2	<input type="checkbox"/>	
JS452160E3R050.3Z2-HEMI	3	E	16	16	24	129	79	15,2	0,5	2	<input type="checkbox"/>	
JS452160E3R100.3Z2-HEMI	3	E	16	16	24	129	79	15,2	1	2	<input type="checkbox"/>	
JS452160E3R200.3Z2-HEMI	3	E	16	16	24	129	79	15,2	2	2	<input type="checkbox"/>	
JS452160E3R250.3Z2-HEMI	3	E	16	16	24	129	79	15,2	2,5	2	<input type="checkbox"/>	
JS452160E3R300.3Z2-HEMI	3	E	16	16	24	129	79	15,2	3	2	<input type="checkbox"/>	
JS452160E3R400.3Z2-HEMI	3	E	16	16	24	129	79	15,2	4	2	<input type="checkbox"/>	
JS452160E3R600.3Z2-HEMI	3	E	16	16	24	129	79	15,2	6	2	<input type="checkbox"/>	
JS452200E3R050.3Z2-HEMI	3	E	20	20	30	164	111	19	0,5	2	<input type="checkbox"/>	
JS452200E3R200.3Z2-HEMI	3	E	20	20	30	164	111	19	2	2	<input type="checkbox"/>	
JS452200E3R250.3Z2-HEMI	3	E	20	20	30	164	111	19	2,5	2	<input type="checkbox"/>	
JS452200E3R300.3Z2-HEMI	3	E	20	20	30	164	111	19	3	2	<input type="checkbox"/>	
JS452200E3R400.3Z2-HEMI	3	E	20	20	30	164	111	19	4	2	<input type="checkbox"/>	
JS452200E3R500.3Z2-HEMI	3	E	20	20	30	164	111	19	5	2	<input type="checkbox"/>	
JS452200E3R600.3Z2-HEMI	3	E	20	20	30	164	111	19	6	2	<input type="checkbox"/>	

Weldon available, delivery time is 3 days.

Cutting data – JS452 Slotting*

SMG		a_p / D_c	f_z					v_c
			8	10	12	16	20	
N1	E	0,80	0,050	0,060	0,075	0,10	0,12	580 (460 — 690)
N2	E	0,60	0,040	0,050	0,060	0,080	0,10	455 (340 — 570)
N3	E	0,60	0,040	0,050	0,060	0,080	0,10	305 (225 — 380)
TS1	A	1,0	0,065	0,080	0,095	0,13	0,16	540 (430 — 640)
TP1	A	1,0	0,048	0,060	0,070	0,095	0,12	460 (345 — 570)

Cutting data – JS452 Side milling roughing $a_e/D_c = 0,2^*$

SMG		a_p / D_c	f_z					v_c
			8	10	12	16	20	
N1	E/M/A	1,3	0,10	0,12	0,15	0,18	0,22	720 (580 — 870)
N2	E/M/A	1,2	0,080	0,10	0,12	0,15	0,17	570 (425 — 710)
N3	E/M/A	1,2	0,080	0,10	0,12	0,15	0,17	380 (285 — 475)
TS1	A/D	1,3	0,12	0,15	0,18	0,22	0,26	680 (550 — 820)
TP1	A/D	1,3	0,085	0,10	0,12	0,15	0,18	600 (455 — 750)

* Remark: If corner radius is >15% of D_c then $a_p = -30\%$, $f_z = -20\%$

SMG = Seco material group

Coolant = A=air D=dry E=emulsion M=mist spray

$v_c =$ m/min

$f_z =$ mm

a_p (mm)/ D_c (mm)= factor

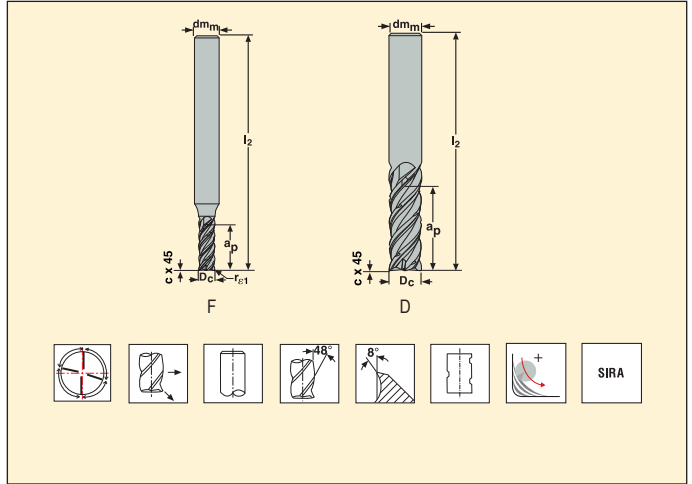
a_e (mm)/ D_c (mm)= factor

All cutting data are target values

JS554 - Solid carbide end mill - cylindrical - four flute - chip splitters - advanced roughing - chamfer



Tolerances:
Run-out=0.01 mm
 $dm_m=h5$



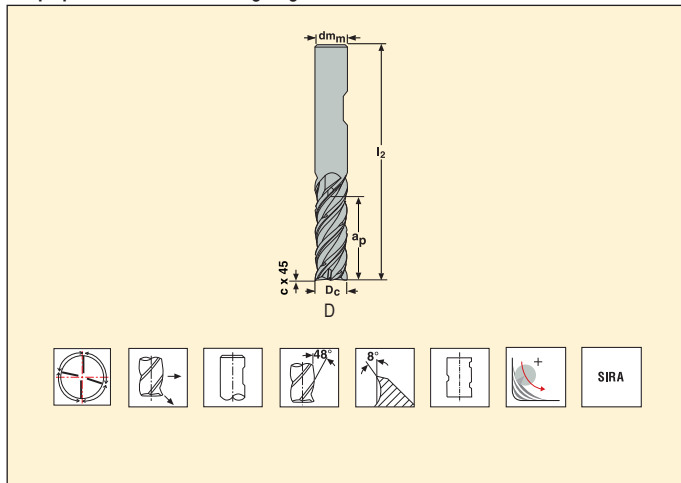
Part No.	Length index	Tool shape	Dimensions in mm				c x 45°	z _n	Cylindrical
			D _c	dm _m	a _p	l ₂			
JS554040F2C.0Z4C-SIRA	2	F	4	6	10	57	0,05	4	■
JS554050F2C.0Z4C-SIRA	2	F	5	6	12,5	57	0,06	4	■
JS554060D2C.0Z4C-SIRA	2	D	6	6	15	57	0,08	4	■
JS554080D2C.0Z4C-SIRA	2	D	8	8	20	63	0,1	4	■
JS554100D2C.0Z4C-SIRA	2	D	10	10	25	72	0,12	4	■
JS554120D2C.0Z4C-SIRA	2	D	12	12	30	83	0,2	4	■
JS554160D2C.0Z4C-SIRA	2	D	16	16	40	99	0,25	4	■
JS554200D2C.0Z4C-SIRA	2	D	20	20	50	114	0,3	4	■

■ Stock standard. Subject to change refer to current price-and stock-list.

JS554 – Solid carbide end mill – cylindrical – four flute – chip splitters – advanced roughing – chamfer



Tolerances:
Run-out=0,01 mm
 $dm_m = h5$



Part No.	Length index	Tool shape	Dimensions in mm				c x 45°	z _n	Weldon
			D _c	dm _m	a _p	l ₂			
JS554060D2C.3Z4C-SIRA	2	D	6	6	15	57	0,08	4	■
JS554080D2C.3Z4C-SIRA	2	D	8	8	20	63	0,1	4	■
JS554100D2C.3Z4C-SIRA	2	D	10	10	25	72	0,12	4	■
JS554120D2C.3Z4C-SIRA	2	D	12	12	30	83	0,2	4	■
JS554160D2C.3Z4C-SIRA	2	D	16	16	40	99	0,25	4	■
JS554200D2C.3Z4C-SIRA	2	D	20	20	50	114	0,3	4	■

■ Stock standard. Subject to change refer to current price-and stock-list.

Cutting data – JS554 2C SIRA advanced roughing $a_p/D_c = 0,05$

SMG		a_p / D_c	f_z								v_c
			4	5	6	8	10	12	16	20	
S1	E	2,0	0,030	0,038	0,046	0,060	0,075	0,090	0,11	0,13	85 (70 — 95)
S2	E	2,0	0,030	0,038	0,046	0,060	0,075	0,090	0,11	0,13	65 (60 — 75)
S3	E	2,0	0,028	0,036	0,042	0,055	0,070	0,085	0,10	0,12	49 (44 — 60)

Cutting data – JS554 2C SIRA advanced roughing $a_p/D_c = 0,10$

SMG		a_p / D_c	f_z								v_c
			4	5	6	8	10	12	16	20	
M4	E	2,5	0,026	0,032	0,038	0,050	0,065	0,075	0,095	0,11	80 (55 — 100)
M5	E	2,5	0,026	0,032	0,038	0,050	0,065	0,075	0,095	0,11	65 (47 — 85)
N3	E	2,5	0,048	0,060	0,075	0,095	0,12	0,14	0,18	0,20	480 (410 — 550)
S11	E	2,0	0,030	0,036	0,044	0,060	0,075	0,085	0,11	0,12	85 (80 — 105)
S12	E	2,0	0,030	0,036	0,044	0,060	0,075	0,085	0,11	0,12	125 (100 — 150)
S13	E	2,0	0,026	0,032	0,038	0,050	0,065	0,075	0,095	0,11	100 (80 — 115)
H5	M/A/D	2,5	0,020	0,026	0,030	0,040	0,050	0,060	0,075	0,085	170 (145 — 195)
H8	M/A/D	2,5	0,015	0,019	0,022	0,030	0,038	0,046	0,055	0,065	180 (155 — 200)
H11	M/A/D	2,5	0,020	0,026	0,030	0,040	0,050	0,060	0,075	0,085	220 (190 — 250)
H12	M/A/D	2,5	0,020	0,026	0,030	0,040	0,050	0,060	0,075	0,085	330 (285 — 375)
H21	M/A/D	2,5	0,015	0,019	0,022	0,030	0,038	0,046	0,055	0,065	180 (155 — 200)
H31	M/A/D	2,5	0,020	0,026	0,030	0,040	0,050	0,060	0,075	0,085	130 (110 — 150)

Cutting data – JS554 2C SIRA advanced roughing $a_p/D_c = 0,12$

SMG		a_p / D_c	f_z								v_c
			4	5	6	8	10	12	16	20	
P1	M/A/D/E	2,5	0,044	0,055	0,065	0,090	0,11	0,13	0,16	0,19	255 (205 — 300)
P2	M/A/D/E	2,5	0,044	0,055	0,065	0,090	0,11	0,13	0,16	0,19	245 (200 — 295)
P3	M/A/D/E	2,5	0,042	0,055	0,065	0,085	0,11	0,12	0,16	0,18	250 (200 — 295)
P4	M/A/D/E	2,5	0,042	0,050	0,060	0,085	0,10	0,12	0,15	0,18	245 (195 — 290)
P5	M/A/D/E	2,5	0,040	0,050	0,060	0,080	0,10	0,12	0,15	0,17	245 (195 — 290)
P6	M/A/D/E	2,5	0,040	0,050	0,060	0,080	0,10	0,12	0,15	0,17	275 (220 — 330)
P7	M/A/D/E	2,5	0,040	0,050	0,060	0,080	0,10	0,12	0,15	0,17	260 (205 — 310)
P8	M/A/D/E	2,5	0,042	0,055	0,065	0,085	0,11	0,12	0,16	0,18	240 (190 — 285)
P11	M/A/D/E	2,5	0,040	0,050	0,060	0,080	0,10	0,12	0,15	0,17	250 (200 — 300)
M1	E	2,5	0,024	0,030	0,036	0,050	0,060	0,075	0,090	0,10	145 (120 — 180)
M2	E	2,5	0,022	0,028	0,034	0,044	0,055	0,065	0,080	0,095	135 (110 — 165)
M3	E	2,5	0,024	0,030	0,036	0,050	0,060	0,075	0,090	0,10	110 (85 — 125)
K1	E	2,5	0,044	0,055	0,065	0,090	0,11	0,13	0,16	0,19	285 (240 — 335)
K2	E	2,5	0,040	0,050	0,060	0,080	0,10	0,12	0,15	0,17	255 (210 — 295)
K3	E	2,5	0,040	0,050	0,060	0,080	0,10	0,12	0,15	0,17	215 (180 — 250)
K4	E	2,5	0,040	0,050	0,060	0,080	0,10	0,12	0,15	0,17	205 (170 — 240)
K5	E	2,5	0,036	0,046	0,055	0,075	0,090	0,11	0,13	0,15	275 (250 — 300)
K6	E	2,5	0,040	0,050	0,060	0,080	0,10	0,12	0,15	0,17	430 (395 — 470)
K7	E	2,5	0,036	0,046	0,055	0,075	0,090	0,11	0,13	0,15	395 (375 — 425)
N1	E	2,5	0,040	0,050	0,060	0,080	0,10	0,12	0,15	0,17	680 (580 — 780)
N2	E	2,5	0,040	0,050	0,060	0,080	0,10	0,12	0,15	0,17	680 (580 — 780)
N11	E	2,5	0,040	0,050	0,060	0,080	0,10	0,12	0,15	0,17	340 (290 — 390)

SMG = Seco material group

Coolant = A=air D=dry E=emulsion M=mist spray

v_c = m/min

f_z = mm

a_p (mm)/ D_c (mm) = factor

a_e (mm)/ D_c (mm) = factor

All cutting data are target values

Recalculation (all values are percentages of original (100%) cutting data.)

STRAIGHT	Use original standard version side rough cutting data then recalculate parameters!									Use original standard version slotting cutting data then recalculate parameters!						
	Slotting		Side Rough			Side Finish				Ramping		Helical		Drilling		
	a_p	f_z	a_e	f_z	a_p	V_c	a_p (% of D_c)	f_z	a_p	a_p	f_z	f_z	$a_p/360^\circ$ (% of D_c)	hole ϕ (% of D_c)	f_z	a_p (% of D_c)
JS554 (2) L (3)	100 40	100 60	100 38	100 105	100 200	110 110	3 3	53 53	150 100	100 50	100 50	100 60	2 1.5	130 130	X X	X X
JD452 (2) L (3)	100 50	100 60	100 75	100 60	100 50	140 120	3 3	35 40	120 100	70 70	100 70	50 50	10 10	130 130	50 20	100 10

Geometry recommendations

Strong cutting edge geometries are always preferred.

- Negative cutting geometry
- Chamfered cutting edge
- Large nose radius

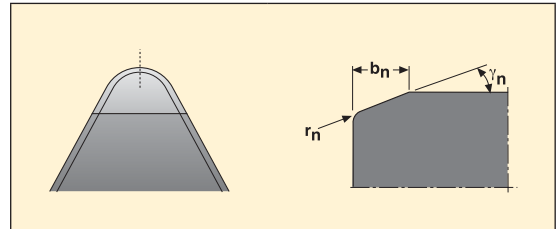
Edge preparation

- S** = Chamfered and honed
- T** = Chamfered, no honing
- E** = Honed

Chamfer size and angle

CS100 = 0,10 mm x 20°

CW100 = Honed



b_n = Chamfer width
 γ_n = Chamfer angle
 r_n = Hone radius

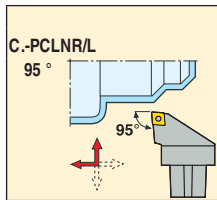
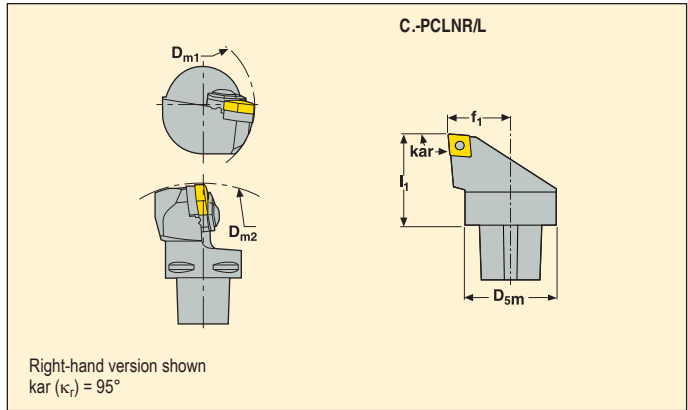
ISO classification

	P					M					K					N				S				H				
	P01	P10	P20	P30	P40	P50	M01	M10	M20	M30	M40	K01	K10	K20	K30	K40	N01	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20	H30
CS100																					○							
CW100																					○							

Toolholders for inserts CNGA, CNGG, CNMA, CNMG and CNMM



- For insert programme, see MN 2015 Turning page(s) 348-355
- γ_0° = Rake angle, λ_s° = Inclination angle



Capto size	Part No.	Dimensions in mm						γ_0°	λ_s°	KG	Image
		D _{5m}	f ₁	l ₁	D _{m1}	D _{m2}					
C5	16 C5-PCLNR -35060-16	50	35,0	60	100	150	-6	-6	0,8	CN..1606..	
	C5-PCLNL -35060-16	50	35,0	60	100	150	-6	-6	0,8	CN..1606..	
C6	16 C6-PCLNR -45065-16	63	45,0	65	120	200	-6	-6	1,5	CN..1606..	
	C6-PCLNL -45065-16	63	45,0	65	120	200	-6	-6	1,5	CN..1606..	
	19 C6-PCLNR -45065-19	63	45,0	65	120	200	-6	-6	1,5	CN..1906..	
	C6-PCLNL -45065-19	63	45,0	65	120	200	-6	-6	1,5	CN..1906..	
C8	19 C8-PCLNR -55080-19	80	55,0	80	120	220	-6	-6	3,0	CN..1906..	
	C8-PCLNL -55080-19	80	55,0	80	120	220	-6	-6	3,0	CN..1906..	
C10	25 C10-PCLNR-68110-25	100	68,0	110	240	400	-6	-6	5,3	CN..2509..	
	C10-PCLNL-68110-25	100	68,0	110	240	400	-6	-6	5,3	CN..2509..	

Spare Parts, Parts included in delivery

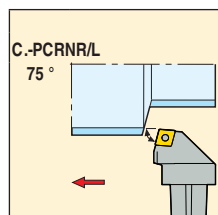
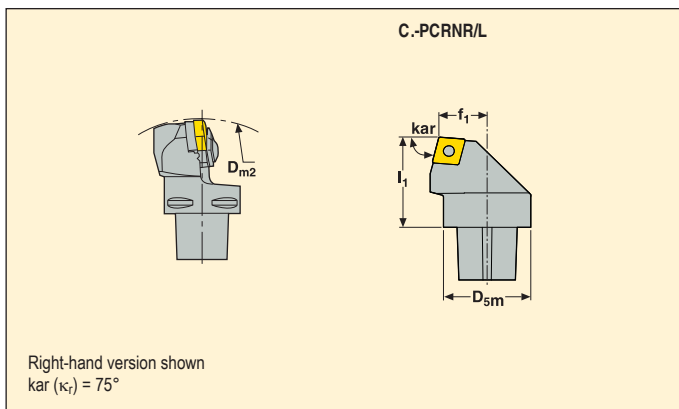
For holder	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
..-16	PP6017	PCN160412	3SMS795	LS0820	MP1519	RP8286
..-19	PP7521	PCN190416	4SMS795	LS1027	MP1519	RP9811
..-25	PP1325	PCN250620	5SMS795	LS1236	MP25	RP1312

Please check availability in current price and stock-list

Toolholders for inserts CNMA, CNMG and CNMM



- For insert programme, see MN 2015 Turning page(s) 348-355
- γ_0° = Rake angle, λ_s° = Inclination angle



Capto size	Part No.	Dimensions in mm				γ_0°	λ_s°	KG	Insert icon
		D _{5m}	f ₁	l ₁	D _{m2}				
C6	19 C6-PCRRR -35065-19	63	35,0	65	150	-6	-6	1,5	CN..1906..
	C6-PCRNL -35065-19	63	35,0	65	150	-6	-6	1,5	CN..1906..

Spare Parts, Parts included in delivery

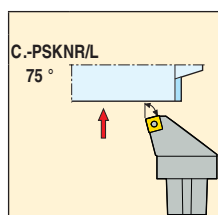
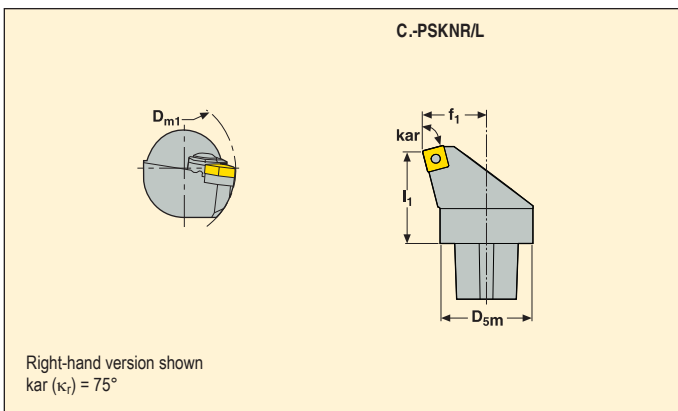
For holder	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
..19	PP7521	PCN190416	4SMS795	LS1027	MP1519	RP9811

Please check availability in current price and stock-list

Toolholders for inserts SNMA, SNMG and SNMM



- For insert programme, see MN 2015 Turning page(s) 374-378
- γ_0° = Rake angle, λ_s° = Inclination angle



Capto size	Part No.	Dimensions in mm				γ_0°	λ_s°	KG	KG	KG
		D_{sm}	f_1	I_1	D_{m1}					
C6	19 C6-PSKNR -45065-19	63	45,0	65	100	-6	-6	1,4	SN..1906..	
	19 C6-PSKNL -45065-19	63	45,0	65	100	-6	-6	1,4	SN..1906..	
C8	19 C8-PSKNR -55080-19	80	55,0	80	120	-6	-6	3,4	SN..1906..	
	19 C8-PSKNL -55080-19	80	55,0	80	120	-6	-6	3,4	SN..1906..	
	25 C8-PSKNR -55080-25	80	55,0	80	180	-6	-6	3,3	SN..2507..	
	25 C8-PSKNL -55080-25	80	55,0	80	180	-6	-6	3,3	SN..2507..	

Spare Parts, Parts included in delivery

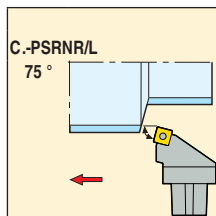
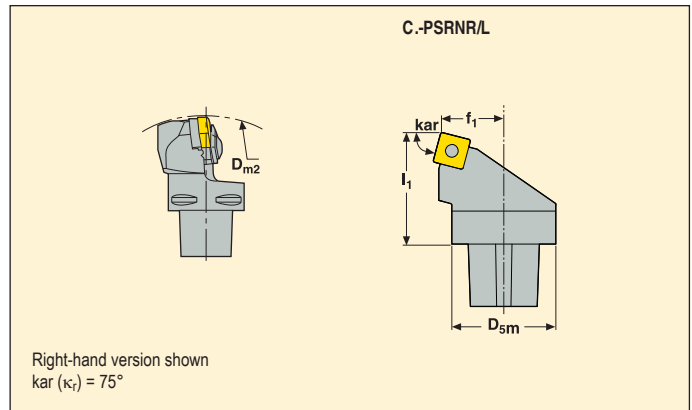
For holder	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
..-19	PP7521	PSN190412	4SMS795	LS1027	MP1519	RP9811
..-25	PP1325	PSN250624	5SMS795	LS1236	MP25	RP1312

Please check availability in current price and stock-list

Toolholders for inserts SNMA, SNMG and SNMM



- For insert programme, see MN 2015 Turning page(s) 374-378
- γ_0° = Rake angle, λ_s° = Inclination angle



Capto size	Part No.	Dimensions in mm				γ_0°	λ_s°	KG	Insert
		D _{5m}	f ₁	l ₁	D _{m2}				
C5	C5-PSRNR -27060-19	50	27,0	60	130	-6	-6	0,9	SN..1906..
	C5-PSRNL -27060-19	50	27,0	60	130	-6	-6	0,9	SN..1906..
C6	C6-PSRNR -35065-19	63	35,0	65	160	-6	-6	1,4	SN..1906..
	C6-PSRNL -35065-19	63	35,0	65	160	-6	-6	1,4	SN..1906..
C8	C8-PSRNR -45080-19	80	45,0	80	200	-6	-6	3,4	SN..1906..
	C8-PSRNL -45080-19	80	45,0	80	200	-6	-6	3,4	SN..1906..
C8	C8-PSRNR -45080-25	80	45,0	80	220	-6	-6	3,4	SN..2507..
	C8-PSRNL -45080-25	80	45,0	80	220	-6	-6	3,4	SN..2507..
C10	C10-PSRNR-58110-25	100	58,0	110	320	-6	-6	5,3	SN..2507..
	C10-PSRNL-58110-25	100	58,0	110	320	-6	-6	5,3	SN..2507..

Spare Parts, Parts included in delivery

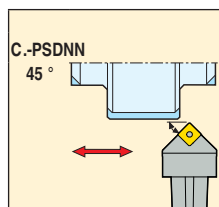
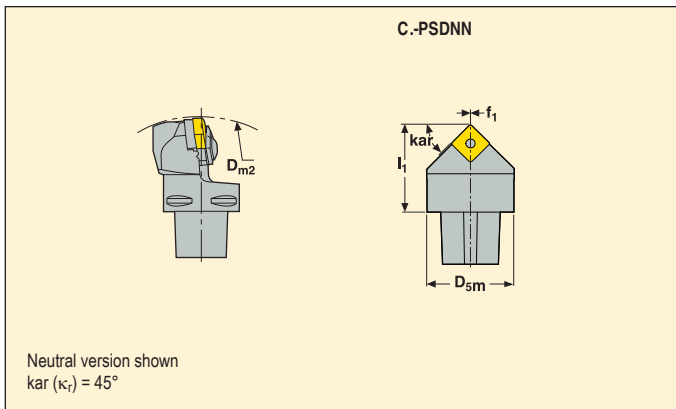
For holder	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
..-19	PP7521	PSN190412	4SMS795	LS1027	MP1519	RP9811
C8-..-25	PP1325	PSN250624	5SMS795	LS1236	MP25	RP1312
C10-..-25	PP1325	PSN250624	5SMS795	LS1236	MP25	RP1312

Please check availability in current price and stock-list

Toolholders for inserts SNMA, SNMG and SNMM



- For insert programme, see MN 2015 Turning page(s) 374-378
- γ_0° = Rake angle, λ_s° = Inclination angle



Capto size	Part No.	Dimensions in mm				γ_0°	λ_s°	KG		
		D _{5m}	f ₁	l ₁	D _{m2}					
C5	19	C5-PSDNN -00060-19	50	0,5	60	130	-6,0	-6,0	0,8	SN..1906..
	19	C6-PSDNN -00065-19	63	0,5	65	140	-6,0	-6,0	1,3	SN..1906..
C8	25	C8-PSDNN -00080-25	80	0,5	80	200	-6,0	-6,0	2,2	SN..2507..
	25	C10-PSDNN-00110-25	100	1,0	110	200	-6,0	-6,0	4,9	SN..2507..

Spare Parts, Parts included in delivery

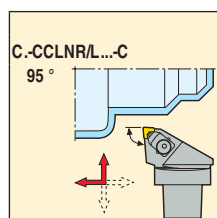
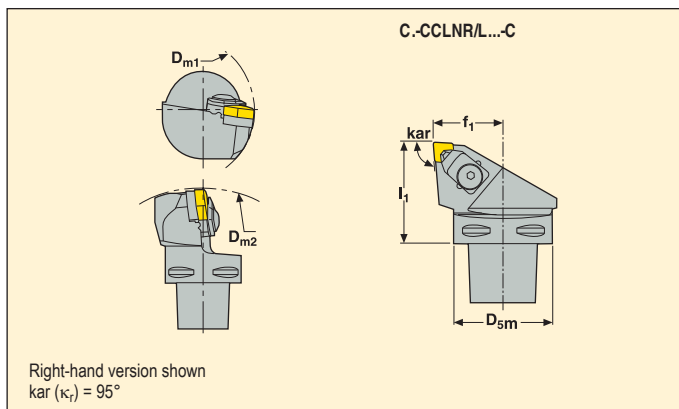
For holder	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
..19	PP7521	PSN190412	4SMS795	LS1027	MP1519	RP9811
..25	PP1325	PSN250624	5SMS795	LS1236	MP25	RP1312

Please check availability in current price and stock-list

Toolholders for ceramic inserts CNGN



- For insert programme, see MN 2015 Turning page(s) 436
- γ_0° = Rake angle, λ_s° = Inclination angle



Capto size	Part No.	Dimensions in mm						γ_0°	λ_s°	KG	CNGN1207..
		D _{5m}	f ₁	I ₁	D _{m1}	D _{m2}					
C4	12 C4-CCLNR -27050-12-4C	40	27,0	50	110	140	-6	-6	0,5	CNGN1207..	
	C4-CCLNL -27050-12-4C	40	27,0	50	110	140	-6	-6	0,5	CNGN1207..	
C5	12 C5-CCLNR -35060-12-4C	50	35,0	60	110	165	-6	-6	0,7	CNGN1207..	
	C5-CCLNL -35060-12-4C	50	35,0	60	110	165	-6	-6	0,7	CNGN1207..	
C6	12 C6-CCLNR -45065-12-4C	63	45,0	65	110	190	-6	-6	1,4	CNGN1207..	
	C6-CCLNL -45065-12-4C	63	45,0	65	110	190	-6	-6	1,4	CNGN1207..	

Spare Parts, Parts included in delivery

Accessories*

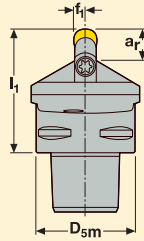
For size	Clamp kit	Insert shim	Shim key	Shim screw	Insert shim
..12	CC12P-D12	DCN120316	T15P-2D	C04008-T15P	DCN120616

Please check availability in current price and stock-list

*To be ordered separately

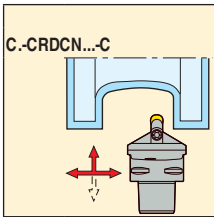
Toolholders for ceramic inserts RCGX and RPGX

C.-CRDCN...C



- For insert programme, see MN 2015 Turning page(s) 436-437
- γ_0° = Rake angle, λ_s° = Inclination angle

Neutral version shown



Capto size	Part No.	Dimensions in mm				γ_0°	λ_s°	KG	
		D _{5m}	f ₁	l ₁	a _r				
C4	09 C4-CRDCN -00050-09C	40	4,8	50	13	0	0	0,4	RC../RP..0907..
	12 C4-CRDCN -00055-12C	40	6,4	55	15	0	0	0,5	RC../RP..1207..
C5	09 C5-CRDCN -00060-09C	50	4,8	60	29	0	0	0,6	RC../RP..0907..
	12 C5-CRDCN -00060-12C	50	6,4	60	38	0	0	0,6	RC../RP..1207..

Spare Parts, Parts included in delivery

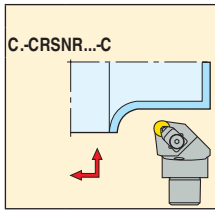
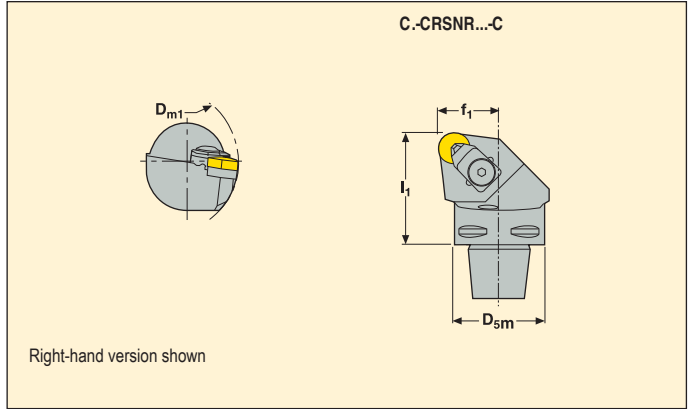
For size	Clamp	Clamp key	Insert shim
-09	CEN087	–	CN76.206
-12	CEN120	T30P-7	CN55.222

Please check availability in current price and stock-list

Toolholders for ceramic inserts RNGN



- For insert programme, see MN 2015 Turning page(s) 437
- γ_0° = Rake angle, λ_s° = Inclination angle



Capto size	Part No.	Dimensions in mm				γ_0°	λ_s°	KG	
		D_{5m}	f_1	l_1	D_{m1}				
C4	12 C4-CRSNR -27050-12C	40	27,0	50	75	-6	-6	0,5	RNGN1207..
	C4-CRSNL -27050-12C	40	27,0	50	75	-6	-6	0,5	RNGN1207..
C5	12 C5-CRSNR -35060-12C	50	35,0	60	95	-6	-6	0,9	RNGN1207..
	C5-CRSNL -35060-12C	50	35,0	60	95	-6	-6	0,9	RNGN1207..
C6	12 C6-CRSNR -45065-12C	63	45,0	65	121	-6	-6	1,4	RNGN1207..
	C6-CRSNL -45065-12C	63	45,0	65	121	-6	-6	1,4	RNGN1207..

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp	Clamp key	Insert shim	Pressure plate	Shim key	Shim screw	Insert shim
C4-...12C	CC17P	4SMS795	CRN120400	P1311	T20P-2D	L85013-T20P	CRN120800
C5-...12C	CC17P	4SMS795	CRN120400	P1311	T20P-2D	L85013-T20P	CRN120800
C6-...12C	CC17P	4SMS795	CRN120400	P1311	T20P-2D	L85013-T20P	CRN120800

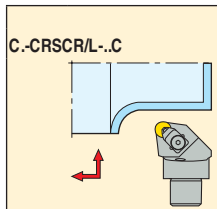
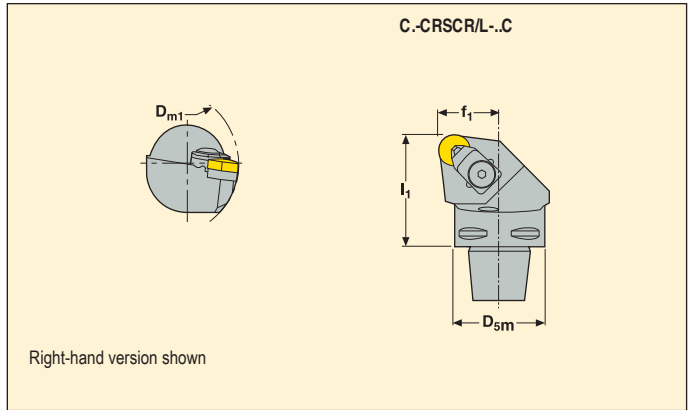
Please check availability in current price and stock-list

*To be ordered separately

Toolholders for ceramic inserts RNGN



- For insert programme, see MN 2015 Turning page(s) 437
- γ_o° = Rake angle, λ_s° = Inclination angle



Capto size	Part No.	Dimensions in mm				γ_o°	λ_s°	KG	RNGN1207..
		D_{5m}	f_1	l_1	D_{m1}				
C5	09 C5-CRSCR -35060-09C	50	35,0	60	95	0	0	0,7	RNGN1207..
	C5-CRCL -35060-09C	50	35,0	60	95	0	0	0,7	RNGN1207..
	12 C5-CRSCR -35060-12C	50	35,0	60	95	0	0	0,7	RNGN1207..
	C5-CRCL -35060-12C	50	35,0	60	95	0	0	0,7	RNGN1207..

Spare Parts, Parts included in delivery

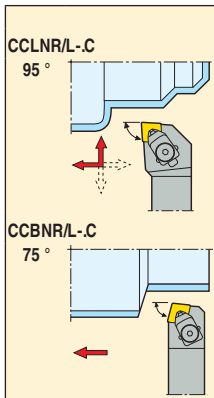
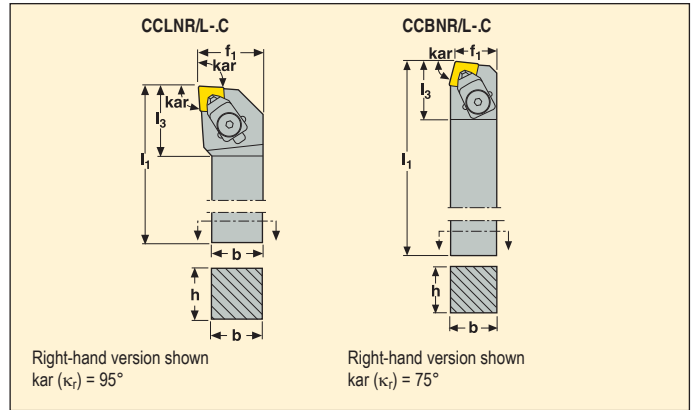
For size	Clamp	Clamp key	Insert shim
-09C	CEN087	–	CN76.206
-12C	CEN120	T30P-7	CN55.222

Please check availability in current price and stock-list

Toolholders for ceramic inserts CNGN



- For insert programme, see MN 2015 Turning page(s) 436
- γ_0° = Rake angle, λ_s° = Inclination angle



Part No.	Dimensions in mm					γ_0°	λ_s°	KG	CNGN1207..	
	h	b	l_1	f_1	l_3					
12	CCLNR 2525M12-4C	25	25	150	32,4	32	-6	-6	0,7	CNGN1207..
	3225P12-4C	32	25	170	32,4	32	-6	-6	1,1	CNGN1207..
	CCLNL 2525M12-4C	25	25	150	32,4	32	-6	-6	0,7	CNGN1207..
	3225P12-4C	32	25	170	32,4	32	-6	-6	1,1	CNGN1207..
12	CCBNR 2525M12-4C	25	25	150	22,4	34	-6	-6	0,7	CNGN1207..
	3225P12-4C	32	25	170	22,4	34	-6	-6	1,1	CNGN1207..
	CCBNL 2525M12-4C	25	25	150	22,4	34	-6	-6	0,7	CNGN1207..
	3225P12-4C	32	25	170	22,4	34	-6	-6	1,1	CNGN1207..

Spare Parts, Parts included in delivery

For size	Clamp kit	Insert shim	Shim key	Shim screw
..4C	CC12P-D12	DCN120316	T15P-2D	C04008-T15P

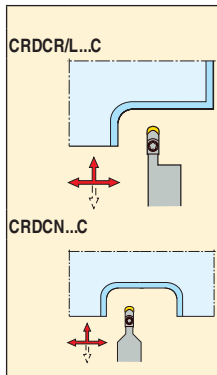
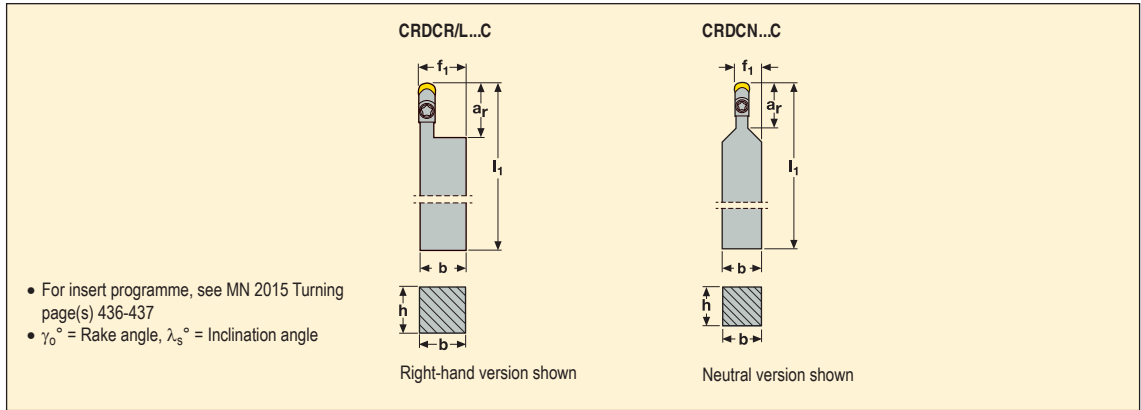
Accessories*

Insert shim
DCN120616

Please check availability in current price and stock-list

*To be ordered separately

Toolholders for ceramic inserts RCGX and RPGX



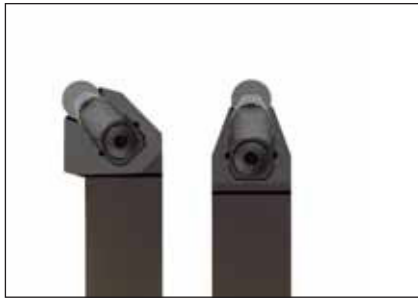
	Part No.	Dimensions in mm					γ_0°	λ_s°	KG	
		h	b	l_1	f_1	l_3				
09	CRDCR 3225P09C	32	25	170	26,0	29,0	0	0	0,9	RC../RP..0907
	CRDCL 3225P09C	32	25	170	26,0	29,0	0	0	0,9	RC../RP..0907
12	CRDCR 3225P12C	32	25	170	25,9	38,5	0	0	0,9	RC../RP..1207
	CRDCL 3225P12C	32	25	170	25,9	38,5	0	0	0,9	RC../RP..1207
06	CRDCN 3225P06C	32	25	170	15,6	19,4	0	0	0,9	RC../RP..0606
09	CRDCN 3225P09C	32	25	170	17,2	29,0	0	0	0,9	RC../RP..0907
12	CRDCN 3225P12C	32	25	170	18,8	38,5	0	0	0,9	RC../RP..1207
	5040T12C	50	40	300	26,4	30,0	0	0	3,2	RC../RP..1207

Spare Parts, Parts included in delivery

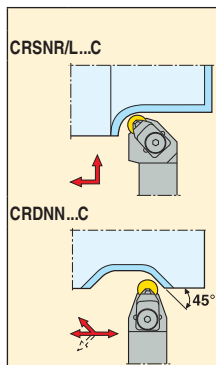
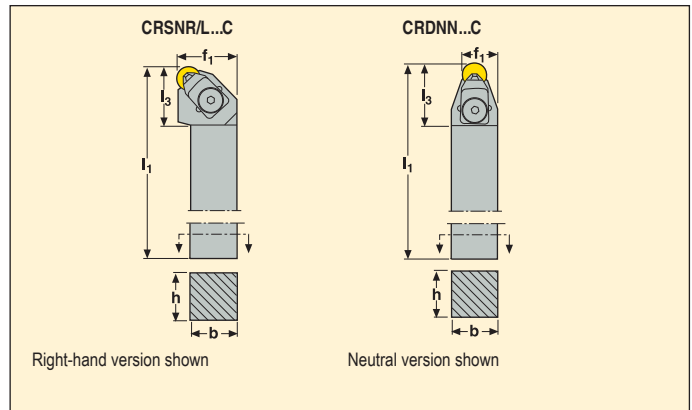
For size	Clamp	Clamp key	Insert shim	Shim key
CRDCR/L...09C	CEN087	–	CN76.206	T10P-2D
CRDCR/L...12C	CEN120	T30P-7	CN55.222	T25P-7
...06C	CEN055	T30P-7	CN52.190	2SMS795
CRDCN...09C	CEN087	–	CN76.206	T10P-2D
CRDCN32...12C	CEN120	T30P-7	CN55.222	T25P-7
CRDCN50...12C	CEN120	T30P-7	CS107.131	–

Please check availability in current price and stock-list

Toolholders for ceramic inserts RNGN



- For insert programme, see MN 2015 Turning page(s) 437
- γ_0° = Rake angle, λ_s° = Inclination angle



Part No.	Dimensions in mm					γ_0°	λ_s°	KG	RNGN1207..	
	h	b	l_1	f_1	l_3					
12	CRSNR 2525M12C	25	25	150	32,0	28	-6	-6	0,7	RNGN1207..
	3225P12C	32	25	170	32,0	28	-6	-6	1,1	RNGN1207..
	5040T12C	50	40	300	50,0	31	-6	-6	5,5	RNGN1207..
	CRSNL 2525M12C	25	25	150	32,0	28	-6	-6	0,7	RNGN1207..
3225P12C	32	25	170	32,0	28	-6	-6	1,1	RNGN1207..	
12	CRDNN 2525M12C	25	25	150	18,8	32	0	0	0,7	RNGN1207..
	3225P12C	32	25	170	18,8	32	0	0	1,1	RNGN1207..

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp	Clamp key	Insert shim	Pressure plate	Shim key	Shim screw	Insert shim
..12C	CC17P	4SMS795	CRN120400	P1311	T20P-2D	L85013-T20P	CRN120800

Please check availability in current price and stock-list

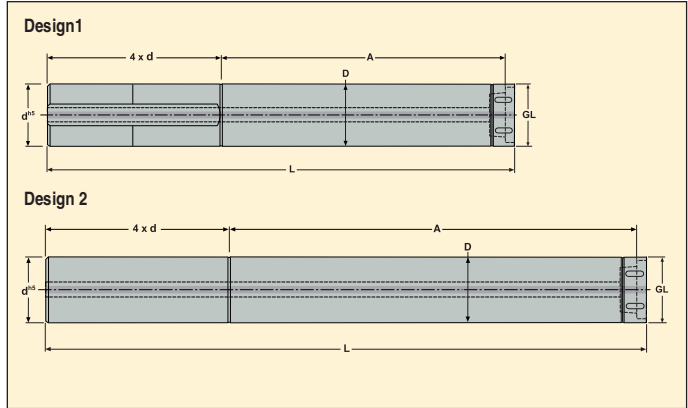
*To be ordered separately

GL Steadyline - Damping holders for turning

Cylindrical shank - inch



- With dynamic damping, ready to use
- With through coolant
- For GL heads programme, see page(s) 226-228 and MN 2015 Turning page(s) 306-313



Machine side Shank d ^{ns} mm	Workpiece side		Dimensions in mm			Design	 KG
	GL bore size	Part No.	A	D	L		
31.75	GL32	DA20-6.50-GL32	165	32	298	1	1,8
	GL32	DA20-9.00-GL32	229	32	361	1	2,3
	GL32	DA20-11.50-GL32	292	32	425	2	2,7
38.10	GL40	DA24-8.00-GL40	203	40	362	1	3,5
	GL40	DA24-11.00-GL40	279	40	438	1	4,3
	GL40	DA24-14.00-GL40	356	40	515	2	5,2
50.80	GL50	DA32-10.50-GL50	267	50	477	1	7,6
	GL50	DA32-14.50-GL50	368	50	579	1	9,2
	GL50	DA32-18.50-GL50	470	50	681	2	11,1

Accessories*

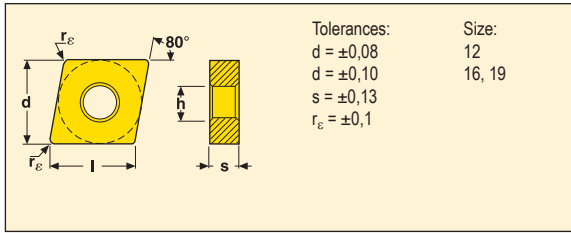
Spare Parts

For size	Replaceable end	Torque key	For size	Locking key
GL32	SL00-32	SL00-32.250	GL32	SL32
GL40	SL00-40	SL00-40.350	GL40	SL40
GL50	SL00-50	SL00-50.550	GL50	SL50

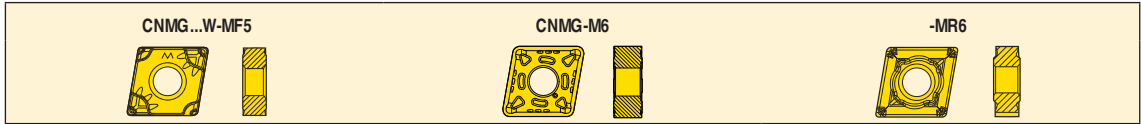
Please check availability in current price and stock-list

*To be ordered separately

CNMG



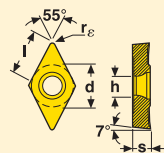
Size	Dimensions in mm			
	d	l	s	h
1204	12,70	12,9	4,76	5,15
1206	12,70	12,9	6,35	5,15
1606	15,88	16,1	6,35	6,35
1906	19,05	19,3	6,35	7,92



Inserts	Part No.	$r_c =$ rep	Grades																							
			Coated													Uncoated				Cermets						
			TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2050	TS2500	CP200	CP500	CP600	HX	KX	883	890	TP1020	TP1030
CNMG...W-MF5	CNMG 120408W-MF5	0,8	■	■			■	■			■															
CNMG-M6	CNMG 120408-M6	0,8	■	■	■	■							■													
	120412-M6	1,2	■	■	■	■							■													
	120416-M6	1,6		■	■																					
	CNMG 160612-M6	1,2	■	■	■	■							■													
	160616-M6	1,6	■	■	■								■													
	160624-M6	2,4		■	■																					
	CNMG 190612-M6	1,2	■	■	■																					
	190616-M6	1,6	■	■	■																					
	190624-M6	2,4	■	■	■																					
CNMG-MR6	CNMG 120408-MR6	0,8		■	■	■																				
	120412-MR6	1,2		■	■	■																				
	120416-MR6	1,6				■																				
	CNMG 120612-MR6	1,2				■																				
	CNMG 160612-MR6	1,2			■	■																				
	160616-MR6	1,6				■																				
	CNMG 190612-MR6	1,2				■																				

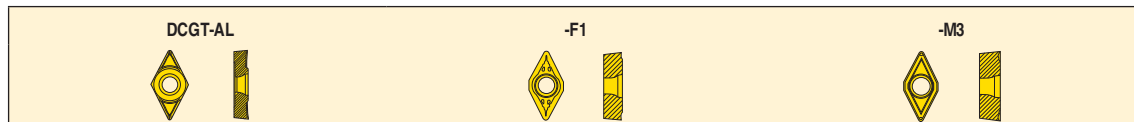
■ Stock standard
 Subject to change refer to current price- and stock-list

DCGT



Tolerances:
 $d = \pm 0,025$
 $s = \pm 0,05$
 $r_e (\geq 0,2) = \pm 0,1$
 $r_e (\leq 0,1) = \pm 0,025$

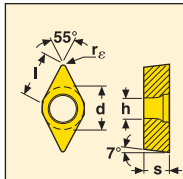
Size	Dimensions in mm			
	d	l	s	h
0702	6,350	7,8	2,38	2,9
0702-AL	6,350	7,8	2,38	2,8
11T3	9,525	11,6	3,97	4,5
11T3.-AL	9,525	11,6	3,97	4,4
1504	12,700	15,5	4,76	5,6



Inserts	Part No.	$r_e =$ rep	Grades																								
			Coated													Uncoated		Cermet									
			TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2050	TS2500	CP200	CP500	CP600	HX	KX	883	890	TP1020	TP1030	
DCGT-AL	DCGT 0702005F-AL	0,05																			■						
	070201F-AL	0,10																			■						
	070202F-AL	0,20																			■						
	070204F-AL	0,40																			■						
	DCGT 11T302F-AL	0,20												■								■					
	11T304F-AL	0,40												■								■					
11T308F-AL	0,80																				■						
DCGT-F1	DCGT 0702005-F1	0,05															■										
	070201-F1	0,10															■										
	DCGT 11T301-F1	0,10															■										
	11T304-F1	0,40												■											■		
	11T308-F1	0,80												■													
DCGT-M3	DCGT 070202-M3	0,20																		■							
	070204-M3	0,40																		■							
	DCGT 11T302-M3	0,20																			■						
	11T304-M3	0,40																			■						
	11T308-M3	0,80																			■						
	DCGT 150404-M3	0,40																			■						

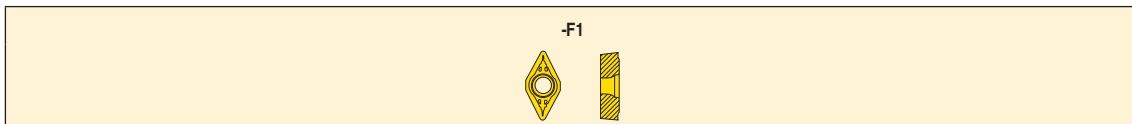
■ Stock standard
 Subject to change refer to current price- and stock-list

DCMT



Tolerances:
 $d = \pm 0,05$
 $s = \pm 0,05$
 $r_c = \pm 0,1$

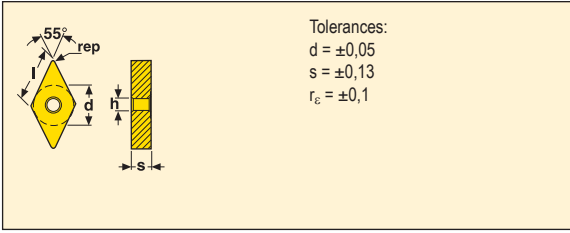
Size	Dimensions in mm			
	d	l	s	h
0702	6,35	7,8	2,38	2,9
11T3	9,53	11,6	3,97	4,5



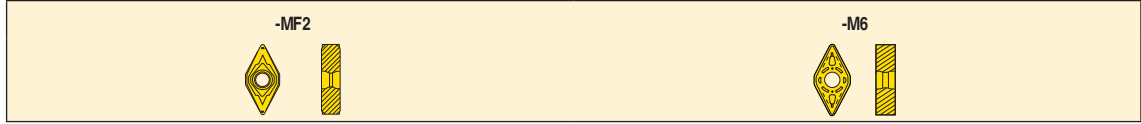
Inserts	Part No.	r _c = rep	Grades																							
			Coated														Uncoated			Cermet						
			TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2050	TS2500	CP200	CP500	CP600	HX	KX	883	890	TP1020	TP1030
DCMT-F1	DCMT 070202-F1	0,2			■	■								■			■	■								
	070204-F1	0,4		■	■	■		■		■	■			■			■	■							■	
	070208-F1	0,8		■		■												■							■	
DCMT-F1	DCMT 11T302-F1	0,2			■	■												■						■	■	
	11T304-F1	0,4	■	■	■	■		■	■	■	■	■	■	■			■		■					■	■	
	11T308-F1	0,8	■	■	■	■	■	■	■	■	■	■	■	■			■	■						■	■	
	11T312-F1	1,2		■	■																					

■ Stock standard
 Subject to change refer to current price- and stock-list

DNMU



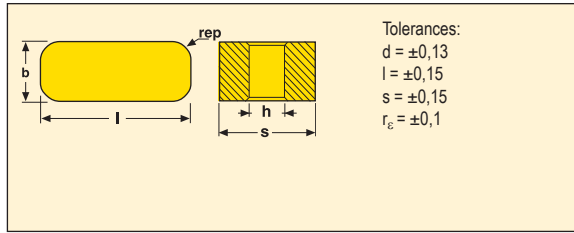
Size	Dimensions in mm			
	d	l	s	h
1104	9,53	11,6	4,76	3,81



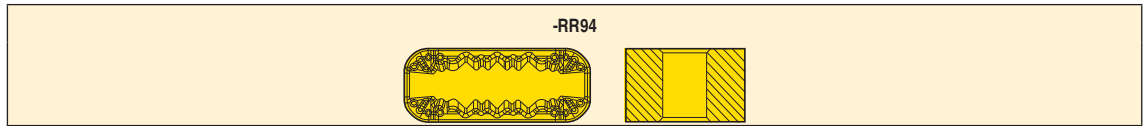
Inserts	Part No.	$r_e =$ rep	Grades																							
			Coated													Uncoated				Cermets						
			TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2050	TS2500	CP200	CP500	CP600	HX	KX	883	890	TP1020	TP1030
DNMU-MF2	DNMU 110404-MF2	0,4	■	■	■	■	■	■				■														■
	110408-MF2	0,8	■	■	■	■	■	■					■													■
	110412-MF2	1,2			■					■																
DNMU-M6	DNMU 110408-M6	0,8		■	■																					
	110412-M6	1,2		■	■																					

■ Stock standard
 Subject to change refer to current price- and stock-list

LNMX



Size	Dimensions in mm			
	d	l	s	h
1919	10,00	19,05	19,05	6,35
3019	12,00	30,00	19,05	6,35



Inserts	Part No.	$r_{c, rep}$	Grades																								
			Coated															Uncoated				Cermets					
			TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2050	TS2500	CP200	CP500	CP600	HX	KX	883	890	TP1020	TP1030	
LNMX-RR94	LNMX 191940-RR94	4,0	■	■										■													
	LNMX 301940-RR94	4,0	■	■										■													

■ Stock standard
 Subject to change refer to current price- and stock-list

RCMT

Tolerances:
 D = ±0,05
 D = ±0,08
 D = ±0,10
 s = ±0,05
 s = ±0,13

Size:
 06, 08, 10
 12
 16
 06, 08, 10
 12, 16

Size	Dimensions in mm		
	D	s	h
0602	6,00	2,38	2,9
0803	8,00	3,18	3,5
10T3	10,00	3,97	4,5
1204	12,00	4,76	4,5
1606	16,00	6,35	5,6

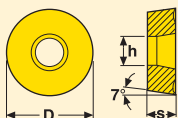
RCMT-F1

-M3

Inserts	Part No.	Grades																							
		Coated														Uncoated				Cermet					
		TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2050	TS2500	CP200	CP500	CP600	HX	KX	883	890	TP1020	TP1030
RCMT-F1	RCMT 0602M0-F1			■													■								
	RCMT 0803M0-F1			■				■										■							
	RCMT 10T3M0-F1			■	■			■										■							
	RCMT 1204M0-F1		■	■	■			■						■				■							
	RCMT 1606M0-F1	■	■	■																					
	RCMT-M3	RCMT 0602M0-M3			■																				
RCMT 0803M0-M3			■	■									■												
RCMT 10T3M0-M3			■	■									■												
RCMT 1204M0-M3			■	■				■					■	■											
RCMT 1606M0-M3		■	■	■																					

■ Stock standard
 Subject to change refer to current price- and stock-list

RCMX



Tolerances:
 D = ±0,08
 D = ±0,10
 s = ±0,13

Size:
 12, 16, 20
 25, 32

Size	Dimensions in mm		
	D	s	h
1204	12,00	4,76	4,2
1606	16,00	6,35	5,2
2006	20,00	6,35	6,5
2507	25,00	7,94	7,2
3209	32,00	9,52	9,5

-RR94



Inserts	Part No.	Grades																							
		Coated												Uncoated		Cermets									
		TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2050	TS2500	CP200	CP500	CP600	HX	KX	883	890	TP1020	TP1030
RCMX-RR94	RCMX 120400-RR94			■																					
	RCMX 160600-RR94		■	■																					
	RCMX 200600-RR94	■	■	■																					
	RCMX 250700-RR94	■	■	■				■				■													
	RCMX 320900-RR94	■	■	■				■				■													

■ Stock standard
 Subject to change refer to current price- and stock-list

SNMA, SNMG

Tolerances:
 $l = \pm 0,05$
 $l = \pm 0,08$
 $l = \pm 0,10$
 $s = \pm 0,13$
 $r_e = \pm 0,1$

Size:
 09
 12
 15, 19

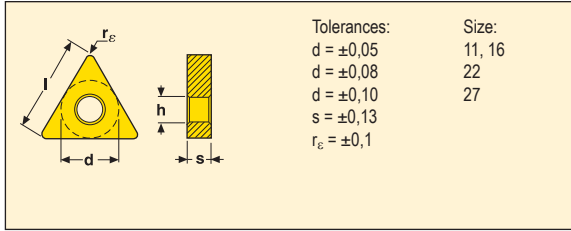
Size	Dimensions in mm		
	l	s	h
0903	9,53	3,18	3,81
1204	12,70	4,76	5,15
1506	15,88	6,35	6,35
1906	19,05	6,35	7,92

-MF2
-M5
-M6

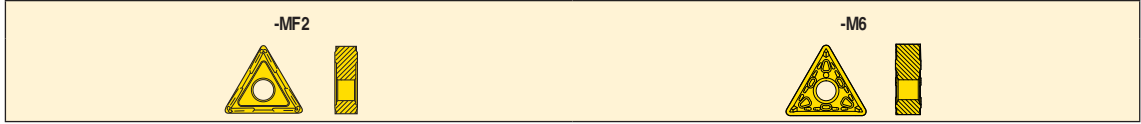
Inserts	Part No.	$r_e =$ rep	Grades																						
			Coated													Uncoated		Cermet							
			TP0501	TP1501	TP2501	TP3500	TP200	TP 40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2050	TS2500	CP200	CP500	CP600	HX	KX	883	890	TP1020
SNMG-MF2	SNMG 090304-MF2	0,4			■																				
	090308-MF2	0,8			■																				
	SNMG 120408-MF2	0,8		■	■	■	■		■																■
	120412-MF2	1,2		■	■				■																■
SNMG-M5	SNMG 090308-M5	0,8			■	■																			
	SNMG 120408-M5	0,8			■	■	■	■	■		■	■	■	■											
	120412-M5	1,2		■	■	■		■	■		■	■	■												
	120416-M5	1,6		■	■	■																			
	SNMG 150608-M5	0,8			■																				
	150612-M5	1,2		■	■	■		■				■													
	150616-M5	1,6		■	■	■	■		■																
	SNMG 190612-M5	1,2			■	■		■		■	■		■												
	190616-M5	1,6		■	■	■	■		■		■														
	SNMG-M6	SNMG 120408-M6	0,8		■	■																			
120412-M6		1,2		■	■																				
SNMG 150612-M6		1,2			■	■																			
150616-M6		1,6		■	■	■																			
SNMG 190612-M6		1,2		■	■	■																			
190616-M6		1,6		■	■	■																			
190624-M6		2,4		■	■	■																			

■ Stock standard
 Subject to change refer to current price- and stock-list

TNMA, TNMG



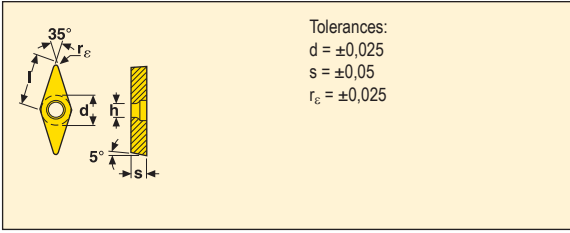
Size	Dimensions in mm			
	d	l	s	h
1103	6,35	11,0	3,18	2,26
1604	9,53	16,5	4,76	3,81
2204	12,70	22,0	4,76	5,15
2706	15,88	27,5	6,35	6,35



Inserts	Part No.	$r_c =$ rep	Grades																								
			Coated											Uncoated				Cermets									
			TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2050	TS2500	CP200	CP500	CP600	HX	KX	883	890	TP1020	TP1030	
TNMG-MF2	TNMG 110304-MF2	0,4			■																						
	TNMG 160404-MF2	0,4		■	■	■	■																		■	■	
	160408-MF2	0,8	■	■	■	■	■		■															■	■		
	160412-MF2	1,2		■	■				■																		
	TNMG 220404-MF2	0,4			■																						
	220408-MF2	0,8		■	■																						
TNMG-M6	TNMG 160408-M6	0,8		■	■																						
	160412-M6	1,2		■	■																						
	TNMG 220408-M6	0,8	■	■	■																						
	220412-M6	1,2	■	■	■																						
	220416-M6	1,6	■	■	■																						
	TNMG 270612-M6	1,2		■	■																						
	270616-M6	1,6		■	■																						

■ Stock standard
 Subject to change refer to current price- and stock-list

VBGT



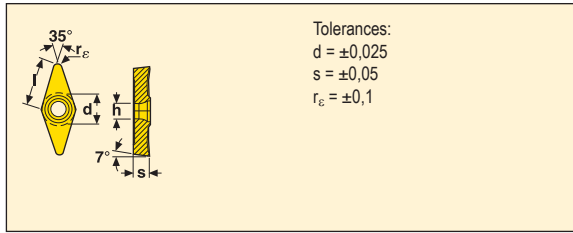
Size	Dimensions in mm			
	d	l	s	h
1102	6,350	11,0	2,38	2,9
1604	9,525	16,0	4,76	4,5



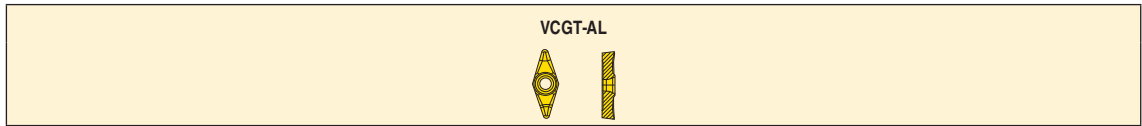
Inserts	Part No.	$r_e =$ rep	Grades																						
			Coated													Uncoated		Cermet							
			TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2050	TS2500	CP200	CP500	CP600	HX	KX	883	890	TP1020
VBGT-F1	VBGT 110201-F1	0,1															■								
	VBGT 160401-F1	0,1															■								
	160404-F1	0,4													■										
	160408-F1	0,8													■										
VBGT-M3	VBGT 160404-M3	0,4																		■					
	160408-M3	0,8																		■					

■ Stock standard
 Subject to change refer to current price- and stock-list

VCGT



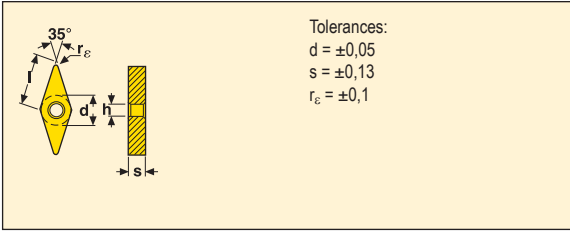
Size	Dimensions in mm			
	d	l	s	h
1103	6,350	11,1	3,18	2,8
1604	9,525	16,6	4,76	4,4



Inserts	Part No.	r _c = rep	Grades																							
			Coated											Uncoated				Cermet								
			TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2050	TS2500	CP200	CP500	CP600	HX	KX	883	890	TP1020	TP1030
VCGT-AL	VCGT 110302F-AL	0,2																								
	110304F-AL	0,4																								
	VCGT 160402F-AL	0,2												■												
	160404F-AL	0,4											■													
	160408F-AL	0,8																								
	160412F-AL	1,2																								

■ Stock standard
 Subject to change refer to current price- and stock-list

VNMU



Size	Dimensions in mm			
	d	l	s	h
1304	7,94	13	4,76	3,81



Inserts	Part No.	r _e = rep	Grades																							
			Coated													Uncoated				Cermets						
			TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2050	TS2500	CP200	CP500	CP600	HX	KX	883	890	TP1020	TP1030
VNMU-MF2	VNMU 130404-MF2	0,4	■	■																						
	130408-MF2	0,8	■	■																						
VNMU-M6	VNMU 130408-M6	0,8	■	■																						

■ Stock standard
 Subject to change refer to current price- and stock-list

WNMA, WNMG

Tolerances:
 $d = \pm 0,05$
 $d = \pm 0,08$
 $s = \pm 0,13$
 $r_c = \pm 0,1$

Size:
 06
 08

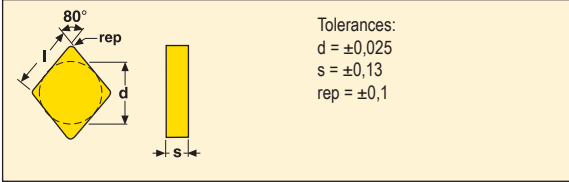
Size	Dimensions in mm			
	d	l	s	h
0604	9,53	6,6	4,76	3,81
0804	12,70	8,7	4,76	5,15

-MF2

Inserts	Part No.	r _c = rep	Grades																								
			Coated											Uncoated				Cermet									
			TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2050	TS2500	CP200	CP500	CP600	HX	KX	883	890	TP1020	TP1030	
WNMG-MF2	060404-MF2	0,4	■	■	■	■																			■	■	
	060408-MF2	0,8	■	■	■	■	■																			■	
	060412-MF2	1,2			■																						
	080404-MF2	0,4	■	■																							
	080408-MF2	0,8	■	■		■		■	■																		
	080412-MF2	1,2	■					■	■																		

■ Stock standard
 Subject to change refer to current price- and stock-list

CNGN



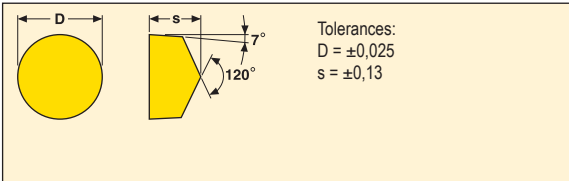
Size	Dimensions in mm			
	d	l	s	rep
1204	12,700	12,9	4,76	0,8
1207	12,700	12,9	7,94	0,8-1,2

CNGN



Inserts	Part No.	Grades	Toolholders	
		Uncoated	External	Internal
		CS100		
CNGN	CNGN 120408S-01020	■	CCBNR/L...12 CCLNR/L...12	..-MCLNR/L12 (without pin)
	CNGN 120708S-01020	■	CCBNR/L...12C CCLNR/L...12C	***
	120712S-01020	■		

RCGX



Size	Dimensions in mm	
	D	s
0606	6,350	6,35
0907	9,525	7,94
1207	12,700	7,94

RCGX

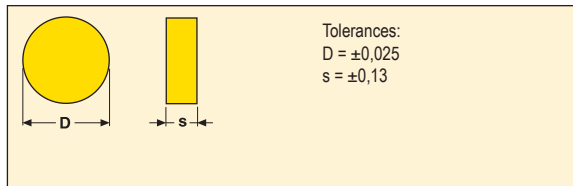


Inserts	Part No.	Grades	Toolholders	
		Uncoated	External	Internal
		CS100		
RCGX	RCGX 060600S-01020	■	CRDCN..06C	***
	060600T-01020	■		
	RCGX 090700S-01020	■	CRDCR/L...09C CRDCN..09C	***
	090700T-01020	■		
	RCGX 120700S-01020	■	CRDCR/L...12C CRDCN..12C	***
	120700T-01020	■		

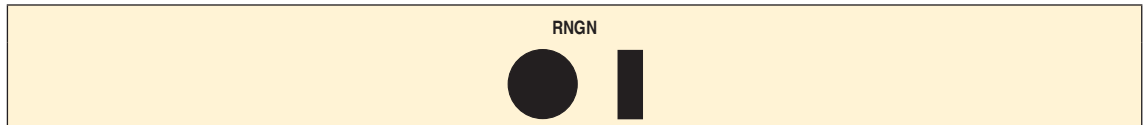
■ Stock standard
 Subject to change refer to current price- and stock-list

*** For information, contact your local Seco office

RNGN



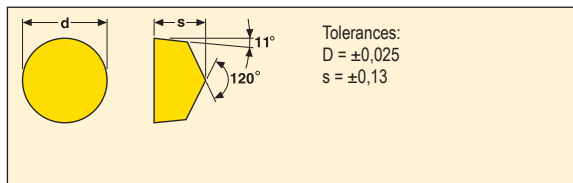
Size	Dimensions in mm	
	D	s
1204	12,700	4,76
1207	12,700	7,94



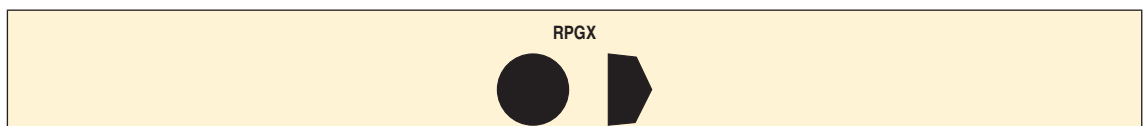
Inserts	Part No.	Grades	Toolholders	
		Uncoated	External	Internal
		CS100		
RNGN	RNGN 120400S-01020	■	CRSNR/L..12*	***
	120400T-01020	■	CRDNN..12*	
	RNGN 120700S-01020	■	CRSNR/L..12C	***
	120700T-01020	■	CRDNN..12C	

*Shim 117.10-621 to be ordered separately

RPGX



Size	Dimensions in mm	
	D	s
0907	9,525	7,94
1207	12,700	7,94



Inserts	Part No.	Grades	Toolholders	
		Uncoated	External	Internal
		CS100		
RPGX	RPGX 090700S-01020	■	CRDCR/L..09C	***
	090700T-01020	■	CRDCN..09C	
	RPGX 120700S-01020	■	CRDCR/L..12C	***
	120700T-01020	■	CRDCN..12C	

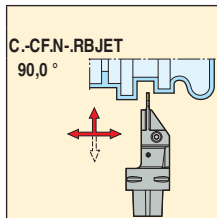
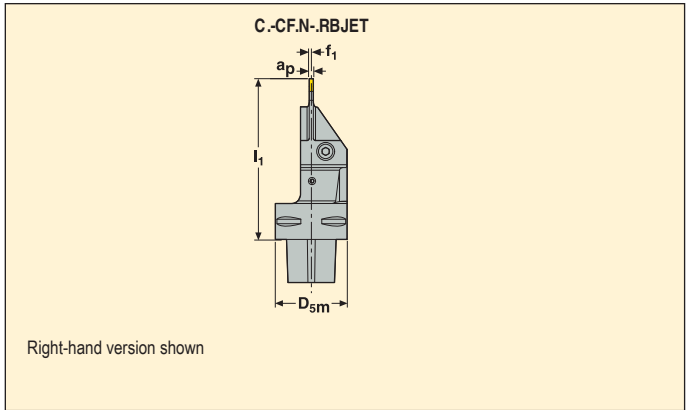
■ Stock standard
 Subject to change refer to current price- and stock-list

*** For information, contact your local Seco office

Toolholders for LCGF, LCGN, LCMF and LCMR



- For insert programme, see MN 2015 Turning page(s) 577-591, 593-594



Capto size	Part No.	Dimensions in mm					KG	Seat size	Image
		D _{5m}	f ₁	l ₁	a _r	D _m *			
C4	2.0 C4-CFZN-00075-2802RBJET	40	1,0	75	-	52,0	0,5	2	LC..2802..
	3.0 C4-CFXN-00090-03RBJET	40	1,5	90	-	64,0	0,6	3	LC..1603..

*Due to the design, grooving depth is limited, see MN Turning 2015 page(s) 477

Spare Parts, Parts included in delivery

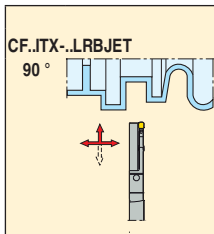
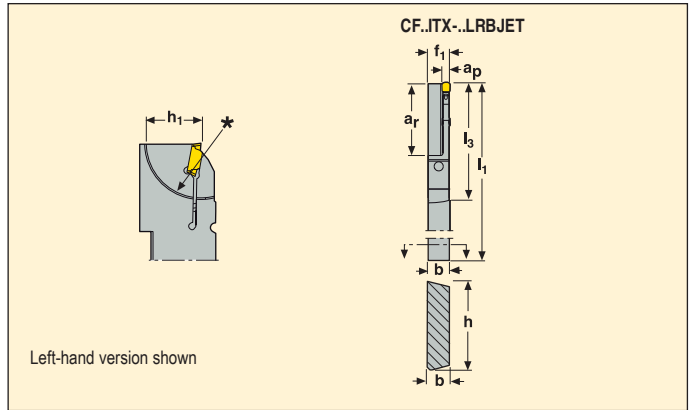
For holder	Clamp key	Clamp screw
CFZN/CFXN	4SMS795	TCEI0513

Please check availability in current price and stock-list

Toolholders for LCGF, LCGN, LCMF and LCMR



- For insert programme, see MN Turning 2015 page(s) 577-591, 593-594



	Part No.	Dimensions in mm							KG	
		h	b	l ₁	f ₁	l ₃	h ₁	D _m [*]		
3	CFOL26ITX-1603LRBJET	8	26	110	8	43	21,4	36,0	0,2	LC..1603..
3	CFQL32ITX-1603LRBJET	8	32	110	8	43	24,8	50,0	0,2	LC..1603..
2	CFTL26ITX-1902LRBJET	8	26	110	8	43	21,4	36,0	0,2	LC..1902..
2	CFZL32ITX-2802LRBJET	8	32	110	8	47	24,8	50,0	0,2	LC..2802..

*Due to the design, grooving depth is limited, see MN Turning 2015 page(s) 477

**Max depth of cut for LCGF/LCMF16.. = 14 mm

Spare Parts, Parts included in delivery

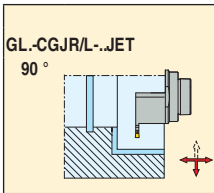
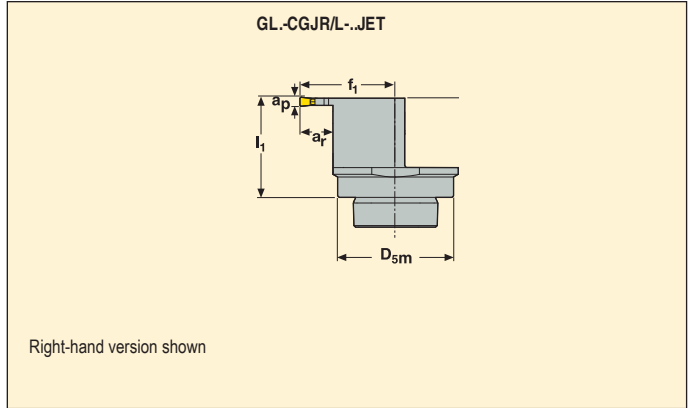
For size	Screw
26-32	MC6S4X18

Please check availability in current price and stock-list

Toolholders for LCGF, LCGN, LCMF and LCMR



- For insert programme, see MN 2015 Turning page(s) 578-591, 593-594
- For damping holders programme, see MN 2015 Turning page(s) 304-305



Size	Part No.	Dimensions in mm					DCINN*	KG	LC
		D _{5m}	f ₁	l ₁	a _r				
GL32	GL32-CGJR-25032-1902JET	32	25,0	32,0	7,5	42,5	0,2	LC..1902..	
	GL32-CGJL-25032-1902JET	32	25,0	32,0	7,5	42,5	0,2	LC..1902..	
GL40	GL40-CGJR-29032-1902JET	40	29,0	32,0	7,5	49,0	0,2	LC..1902..	
	GL40-CGJL-29032-1902JET	40	29,0	32,0	7,5	49,0	0,2	LC..1902..	
GL50	GL50-CGJR-34032-1902JET	50	34,0	32,0	7,5	59,0	0,3	LC..1902..	
	GL50-CGJL-34032-1902JET	50	34,0	32,0	7,5	59,0	0,3	LC..1902..	

*DCINN – minimum bore diameter, see MN Turning 2015 page(s) 477

Spare Parts, Parts included in delivery

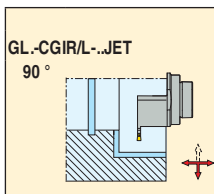
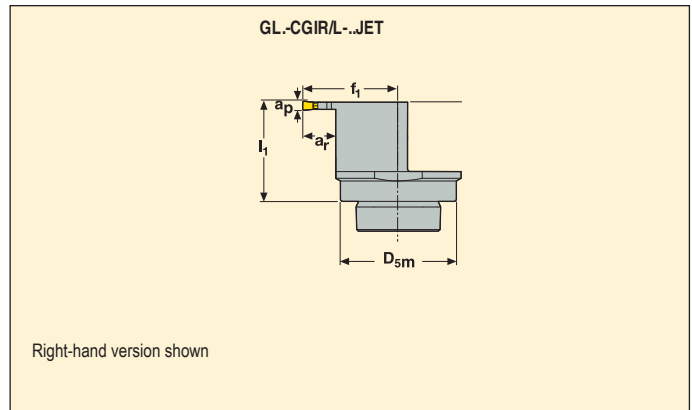
For size	Clamp key	Clamp screw
1902	T15P-7	L85011-T15P

Please check availability in current price and stock-list

Toolholders for LCGF, LCGN, LCMF and LCMR



- For insert programme, see MN 2015 Turning page(s) 578-591, 593-594
- For damping holders programme, see MN 2015 Turning page(s) 304-305



Size	Part No.	Dimensions in mm					DCINN*	KG	LC..1603..
		D _{sm}	f ₁	l ₁	a _r	a _p			
GL32	3,0	GL32-CGIR-26032-1603JET	32	26,5	32,0	9,0	43,0	0,2	LC..1603..
		GL32-CGIL-26032-1603JET	32	26,5	32,0	9,0	43,0	0,2	LC..1603..
GL40	3,0	GL40-CGIR-30032-1603JET	40	30,5	32,0	9,0	51,0	0,2	LC..1603..
		GL40-CGIL-30032-1603JET	40	30,5	32,0	9,0	51,0	0,2	LC..1603..
GL50	3,0	GL50-CGIR-35032-1603JET	50	35,5	32,0	9,0	61,0	0,3	LC..1603..
		GL50-CGIL-35032-1603JET	50	35,5	32,0	9,0	61,0	0,3	LC..1603..

*DCINN – minimum bore diameter, see MN Turning 2015 page(s) 477

Spare Parts, Parts included in delivery

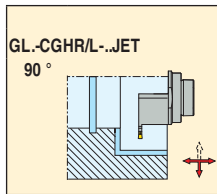
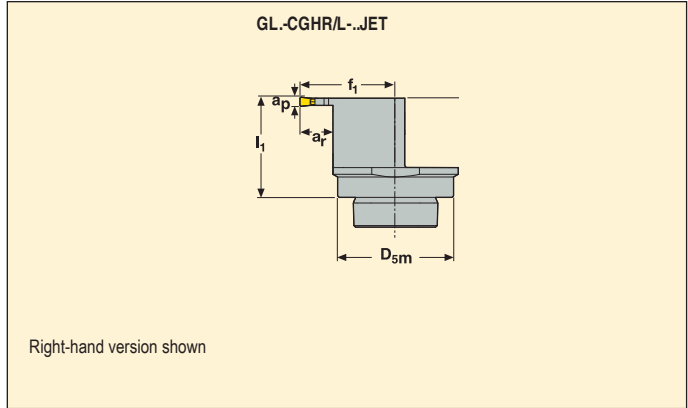
For size	Clamp key	Clamp screw
1603	T15P-7	L85011-T15P

Please check availability in current price and stock-list

Toolholders for LCGF, LCGN, LCMF and LCMR



- For insert programme, see MN 2015 Turning page(s) 578-591, 593-594
- For damping holders programme, see MN 2015 Turning page(s) 304-305



Size	Part No.	Dimensions in mm					DCINN*	KG	LC..1604..
		D _{5m}	f ₁	l ₁	a _r				
GL32	4,0 GL32-CGHR-27032-1604JET	32	27,5	32,0	10,0	43	0,2	LC..1604..	
	GL32-CGHL-27032-1604JET	32	27,5	32,0	10,0	43	0,2	LC..1604..	
GL40	4,0 GL40-CGHR-31032-1604JET	40	31,5	32,0	10,0	52,0	0,2	LC..1604..	
	GL40-CGHL-31032-1604JET	40	31,5	32,0	10,0	52,0	0,2	LC..1604..	
GL50	4,0 GL50-CGHR-36032-1604JET	50	36,5	32,0	10,0	62,0	0,3	LC..1604..	
	GL50-CGHL-36032-1604JET	50	36,5	32,0	10,0	62,0	0,3	LC..1604..	

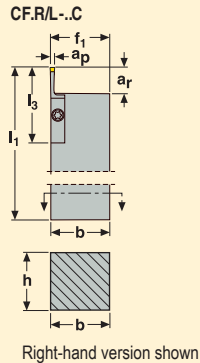
*DCINN – minimum bore diameter, see MN Turning 2015 page(s) 477

Spare Parts, Parts included in delivery

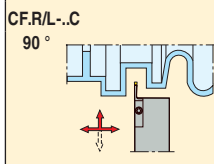
For size	Clamp key	Clamp screw
1604	T15P-7	L85011-T15P







Please check availability in current price and stock-list

Toolholders for ceramic inserts LPGN





• For insert programme, see MN 2015 Turning page(s) 632



		Part No.	Dimensions in mm							Seat size	
			h	b	l ₁	f ₁	l ₃	a _r			
3,17		CFOR 3244M-0317C	32	44	150	44,2	56,4	19	1,5	3,17	LPGN1204..
		CFOL 3244M-0317C	32	44	150	44,2	56,4	19	1,5	3,17	LPGN1204..
6,35		CFLR 3244M-0635C	32	44	150	44,6	66,6	29	1,5	6,35	LPGN1906..
		CFLl 3244M-0635C	32	44	150	44,6	66,6	29	1,5	6,35	LPGN1906..
9,52		CFKR 3244M-0952C	32	44	150	45,0	76,8	39	1,5	9,52	LPGN2508..
		CFKL 3244M-0952C	32	44	150	45,0	76,8	39	1,5	9,52	LPGN2508..

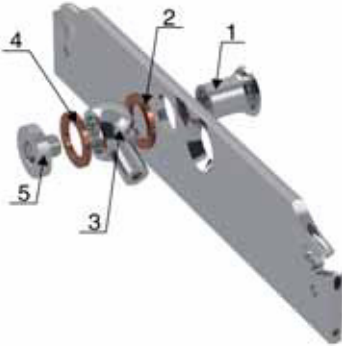
Spare Parts, Parts included in delivery

For holder	Clamp	Clamp key
		
-0317C	CER024	T30P-7
-0635C	CER055	T30P-7
-0952C	CER087	T30P-7

Please check availability in current price and stock-list

Assembling instructions for 150.10 coolant kit

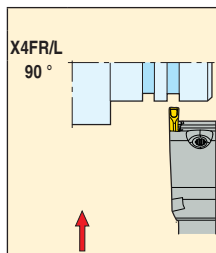
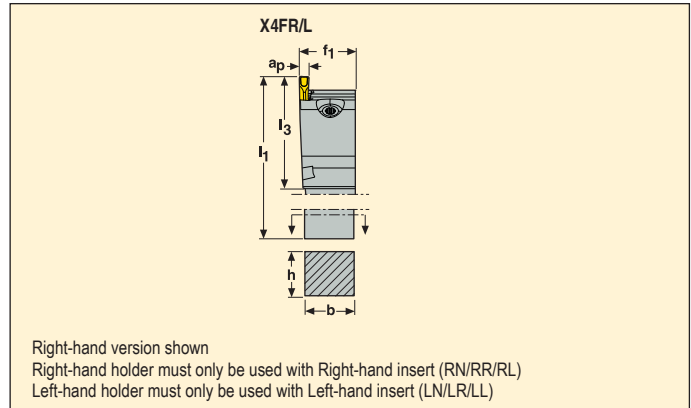
- Put the coolant adapter (1) from the back side of the blade.
- Put one washer (2) with thickness = 1,5 mm from the front side of the blade onto the coolant adapter.
Attention: for the 3 mm blades and thinner, use washer (2) with thickness 1,0 mm.
- Mount the banjo hose (3) and after that one washer (4) with thickness = 1,5 mm.
- Lock the jet-kit with the screw (5). Use two Allen keys (6 mm) to tighteh the kit with maximum 30 Nm torque.



Toolholders for inserts X4GK



- For insert programme, see MN Turning 2015 page(s) 665-669



Part No.	Dimensions in mm					KG	
	h	b	l ₁	f ₁	l ₃		
X4FR 1212K2503	12	12	125	15	37	0,2	X4GK25..RN/RR/RL...
1616K2503	16	16	125	18	37	0,3	X4GK25..RN/RR/RL...
2020M2503	20	20	150	22	36	0,6	X4GK25..RN/RR/RL...
2525M2503	25	25	150	28	36	0,8	X4GK25..RN/RR/RL...
X4FL 1212K2503	12	12	125	15	37	0,2	X4GK25..LN/LR/LL...
1616K2503	16	16	125	18	37	0,3	X4GK25..LN/LR/LL...
2020M2503	20	20	150	22	36	0,6	X4GK25..LN/LR/LL...
2525M2503	25	25	150	28	36	0,8	X4GK25..LN/LR/LL...

For a_p and a_r, see MN Turning 2015 page(s) 656

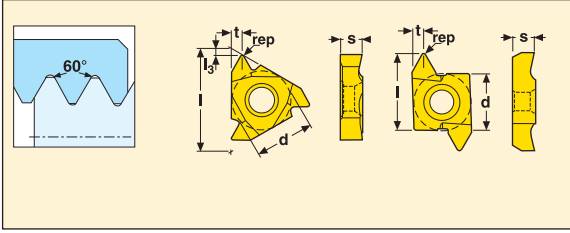
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw
-2503	T15P-7	L85020-T15P

Please check availability in current price and stock-list

Partial Profile 60° – External Threading

Snap-Tap®



Size	Dimensions in mm		
	d	l	s
16	9,525	16,5	3,47
22	12,700	22,0	4,71
26	15,875	26,0	7,88



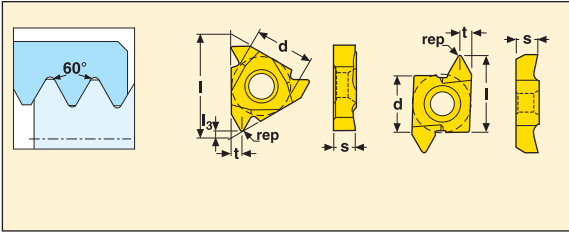
Pitch		Dimensions in mm			Insert Part No. Right	Grades							Insert Part No. Left	Grades									
mm	TPI	l ₃	t	rep		Coated				Uncoated				Coated				Uncoated					
						CP200	CP300	CP500	TP1030	TM4000	H15					CP200	CP300	CP500	TP1030	TM4000	H15		
						■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■
0,50-1,50	48-16	0,6	0,8	0,08	16ER A60	■	■	■	■	■			16EL A60		■	■							
0,50-3,00	48-8	1,1	1,5	0,08	AG60	■		■	■	■			AG60	■	■								
1,75-3,00	14-8	1,1	1,5	0,18	G60	■		■		■			G60		■								
3,50-5,00	7-5	1,8	2,5	0,40	22ER N60	■	■	■		■	■		22EL N60		■								
0,50-1,50	48-16	0,6	0,8	0,08	16ER A60-A				■														
0,50-3,00	48-8	1,1	1,5	0,08	AG60-A				■														
1,75-3,00	14-8	1,2	1,5	0,18	G60-A				■														
0,50-1,50	48-16	0,6	0,8	0,08	16ER A60-A1			■	■														
0,50-3,00	48-8	1,1	1,5	0,08	AG60-A1			■	■														
1,75-3,00	14-8	1,2	1,5	0,18	G60-A1			■	■														
0,50-1,50	48-16	0,6	0,8	0,08	16ER A60-A2				■														
0,50-3,00	48-8	1,1	1,5	0,08	AG60-A2				■														
1,75-3,00	14-8	1,2	1,5	0,18	G60-A2				■														
5,50-10,00	4,5-2,5	-	5,0	0,40	26ER K60		■	■		■			26NR K60		■	■		■					
-	-	-	-	-	16V60				■														

■ Stock standard
Subject to change refer to current price- and stock-list

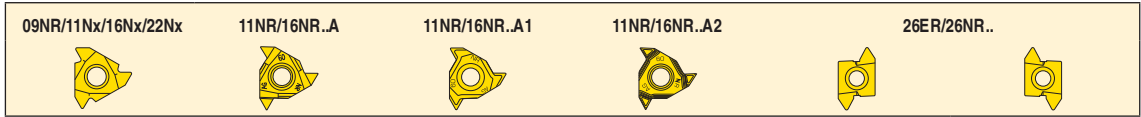
* Toolset contents:
3 pcs 16ERG60, CP500, 3 pcs 16NRG60, CP500,
2 pcs 16ERA60, CP500 and 2 pcs 16NRA60, CP500

Partial Profile 60° – Internal Threading

Snap-Tap®



Size	Dimensions in mm		
	d	l	s
09	5,560	9,6	2,40
11	6,350	11,0	3,00
16	9,525	16,5	3,47
22	12,700	22,0	4,71
26	15,875	26,0	7,88

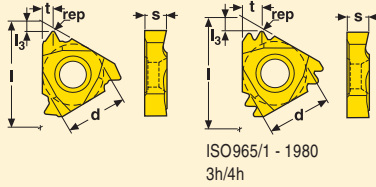
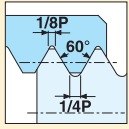


Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades						
mm	TPI	l ₃	t	rep		Coated			Uncoated				Coated			Uncoated			
						CP200	CP300	CP500	TP1030	TM4000	H15		CP200	CP300	CP500	TP1030	TM4000	H15	
0,50-1,50	48-16	0,7	0,8	0,08	09NR A60			■		■									
0,50-1,50	48-16	0,7	0,8	0,08	11NR A60	■		■	■	■	■		11NL A60			■			
0,50-1,50	48-16	0,7	0,8	0,08	16NR A60			■		■	■		16NL A60			■		■	
0,50-3,00	48-8	1,1	1,5	0,08	AG60	■		■	■	■	■		AG60			■			
1,75-3,00	14-8	1,1	1,5	0,12	G60	■		■		■	■		G60			■			
3,50-5,00	7-5	1,8	2,5	0,25	22NR N60	■	■	■		■	■		22NL N60			■			
0,50-1,50	48-16	0,7	0,8	0,08	11NR A60-A			■											
0,50-3,00	48-8	1,1	1,5	0,08	16NR AG60-A			■											
1,75-3,00	14-8	1,2	1,5	0,12	G60-A			■											
0,50-1,50	48-16	0,7	0,8	0,08	11NR A60-A1			■	■										
0,50-3,00	48-8	1,1	1,5	0,08	16NR AG60-A1			■	■										
1,75-3,00	14-8	1,2	1,5	0,12	G60-A1			■	■										
0,50-1,50	48-16	0,7	0,8	0,08	11NR A60-A2			■											
0,50-3,00	48-8	1,1	1,5	0,08	16NR AG60-A2			■											
1,75-3,00	14-8	1,2	1,5	0,12	G60-A2			■											
5,50-10,00	4,5-2,5	-	5,0	0,40	26NR K60			■	■		■		26ER K60			■	■		■

■ Stock standard
 Subject to change refer to current price- and stock-list

ISO Metric – External Threading

Snap-Tap®



ISO 965/1 - 1980
3h/4h

Size	Dimensions in mm		
	d	l	s
16	9,525	16,5	3,47
22	12,700	22,0	4,71
27	15,875	27,0	6,15

16Ex/22Ex/27ER



16ER..A



16ER..A1



16ER..A2



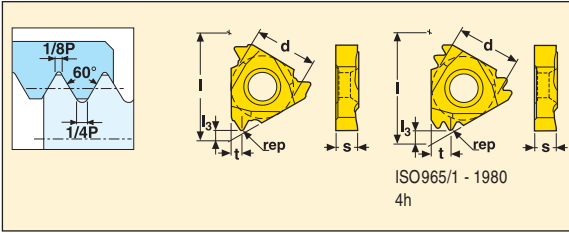
Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades								
mm	TPI	l ₃	t	rep		Coated			Uncoated				Coated			Uncoated					
						CP200	CP300	CP500	TPT030	TMA000	H15		CP200	CP300	CP500	TPT030	TMA000	H15			
0.50	-	0,8	0,8	0,06	16ER 0.5ISO			■		■	■		16EL 0.5ISO			■					
0.75	-	0,8	0,8	0,11	0.75ISO		■	■		■	■		0.75ISO			■					
0.80	-	0,8	0,6	0,11	0.8ISO			■					0.8ISO			■					
1.00	-	0,8	0,8	0,14	1.0ISO	■		■	■	■	■		1.0ISO			■					
1.25	-	0,8	0,8	0,17	1.25ISO	■		■	■	■	■		1.25ISO			■					
1.50	-	0,8	0,8	0,22	1.5ISO	■		■	■	■	■		1.5ISO	■	■		■				
1.75	-	1,2	1,5	0,25	1.75ISO	■		■	■	■	■		1.75ISO			■					
2.00	-	1,2	1,5	0,29	2.0ISO	■		■	■	■	■		2.0ISO			■		■			
2.50	-	1,2	1,5	0,34	2.5ISO	■		■	■	■	■		2.5ISO			■					
3.00	-	1,2	1,5	0,42	3.0ISO	■		■	■	■	■		3.0ISO			■					
3.50	-	1,8	2,5	0,47	22ER 3.5ISO	■	■	■			■		22EL 3.5ISO			■					
4.00	-	1,8	2,5	0,53	4.0ISO	■	■	■		■	■		4.0ISO			■					
4.50	-	1,8	2,5	0,59	4.5ISO			■			■		4.5ISO			■					
5.00	-	1,8	2,5	0,66	5.0ISO	■		■			■		5.0ISO			■					
5.50	-	2,2	3,2	0,72	27ER 5.5ISO			■													
6.00	-	2,2	3,2	0,79	6.0ISO		■	■		■											
1.00	-	0,8	0,8	0,14	16ER 1.0ISO-A			■													
1.25	-	0,8	0,8	0,17	1.25ISO-A			■													
1.50	-	0,8	0,8	0,22	1.5ISO-A			■													
1.75	-	1,2	1,5	0,25	1.75ISO-A			■													
2.00	-	1,2	1,5	0,29	2.0ISO-A			■													
2.50	-	1,2	1,5	0,34	2.5ISO-A			■													
3.00	-	1,2	1,5	0,42	3.0ISO-A			■													
1.00	-	0,8	0,8	0,14	16ER 1.0ISO-A1			■													
1.25	-	0,8	0,8	0,17	1.25ISO-A1			■													
1.50	-	0,8	0,8	0,22	1.5ISO-A1		■	■													
1.75	-	1,2	1,5	0,25	1.75ISO-A1			■													
2.00	-	1,2	1,5	0,29	2.0ISO-A1		■	■													
2.50	-	1,2	1,5	0,34	2.5ISO-A1			■													
3.00	-	1,2	1,5	0,42	3.0ISO-A1			■													
1.00	-	0,8	0,8	0,14	16ER 1.0ISO-A2			■													
1.25	-	0,8	0,8	0,17	1.25ISO-A2			■													
1.50	-	0,8	0,8	0,22	1.5ISO-A2			■													
1.75	-	1,2	1,5	0,25	1.75ISO-A2			■													
2.00	-	1,2	1,5	0,29	2.0ISO-A2			■													
2.50	-	1,2	1,5	0,34	2.5ISO-A2			■													
3.00	-	1,2	1,5	0,42	3.0ISO-A2			■													

■ Stock standard

Subject to change refer to current price- and stock-list

ISO Metric – Internal Threading

Snap-Tap®



Size	Dimensions in mm		
	d	l	s
09	5,560	9,6	2,40
11	6,350	11,0	3,00
16	9,525	16,5	3,47
22	12,700	22,0	4,71
27	15,875	27,0	6,15

09NR/11Nx/16Nx/22Nx/27NR

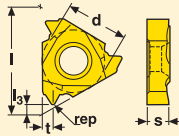
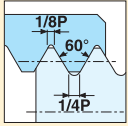


Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades					
mm	TPI	l ₃	t	rep		Coated			Uncoated				Coated			Uncoated		
						CP200	CP300	CP500	TP1030	TM4000	H15		CP200	CP300	CP500	TP1030	TM4000	H15
0,50	-	0,7	0,6	0,04		09NR 0.5ISO		■										
0,80	-	0,7	0,6	0,07	0.8ISO		■											
1,00	-	0,7	0,8	0,07	1.0ISO		■		■									
1,25	-	0,7	0,8	0,11	1.25ISO				■									
1,50	-	0,7	0,8	0,12	1.5ISO				■									
1,75	-	0,7	0,8	0,12	1.75ISO				■									
2,00	-	0,7	0,9	0,17	2.0ISO				■									
0,50	-	0,8	0,8	0,03	11NR 0.5ISO						■	11NL 0.5ISO				■		
0,75	-	0,8	0,8	0,04	0.75ISO						■	0.75ISO				■		
1,00	-	0,8	0,8	0,08	1.0ISO	■					■	1.0ISO				■		
1,25	-	0,8	0,8	0,09	1.25ISO						■	1.25ISO				■		
1,50	-	0,8	0,8	0,12	1.5ISO	■					■	1.5ISO				■		
1,75	-	0,8	0,8	0,12	1.75ISO						■	1.75ISO				■		
2,00	-	0,8	0,9	0,17	2.0ISO	■					■	2.0ISO				■		
0,50	-	0,8	0,8	0,03	16NR 0.5ISO						■	16NL 0.5ISO				■		
0,75	-	0,8	0,8	0,04	0.75ISO						■	0.75ISO				■		
1,00	-	0,8	0,8	0,08	1.0ISO	■					■	1.0ISO	■			■		
1,25	-	0,8	0,8	0,09	1.25ISO	■					■	1.25ISO				■		
1,50	-	0,8	0,8	0,12	1.5ISO	■					■	1.5ISO	■			■		
1,75	-	1,2	1,5	0,12	1.75ISO						■	1.75ISO				■		
2,00	-	1,2	1,5	0,17	2.0ISO	■					■	2.0ISO				■		
2,50	-	1,2	1,5	0,18	2.5ISO	■					■	2.5ISO				■		
3,00	-	1,2	1,5	0,21	3.0ISO	■					■	3.0ISO				■		
3,50	-	1,9	2,3	0,25	22NR 3.5ISO	■					■	22NL 3.5ISO				■		
4,00	-	2,0	2,5	0,28	4.0ISO	■	■				■	4.0ISO				■		
4,50	-	2,1	2,5	0,32	4.5ISO						■	4.5ISO				■		
5,00	-	1,8	2,5	0,35	5.0ISO	■					■	5.0ISO				■		
5,50	-	2,2	3,2	0,38	27NR 5.5ISO						■							
6,00	-	2,2	3,2	0,42	6.0ISO		■	■		■								

■ Stock standard
Subject to change refer to current price- and stock-list

UN – Internal Threading

Snap-Tap®



ANSI B1.1 - 1983
3B

Size	Dimensions in mm		
	d	l	s
09	5,560	9,6	2,40
11	6,350	11,0	3,00
16	9,525	16,5	3,47
22	12,700	22,0	4,71
27	15,875	27,0	6,15

09NR/11Nx/16Nx/22Nx/27NR

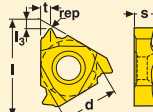
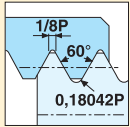


Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades							
mm	TPI	l ₃	t	rep		Coated			Uncoated				Coated			Uncoated				
						CP200	CP300	CP500	TPT030	TMA000	H15		CP200	CP300	CP500	TPT030	TMA000	H15		
-	20	0,7	0,8	0,09	09NR 20UN			■	■											
-	18	0,7	0,8	0,10	18UN			■												
-	13	0,7	0,9	0,15	13UN			■												
-	32	0,8	0,8	0,04	11NR 32UN			■		■										
-	28	0,8	0,8	0,05	28UN			■		■										
-	24	0,8	0,8	0,07	24UN			■		■			11NL 24UN							
-	20	0,8	0,8	0,09	20UN			■		■	■		20UN			■				
-	18	0,8	0,8	0,10	18UN			■		■	■		18UN			■				
-	16	0,8	0,8	0,13	16UN			■		■	■		16UN			■				
-	14	0,8	0,9	0,14	14UN			■		■	■		14UN			■				
-	40	1,2	0,5	0,04	16NR 40UN			■												
-	32	0,8	0,8	0,04	32UN			■		■			16NL 32UN			■				
-	28	0,8	0,8	0,05	28UN			■		■			28UN			■				
-	24	0,8	0,8	0,07	24UN			■		■			24UN			■				
-	20	0,8	0,8	0,09	20UN			■		■	■		20UN			■				
-	18	0,8	0,8	0,10	18UN			■		■	■		18UN			■				
-	16	0,8	0,8	0,13	16UN			■		■	■		16UN			■				
-	14	1,2	1,5	0,14	14UN			■		■	■		14UN			■				
-	13	1,2	1,5	0,15	13UN			■		■										
-	12	1,2	1,5	0,15	12UN			■		■	■		16NL 12UN			■				
-	11	1,2	1,5	0,16	11UN			■		■			11UN			■				
-	10	1,2	1,5	0,18	10UN			■		■	■		10UN			■				
-	9	1,2	1,5	0,19	9UN			■		■										
-	8	1,2	1,5	0,25	8UN			■		■	■		16NL 8UN			■				
-	7	2,0	2,4	0,25	22NR 7UN					■			22NL 7UN			■				
-	6	2,2	2,5	0,30	6UN			■		■			6UN			■				
-	5	1,8	2,5	0,36	5UN			■		■										
-	4	2,2	3,2	0,45	27NR 4UN					■										

■ Stock standard
Subject to change refer to current price- and stock-list

UNJ – External threading (Internal Threading*)

Snap-Tap®



BS4084 - 1996
MIL-SPECS - 8879A
3A

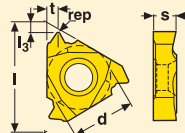
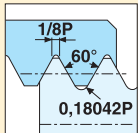
Size	Dimensions in mm		
	d	l	s
16	9,525	16,5	3,47

16ER..UNJ



Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades							
mm	TPI	l ₃	t	rep		Coated			Uncoated				Coated			Uncoated				
						CP200	CP300	CP500	TP1030	TM4000	H15		CP200	CP300	CP500	TP1030	TM4000	H15		
-	32	0,8	0,8	0,11	16ER 32UNJ															
-	28	0,8	0,8	0,14	28UNJ	■	■													
-	24	0,8	0,8	0,16	24UNJ	■	■													
-	20	0,8	0,8	0,21	20UNJ	■	■			■	■									
-	18	1,2	0,8	0,24	18UNJ	■	■			■	■									
-	16	1,2	0,8	0,27	16UNJ	■	■			■	■									
-	14	1,2	1,5	0,30	14UNJ	■	■													
-	12	1,2	1,5	0,32	12UNJ					■	■			16EL 12UNJ	■		■			
-	10	1,2	1,5	,34	10UNJ	■														
-	8	1,2	1,5	0,45	8UNJ	■	■													

MJ – External Threading (Internal Threading*)



ISO5855 - 1983
4h/6h

Size	Dimensions in mm		
	d	l	s
16	9,525	16,5	3,47

16ER..MJ

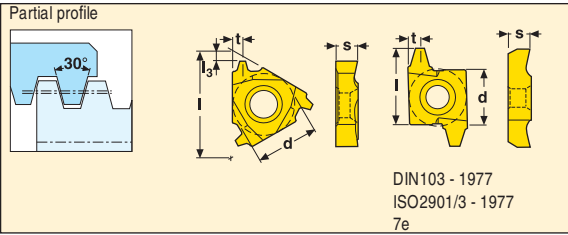


Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades							
mm	TPI	l ₃	t	rep		Coated			Uncoated				Coated			Uncoated				
						CP200	CP300	CP500	TP1030	TM4000	H15		CP200	CP300	CP500	TP1030	TM4000	H15		
1,0	-	0,8	0,8	0,16	16ER 1.0MJ	■	■			■			16EL 1.0MJ	■						
1,25	-	0,8	0,8	0,21	1.25MJ	■														
1,5	-	0,8	0,8	0,25	1.5MJ	■		■			■			16EL 1.5MJ	■					
2,0	-	1,2	1,5	0,32	2.0MJ	■														

■ Stock standard
Subject to change refer to current price- and stock-list

TR-DIN103 – External Threading

Snap-Tap®



Size	Dimensions in mm		
	d	l	s
16	9,525	16,5	3,47
22	12,700	22,0	4,71
27	15,875	27,0	6,15
20	12,700	20,0	6,30
26	15,875	26,0	7,88

16Ex/22Ex27ER



20ER/26ER



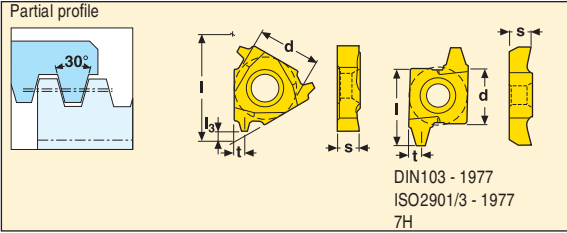
Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades						
mm	TPI	l ₃	t	rep		Coated			Uncoated				Coated			Uncoated			
						CP200	CP300	CP500	TPT030	TMA000	H15		CP200	CP300	CP500	TPT030	TMA000	H15	
1,5	-	0,9	0,8	-	16ER 1.5TR			■			■								
2,0	-	1,3	1,5	-	2.0TR			■			■								
3,0	-	1,3	1,6	-	3.0TR			■		■									
4,0	-	2,0	2,5	-	22ER 4.0TR		■	■		■									
5,0	-	2,0	2,3	-	5.0TR		■	■		■									
6,0	-	2,5	3,2	-	27ER 6.0TR					■									
7,0	-		3,2	-	20ER 7.0TR		■	■											
8,0	-		3,2	-	8.0TR		■	■											
9,0	-		5,0	-	26ER 9.0TR					■									
10,0	-		5,0	-	10.0TR		■	■		■									
12,0	-		5,0	-	12.0TR		■	■		■									
14,0	-		5,1	-	14.0TR		■	■		■									

■ Stock standard

Subject to change refer to current price- and stock-list

TR-DIN103 – Internal Threading

Snap-Tap®



Size	Dimensions in mm		
	d	l	s
16	9,525	16,5	3,47
22	12,700	22,0	4,71
27	15,875	27,0	6,15
20	12,700	20,0	6,30
26	15,875	26,0	7,88

16Nx/22Nx/27NR



20NR/26NR



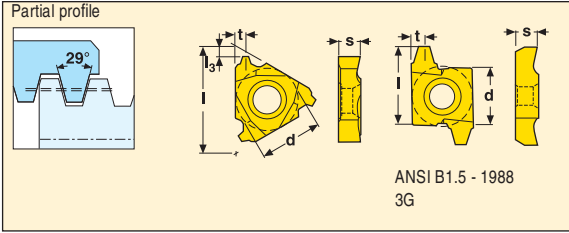
Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades					
mm	TPI	l ₃	t	rep		Coated			Uncoated				Coated			Uncoated		
						CP200	CP300	CP500	TP1030	TM4000	H15		CP200	CP300	CP500	TP1030	TM4000	H15
1,5	-	0,9	0,8	-	16NR 1.5TR		■		■		16NL 1.5TR		■					
2,0	-	1,3	1,5	-	2.0TR		■		■		2.0TR		■					
3,0	-	1,3	1,6	-	3.0TR		■	■			3.0TR		■					
4,0	-	2,0	2,5	-	22NR 4.0TR		■		■		22NL 4.0TR		■					
5,0	-	2,0	2,3	-	5.0TR		■	■			5.0TR		■					
6,0	-	2,5	3,2	-	27NR 6.0TR			■										
7,0	-		3,2	-	20NR 7.0TR		■	■										
8,0	-		3,2	-	8.0TR		■	■										
9,0	-		5,0	-	26NR 9.0TR			■										
10,0	-		5,0	-	10.0TR		■	■	■									
12,0	-		5,0	-	12.0TR		■	■	■									
14,0	-		5,1	-	14.0TR		■	■	■									

■ Stock standard

Subject to change refer to current price- and stock-list

ACME – External Threading

Snap-Tap®



Size	Dimensions in mm		
	d	l	s
16	9,525	16,5	3,47
22	12,700	22,0	4,71
27	15,875	27,0	6,15
20	12,700	20,0	6,30
26	15,875	26,0	7,88

16Ex/22Ex/27Ex



20ER/26ER



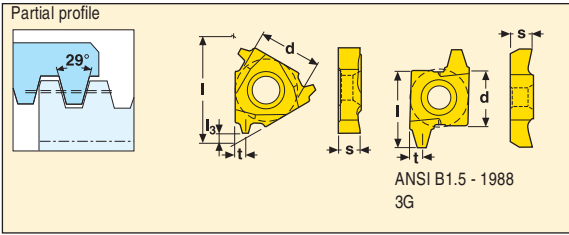
Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades						
mm	TPI	l ₃	t	rep		Coated			Uncoated				Coated			Uncoated			
						CP200	CP300	CP500	TPT030	TMA000	H15		CP200	CP300	CP500	TPT030	TMA000	H15	
-	16	0,9	0,8	-	16ER 16ACME		■												
-	14	1,3	1,5	-	14ACME		■												
-	12	1,3	1,5	-	12ACME		■												
-	10	1,4	1,5	-	10ACME		■												
-	8	1,3	1,5	-	8ACME		■		■		16EL 8ACME		■						
-	6	2,0	2,5	-	22ER 6ACME		■		■		22EL 6ACME		■						
-	5	2,0	2,3	-	5ACME		■				5ACME		■						
-	4	2,5	3,0	-	27ER 4ACME		■		■		27EL 4ACME		■						
-	3		3,2	-	20ER 3ACME		■	■	■										
-	2		5,0	-	26ER 2ACME		■	■	■										

■ Stock standard

Subject to change refer to current price- and stock-list

ACME - Internal Threading

Snap-Tap®



Size	Dimensions in mm		
	d	l	s
16	9,525	16,5	3,47
22	12,700	22,0	4,71
27	15,875	27,0	6,15
20	12,700	20,0	6,30
26	15,875	26,0	7,88

16NR/22Nx/27NR



20NR/26NR



Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades						
mm	TPI	l ₃	t	rep		Coated			Uncoated				Coated			Uncoated			
						CP200	CP300	CP500	TP1030	TIM4000	H15		CP200	CP300	CP500	TP1030	TIM4000	H15	
-	16	0,9	0,8	-	16NR 16ACME		■												
-	12	1,3	1,5	-	12ACME		■												
-	10	1,3	1,5	-	10ACME		■												
-	8	1,3	1,5	-	8ACME		■												
-	6	2,0	2,5	-	22NR 6ACME		■	■	■										
-	5	2,0	2,3	-	5ACME			■			22NL 5ACME		■						
-	4	2,5	3,0	-	27NR 4ACME		■	■	■										
-	3,5		3,2	-	20NR 3.5ACME				■										
-	3		3,2	-	20NR 3ACME		■	■	■										
-	2		5,0	-	26NR 2ACME		■		■										

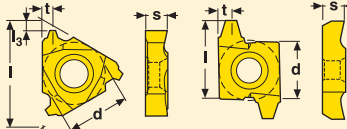
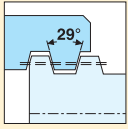
■ Stock standard

Subject to change refer to current price- and stock-list

Stub-ACME – External Threading

Snap-Tap®

Partial profile



ANSI B1.8 - 1988
2G

Size	Dimensions in mm		
	d	l	s
16	9,525	16,5	3,47
22	12,700	22,0	4,71
27	15,875	27,0	6,15
20	12,700	20,0	6,30
26	15,875	26,0	7,88

16ER/22Ex/27ER



20ER/26ER



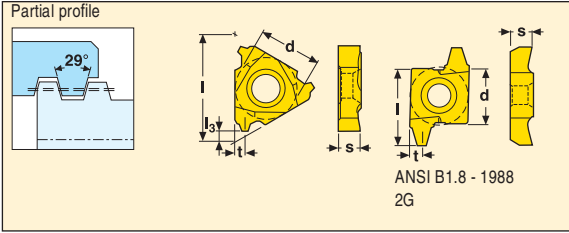
Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades						
mm	TPI	l ₃	t	rep		Coated			Uncoated				Coated			Uncoated			
						CP200	CP300	CP500	TPT030	TMA000	H15		CP200	CP300	CP500	TPT030	TMA000	H15	
-	12	1,5	1,5	-	16ER 12STACME			■											
-	10	1,5	1,5	-	10STACME			■		■									
-	8	1,8	1,5	-	8STACME		■	■		■									
-	6	2,4	2,5	-	22ER 6STACME			■				22EL 6STACME			■				
-	5	2,0	2,1	-	5STACME			■											
-	4	2,6	2,8	-	27ER 4STACME		■	■		■									
-	3		3,2	-	20ER 3STACME			■											
-	2		5,0	-	26ER 2STACME		■	■											

■ Stock standard

Subject to change refer to current price- and stock-list

Stub-ACME – Internal Threading

Snap-Tap®



Size	Dimensions in mm		
	d	l	s
16	9,525	16,5	3,47
22	12,700	22,0	4,71
27	15,875	27,0	6,15
20	12,700	20,0	6,30

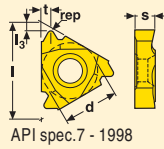
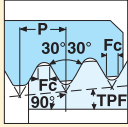


Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades						
						Coated			Uncoated				Coated			Uncoated			
						CP200	CP300	CP500	TP1030	TIM4000	H15		CP200	CP300	CP500	TP1030	TIM4000	H15	
mm	TPI	l ₃	t	rep															
-	12	1,5	1,5	-	16NR 12STACME		■												
-	10	1,5	1,5	-	10STACME		■		■										
-	8	1,8	1,5	-	8STACME	■	■		■										
-	6	2,4	2,5	-	22NR 6STACME		■												
-	5	2,0	2,1	-	5STACME		■												
-	4	2,6	2,8	-	27NR 4STACME	■	■		■										
-	3		3,2	-	20NR 3STACME		■												

■ Stock standard
Subject to change refer to current price- and stock-list

API – External Threading

Snap-Tap®



API spec.7 - 1998

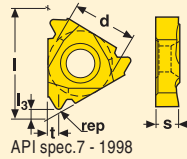
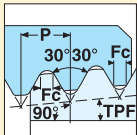
Size	Dimensions in mm		
	d	l	s
22	12,700	22,0	4,71
27	15,875	27,0	6,15

22ER/27ER



Pitch	Dimensions in mm		API Code	Taper TPF	rep	fc	Part No.	Grades						
	TPI	l ₃						t	Coated				Uncoated	
								CP200	CP300	CP500	TP1030	TM4000	H15	
5	2,00	2,50	V040	3	0,508	1,016	22ER 5API404 4API386		■	■		■		
4	1,95	2,55	V038R	2	0,965	1,651			■	■		■		
5	2,20	3,20	V040	3	0,508	1,016	27ER 5API404 4API384		■	■		■		
4	2,20	3,20	V038R	3	0,965	1,651			■	■	■			
4	2,20	3,20	V038R	2	0,965	1,651	4API386	■	■	■		■		
4	2,20	3,20	V050	3	0,635	1,270	4API504	■	■	■		■		
4	2,20	3,20	V050	2	0,635	1,270	4API506	■	■	■		■		

API – Internal Threading



API spec.7 - 1998

Size	Dimensions in mm		
	d	l	s
22	12,700	22,0	4,71
27	15,875	27,0	6,15

22NR/27NR



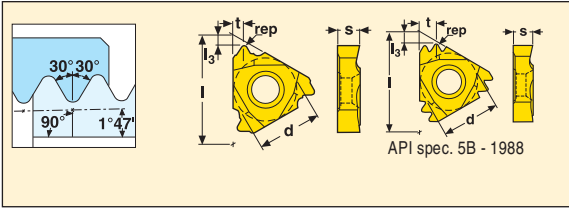
Pitch	Dimensions in mm		API Code	Taper TPF	rep	fc	Part No.	Grades						
	TPI	l ₃						t	Coated				Uncoated	
								CP200	CP300	CP500	TP1030	TM4000	H15	
5	2,00	2,50	V040	3	0,508	1,016	22NR 5API404 4API386		■	■		■		
4	1,90	2,50	V038R	2	0,965	1,651			■	■		■	■	
5	2,20	3,20	V040	3	0,508	1,016	27NR 5API404 4API384		■			■		
4	2,20	3,20	V038R	3	0,965	1,651			■	■	■			
4	2,20	3,20	V038R	2	0,965	1,651	4API386	■	■	■		■		
4	2,20	3,20	V050	3	0,635	1,270	4API504	■	■	■		■		
4	2,20	3,20	V050	2	0,635	1,270	4API506	■	■	■		■		

■ Stock standard

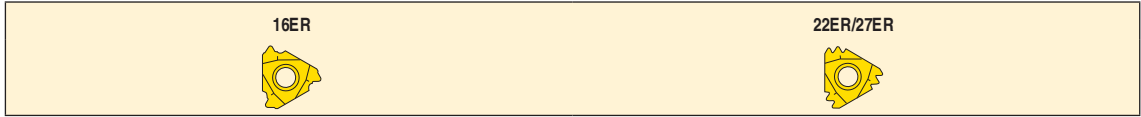
Subject to change refer to current price- and stock-list

APIRD-External Threading

Snap-Tap®

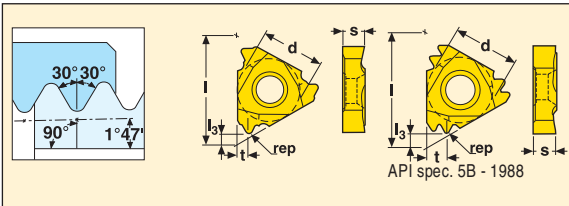


Size	Dimensions in mm		
	d	l	s
16	9,525	16,5	3,47
22	12,700	22,0	4,71
27	15,875	27,0	6,15



Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades					
						Coated			Uncoated				Coated			Uncoated		
mm	TPI	l ₃	t	rep		CP200	CP300	CP500	TP1030	TM4000	H15		CP200	CP300	CP500	TP1030	TM4000	H15
-	10	1,50	1,50	0,38	16ER 10APIRD	■	■											
-	8	1,50	1,50	0,46	8APIRD	■	■		■									
-	10	2,40	3,70	0,38	22ER 10APIRD2M			■										
-	8	2,90	4,50	0,460	27ER 8APIRD2M	■			■									

APIRD-Internal Threading



Size	Dimensions in mm		
	d	l	s
16	9,525	16,5	3,47
27	15,875	27,0	6,15



Pitch		Dimensions in mm			Insert Part No. Right	Grades						Insert Part No. Left	Grades					
						Coated			Uncoated				Coated			Uncoated		
mm	TPI	l ₃	t	rep		CP200	CP300	CP500	TP1030	TM4000	H15		CP200	CP300	CP500	TP1030	TM4000	H15
-	10	1,50	1,50	0,38	16NR 10APIRD	■	■											
-	8	1,50	1,50	0,46	8APIRD		■		■									
-	8	2,90	4,50	0,460	27NR 8APIRD2M	■			■									

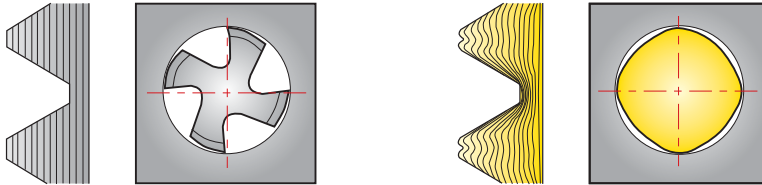
■ Stock standard
 Subject to change refer to current price- and stock-list

Introduction to taps

What are you looking for in a thread?

Cutting a thread vs forming a thread

There are two ways of making a thread, cutting or forming. Cutting is to be used in most materials, while forming is to be used in steel, stainless steel and aluminium.



Through hole, blind hole

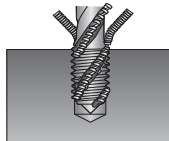
Taps have different designs. Depending on application (through or blind hole).



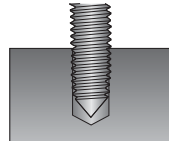
Hole size

Dimension of the hole differs between cutting and forming the thread.

Cutting tap
 $D = TD - PTH$



Forming tap
 $D = TD - PTH / 2$
 $(D = D_{nom} - 0.0068 \times PTH \times 65)$



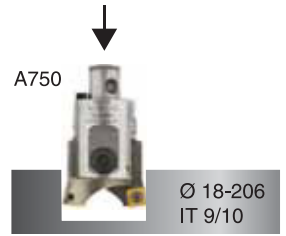
D = Hole diameter
 TD = Major thread diameter
 PTH = Thread pitch

Introduction to taps – Tool guide

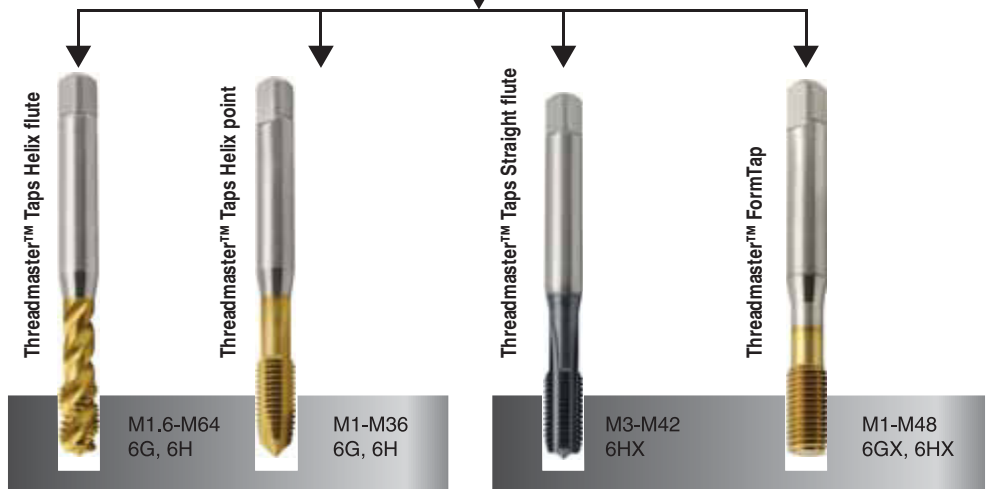
Drilling



Rough boring

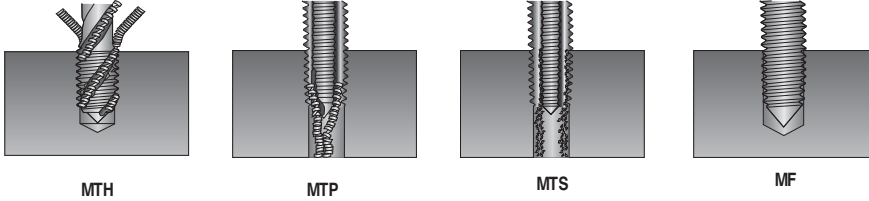


Thread tapping



Also other threading profiles are available.

Taps - Choice of tap



1. Threadmaster™ Tap Helix flute

Available with 15°, 45° and 48° spiral for different materials. For blind holes.

2. Threadmaster™ Tap Helix point

For through holes. To be used under tough conditions.

(Includes MTH - V001, 002, 005, 006, 007, 008, 014, 017, 020 and 023. Those will be changed to MTP during 2016).

3. Threadmaster™ Tap Straight flutes

For short chipping materials, i.e. cast iron. To be used for all types of holes and depths.

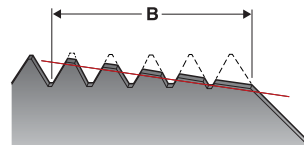
4. Threadmaster™ FormTap

Forms the thread. For steel, stainless steels and aluminium. Workpiece material need some ductility and also with a limit of tensile strength of 1200N/mm². For all types of holes and depths. Strength of thread is increased.

Taps – Entering chamfer

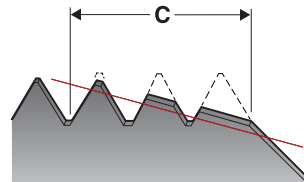
B-type

Length 3.5 – 5 threads
High torque
Best surface finish
Thin chip thickness
Low pressure at the chamfer
Long tool life
Most common for through holes (Helix point)



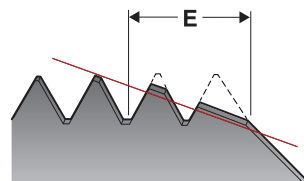
C-type

Length 2 - 3 threads
Medium torque
Good surface finish
Normal chip thickness
Normal pressure at the chamfer
Normal tool life
Most common design
Standard for blind holes
Most common for blind holes (Helix flute)



E-type

Length 1.5 – 2 threads
Low torque
Good surface finish
Thick chip thickness
High pressure at the chamfer
Shorter tool life
When limited space in the bottom of a hole



Taps - Choice of toolholder

The tool holder choice is made according to the machine spindle, with or without synchronization:

1. Modern CNC machine with synchronization:

The modern CNC machines can synchronize the spindle feed rate and rotation in order to make a rigid tapping operation. The EPB 5867 – tapping chucks with micro-compensation is the most suitable for synchronized tapping. Alternative solutions are the Type 5865 or Type 5260.

EPB 5867 Tapping chucks with micro-compensation, for synchronized tapping:

EPB 5867 for synchronized tapping has a micro-compensation system to avoid the small discrepancies and axial forces during rigid tapping machining. The taps are mounted in specific ER collets with square drive.

Note: These ER collets with square drive can also be mounted in ER collet chucks (Type 5675), but then without micro-compensation

EPB 5865 ER tapping chucks, for synchronized tapping:

EPB 5865 for rigid synchronized tapping, with ER standard collets, offers flexibility and precise tap holding for a complete rigid tapping system without compensation. The square clamping system is based on two driving tenons clamping the tap square, while the cylindrical shank is clamped into the ER standard collet.

EPB 5260 Quick change tapping chucks, for synchronized tapping:

EPB 5260 – Quick change tapping chucks for synchronized tapping are used with tap adapter type 5241 without torque limiter and allow fast changing of the tap

2. Conventional machine without synchronization

Conventional machine tools are not featured with synchronization of the spindle feed rate and rotation. Tapping chuck with axial compensation is necessary to machine threads, e.g. Type 5283.

EPB 5283 – Quick change tapping chucks with axial compensation:

EPB 5283 Offer an axial feed compensation and extension which ensure a good machining process. The quick change system is used with tap adapter type 5285 with torque limiter to avoid tool breakage during tapping operation.

EPB 5867



EPB 5865



EPB 5260



EPB 5283



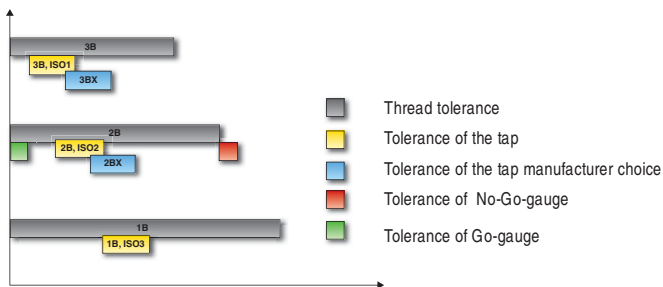
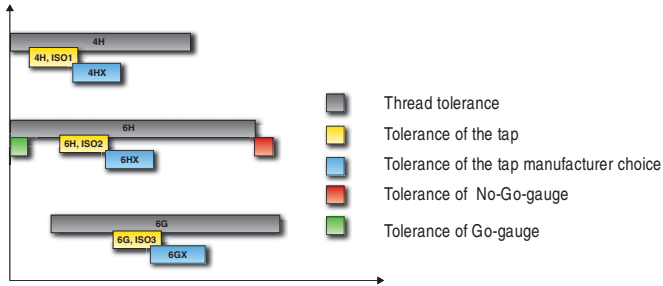
Taps – Choice of Tap tolerance

The Threadmaster™ Taps from Seco are available for threads with different tolerances 6H and 6G, as well in 6HX and 6GX.
Normal standard tolerance is H.

Tolerance GX/HX and BX is to be used when risk of oversize is limited, this also increases tool life of the tap.

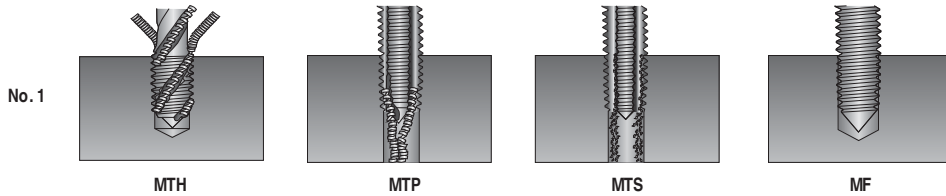
Taps for UNC/UNF are designed for tolerance 2B.

Tolerance class for G and NPT/NPTF is normal.



Code key – Taps

MTS	-	M10	X	1.5ISO	6H	-	B	C	-	V	0	01	-	A
1		2		3	4		5	6		7	8	9		10



1	Description MTH = Threadmaster™ Tap Helix flute MTP = Threadmaster™ Tap Helix point* MTS = Threadmaster™ Tap Straight flute tap MF = Threadmaster™ FormTap
2	Thread type and size
3	Pitch and thread form
4	Tolerance (tctr) 2BX, 5HX, 6G, 6GX, 6H, 6HX, 2B, Normal
5	Operation, B = Blind hole, T = Through hole, X = Blind and Through hole
6	Entering Chamfer(THCHT) B = Entering chamfer 3,5 - 5 threads C = Entering chamfer 2 - 3 threads E = Entering chamfer 1,5 - 2 threads
7	V = versatile, S = Specific, P = Steel, M = Stainless Steel, K = Cast Iron, N = Non ferrous metals
8	Release No.= 0 (2014)
9	Tool type No. = 01, 02, 03, 04 etc
10	A = Through coolant

* Includes MTH-V001, 002, 005, 006, 007, 008, 014, 017, 020 and 023. Those will be changed to MTP during 2016.

Troubleshooting

Oversized thread

Wrong tap for application

- Refer to application charts

Incorrect axial feed

- Ensure feed rate is controlled
- If possible, use tool holder for synchronized tapping

Wrong cutting speed

- Refer to recommendations

Wrong tolerance

- Choose tap with lower tolerance



Undersized thread

Tap worn out

- Replace tap

Tap drill hole too small

- Check drilling recommendations

Material closing after tapping

- Increase drill diameter

Wrong tolerance on tap

- Choose tap with higher tolerance



Rapid wear

Wrong type of tap for application

- Refer to tap choice

Incorrect or lack of lubricant

- Use appropriate emulsion or oil

Too high cutting speed

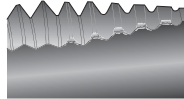
- Refer to recommendations

Work (surface) hardening in drilled hole

- Check drilling recommendations
- Drill worn out

Tap drill hole too small

- Check drilling recommendations



Built-up edge

Incorrect or lack of lubricant

- Use appropriate emulsion or oil

Tap worn out

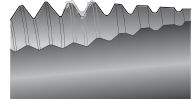
- Replace tap

Wrong cutting speed

- Refer to recommendations

Wrong type of tap for application

- Refer to tap choice



Chipping

Wrong tap for the application

- Check for tool selection

Incorrect or lack of lubricant

- Use appropriate emulsion or oil

Tap hitting bottom of hole

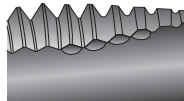
- Increase drill depth or reduce thread depth

Trapped chip

- Check tool selection

Surface hardening in drilled hole

- Check drilling recommendations



Breakage

Too high torque

- Use tap holder with torque settings

Tap worn out

- Replace tap

Incorrect or lack of lubricant

- Use appropriate emulsion or oil

Tap hitting bottom of hole

- Increase drill depth or reduce thread depth

Wrong cutting speed

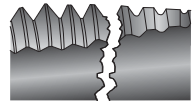
- Refer to recommendations

“Birdnest” around tool

- Check tool selection

Tap drill hole too small

- Check drilling recommendations



Tool type	MTH-P001 30-48 HRC	MTH-P001-A 30-48 HRC	MTH-P002 30-48 HRC	MTH-P002-A 30-48 HRC	MTH-P003	MTH-P003-A	MTH-P004	MTH-P004-A	MTH-P011
Thread type	M	M	M	M	M	M	M	M	MF
tctr	6H	6H	6H	6H	6HX	6HX	6HX	6HX	6HX
uldr	1.5	1.5	1.5	1.5	3	3	3	3	3
THCTH	C	C	C	C	C	C	C	C	C
BSG	SECO-DIN	SECO-DIN	DIN376	DIN376	DIN371	DIN371	DIN376	DIN376	DIN374
Thread size	M3 - M10	M4 - M10	M12 - M20	M12 - M20	M1.6 - M10	M4 - M10	M5 - M30	M12 - M30	MF 4X0.50 - MF 30X2.00
FHA	15°	15°	15°	15°	48°	48°	48°	48°	48°
Coolant	No	Yes	No	Yes	No	Yes	No	Yes	No
Page	264	265	266	267	268	269	270	271	272-273

SMG	v _c								
	MTH- P001	MTH- P001	MTH- P002	MTH- P002	MTH- P003	MTH- P003	MTH- P004	MTH- P004	MTH- P011
P1	—	—	—	—	55	55	55	55	55
P2	—	—	—	—	55	55	55	55	55
P3	—	—	—	—	45	45	45	45	45
P4	—	—	—	—	40	40	40	40	40
P5	—	—	—	—	38	38	38	38	38
P6	—	—	—	—	42	42	42	42	42
P7	—	—	—	—	40	40	40	40	40
P8	—	—	—	—	38	38	38	38	38
P11	—	—	—	—	39	39	39	39	39
M1	—	—	—	—	—	—	—	—	—
M2	—	—	—	—	—	—	—	—	—
M3	—	—	—	—	—	—	—	—	—
M4	—	—	—	—	—	—	—	—	—
M5	—	—	—	—	—	—	—	—	—
K1	—	—	—	—	—	—	—	—	—
K2	—	—	—	—	—	—	—	—	—
K3	—	—	—	—	—	—	—	—	—
K4	—	—	—	—	—	—	—	—	—
K5	—	—	—	—	—	—	—	—	—
K6	—	—	—	—	—	—	—	—	—
K7	—	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—	—
H3	20	20	20	20	—	—	—	—	—
H5	17	17	17	17	—	—	—	—	—
H7	16	16	16	16	—	—	—	—	—
H8	15	15	15	15	—	—	—	—	—

SMG = Seco Material Group
v_c = m/min
All cutting data are start values

Tool type	MTP-P001 30-48 HRC	MTP-P002 30-48 HRC	MTP-P003	MTP-P003-A	MTP-P004	MTP-P004-A	MTP-P011
Thread type	M	M	M	M	M	M	MF
tctr	6H	6H	5HX/6HX	6HX	6HX	6HX	6HX
uldr	2.5	2.5	3	3	3	3	3
THCTH	B	B	B	B	B	B	B
BSG	SECO-DIN	DIN376	DIN371	DIN371	DIN376	DIN376	DIN374
Thread size	M3 - M10	M12 - M20	M1 - M10	M4 - M10	M4 - M30	M12 - M30	MF 4X0.50 - MF 30X2.00
FHA							
Coolant	No	No	No	Yes	No	Yes	No
Page	274	275	276	277	278	279	280-281

SMG	v _c						
	MTP- P001	MTP- P002	MTP- P003	MTP- P003	MTP- P004	MTP- P004	MTP- P011
P1	—	—	60	60	60	60	60
P2	—	—	60	60	60	60	60
P3	—	—	50	50	50	50	50
P4	—	—	45	45	45	45	45
P5	—	—	43	43	43	43	43
P6	—	—	48	48	48	48	48
P7	—	—	46	46	46	46	46
P8	—	—	43	43	43	43	43
P11	—	—	44	44	44	44	44
M1	—	—	—	—	—	—	—
M2	—	—	—	—	—	—	—
M3	—	—	—	—	—	—	—
M4	—	—	—	—	—	—	—
M5	—	—	—	—	—	—	—
K1	—	—	—	—	—	—	—
K2	—	—	—	—	—	—	—
K3	—	—	—	—	—	—	—
K4	—	—	—	—	—	—	—
K5	—	—	—	—	—	—	—
K6	—	—	—	—	—	—	—
K7	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—
H3	20	20	—	—	—	—	—
H5	17	17	—	—	—	—	—
H7	16	16	—	—	—	—	—
H8	15	15	—	—	—	—	—

SMG = Seco Material Group

v_c= m/min

All cutting data are start values

Tool type	MTH-M003	MTH-M003-A	MTH-M004	MTH-M004-A	MTP-M003	MTP-M003-A	MTP-M004	MTP-M004-A
Thread type	M	M	M	M	M	M	M	M
tctr	6H	6H	6H	6H	5HX/6H	6H	6H	6H
uldr	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
THCTH	C	C	C	C	B	B	B	B
BSG	DIN371	DIN371	DIN376	DIN376	DIN371	DIN371	DIN376	DIN376
Thread size	M1.6 - M10	M4 - M10	M12 - M20	M12 - M20	M1 - M10	M4 - M10	M12 - M20	M12 - M24
FHA	48°	48°	48°	48°				
Coolant	No	Yes	No	Yes	No	Yes	No	Yes
Page	282	283	284	285	286	287	288	289

SMG	v _c							
	MTH- M003	MTH- M003	MTH- M004	MTH- M004	MTP- M003	MTP- M003	MTP- M004	MTP- M004
P1	—	—	—	—	—	—	—	—
P2	—	—	—	—	—	—	—	—
P3	—	—	—	—	—	—	—	—
P4	—	—	—	—	—	—	—	—
P5	—	—	—	—	—	—	—	—
P6	—	—	—	—	—	—	—	—
P7	—	—	—	—	—	—	—	—
P8	—	—	—	—	—	—	—	—
P11	—	—	—	—	—	—	—	—
M1	12	12	12	12	12	12	12	12
M2	10	10	10	10	10	10	10	10
M3	8	8	8	8	8	8	8	8
M4	6	6	6	6	6	6	6	6
M5	5	5	5	5	5	5	5	5
K1	—	—	—	—	—	—	—	—
K2	—	—	—	—	—	—	—	—
K3	—	—	—	—	—	—	—	—
K4	—	—	—	—	—	—	—	—
K5	—	—	—	—	—	—	—	—
K6	—	—	—	—	—	—	—	—
K7	—	—	—	—	—	—	—	—
N1	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—
H5	—	—	—	—	—	—	—	—
H7	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—

SMG = Seco Material Group
 v_c = m/min
 All cutting data are start values

Tool type	MTS-S005	MTS-K001-A	MTS-S010/ K002	MTS-K002-A	MTS-K011	MTS-K021	MTS-K031	MTS-K041
Thread type	M	M	M	M	MF	G	UNC	UNF
tctr	6HX	6HX	6HX	6HX	6HX	NORMAL	2BX	2BX
uldr	2	2.5	2	2.5	2 - 2.5	2	2	2
THCTH	C	C/E	C	C/E	C	C	C	C
BSG	DIN371	DIN371	DIN376	DIN376	DIN374	DIN5156	DIN2184-1	DIN2184-1
Thread size	M3 - M10	M4 - M10	M8 - M42	M12 - M42	MF 10X1.00 - MF 20X1.50	G 1/8-28 - G 1-11	UNC 1/4-20 - UNC 7/8-9	UNF 1/4-28 - UNF 7/8-14
FHA	0°	0°	0°	0°	0°	0°	0°	0°
Coolant	No	Yes	No	Yes	No	No	No	No
Page	290	291	292	293	294	295	296	297

SMG	v _c							
	MTS- K001	MTS- K001	MTS- K002	MTS- K002	MTS- K011	MTS- K021	MTS- K031	MTS- K041
P1	—	—	—	—	—	—	—	—
P2	—	—	—	—	—	—	—	—
P3	—	—	—	—	—	—	—	—
P4	—	—	—	—	—	—	—	—
P5	—	—	—	—	—	—	—	—
P6	—	—	—	—	—	—	—	—
P7	—	—	—	—	—	—	—	—
P8	—	—	—	—	—	—	—	—
P11	—	—	—	—	—	—	—	—
M1	—	—	—	—	—	—	—	—
M2	—	—	—	—	—	—	—	—
M3	—	—	—	—	—	—	—	—
M4	—	—	—	—	—	—	—	—
M5	—	—	—	—	—	—	—	—
K1	36	36	36	36	36	36	36	36
K2	31	31	31	31	31	31	31	31
K3	26	26	26	26	26	26	26	26
K4	25	25	25	25	25	25	25	25
K5	15	15	15	15	15	15	15	15
K6	22	22	22	22	22	22	22	22
K7	19	19	19	19	19	19	19	19
N1	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—
N3	—	—	—	—	—	—	—	—
N11	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—
H5	—	—	—	—	—	—	—	—
H7	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—

SMG = Seco Material Group

v_c= m/min

All cutting data are start values

Tool type	MTH-N001	MTH-N002	MTP-N001	MTP-N001-A	MTP-N002	MTP-N002-A
Thread type	M	M	M	M	M	M
tctr	6H	6H	6H	6H	6H	6H
uldr	1.5	1.5	3	3	3	3
THCTH	C	C	B	B	B	B
BSG	DIN371	DIN376	DIN371	DIN371	DIN376	DIN376
Thread size	M3 - M10	M12 - M16	M3 - M10	M4 - M10	M12 - M16	M12 - M16
FHA	15°	15°				
Coolant	No	No	No	Yes	No	Yes
Page	298	299	300	301	302	303

SMG	v _c					
	MTH- N001	MTH- N002	MTP- N001	MTP- N001	MTP- N002	MTP- N002
P1	—	—	—	—	—	—
P2	—	—	—	—	—	—
P3	—	—	—	—	—	—
P4	—	—	—	—	—	—
P5	—	—	—	—	—	—
P6	—	—	—	—	—	—
P7	—	—	—	—	—	—
P8	—	—	—	—	—	—
P11	—	—	—	—	—	—
M1	—	—	—	—	—	—
M2	—	—	—	—	—	—
M3	—	—	—	—	—	—
M4	—	—	—	—	—	—
M5	—	—	—	—	—	—
K1	—	—	—	—	—	—
K2	—	—	—	—	—	—
K3	—	—	—	—	—	—
K4	—	—	—	—	—	—
K5	—	—	—	—	—	—
K6	—	—	—	—	—	—
K7	—	—	—	—	—	—
N1	55	55	55	55	55	55
N2	35	35	35	35	35	35
N3	23	23	23	23	23	23
N11	31	31	31	31	31	31
H3	—	—	—	—	—	—
H5	—	—	—	—	—	—
H7	—	—	—	—	—	—
H8	—	—	—	—	—	—

SMG = Seco Material Group

v_c= m/min

All cutting data are start values

Tool type	MF-V053	MF-V054	MF-V055	MF-V056	MF-V057	MF-V058	MF-V059	MF-V060-A	MF-V063	MF-V063-A
Thread type	M	M	M	UNC	UNF	M	G	M	MF	MF
tctr	6HX	5HX/6HX	6HX	2BX	2BX	6GX	NORMAL-X	6HX	6HX	6HX
uldr	3	3	3	3	3	3	3	3	3	3
THCTH	E	C	C	C	C	C	C	C	C	C
BSG	DIN2174	DIN2174	DIN2174	DIN2184-1	DIN2184-1	DIN2174	DIN2189	DIN2174	DIN2174	DIN2174
Thread size	M3 - M10	M1 - M2.6	M3 - M48	UNC 4-40 - UNC 1-8	UNF 10-32 - UNF 1-12	M3 - M12	G 1/8-28 - G 5/8-14	M5 - M48	MF 5X0.50 - MF 16X1.50	MF 5X0.50 - MF 16X1.50
FHA										
Coolant	No	No	No	No	No	No	No	Yes	No	Yes
Page	304	305	306	307	308	309	310	311	312	313








SMG	v _c									
	MF- V053	MF- V054	MF- V055	MF- V056	MF- V057	MF- V058	MF- V059	MF- V060	MF- V063	MF- V063
P1	65	65	65	65	65	65	65	65	65	65
P2	60	60	60	60	60	60	60	60	60	60
P3	55	55	55	55	55	55	55	55	55	55
P4	47	47	47	47	47	47	47	47	47	47
P5	45	45	45	45	45	45	45	45	45	45
P6	50	50	50	50	50	50	50	50	50	50
P7	48	48	48	48	48	48	48	48	48	48
P8	45	45	45	45	45	45	45	45	45	45
P11	46	46	46	46	46	46	46	46	46	46
M1	25	25	25	25	25	25	25	25	25	25
M2	20	20	20	20	20	20	20	20	20	20
M3	15	15	15	15	15	15	15	15	15	15
M4	11	11	11	11	11	11	11	11	11	11
M5	10	10	10	10	10	10	10	10	10	10
K1	—	—	—	—	—	—	—	—	—	—
K2	—	—	—	—	—	—	—	—	—	—
K3	—	—	—	—	—	—	—	—	—	—
K4	—	—	—	—	—	—	—	—	—	—
K5	—	—	—	—	—	—	—	—	—	—
K6	—	—	—	—	—	—	—	—	—	—
K7	—	—	—	—	—	—	—	—	—	—
N1	55	55	55	55	55	55	55	55	55	55
N2	35	35	35	35	35	35	35	35	35	35
N3	23	23	23	23	23	23	23	23	23	23
N11	31	31	31	31	31	31	31	31	31	31
H3	—	—	—	—	—	—	—	—	—	—
H5	—	—	—	—	—	—	—	—	—	—
H7	—	—	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—	—	—

SMG = Seco Material Group
 v_c = m/min
 All cutting data are start values

Tool type	MTH-V011	MTH-S015	MTH-S020	MTH-V025	MTH-V026	MTH-V028	MTH-V029	MTH-V030	MTH-V030-A
Thread type	MF	M	M	M	M	M	M	M	M
tctr	6HX	6H	6H	6H	6H	6G	6G	6H	6H
uldr	2	2	2	3	3	3	3	2.5	2.5
THCHT	C	C	C	C	C	C	C	C	C
BSG	DIN374	DIN371	DIN376	DIN371	DIN376	DIN371	DIN376	DIN371	DIN371
Thread size	MF 8X0.75 - MF 24X2.00	M3 - M10	M12 - M36	M3 - M10	M12 - M20	M3 - M10	M12 - M20	M2 - M10	M4 - M10
FHA	15°	15°	15°	45°	45°	45°	45°	45°	45°
Coolant	No	No	No	No	No	No	No	No	Yes
Page	314	315	316	317	318	319	320	321	322

SMG	v _c								
	MTH- V011	MTH- S015	MTH- S020	MTH- V025	MTH- V026	MTH- V028	MTH- V029	MTH- V030	MTH- V030
P1	40	40	40	40	40	40	40	40	40
P2	39	39	39	39	39	39	39	39	39
P3	33	33	33	33	33	33	33	33	33
P4	29	29	29	29	29	29	29	29	29
P5	28	28	28	28	28	28	28	28	28
P6	31	31	31	31	31	31	31	31	31
P7	30	30	30	30	30	30	30	30	30
P8	28	28	28	28	28	28	28	28	28
P11	29	29	29	29	29	29	29	29	29
M1	9	9	9	9	9	9	9	9	9
M2	7	7	7	7	7	7	7	7	7
M3	5	5	5	5	5	5	5	5	5
M4	4	4	4	4	4	4	4	4	4
M5	3	3	3	3	3	3	3	3	3
K1	—	—	—	—	—	—	—	—	—
K2	—	—	—	—	—	—	—	—	—
K3	—	—	—	—	—	—	—	—	—
K4	—	—	—	—	—	—	—	—	—
K5	—	—	—	—	—	—	—	—	—
K6	—	—	—	—	—	—	—	—	—
K7	—	—	—	—	—	—	—	—	—
N1	37	37	37	37	37	37	37	37	37
N2	24	24	24	24	24	24	24	24	24
N3	16	16	16	16	16	16	16	16	16
N11	21	21	21	21	21	21	21	21	21
H3	—	—	—	—	—	—	—	—	—
H5	—	—	—	—	—	—	—	—	—
H7	—	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—	—

SMG = Seco Material Group
v_c = m/min
All cutting data are start values






Tool type	MTH-V033	MTH-V033-A	MTH-V038	MTH-V038-A	MTH-V040	MTH-V043	MTH-V045
Thread type	M	M	MF	MF	UNC	UNF	G
tctr	6H	6H	6H	6H	2B	2B	NORMAL
uldr	2.5	2.5	2.5	2.5	2.5	2.5	2.5
THCTH	C	C	C	C	C	C	C
BSG	DIN376	DIN376	DIN374	DIN374	DIN2184-1	DIN2184-1	DIN5156
Thread size	M6 - M64	M12 - M64	MF 4X0.50 - MF 30X2.00	MF 6X0.75 - MF 30X2.00	UNC 4-40 - UNC 5/8-11	UNF 8-36 - UNF 1-12	G 1/8''-28 - G11/2''-11
FHA	45°	45°	45°	45°	45°	45°	45°
							
Coolant	No	Yes	No	Yes	No	No	No
Page	323	324	325-326	327-328	329	330	331

SMG	v _c						
	MTH- V033	MTH- V033	MTH- V038	MTH- V038	MTH- V040	MTH- V043	MTH- V045
P1	40	40	40	40	40	40	40
P2	39	39	39	39	39	39	39
P3	33	33	33	33	33	33	33
P4	29	29	29	29	29	29	29
P5	28	28	28	28	28	28	28
P6	31	31	31	31	31	31	31
P7	30	30	30	30	30	30	30
P8	28	28	28	28	28	28	28
P11	29	29	29	29	29	29	29
M1	9	9	9	9	9	9	9
M2	7	7	7	7	7	7	7
M3	5	5	5	5	5	5	5
M4	4	4	4	4	4	4	4
M5	3	3	3	3	3	3	3
K1	—	—	—	—	—	—	—
K2	—	—	—	—	—	—	—
K3	—	—	—	—	—	—	—
K4	—	—	—	—	—	—	—
K5	—	—	—	—	—	—	—
K6	—	—	—	—	—	—	—
K7	—	—	—	—	—	—	—
N1	37	37	37	37	37	37	37
N2	24	24	24	24	24	24	24
N3	16	16	16	16	16	16	16
N11	21	21	21	21	21	21	21
H3	—	—	—	—	—	—	—
H5	—	—	—	—	—	—	—
H7	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—

SMG = Seco Material Group


v_c= m/min

All cutting data are start values

Tool type	MTH-V001	MTH-V002	MTH-V005	MTH-V006	MTH-V007	MTP-V007-A	MTP/MTH-V008	MTP-V008-A
Thread type	M	M	M	M	M	M	M	M
tctr	6H	6H	6G	6G	6H	6H	6H	6H
uldr	3	3	2.5	2.5	2.5	2.5	2.5	2.5
THCTH	B	B	B	B	B	B	B	B
BSG	DIN371	DIN376	DIN371	DIN376	DIN371	DIN371	DIN376	DIN376
Thread size	M3 - M10	M12 - M20	M3 - M10	M12 - M20	M2 - M10	M4 - M10	M3 - M36	M12 - M36
FHA								
								
Coolant	No	No	No	No	No	Yes	No	Yes
Page	332	333	334	335	336	337	338	339

SMG	v _c							
	MTH- V001	MTH- V002	MTH- V005	MTH- V006	MTH- V007	MTP- V007	MTP/MTH- V008	MTP- V008
P1	40	40	40	40	40	40	40	40
P2	39	39	39	39	39	39	39	39
P3	33	33	33	33	33	33	33	33
P4	29	29	29	29	29	29	29	29
P5	28	28	28	28	28	28	28	28
P6	31	31	31	31	31	31	31	31
P7	30	30	30	30	30	30	30	30
P8	28	28	28	28	28	28	28	28
P11	29	29	29	29	29	29	29	29
M1	9	9	9	9	9	9	9	9
M2	7	7	7	7	7	7	7	7
M3	5	5	5	5	5	5	5	5
M4	4	4	4	4	4	4	4	4
M5	3	3	3	3	3	3	3	3
K1	—	—	—	—	—	—	—	—
K2	—	—	—	—	—	—	—	—
K3	—	—	—	—	—	—	—	—
K4	—	—	—	—	—	—	—	—
K5	—	—	—	—	—	—	—	—
K6	—	—	—	—	—	—	—	—
K7	—	—	—	—	—	—	—	—
N1	37	37	37	37	37	37	37	37
N2	24	24	24	24	24	24	24	24
N3	16	16	16	16	16	16	16	16
N11	21	21	21	21	21	21	21	21
H3	—	—	—	—	—	—	—	—
H5	—	—	—	—	—	—	—	—
H7	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—

SMG = Seco Material Group
v_c = m/min
All cutting data are start values



Tool type	MTP/MTH-V014	MTP-V014-A	MTH-V017	MTH-V020	MTH-V023
Thread type	MF	MF	UNC	UNF	G
tctr	6H	6H	2B	2B	NORMAL
uldr	2.5	2.5	2.5	2.5	2.5
THCTH	B	B	B	B	B
BSG	DIN374	DIN374	DIN2184-1	DIN2184-1	DIN5156
Thread size	MF 4X0.50 - MF 30X2.00	MF 6X0.75 - MF 24X2.00	UNC 4-40 - UNC 5/8-1	UNF 8-36 - UNF 5/8-18	G 1/8-28 - G 5/8-14
FHA					
					
Coolant	No	Yes	No	No	No
Page	340-341	342	343	344	345

SMG	v _c				
	MTP/MTH- V014	MTP- V014	MTH- V017	MTH- V020	MTH- V023
P1	40	40	40	40	40
P2	39	39	39	39	39
P3	33	33	33	33	33
P4	29	29	29	29	29
P5	28	28	28	28	28
P6	31	31	31	31	31
P7	30	30	30	30	30
P8	28	28	28	28	28
P11	29	29	29	29	29
M1	9	9	9	9	9
M2	7	7	7	7	7
M3	5	5	5	5	5
M4	4	4	4	4	4
M5	3	3	3	3	3
K1	—	—	—	—	—
K2	—	—	—	—	—
K3	—	—	—	—	—
K4	—	—	—	—	—
K5	—	—	—	—	—
K6	—	—	—	—	—
K7	—	—	—	—	—
N1	37	37	37	37	37
N2	24	24	24	24	24
N3	16	16	16	16	16
N11	21	21	21	21	21
H3	—	—	—	—	—
H5	—	—	—	—	—
H7	—	—	—	—	—
H8	—	—	—	—	—

SMG = Seco Material Group

v_c= m/min

All cutting data are start values

Tool type	MTH-V048	MTH-V050
Thread type	NPT	NPTF
tctr	NORMAL	NORMAL
uldr	1.5	1.5
THCTH	C	C
BSG	DIN/ANSI	DIN/ANSI
Thread size	NPT 1/16-27 NPT 1-11.5	NPTF 1/16-27 NPTF 3/4-14
FHA	15°	15°
		
Coolant	No	No
Page	346	347

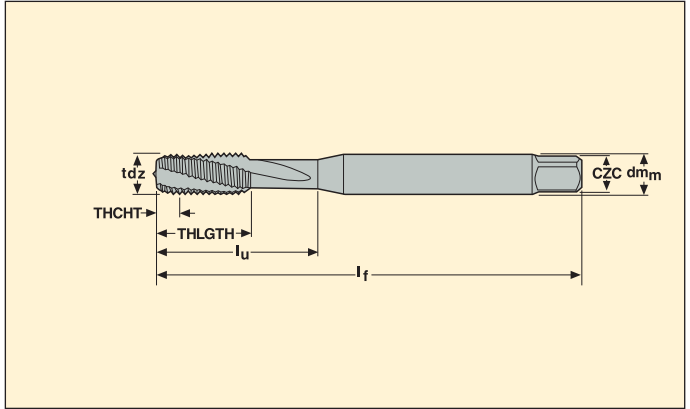
SMG	v _c	
	MTH- V048	MTH- V050
P1	11	11
P2	11	11
P3	10	10
P4	8	8
P5	8	8
P6	9	9
P7	8	8
P8	8	8
P11	8	8
M1	9	9
M2	7	7
M3	5	5
M4	4	4
M5	3	3
K1	14	14
K2	12	12
K3	10	10
K4	10	10
K5	6	6
K6	9	9
K7	8	8
N1	23	23
N2	15	15
N3	10	10
N11	10	10
H3	—	—
H5	—	—
H7	—	—
H8	—	—

SMG = Seco Material Group

v_c= m/min

All cutting data are start values

MTH-P001



- For cutting data see page 253
- Coating: TiAlN
- Substrate: HSS-E-PM

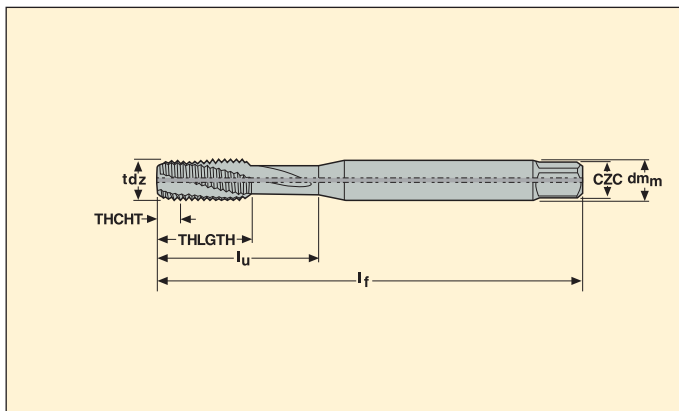
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M3X0.50ISO6H-BC-P001	M3	0,50	-	4,50	12	12	63	4.50X3.40	3	SECO-DIN	6H	C
MTH- M4X0.70ISO6H-BC-P001	M4	0,70	-	6,00	13	13	70	6.00X4.90	3	SECO-DIN	6H	C
MTH- M5X0.80ISO6H-BC-P001	M5	0,80	-	6,00	15	15	80	6.00X4.90	3	SECO-DIN	6H	C
MTH- M6X1.00ISO6H-BC-P001	M6	1,00	-	8,00	18	18	90	8.00X6.20	3	SECO-DIN	6H	C
MTH- M8X1.25ISO6H-BC-P001	M8	1,25	-	10,00	20	20	100	10.00X8.00	3	SECO-DIN	6H	C
MTH- M10X1.50ISO6H-BC-P001	M10	1,50	-	10,00	39	20	100	10.00X8.00	3	SECO-DIN	6H	C

Please check availability in current price and stock-list.

MTH-P001-A



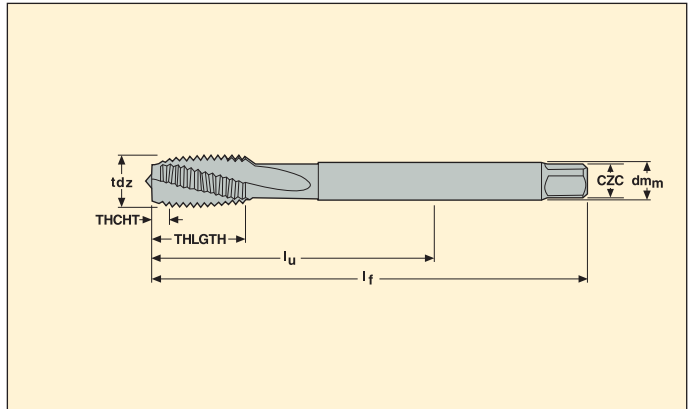
- For cutting data see page 253
- Coating: TiAlN
- Substrate: HSS-E-PM
- Internal coolant



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm_m	l_u	THLGTH	l_f	CZC				
MTH- M4X0.70ISO6H-BC-P001-A	M4	0,70	–	6,00	13	13	70	6.00X4.90	3	SECO-DIN	6H	C
MTH- M5X0.80ISO6H-BC-P001-A	M5	0,80	–	6,00	15	15	80	6.00X4.90	3	SECO-DIN	6H	C
MTH- M6X1.00ISO6H-BC-P001-A	M6	1,00	–	8,00	18	18	90	8.00X6.20	3	SECO-DIN	6H	C
MTH- M8X1.25ISO6H-BC-P001-A	M8	1,25	–	10,00	20	20	100	10.00X8.00	3	SECO-DIN	6H	C
MTH- M10X1.50ISO6H-BC-P001-A	M10	1,50	–	10,00	39	20	100	10.00X8.00	3	SECO-DIN	6H	C

Please check availability in current price and stock-list.

MTH-P002



- For cutting data see page 253
- Coating: TiAlN
- Substrate: HSS-E-PM

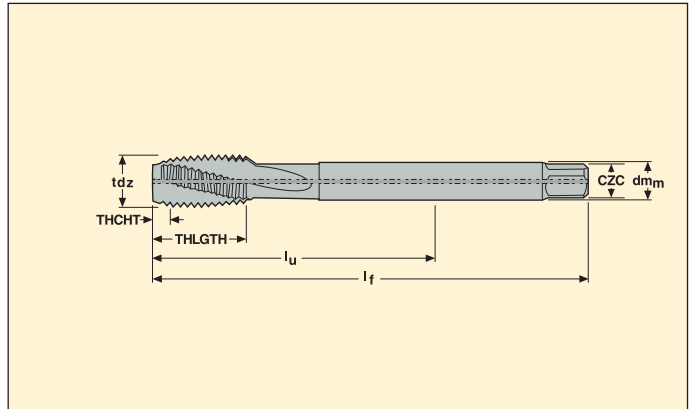
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M12X1.75ISO6H-BC-P002	M12	1,75	–	9,00	83	23	110	9.00X7.00	4	DIN376	6H	C
MTH- M14X2.00ISO6H-BC-P002	M14	2,00	–	11,00	81	25	110	11.00X9.00	4	DIN376	6H	C
MTH- M16X2.00ISO6H-BC-P002	M16	2,00	–	12,00	68	25	110	12.00X9.00	4	DIN376	6H	C
MTH- M18X2.50ISO6H-BC-P002	M18	2,50	–	14,00	81	30	125	14.00X11.00	4	DIN376	6H	C
MTH- M20X2.50ISO6H-BC-P002	M20	2,50	–	16,00	95	30	140	16.00X12.00	4	DIN376	6H	C

Please check availability in current price and stock-list.

Holemaking – Threadmaster™ – Taps



MTH-P002-A

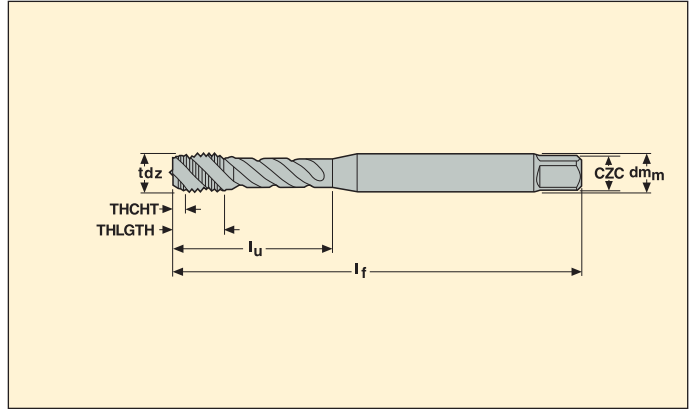


- For cutting data see page 253
- Coating: TiAlN
- Substrate: HSS-E-PM
- Internal coolant

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M12X1.75ISO6H-BC-P002-A	M12	1,75	–	9,00	83	23	110	9.00X7.00	4	DIN376	6H	C
MTH- M14X2.00ISO6H-BC-P002-A	M14	2,00	–	11,00	81	25	110	11.00X9.00	4	DIN376	6H	C
MTH- M16X2.00ISO6H-BC-P002-A	M16	2,00	–	12,00	68	25	110	12.00X9.00	4	DIN376	6H	C
MTH- M18X2.50ISO6H-BC-P002-A	M18	2,50	–	14,00	81	30	125	14.00X11.00	4	DIN376	6H	C
MTH- M20X2.50ISO6H-BC-P002-A	M20	2,50	–	16,00	95	30	140	16.00X12.00	4	DIN376	6H	C

Please check availability in current price and stock-list.

MTH-P003

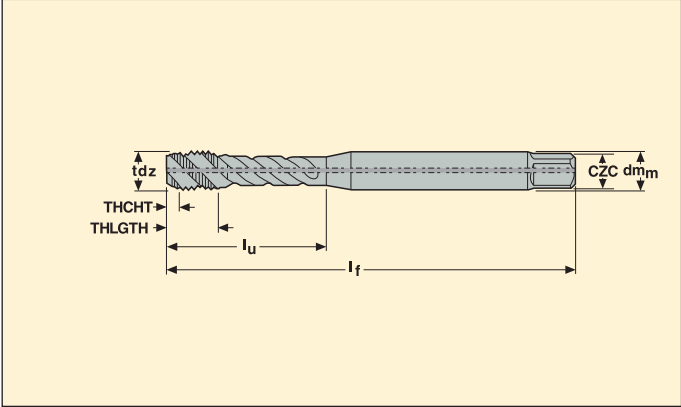


- For cutting data see page 253
- Coating: AlTiN-based
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	I _u	THLGTH	I _f	CZC				
MTH- M1.6X0.35ISO6HX-BC-P003	M1.6	0,35	–	2,50	6	4	40	2.50X2.10	2	DIN371	6HX	C
MTH- M2X0.40ISO6HX-BC-P003	M2	0,40	–	2,80	9	4	45	2.80X2.10	2	DIN371	6HX	C
MTH- M2.2X0.45ISO6HX-BC-P003	M2.2	0,45	–	2,80	12	4	45	2.80X2.10	2	DIN371	6HX	C
MTH- M2.3X0.40ISO6HX-BC-P003	M2.3	0,40	–	2,80	12	4	45	2.80X2.10	2	DIN371	6HX	C
MTH- M2.5X0.45ISO6HX-BC-P003	M2.5	0,45	–	2,80	12,50	4	50	2.80X2.10	2	DIN371	6HX	C
MTH- M2.6X0.45ISO6HX-BC-P003	M2.6	0,45	–	2,80	12,50	4	50	2.80X2.10	2	DIN371	6HX	C
MTH- M3X0.50ISO6HX-BC-P003	M3	0,50	–	3,50	18	5,9	56	3.50X2.70	3	DIN371	6HX	C
MTH- M3.5X0.60ISO6HX-BC-P003	M3.5	0,60	–	4,00	20	7	56	4.00X3.00	3	DIN371	6HX	C
MTH- M4X0.70ISO6HX-BC-P003	M4	0,70	–	4,50	21	6,7	63	4.50X3.40	3	DIN371	6HX	C
MTH- M5X0.80ISO6HX-BC-P003	M5	0,80	–	6,00	25	7,7	70	6.00X4.90	3	DIN371	6HX	C
MTH- M6X1.00ISO6HX-BC-P003	M6	1,00	–	6,00	30	10	80	6.00X4.90	3	DIN371	6HX	C
MTH- M7X1.00ISO6HX-BC-P003	M7	1,00	–	7,00	30	10	80	7.00X5.50	3	DIN371	6HX	C
MTH- M8X1.25ISO6HX-BC-P003	M8	1,25	–	8,00	35	11,6	90	8.00X6.20	3	DIN371	6HX	C
MTH- M10X1.50ISO6HX-BC-P003	M10	1,50	–	10,00	39	15,1	100	10.00X8.00	3	DIN371	6HX	C

Please check availability in current price and stock-list.

MTH-P003-A



- For cutting data see page 253
- Coating: AlTiN-based
- Substrate: HSS-E-PM
- Internal coolant

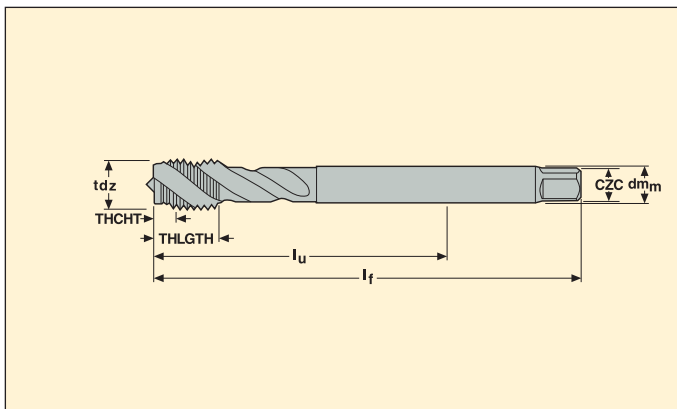
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M4X0.70ISO6HX-BC-P003-A	M4	0,70	–	4,50	21	6,7	63	4.50X3.40	3	DIN371	6HX	C
MTH- M5X0.80ISO6HX-BC-P003-A	M5	0,80	–	6,00	25	7,7	70	6.00X4.90	3	DIN371	6HX	C
MTH- M6X1.00ISO6HX-BC-P003-A	M6	1,00	–	6,00	30	10	80	6.00X4.90	3	DIN371	6HX	C
MTH- M7X1.00ISO6HX-BC-P003-A	M7	1,00	–	7,00	30	10	80	7.00X5.50	3	DIN371	6HX	C
MTH- M8X1.25ISO6HX-BC-P003-A	M8	1,25	–	8,00	35	11,6	90	8.00X6.20	3	DIN371	6HX	C
MTH- M10X1.50ISO6HX-BC-P003-A	M10	1,50	–	10,00	39	15,1	100	10.00X8.00	3	DIN371	6HX	C

Please check availability in current price and stock-list.

MTH-P004



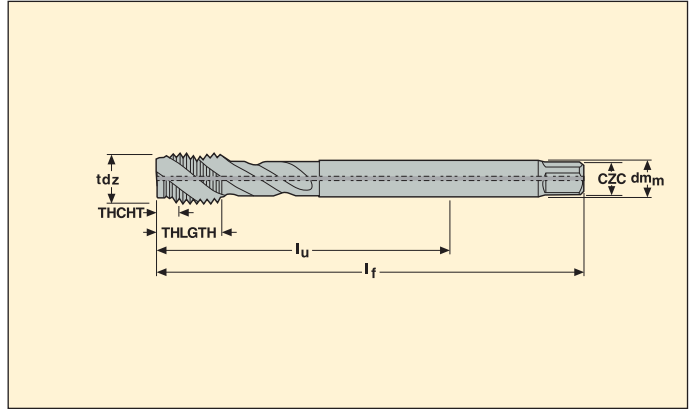
- For cutting data see page 253
- Coating: AlTiN-based
- Substrate: HSS-E-PM



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M5X0.80ISO6HX-BC-P004	M5	0,80	–	3,50	49	8	70	3.50X2.70	3	DIN376	6HX	C
MTH- M6X1.00ISO6HX-BC-P004	M6	1,00	–	4,50	59	10	80	4.50X3.40	3	DIN376	6HX	C
MTH- M7X1.00ISO6HX-BC-P004	M7	1,00	–	5,50	59	10	80	5.50X4.30	3	DIN376	6HX	C
MTH- M8X1.25ISO6HX-BC-P004	M8	1,25	–	6,00	67	13	90	6.00X4.90	3	DIN376	6HX	C
MTH- M10X1.50ISO6HX-BC-P004	M10	1,50	–	7,00	77	20	100	7.00X5.50	3	DIN376	6HX	C
MTH- M12X1.75ISO6HX-BC-P004	M12	1,75	–	9,00	83	16	110	9.00X7.00	3	DIN376	6HX	C
MTH- M14X2.00ISO6HX-BC-P004	M14	2,00	–	11,00	81	25	110	11.00X9.00	3	DIN376	6HX	C
MTH- M16X2.00ISO6HX-BC-P004	M16	2,00	–	12,00	68	20	110	12.00X9.00	4	DIN376	6HX	C
MTH- M18X2.50ISO6HX-BC-P004	M18	2,50	–	14,00	81	25	125	14.00X11.00	4	DIN376	6HX	C
MTH- M20X2.50ISO6HX-BC-P004	M20	2,50	–	16,00	95	25	140	16.00X12.00	4	DIN376	6HX	C
MTH- M22X2.50ISO6HX-BC-P004	M22	2,50	–	18,00	93	25	140	18.00X14.50	4	DIN376	6HX	C
MTH- M24X3.00ISO6HX-BC-P004	M24	3,00	–	18,00	113	30	160	18.00X14.50	4	DIN376	6HX	C
MTH- M27X3.00ISO6HX-BC-P004	M27	3,00	–	20,00	97	30	160	20.00X16.00	4	DIN376	6HX	C
MTH- M30X3.50ISO6HX-BC-P004	M30	3,50	–	22,00	115	36	180	22.00X18.00	4	DIN376	6HX	C

Please check availability in current price and stock-list.

MTH-P004-A

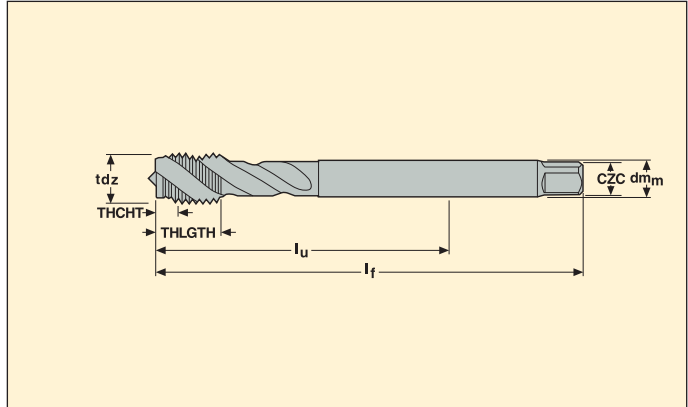


- For cutting data see page 253
- Coating: AlTiN-based
- Substrate: HSS-E-PM
- Internal coolant

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M12X1.75ISO6HX-BC-P004-A	M12	1,75	–	9,00	83	16	110	9.00X7.00	3	DIN376	6HX	C
MTH- M14X2.00ISO6HX-BC-P004-A	M14	2,00	–	11,00	81	25	110	11.00X9.00	3	DIN376	6HX	C
MTH- M16X2.00ISO6HX-BC-P004-A	M16	2,00	–	12,00	68	20	110	12.00X9.00	4	DIN376	6HX	C
MTH- M18X2.50ISO6HX-BC-P004-A	M18	2,50	–	14,00	81	25	125	14.00X11.00	4	DIN376	6HX	C
MTH- M20X2.50ISO6HX-BC-P004-A	M20	2,50	–	16,00	95	25	140	16.00X12.00	4	DIN376	6HX	C
MTH- M22X2.50ISO6HX-BC-P004-A	M22	2,50	–	18,00	93	25	140	18.00X14.50	4	DIN376	6HX	C
MTH- M24X3.00ISO6HX-BC-P004-A	M24	3,00	–	18,00	113	30	160	18.00X14.50	4	DIN376	6HX	C
MTH- M27X3.00ISO6HX-BC-P004-A	M27	3,00	–	20,00	97	30	160	20.00X16.00	4	DIN376	6HX	C
MTH- M30X3.50ISO6HX-BC-P004-A	M30	3,50	–	22,00	115	36	180	22.00X18.00	4	DIN376	6HX	C

Please check availability in current price and stock-list.

MTH-P011

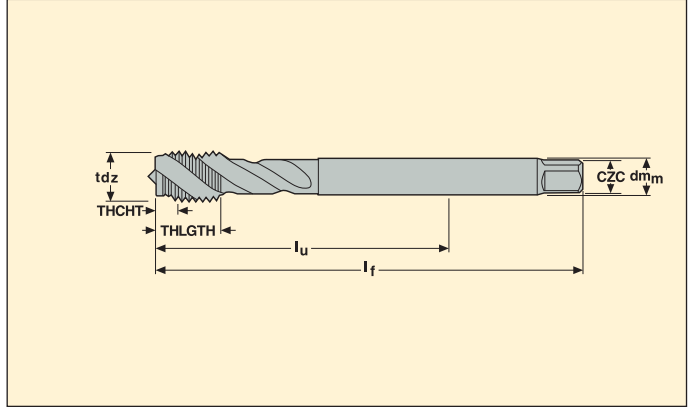


- For cutting data see page 253
- Coating: AlTiN-based
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm				No. of flutes	BSG	tctr	THCHT	
		mm	TPI	dm _m	l _u	THLGTH	l _f					CZC
MTH- M4X0.50ISO6HX-BC-P011	MF 4X0.5	0,50	–	2,80	43	7	63	2.80X2.10	3	DIN374	6HX	C
MTH- M5X0.50ISO6HX-BC-P011	MF 5X0.5	0,50	–	3,50	49	8	70	3.50X2.70	3	DIN374	6HX	C
MTH- M6X0.75ISO6HX-BC-P011	MF 6X0.75	0,75	–	4,50	59	10	80	4.50X3.40	3	DIN374	6HX	C
MTH- M8X0.75ISO6HX-BC-P011	MF 8X0.75	0,75	–	6,00	57	13	80	6.00X4.90	3	DIN374	6HX	C
MTH- M8X1.00ISO6HX-BC-P011	MF 8X1	1,00	–	6,00	67	13	90	6.00X4.90	3	DIN374	6HX	C
MTH- M10X0.75ISO6HX-BC-P011	MF 10X0.75	0,75	–	7,00	67	13	90	7.00X5.50	3	DIN374	6HX	C
MTH- M10X1.00ISO6HX-BC-P011	MF 10X1	1,00	–	7,00	67	13	90	7.00X5.50	3	DIN374	6HX	C
MTH- M10X1.25ISO6HX-BC-P011	MF 10X1.25	1,25	–	7,00	77	15	100	7.00X5.50	3	DIN374	6HX	C
MTH- M12X1.00ISO6HX-BC-P011	MF 12X1	1,00	–	9,00	73	15	100	9.00X7.00	3	DIN374	6HX	C
MTH- M12X1.25ISO6HX-BC-P011	MF 12X1.25	1,25	–	9,00	73	15	100	9.00X7.00	3	DIN374	6HX	C
MTH- M12X1.50ISO6HX-BC-P011	MF 12X1.5	1,50	–	9,00	73	15	100	9.00X7.00	3	DIN374	6HX	C
MTH- M14X1.00ISO6HX-BC-P011	MF 14X1	1,00	–	11,00	71	15	100	11.00X9.00	3	DIN374	6HX	C
MTH- M14X1.25ISO6HX-BC-P011	MF 14X1.25	1,25	–	11,00	71	15	100	11.00X9.00	3	DIN374	6HX	C
MTH- M14X1.50ISO6HX-BC-P011	MF 14X1.5	1,50	–	11,00	71	15	100	11.00X9.00	3	DIN374	6HX	C
MTH- M16X1.00ISO6HX-BC-P011	MF 16X1	1,00	–	12,00	58	15	100	12.00X9.00	4	DIN374	6HX	C
MTH- M16X1.50ISO6HX-BC-P011	MF 16X1.5	1,50	–	12,00	58	15	100	12.00X9.00	4	DIN374	6HX	C
MTH- M18X1.00ISO6HX-BC-P011	MF 18X1	1,00	–	14,00	66	17	110	14.00X11.00	4	DIN374	6HX	C
MTH- M18X1.50ISO6HX-BC-P011	MF 18X1.5	1,50	–	14,00	66	17	110	14.00X11.00	4	DIN374	6HX	C
MTH- M20X1.00ISO6HX-BC-P011	MF 20X1	1,00	–	16,00	80	17	125	16.00X12.00	4	DIN374	6HX	C
MTH- M20X1.50ISO6HX-BC-P011	MF 20X1.5	1,50	–	16,00	80	17	125	16.00X12.00	4	DIN374	6HX	C
MTH- M22X1.50ISO6HX-BC-P011	MF 22X1.5	1,50	–	18,00	78	17	125	18.00X14.50	4	DIN374	6HX	C
MTH- M24X1.50ISO6HX-BC-P011	MF 24X1.5	1,50	–	18,00	93	20	140	18.00X14.50	4	DIN374	6HX	C
MTH- M24X2.00ISO6HX-BC-P011	MF 24X2	2,00	–	18,00	93	20	140	18.00X14.50	4	DIN374	6HX	C

Please check availability in current price and stock-list.

MTH-P011

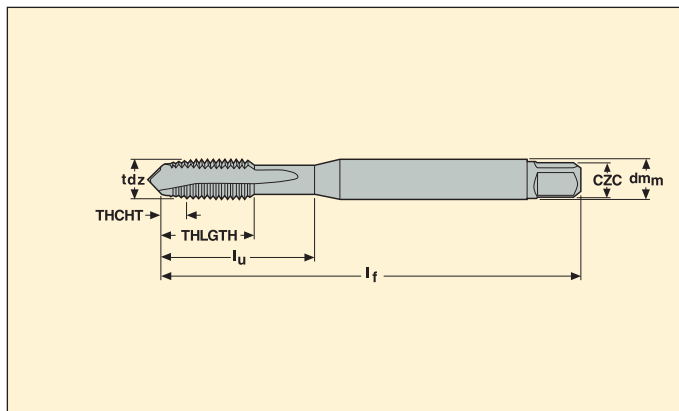


- For cutting data see page 253
- Coating: AlTiN-based
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M25X1.50ISO6HX-BC-P011	MF25X1.5	1,50	-	18,00	93	20	140	18.00X14.50	4	DIN374	6HX	C
MTH- M26X1.50ISO6HX-BC-P011	MF26X1.5	1,50	-	18,00	93	20	140	18.00X14.50	4	DIN374	6HX	C
MTH- M27X1.50ISO6HX-BC-P011	MF27X1.5	1,50	-	20,00	77	20	140	20.00X16.00	4	DIN374	6HX	C
MTH- M27X2.00ISO6HX-BC-P011	MF27X2	2,00	-	20,00	77	20	140	20.00X16.00	4	DIN374	6HX	C
MTH- M28X1.50ISO6HX-BC-P011	MF28X1.5	1,50	-	20,00	77	20	140	20.00X16.00	4	DIN374	6HX	C
MTH- M30X2.00ISO6HX-BC-P011	MF30X2	2,00	-	22,00	85	20	150	22.00X18.00	4	DIN374	6HX	C

Please check availability in current price and stock-list.

MTP-P001

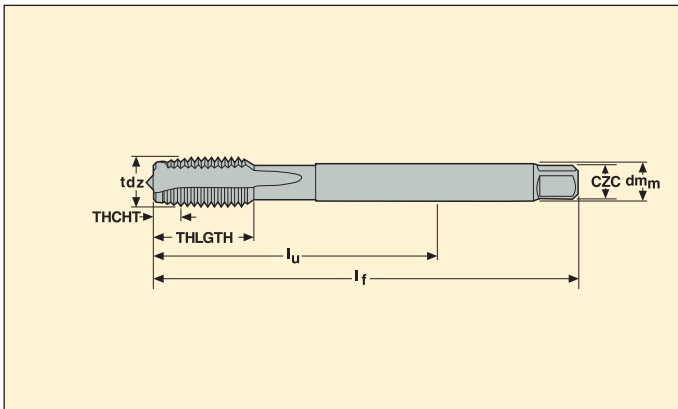


- For cutting data see page 254
- Coating: TiAlN
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTP- M3X0.50ISO6H-TB-P001	M3	0,50	–	4,50	12	12	63	4.50X3.40	3	SECO-DIN	6H	B
MTP- M4X0.70ISO6H-TB-P001	M4	0,70	–	6,00	13	13	70	6.00X4.90	3	SECO-DIN	6H	B
MTP- M5X0.80ISO6H-TB-P001	M5	0,80	–	6,00	15	15	80	6.00X4.90	3	SECO-DIN	6H	B
MTP- M6X1.00ISO6H-TB-P001	M6	1,00	–	8,00	18	18	90	8.00X6.20	3	SECO-DIN	6H	B
MTP- M8X1.25ISO6H-TB-P001	M8	1,25	–	10,00	20	20	100	10.00X8.00	3	SECO-DIN	6H	B
MTP- M10X1.50ISO6H-TB-P001	M10	1,50	–	10,00	39	20	100	10.00X8.00	3	SECO-DIN	6H	B

Please check availability in current price and stock-list.

MTP-P002



- For cutting data see page 254
- Coating: TiAlN
- Substrate: HSS-E-PM

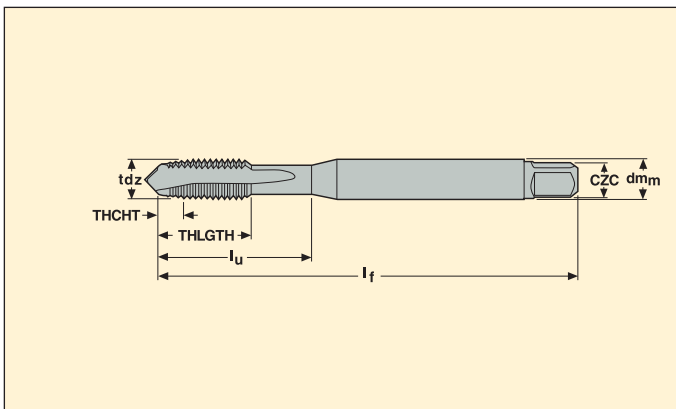
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTP- M12X1.75ISO6H-TB-P002	M12	1,75	–	9,00	83	23	110	9.00X7.00	4	DIN376	6H	B
MTP- M14X2.00ISO6H-TB-P002	M14	2,00	–	11,00	81	25	110	11.00X9.00	4	DIN376	6H	B
MTP- M16X2.00ISO6H-TB-P002	M16	2,00	–	12,00	68	25	110	12.00X9.00	4	DIN376	6H	B
MTP- M18X2.50ISO6H-TB-P002	M18	2,50	–	14,00	81	30	125	14.00X11.00	4	DIN376	6H	B
MTP- M20X2.50ISO6H-TB-P002	M20	2,50	–	16,00	95	30	140	16.00X12.00	4	DIN376	6H	B

Please check availability in current price and stock-list.

MTP-P003



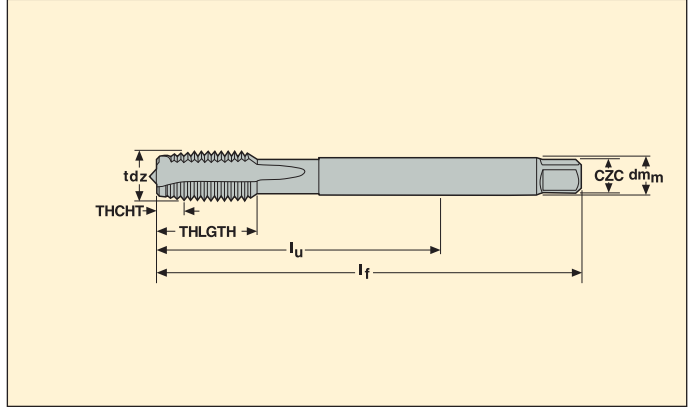
- For cutting data see page 254
- Coating: AlTiN-based
- Substrate: HSS-E-PM



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	d _m	l _u	THLGTH	l _f	CZC				
MTP- M1X0.25ISO5HX-TB-P003	M1	0,25	–	2,50	20	5	40	2.50X2.10	2	DIN371	5HX	B
MTP- M1.2X0.25ISO5HX-TB-P003	M1.2	0,25	–	2,50	20	5	40	2.50X2.10	2	DIN371	5HX	B
MTP- M1.4X0.30ISO5HX-TB-P003	M1.4	0,30	–	2,50	20	6,5	40	2.50X2.10	2	DIN371	5HX	B
MTP- M1.6X0.35ISO6HX-TB-P003	M1.6	0,35	–	2,50	20	7	40	2.50X2.10	2	DIN371	6HX	B
MTP- M1.8X0.35ISO6HX-TB-P003	M1.8	0,35	–	2,50	20	7	40	2.50X2.10	2	DIN371	6HX	B
MTP- M2X0.40ISO6HX-TB-P003	M2	0,40	–	2,80	9	6	45	2.80X2.10	2	DIN371	6HX	B
MTP- M2.2X0.45ISO6HX-TB-P003	M2.2	0,45	–	2,80	12	7	45	2.80X2.10	2	DIN371	6HX	B
MTP- M2.3X0.40ISO6HX-TB-P003	M2.3	0,40	–	2,80	12	7	45	2.80X2.10	2	DIN371	6HX	B
MTP- M2.5X0.45ISO6HX-TB-P003	M2.5	0,45	–	2,80	12,50	8	50	2.80X2.10	2	DIN371	6HX	B
MTP- M2.6X0.45ISO6HX-TB-P003	M2.6	0,45	–	2,80	12,50	8	50	2.80X2.10	2	DIN371	6HX	B
MTP- M3X0.50ISO6HX-TB-P003	M3	0,50	–	3,50	18	8,9	56	3.50X2.70	3	DIN371	6HX	B
MTP- M3.5X0.60ISO6HX-TB-P003	M3.5	0,60	–	4,00	20	10,8	56	4.00X3.00	3	DIN371	6HX	B
MTP- M4X0.70ISO6HX-TB-P003	M4	0,70	–	4,50	21	11,7	63	4.50X3.40	3	DIN371	6HX	B
MTP- M5X0.80ISO6HX-TB-P003	M5	0,80	–	6,00	25	12,6	70	6.00X4.90	3	DIN371	6HX	B
MTP- M6X1.00ISO6HX-TB-P003	M6	1,00	–	6,00	30	14,5	80	6.00X4.90	3	DIN371	6HX	B
MTP- M7X1.00ISO6HX-TB-P003	M7	1,00	–	7,00	30	14,5	80	7.00X5.50	3	DIN371	6HX	B
MTP- M8X1.25ISO6HX-TB-P003	M8	1,25	–	8,00	35	17,4	90	8.00X6.20	3	DIN371	6HX	B
MTP- M10X1.50ISO6HX-TB-P003	M10	1,50	–	10,00	39	19,2	100	10.00X8.00	3	DIN371	6HX	B

Please check availability in current price and stock-list.

MTP-P004

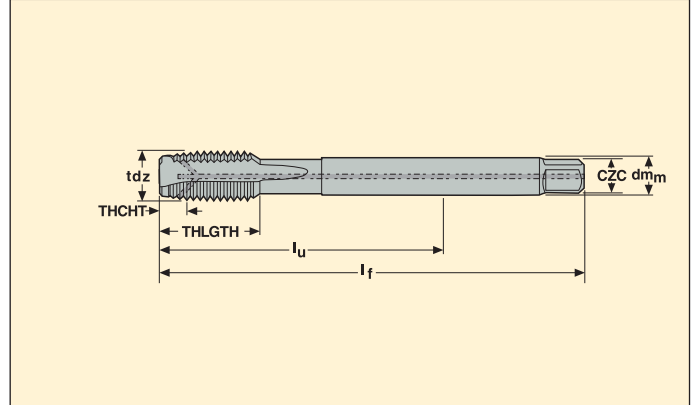


- For cutting data see page 254
- Coating: AlTiN-based
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	lu	THLGTH	lf	CZC				
MTP- M4X0.70ISO6HX-TB-P004	M4	0,70	–	2,80	43	12	63	2.80X2.10	3	DIN376	6HX	B
MTP- M5X0.80ISO6HX-TB-P004	M5	0,80	–	3,50	49	13,2	70	3.50X2.70	3	DIN376	6HX	B
MTP- M6X1.00ISO6HX-TB-P004	M6	1,00	–	4,50	59	15,1	80	4.50X3.40	3	DIN376	6HX	B
MTP- M8X1.25ISO6HX-TB-P004	M8	1,25	–	6,00	67	18	90	6.00X4.90	3	DIN376	6HX	B
MTP- M10X1.50ISO6HX-TB-P004	M10	1,50	–	7,00	77	19,8	100	7.00X5.50	3	DIN376	6HX	B
MTP- M12X1.75ISO6HX-TB-P004	M12	1,75	–	9,00	83	23	110	9.00X7.00	4	DIN376	6HX	B
MTP- M14X2.00ISO6HX-TB-P004	M14	2,00	–	11,00	81	25	110	11.00X9.00	4	DIN376	6HX	B
MTP- M16X2.00ISO6HX-TB-P004	M16	2,00	–	12,00	68	25	110	12.00X9.00	4	DIN376	6HX	B
MTP- M18X2.50ISO6HX-TB-P004	M18	2,50	–	14,00	81	30	125	14.00X11.00	4	DIN376	6HX	B
MTP- M20X2.50ISO6HX-TB-P004	M20	2,50	–	16,00	95	30	140	16.00X12.00	4	DIN376	6HX	B
MTP- M22X2.50ISO6HX-TB-P004	M22	2,50	–	18,00	93	34	140	18.00X14.50	4	DIN376	6HX	B
MTP- M24X3.00ISO6HX-TB-P004	M24	3,00	–	18,00	113	38	160	18.00X14.50	4	DIN376	6HX	B
MTP- M27X3.00ISO6HX-TB-P004	M27	3,00	–	20,00	97	38	160	20.00X16.00	4	DIN376	6HX	B
MTP- M30X3.50ISO6HX-TB-P004	M30	3,50	–	22,00	115	45	180	22.00X18.00	4	DIN376	6HX	B

Please check availability in current price and stock-list.

MTP-P004-A

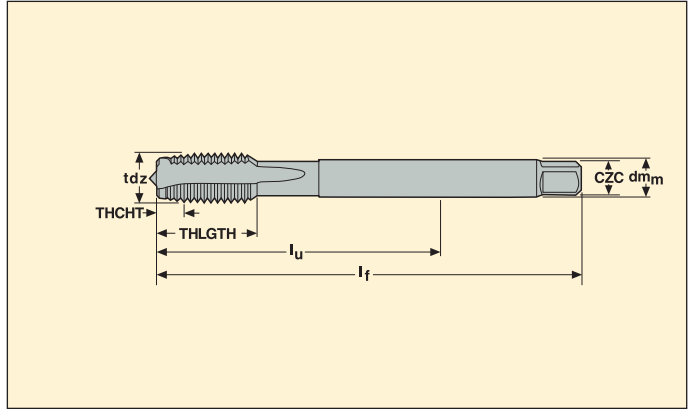


- For cutting data see page 254
- Coating: AlTiN-based
- Substrate: HSS-E-PM
- Internal coolant

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTP- M12X1.75ISO6HX-TB-P004-A	M12	1,75	–	9,00	83	23	110	9.00X7.00	4	DIN376	6HX	B
MTP- M14X2.00ISO6HX-TB-P004-A	M14	2,00	–	11,00	81	25	110	11.00X9.00	4	DIN376	6HX	B
MTP- M16X2.00ISO6HX-TB-P004-A	M16	2,00	–	12,00	68	25	110	12.00X9.00	4	DIN376	6HX	B
MTP- M18X2.50ISO6HX-TB-P004-A	M18	2,50	–	14,00	81	30	125	14.00X11.00	4	DIN376	6HX	B
MTP- M20X2.50ISO6HX-TB-P004-A	M20	2,50	–	16,00	95	30	140	16.00X12.00	4	DIN376	6HX	B
MTP- M22X2.50ISO6HX-TB-P004-A	M22	2,50	–	18,00	93	34	140	18.00X14.50	4	DIN376	6HX	B
MTP- M24X3.00ISO6HX-TB-P004-A	M24	3,00	–	18,00	113	38	160	18.00X14.50	4	DIN376	6HX	B
MTP- M27X3.00ISO6HX-TB-P004-A	M27	3,00	–	20,00	97	38	160	20.00X16.00	4	DIN376	6HX	B
MTP- M30X3.50ISO6HX-TB-P004-A	M30	3,50	–	22,00	115	45	180	22.00X18.00	4	DIN376	6HX	B

Please check availability in current price and stock-list.

MTP-P011

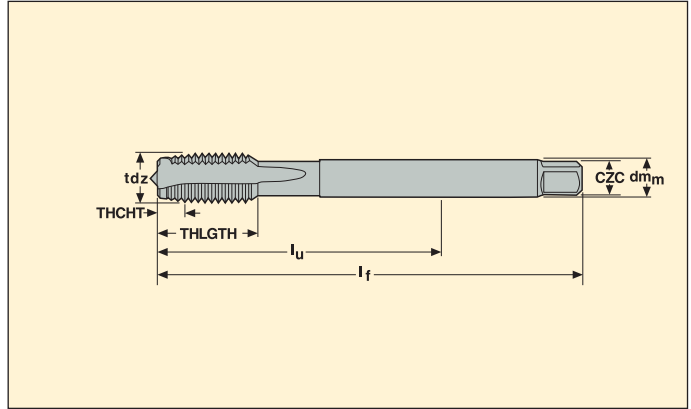


- For cutting data see page 254
- Coating: AlTiN-based
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	d _m	l _u	THLGTH	l _f	CZC				
MTP- M4X0.50ISO6HX-TB-P011	MF4X0.5	0,50	–	2,80	43	12	63	2.80X2.10	3	DIN374	6HX	B
MTP- M5X0.50ISO6HX-TB-P011	MF5X0.5	0,50	–	3,50	49	13	70	3.50X2.70	3	DIN374	6HX	B
MTP- M6X0.75ISO6HX-TB-P011	MF6X0.75	0,75	–	4,50	59	15	80	4.50X3.40	3	DIN374	6HX	B
MTP- M8X0.75ISO6HX-TB-P011	MF8X0.75	0,75	–	6,00	57	15	80	6.00X4.90	3	DIN374	6HX	B
MTP- M8X1.00ISO6HX-TB-P011	MF8X1	1,00	–	6,00	67	18	90	6.00X4.90	3	DIN374	6HX	B
MTP- M10X0.75ISO6HX-TB-P011	MF10X0.75	0,75	–	7,00	67	17,60	90	7.00X5.50	3	DIN374	6HX	B
MTP- M10X1.00ISO6HX-TB-P011	MF10X1	1,00	–	7,00	67	17,60	90	7.00X5.50	3	DIN374	6HX	B
MTP- M10X1.25ISO6HX-TB-P011	MF10X1.25	1,25	–	7,00	77	19,80	100	7.00X5.50	3	DIN374	6HX	B
MTP- M12X1.00ISO6HX-TB-P011	MF12X1	1,00	–	9,00	73	21	100	9.00X7.00	4	DIN374	6HX	B
MTP- M12X1.25ISO6HX-TB-P011	MF12X1.25	1,25	–	9,00	73	21	100	9.00X7.00	4	DIN374	6HX	B
MTP- M12X1.50ISO6HX-TB-P011	MF12X1.5	1,50	–	9,00	73	21	100	9.00X7.00	4	DIN374	6HX	B
MTP- M14X1.00ISO6HX-TB-P011	MF14X1	1,00	–	11,00	71	21	100	11.00X9.00	4	DIN374	6HX	B
MTP- M14X1.25ISO6HX-TB-P011	MF14X1.25	1,25	–	11,00	71	21	100	11.00X9.00	4	DIN374	6HX	B
MTP- M14X1.50ISO6HX-TB-P011	MF14X1.5	1,50	–	11,00	71	21	100	11.00X9.00	4	DIN374	6HX	B
MTP- M16X1.00ISO6HX-TB-P011	MF16X1	1,00	–	12,00	58	21	100	12.00X9.00	4	DIN374	6HX	B
MTP- M16X1.50ISO6HX-TB-P011	MF16X1.5	1,50	–	12,00	58	21	100	12.00X9.00	4	DIN374	6HX	B
MTP- M18X1.00ISO6HX-TB-P011	MF18X1	1,00	–	14,00	66	24	110	14.00X11.00	4	DIN374	6HX	B
MTP- M18X1.50ISO6HX-TB-P011	MF18X1.5	1,50	–	14,00	66	24	110	14.00X11.00	4	DIN374	6HX	B
MTP- M20X1.00ISO6HX-TB-P011	MF20X1	1,00	–	16,00	80	24	125	16.00X12.00	4	DIN374	6HX	B
MTP- M20X1.50ISO6HX-TB-P011	MF20X1.5	1,50	–	16,00	80	24	125	16.00X12.00	4	DIN374	6HX	B
MTP- M22X1.50ISO6HX-TB-P011	MF22X1.5	1,50	–	18,00	78	25	125	18.00X14.50	4	DIN374	6HX	B
MTP- M24X1.50ISO6HX-TB-P011	MF24X1.5	1,50	–	18,00	93	28	140	18.00X14.50	4	DIN374	6HX	B
MTP- M24X2.00ISO6HX-TB-P011	MF24X2	2,00	–	18,00	93	28	140	18.00X14.50	4	DIN374	6HX	B

Please check availability in current price and stock-list.

MTP-P011

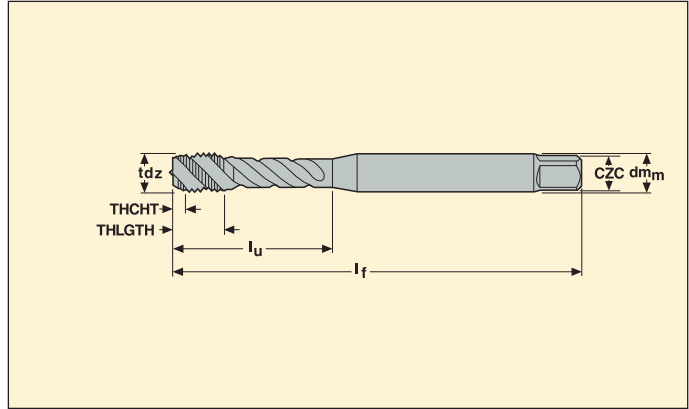


- For cutting data see page 254
- Coating: AlTiN-based
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTP- M25X1.50ISO6HX-TB-P011	MF25X1.5	1,50	–	18,00	93	28	140	18.00X14.50	4	DIN374	6HX	B
MTP- M26X1.50ISO6HX-TB-P011	MF26X1.5	1,50	–	18,00	93	28	140	18.00X14.50	4	DIN374	6HX	B
MTP- M27X1.50ISO6HX-TB-P011	MF27X1.5	1,50	–	20,00	77	28	140	20.00X16.00	4	DIN374	6HX	B
MTP- M27X2.00ISO6HX-TB-P011	MF27X2	2,00	–	20,00	77	28	140	20.00X16.00	4	DIN374	6HX	B
MTP- M28X1.50ISO6HX-TB-P011	MF28X1.5	1,50	–	20,00	77	28	140	20.00X16.00	4	DIN374	6HX	B
MTP- M30X1.50ISO6HX-TB-P011	MF30X1.50	1,50	–	22,00	85	28	150	22.00X18.00	4	DIN374	6HX	B
MTP- M30X2.00ISO6HX-TB-P011	MF30X2	2,00	–	22,00	85	28	150	22.00X18.00	4	DIN374	6HX	B

Please check availability in current price and stock-list.

MTH-M003

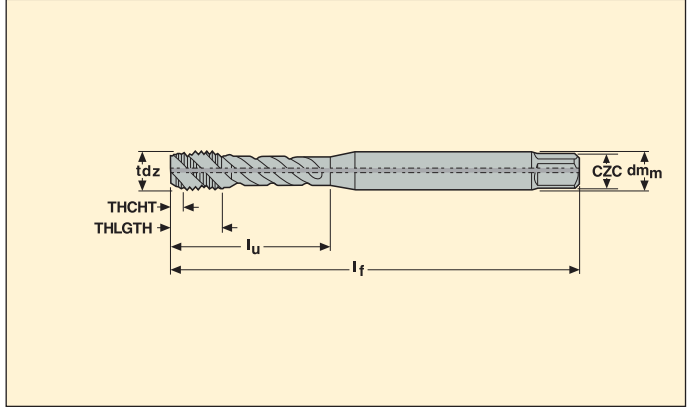


- For cutting data see page 255
- Coating: TiCN
- Substrate: HSS-E

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M1.6X0.35ISO6H-BC-M003	M1.6	0,35	–	2,50	6	4	40	2.50X2.10	2	DIN371	6H	C
MTH- M2X0.40ISO6H-BC-M003	M2	0,40	–	2,80	9	4	45	2.80X2.10	3	DIN371	6H	C
MTH- M2.2X0.45ISO6H-BC-M003	M2.2	0,45	–	2,80	12	4	45	2.80X2.10	3	DIN371	6H	C
MTH- M2.3X0.40ISO6H-BC-M003	M2.3	0,40	–	2,80	12	4	45	2.80X2.10	3	DIN371	6H	C
MTH- M2.5X0.45ISO6H-BC-M003	M2.5	0,45	–	2,80	12,50	4	50	2.80X2.10	3	DIN371	6H	C
MTH- M2.6X0.45ISO6H-BC-M003	M2.6	0,45	–	2,80	12,50	4	50	2.80X2.10	3	DIN371	6H	C
MTH- M3X0.50ISO6H-BC-M003	M3	0,50	–	3,50	18	5,9	56	3.50X2.70	3	DIN371	6H	C
MTH- M3.5X0.60ISO6H-BC-M003	M3.5	0,60	–	4,00	20	7	56	4.00X3.00	3	DIN371	6H	C
MTH- M4X0.70ISO6H-BC-M003	M4	0,70	–	4,50	21	6,7	63	4.50X3.40	3	DIN371	6H	C
MTH- M5X0.80ISO6H-BC-M003	M5	0,80	–	6,00	25	7,7	70	6.00X4.90	3	DIN371	6H	C
MTH- M6X1.00ISO6H-BC-M003	M6	1,00	–	6,00	30	10	80	6.00X4.90	3	DIN371	6H	C
MTH- M7X1.00ISO6H-BC-M003	M7	1,00	–	7,00	30	10	80	7.00X5.50	3	DIN371	6H	C
MTH- M8X1.25ISO6H-BC-M003	M8	1,25	–	8,00	35	11,6	90	8.00X6.20	3	DIN371	6H	C
MTH- M10X1.50ISO6H-BC-M003	M10	1,50	–	10,00	39	15,1	100	10.00X8.00	3	DIN371	6H	C

Please check availability in current price and stock-list.

MTH-M003-A



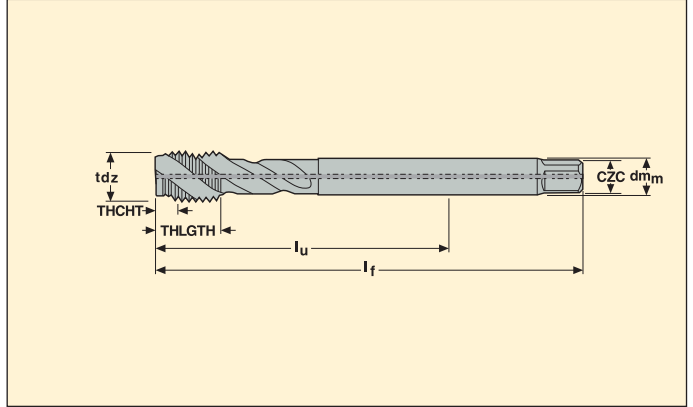
- For cutting data see page 255
- Coating: TiCN
- Substrate: HSS-E
- Internal coolant

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M4X0.70ISO6H-BC-M003-A	M4	0,70	–	4,50	21	6,7	63	4.50X3.40	3	DIN371	6H	C
MTH- M5X0.80ISO6H-BC-M003-A	M5	0,80	–	6,00	25	7,7	70	6.00X4.90	3	DIN371	6H	C
MTH- M6X1.00ISO6H-BC-M003-A	M6	1,00	–	6,00	30	10	80	6.00X4.90	3	DIN371	6H	C
MTH- M7X1.00ISO6H-BC-M003-A	M7	1,00	–	7,00	30	10	80	7.00X5.50	3	DIN371	6H	C
MTH- M8X1.25ISO6H-BC-M003-A	M8	1,25	–	8,00	35	11,6	90	8.00X6.20	3	DIN371	6H	C
MTH- M10X1.50ISO6H-BC-M003-A	M10	1,50	–	10,00	39	15,1	100	10.00X8.00	3	DIN371	6H	C

Please check availability in current price and stock-list.

Holemaking - Threadmaster™ - Taps

MTH-M004-A

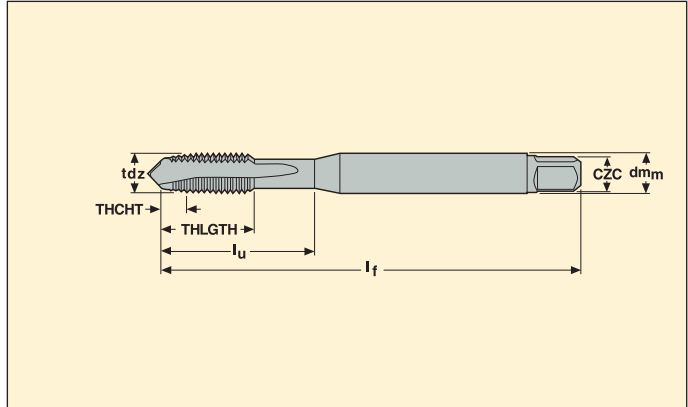


- For cutting data see page 255
- Coating: TiCN
- Substrate: HSS-E
- Internal coolant

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGH	l _f	Czc				
MTH- M12X1.75ISO6H-BC-M004-A	M12	1,75	–	9,00	83	23	110	9.00X7.00	3	DIN376	6H	C
MTH- M14X2.00ISO6H-BC-M004-A	M14	2,00	–	11,00	81	25	110	11.00X9.00	3	DIN376	6H	C
MTH- M16X2.00ISO6H-BC-M004-A	M16	2,00	–	12,00	68	20	110	12.00X9.00	4	DIN376	6H	C
MTH- M18X2.50ISO6H-BC-M004-A	M18	2,50	–	14,00	81	25	125	14.00X11.00	4	DIN376	6H	C
MTH- M20X2.50ISO6H-BC-M004-A	M20	2,50	–	16,00	95	25	140	16.00X12.00	4	DIN376	6H	C

Please check availability in current price and stock-list.

MTP-M003

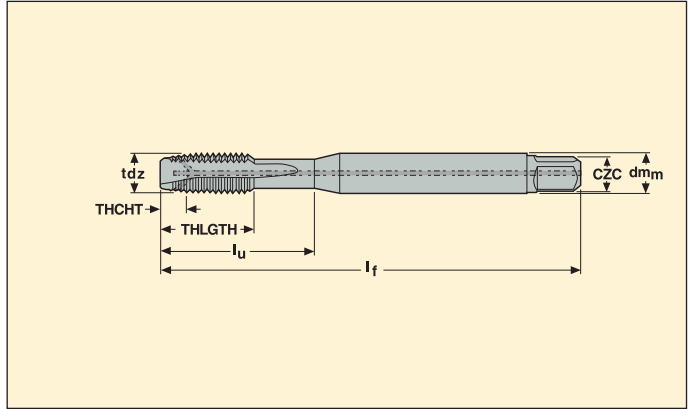


- For cutting data see page 255
- Coating: TiCN
- Substrate: HSS-E

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	d _m	l _u	THLGTH	l _f	CZC				
MTP- M1X0.25ISO5HX-TB-M003	M1	0,25	–	2,50	20	5	40	2.50X2.10	2	DIN371	5HX	B
MTP- M1.2X0.25ISO5HX-TB-M003	M1.2	0,25	–	2,50	20	5	40	2.50X2.10	2	DIN371	5HX	B
MTP- M1.4X0.30ISO5HX-TB-M003	M1.4	0,30	–	2,50	20	6,5	40	2.50X2.10	2	DIN371	5HX	B
MTP- M1.6X0.35ISO6H-TB-M003	M1.6	0,35	–	2,50	20	7	40	2.50X2.10	2	DIN371	6H	B
MTP- M1.8X0.35ISO6H-TB-M003	M1.8	0,35	–	2,50	20	7	40	2.50X2.10	2	DIN371	6H	B
MTP- M2X0.40ISO6H-TB-M003	M2	0,40	–	2,80	9	6	45	2.80X2.10	2	DIN371	6H	B
MTP- M2.2X0.45ISO6H-TB-M003	M2.2	0,45	–	2,80	12	7	45	2.80X2.10	2	DIN371	6H	B
MTP- M2.3X0.40ISO6H-TB-M003	M2.3	0,40	–	2,80	12	7	45	2.80X2.10	2	DIN371	6H	B
MTP- M2.5X0.45ISO6H-TB-M003	M2.5	0,45	–	2,80	12,50	8	50	2.80X2.10	2	DIN371	6H	B
MTP- M2.6X0.45ISO6H-TB-M003	M2.6	0,45	–	2,80	12,50	8	50	2.80X2.10	2	DIN371	6H	B
MTP- M3X0.50ISO6H-TB-M003	M3	0,50	–	3,50	18	8,9	56	3.50X2.70	3	DIN371	6H	B
MTP- M3.5X0.60ISO6H-TB-M003	M3.5	0,60	–	4,00	20	10,8	56	4.00X3.00	3	DIN371	6H	B
MTP- M4X0.70ISO6H-TB-M003	M4	0,70	–	4,50	21	11,7	63	4.50X3.40	3	DIN371	6H	B
MTP- M5X0.80ISO6H-TB-M003	M5	0,80	–	6,00	25	12,6	70	6.00X4.90	3	DIN371	6H	B
MTP- M6X1.00ISO6H-TB-M003	M6	1,00	–	6,00	30	14,5	80	6.00X4.90	3	DIN371	6H	B
MTP- M8X1.25ISO6H-TB-M003	M8	1,25	–	8,00	35	17,4	90	8.00X6.20	3	DIN371	6H	B
MTP- M10X1.50ISO6H-TB-M003	M10	1,50	–	10,00	39	19,2	100	10.00X8.00	3	DIN371	6H	B

Please check availability in current price and stock-list.

MTP-M003-A



- For cutting data see page 255
- Coating: TiCN
- Substrate: HSS-E
- Internal coolant

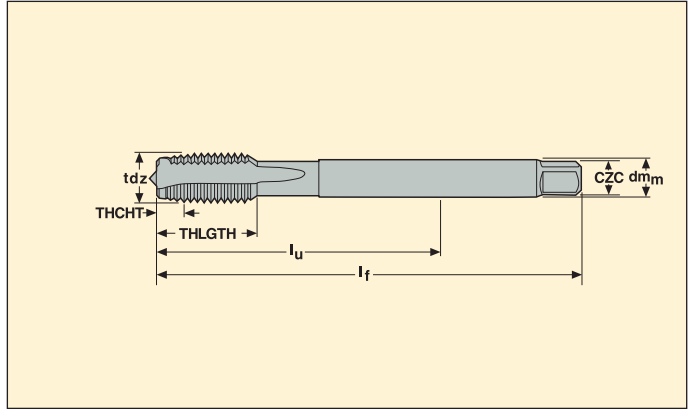
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTP- M4X0.70ISO6H-TB-M003-A	M4	0,70	–	4,50	21	11,7	63	4.50X3.40	3	DIN371	6H	B
MTP- M5X0.80ISO6H-TB-M003-A	M5	0,80	–	6,00	25	12,6	70	6.00X4.90	3	DIN371	6H	B
MTP- M6X1.00ISO6H-TB-M003-A	M6	1,00	–	6,00	30	14,5	80	6.00X4.90	3	DIN371	6H	B
MTP- M8X1.25ISO6H-TB-M003-A	M8	1,25	–	8,00	35	17,4	90	8.00X6.20	3	DIN371	6H	B
MTP- M10X1.50ISO6H-TB-M003-A	M10	1,50	–	10,00	39	19,2	100	10.00X8.00	3	DIN371	6H	B

Please check availability in current price and stock-list.

MTP-M004



- For cutting data see page 255
- Coating: TiCN
- Substrate: HSS-E



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTP- M12X1.75ISO6H-TB-M004	M12	1,75	–	9,00	83	23	110	9.00X7.00	4	DIN376	6H	B
MTP- M14X2.00ISO6H-TB-M004	M14	2,00	–	11,00	81	25	110	11.00X9.00	4	DIN376	6H	B
MTP- M16X2.00ISO6H-TB-M004	M16	2,00	–	12,00	68	25	110	12.00X9.00	4	DIN376	6H	B
MTP- M18X2.50ISO6H-TB-M004	M18	2,50	–	14,00	81	30	125	14.00X11.00	4	DIN376	6H	B
MTP- M20X2.50ISO6H-TB-M004	M20	2,50	–	16,00	95	30	140	16.00X12.00	4	DIN376	6H	B

Please check availability in current price and stock-list.

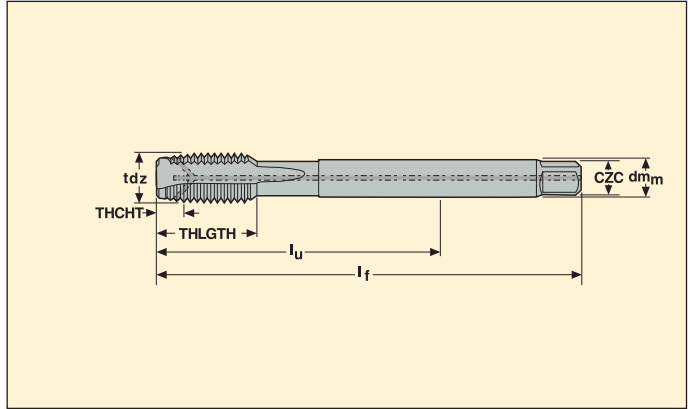
Holemaking – Threadmaster™ – Taps



MTP-M004-A



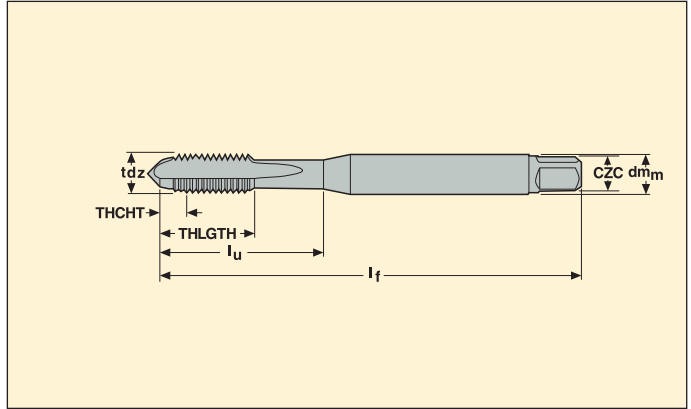
- For cutting data see page 255
- Coating: TiCN
- Substrate: HSS-E
- Internal coolant



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTP- M12X1.75ISO6H-TB-M004-A	M12	1,75	–	9,00	83	23	110	9.00X7.00	4	DIN376	6H	B
MTP- M14X2.00ISO6H-TB-M004-A	M14	2,00	–	11,00	81	25	110	11.00X9.00	4	DIN376	6H	B
MTP- M16X2.00ISO6H-TB-M004-A	M16	2,00	–	12,00	68	25	110	12.00X9.00	4	DIN376	6H	B
MTP- M18X2.50ISO6H-TB-M004-A	M18	2,50	–	14,00	81	30	125	14.00X11.00	4	DIN376	6H	B
MTP- M20X2.50ISO6H-TB-M004-A	M20	2,50	–	16,00	95	30	140	16.00X12.00	4	DIN376	6H	B
MTP- M22X2.50ISO6H-TB-M004-A	M22	2,50	–	18,00	93	34	140	18.00X14.50	4	DIN376	6H	B
MTP- M24X3.00ISO6H-TB-M004-A	M24	3,00	–	18,00	113	38	160	18.00X14.50	4	DIN376	6H	B

Please check availability in current price and stock-list.

MTS-S005

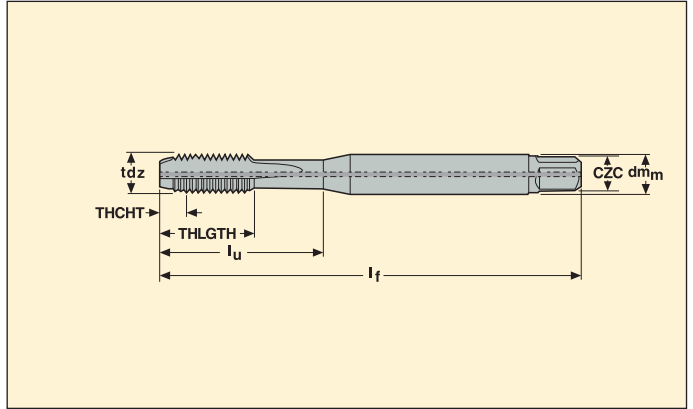


- For cutting data see page 256
- Coating: TiCN
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTS- M3X0.50ISO6HX-XC-S005	M3	0,50	-	3,50	18	8,9	56	3.50X2.70	3	DIN371	6HX	C
MTS- M4X0.70ISO6HX-XC-S005	M4	0,70	-	4,50	21	11,7	63	4.50X3.40	4	DIN371	6HX	C
MTS- M5X0.80ISO6HX-XC-S005	M5	0,80	-	6,00	25	12,6	70	6.00X4.90	4	DIN371	6HX	C
MTS- M6X1.00ISO6HX-XC-S005	M6	1,00	-	6,00	30	14,5	80	6.00X4.90	4	DIN371	6HX	C
MTS- M8X1.25ISO6HX-XC-S005	M8	1,25	-	8,00	35	18,1	90	8.00X6.20	4	DIN371	6HX	C
MTS- M10X1.50ISO6HX-XC-S005	M10	1,50	-	10,00	39	20,1	100	10.00X8.00	4	DIN371	6HX	C

Please check availability in current price and stock-list.

MTS-K001-A

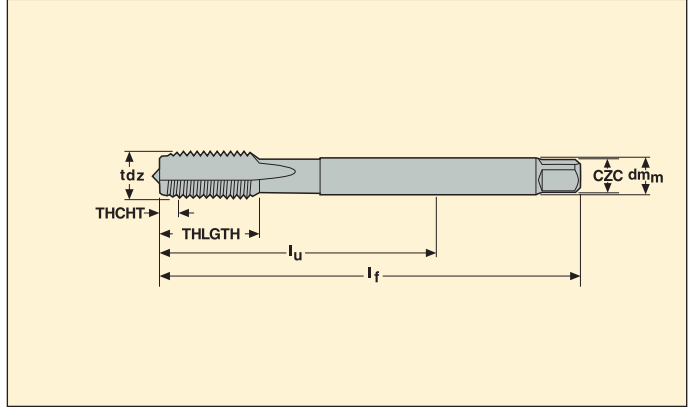


- For cutting data see page 256
- Coating: TiAlN
- Substrate: HSS-E-PM
- Internal coolant

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTS- M4X0.75ISO6HX-XC-K001-A	M4	0,70	–	4,50	21	11,7	63	4.50X3.40	4	DIN371	6HX	C
MTS- M5X0.80ISO6HX-XC-K001-A	M5	0,80	–	6,00	25	12,6	70	6.00X4.90	4	DIN371	6HX	C
MTS- M5X0.80ISO6HX-XE-K001-A	M5	0,80	–	6,00	25	12,6	70	6.00X4.90	4	DIN371	6HX	E
MTS- M6X1.00ISO6HX-XC-K001-A	M6	1,00	–	6,00	30	14,5	80	6.00X4.90	4	DIN371	6HX	C
MTS- M6X1.00ISO6HX-XE-K001-A	M6	1,00	–	6,00	30	14,5	80	6.00X4.90	4	DIN371	6HX	E
MTS- M8X1.25ISO6HX-XC-K001-A	M8	1,25	–	8,00	35	18,1	90	8.00X6.20	4	DIN371	6HX	C
MTS- M8X1.25ISO6HX-XE-K001-A	M8	1,25	–	8,00	35	18,1	90	8.00X6.20	4	DIN371	6HX	E
MTS- M10X1.50ISO6HX-XC-K001-A	M10	1,50	–	10,00	39	20,1	100	10.00X8.00	4	DIN371	6HX	C
MTS- M10X1.50ISO6HX-XE-K001-A	M10	1,50	–	10,00	39	20,1	100	10.00X8.00	4	DIN371	6HX	E

Please check availability in current price and stock-list.

MTS-S010/K002

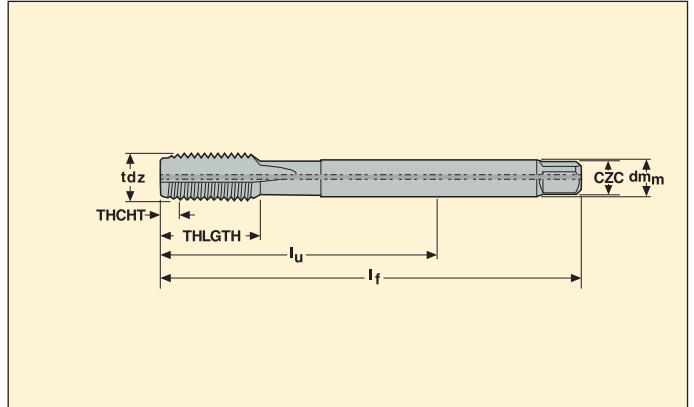


- For cutting data see page 256
- Coating: TiCN/TiAIN
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	L _u	THLGTH	L _f	CZC				
MTS- M8X1.25ISO6HX-XC-S010	M8	1,25	–	6,00	67	18	90	6.00X4.90	4	DIN376	6HX	C
MTS- M10X1.50ISO6HX-XC-S010	M10	1,50	–	7,00	77	20	100	7.00X5.50	4	DIN376	6HX	C
MTS- M12X1.75ISO6HX-XC-S010	M12	1,75	–	9,00	83	23	110	9.00X7.00	4	DIN376	6HX	C
MTS- M14X2.00ISO6HX-XC-S010	M14	2,00	–	11,00	81	25	110	11.00X9.00	4	DIN376	6HX	C
MTS- M16X2.00ISO6HX-XC-S010	M16	2,00	–	12,00	68	25	110	12.00X9.00	4	DIN376	6HX	C
MTS- M18X2.50ISO6HX-XC-S010	M18	2,50	–	14,00	81	30	125	14.00X11.00	4	DIN376	6HX	C
MTS- M20X2.50ISO6HX-XC-S010	M20	2,50	–	16,00	95	30	140	16.00X12.00	4	DIN376	6HX	C
MTS- M22X2.50ISO6HX-XC-S010	M22	2,50	–	18,00	93	34	140	18.00X14.50	4	DIN376	6HX	C
MTS- M24X3.00ISO6HX-XC-S010	M24	3,00	–	18,00	113	38	160	18.00X14.50	4	DIN376	6HX	C
MTS- M27X3.00ISO6HX-XC-K002	M27	3,00	–	20,00	97	38	160	20.00X16.00	4	DIN376	6HX	C
MTS- M30X3.50ISO6HX-XC-K002	M30	3,50	–	22,00	115	45	180	22.00X18.00	4	DIN376	6HX	C
MTS- M33X3.50ISO6HX-XC-K002	M33	3,50	–	25,00	113	50	180	25.00X20.00	4	DIN376	6HX	C
MTS- M36X4.00ISO6HX-XC-K002	M36	4,00	–	28,00	131	55	200	28.00X22.00	4	DIN376	6HX	C
MTS- M39X4.00ISO6HX-XC-K002	M39	4,00	–	32,00	102	60	200	32.00X24.00	4	DIN376	6HX	C
MTS- M42X4.50ISO6HX-XC-K002	M42	4,50	–	32,00	102	60	200	32.00X24.00	4	DIN376	6HX	C

Please check availability in current price and stock-list.

MTS-K002-A

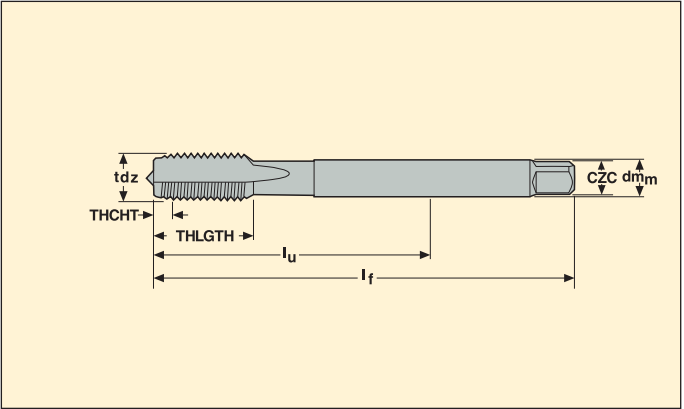


- For cutting data see page 256
- Coating: TiAIN
- Substrate: HSS-E-PM
- Internal coolant

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTS- M12X1.75ISO6HX-XC-K002-A	M12	1,75	–	9,00	83	24	110	9.00X7.00	4	DIN376	6HX	C
MTS- M12X1.75ISO6HX-XE-K002-A	M12	1,75	–	9,00	83	24	110	9.00X7.00	4	DIN376	6HX	E
MTS- M14X2.00ISO6HX-XC-K002-A	M14	2,00	–	11,00	81	25	110	11.00X9.00	4	DIN376	6HX	C
MTS- M16X2.00ISO6HX-XC-K002-A	M16	2,00	–	12,00	68	25	110	12.00X9.00	4	DIN376	6HX	C
MTS- M20X2.50ISO6HX-XC-K002-A	M20	2,50	–	16,00	95	30	140	16.00X12.00	4	DIN376	6HX	C
MTS- M22X2.50ISO6HX-XC-K002-A	M22	2,50	–	18,00	93	34	140	18.00X14.50	4	DIN376	6HX	C
MTS- M24X3.00ISO6HX-XC-K002-A	M24	3,00	–	18,00	113	38	160	18.00X14.50	4	DIN376	6HX	C
MTS- M27X3.00ISO6HX-XC-K002-A	M27	3,00	–	20,00	97	38	160	20.00X16.00	4	DIN376	6HX	C
MTS- M30X3.50ISO6HX-XC-K002-A	M30	3,50	–	22,00	115	45	180	22.00X18.00	4	DIN376	6HX	C
MTS- M33X3.50ISO6HX-XC-K002-A	M33	3,50	–	25,00	113	50	180	25.00X20.00	4	DIN376	6HX	C
MTS- M36X4.00ISO6HX-XC-K002-A	M36	4,00	–	28,00	131	55	200	28.00X22.00	4	DIN376	6HX	C
MTS- M39X4.00ISO6HX-XC-K002-A	M39	4,00	–	32,00	102	60	200	32.00X24.00	4	DIN376	6HX	C
MTS- M42X4.50ISO6HX-XC-K002-A	M42	4,50	–	32,00	102	60	200	32.00X24.00	4	DIN376	6HX	C

Please check availability in current price and stock-list.

MTS-K011



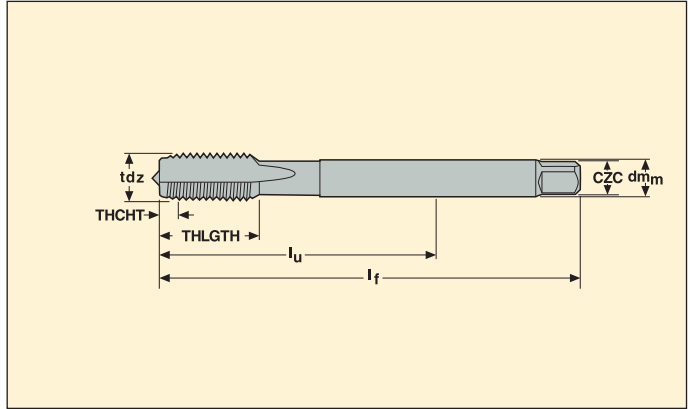
- For cutting data see page 256
- Coating: TiAlN
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTS- M10X1.00ISO6HX-XC-K011	MF10X1.0	1,00	–	7,00	67	20	90	7.00X5.50	4	DIN374	6HX	C
MTS- M10X1.25ISO6HX-XC-K011	MF10X1.25	1,25	–	7,00	77	20	100	7.00X5.50	4	DIN374	6HX	C
MTS- M12X1.25ISO6HX-XC-K011	MF12X1.25	1,25	–	9,00	73	21	100	9.00X7.00	4	DIN374	6HX	C
MTS- M12X1.50ISO6HX-XC-K011	MF12X1.5	1,50	–	9,00	73	21	100	9.00X7.00	4	DIN374	6HX	C
MTS- M14X1.50ISO6HX-XC-K011	MF14X1.5	1,50	–	11,00	71	21	100	11.00X9.00	4	DIN374	6HX	C
MTS- M16X1.50ISO6HX-XC-K011	MF16X1.5	1,50	–	12,00	58	21	100	12.00X9.00	4	DIN374	6HX	C
MTS- M18X1.50ISO6HX-XC-K011	MF18X1.5	1,50	–	14,00	66	24	110	14.00X11.00	4	DIN374	6HX	C
MTS- M20X1.50ISO6HX-XC-K011	MF20X1.5	1,50	–	16,00	80	24	125	16.00X12.00	4	DIN374	6HX	C

Please check availability in current price and stock-list.

Holemaking - Threadmaster™ - Taps

MTS-K021

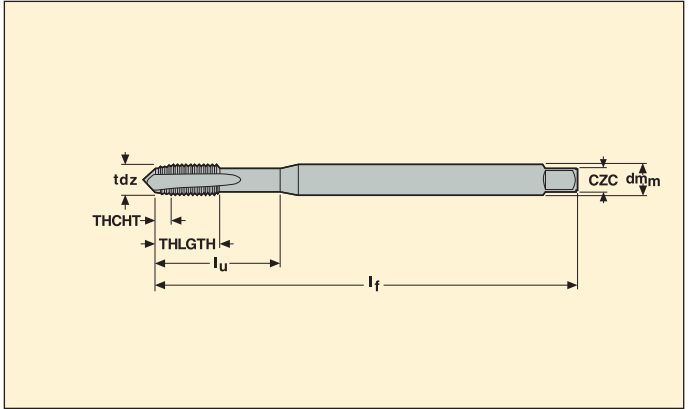


- For cutting data see page 256
- Coating: TiAlN
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTS- 1/8-28G-XC-K021	G 1/8-28	-	28	7,00	67	20	90	7.00X5.50	4	DIN5156	Normal	C
MTS- 1/4-19G-XC-K021	G 1/4-19	-	19	11,00	71	21	100	11.00X9.00	4	DIN5156	Normal	C
MTS- 3/8-19G-XC-K021	G 3/8-19	-	19	12,00	58	21	100	12.00X9.00	5	DIN5156	Normal	C
MTS- 1/2-14G-XC-K021	G 1/2-14	-	14	16,00	80	24	125	16.00X12.00	5	DIN5156	Normal	C
MTS- 3/4-14G-XC-K021	G 3/4-14	-	14	20,00	77	28	140	20.00X16.00	6	DIN5156	Normal	C
MTS- 1-11G-XC-K021	G 1-11	-	11	25,00	93	30	160	25.00X20.00	6	DIN5156	Normal	C

Please check availability in current price and stock-list.

MTS-K031



- For cutting data see page 256
- Coating: TiAlN
- Substrate: HSS-E-PM

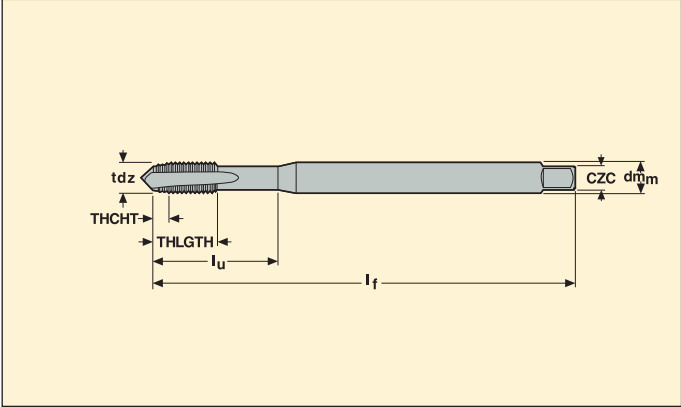
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	lu	THLGTH	lf	CZC				
MTS- 1/4-20UNC-XC-K031	UNC 1/4-20	-	20	7,00	30	15	80	7.00X5.50	4	DIN2184-1	2BX	C
MTS- 5/16-18UNC-XC-K031	UNC 5/16-18	-	18	8,00	35	18	90	8.00X6.20	4	DIN2184-1	2BX	C
MTS- 3/8-16UNC-XC-K031	UNC 3/8-16	-	16	10,00	39	20	100	10.00X8.00	4	DIN2184-1	2BX	C
MTS- 7/16-14UNC-XC-K031	UNC 7/16-14	-	14	8,00	83	20	100	8.00X6.20	4	DIN2184-1	2BX	C
MTS- 1/2-13UNC-XC-K031	UNC 1/2-13	-	13	9,00	81	23	110	9.00X7.00	4	DIN2184-1	2BX	C
MTS- 5/8-11UNC-XC-K031	UNC 5/8-11	-	11	12,00	68	23	110	12.00X9.00	4	DIN2184-1	2BX	C
MTS- 3/4-10UNC-XC-K031	UNC 3/4-10	-	10	14,00	80	30	125	14.00X11.00	4	DIN2184-1	2BX	C
MTS- 7/8-9UNC-XC-K031	UNC 7/8-9	-	9	18,00	93	34	140	18.00X14.50	4	DIN2184-1	2BX	C

Please check availability in current price and stock-list.

MTS-K041



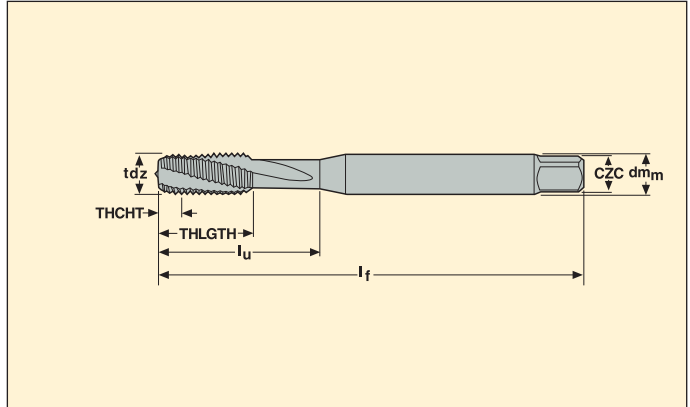
- For cutting data see page 256
- Coating: TiAlN
- Substrate: HSS-E-PM



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	$d_{m,m}$	l_u	THLGTH	l_f	CZC				
MTS- 1/4-28UNF-XC-K041	UNF 1/4-28	–	28	7,00	30	15	80	7.00X5.50	4	DIN2184-1	2BX	C
MTS- 5/16-24UNF-XC-K041	UNF 5/16-24	–	24	8,00	35	18	90	8.00X6.20	4	DIN2184-1	2BX	C
MTS- 3/8-24UNF-XC-K041	UNF 3/8-24	–	24	10,00	39	20	100	10.00X8.00	4	DIN2184-1	2BX	C
MTS- 7/16-20UNF-XC-K041	UNF 7/16-20	–	20	8,00	83	20	100	8.00X6.20	4	DIN2184-1	2BX	C
MTS- 1/2-20UNF-XC-K041	UNF 1/2-20	–	20	9,00	81	23	110	9.00X7.00	4	DIN2184-1	2BX	C
MTS- 5/8-18UNF-XC-K041	UNF 5/8-18	–	18	12,00	68	23	110	12.00X9.00	4	DIN2184-1	2BX	C
MTS- 3/4-16UNF-XC-K041	UNF 3/4-16	–	16	14,00	80	30	125	14.00X11.00	4	DIN2184-1	2BX	C
MTS- 7/8-14UNF-XC-K041	UNF 7/8-14	–	14	18,00	93	34	140	18.00X14.50	4	DIN2184-1	2BX	C

Please check availability in current price and stock-list.

MTH-N001

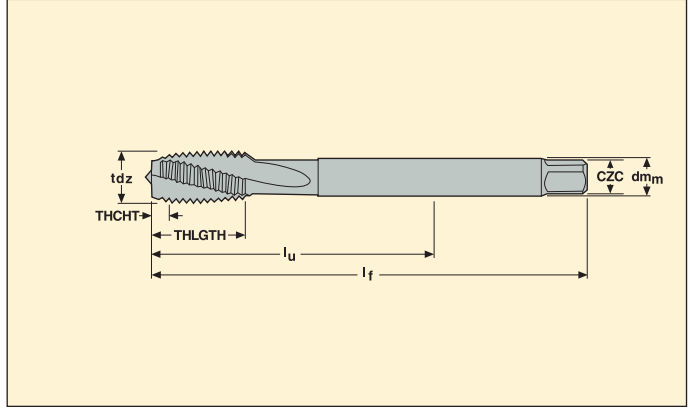


- For cutting data see page 257
- Coating: BRIGHT
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M3X0.50ISO6H-BC-N001	M3	0,50	-	3,50	18	9	56	3.50X2.70	3	DIN371	6H	C
MTH- M4X0.70ISO6H-BC-N001	M4	0,70	-	4,50	21	12	63	4.50X3.40	3	DIN371	6H	C
MTH- M5X0.80ISO6H-BC-N001	M5	0,80	-	6,00	25	13	70	6.00X4.90	3	DIN371	6H	C
MTH- M6X1.00ISO6H-BC-N001	M6	1,00	-	6,00	30	15	80	6.00X4.90	3	DIN371	6H	C
MTH- M8X1.25ISO6H-BC-N001	M8	1,25	-	8,00	35	18	90	8.00X6.20	3	DIN371	6H	C
MTH- M10X1.50ISO6H-BC-N001	M10	1,50	-	10,00	39	20	100	10.00X8.00	3	DIN371	6H	C

Please check availability in current price and stock-list.

MTH-N002

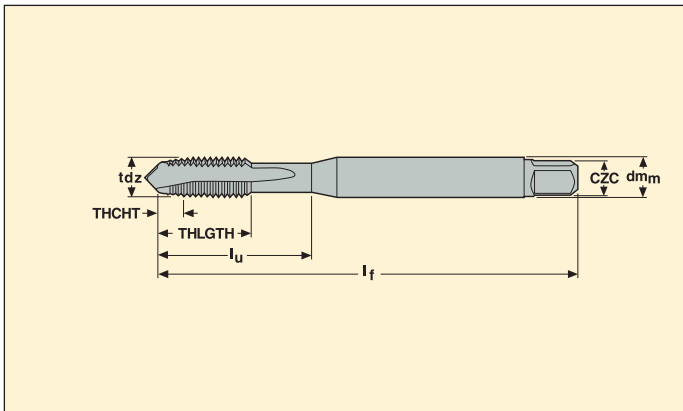


- For cutting data see page 257
- Coating: BRIGHT
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M12X1.75ISO6H-BC-N002	M12	1,75	-	9,00	83	23	110	9.00X7.00	3	DIN376	6H	C
MTH- M14X2.00ISO6H-BC-N002	M14	2,00	-	11,00	81	25	110	11.00X9.00	3	DIN376	6H	C
MTH- M16X2.00ISO6H-BC-N002	M16	2,00	-	12,00	68	25	110	12.00X9.00	3	DIN376	6H	C

Please check availability in current price and stock-list.

MTP-N001

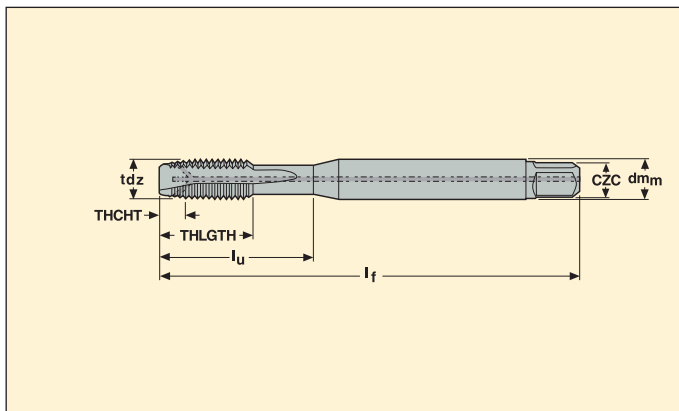


- For cutting data see page 257
- Coating: BRIGHT
- Substrate: HSS-E

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTP- M3X0.50ISO6H-TB-N001	M3	0,50	–	3,50	16	9	56	3.50X2.70	2	DIN371	6H	B
MTP- M4X0.70ISO6H-TB-N001	M4	0,70	–	4,50	19	12	63	4.50X3.40	2	DIN371	6H	B
MTP- M5X0.80ISO6H-TB-N001	M5	0,80	–	6,00	23	13	70	6.00X4.90	2	DIN371	6H	B
MTP- M6X1.00ISO6H-TB-N001	M6	1,00	–	6,00	27	15	80	6.00X4.90	3	DIN371	6H	B
MTP- M8X1.25ISO6H-TB-N001	M8	1,25	–	8,00	28	18	90	8.00X6.20	3	DIN371	6H	B
MTP- M10X1.50ISO6H-TB-N001	M10	1,50	–	10,00	30	20	100	10.00X8.00	3	DIN371	6H	B

Please check availability in current price and stock-list.

MTP-N001-A

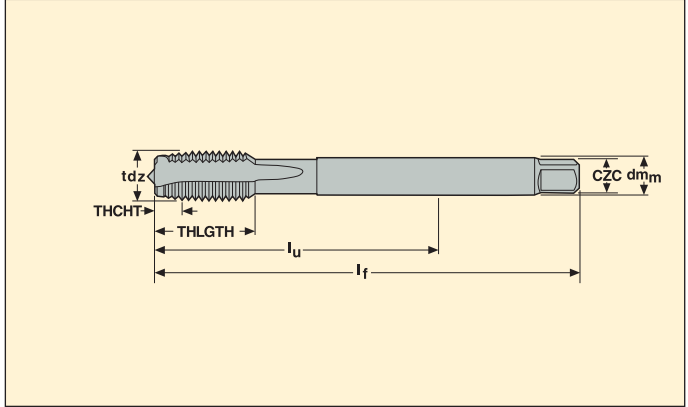


- For cutting data see page 257
- Coating: BRIGHT
- Substrate: HSS-PM
- Internal coolant

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTP- M4X0.70ISO6H-TB-N001-A	M4	0,70	-	4,50	19	12	63	4.50X3.40	2	DIN371	6H	B
MTP- M5X0.80ISO6H-TB-N001-A	M5	0,80	-	6,00	23	13	70	6.00X4.90	2	DIN371	6H	B
MTP- M6X1.00ISO6H-TB-N001-A	M6	1,00	-	6,00	27	15	80	6.00X4.90	3	DIN371	6H	B
MTP- M8X1.25ISO6H-TB-N001-A	M8	1,25	-	8,00	28	18	90	8.00X6.20	3	DIN371	6H	B
MTP- M10X1.50ISO6H-TB-N001-A	M10	1,50	-	10,00	30	20	100	10.00X8.00	3	DIN371	6H	B

Please check availability in current price and stock-list.

MTP-N002

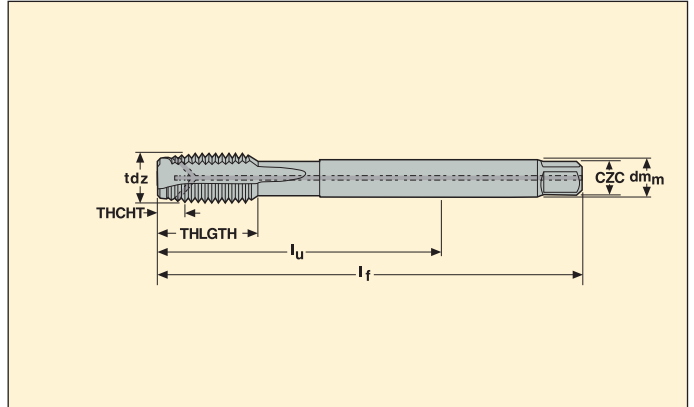


- For cutting data see page 257
- Coating: BRIGHT
- Substrate: HSS-E

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	I _u	THLGTH	I _f	CZC				
MTP- M12X1.75ISO6H-TB-N002	M12	1,75	-	9,00	83	23	110	9.00X7.00	3	DIN376	6H	B
MTP- M14X2.00ISO6H-TB-N002	M14	2,00	-	11,00	81	25	110	11.00X9.00	4	DIN376	6H	B
MTP- M16X2.00ISO6H-TB-N002	M16	2,00	-	12,00	68	25	110	12.00X9.00	4	DIN376	6H	B

Please check availability in current price and stock-list.

MTP-N002-A



- For cutting data see page 257
- Coating: BRIGHT
- Substrate: HSS-PM
- Internal coolant

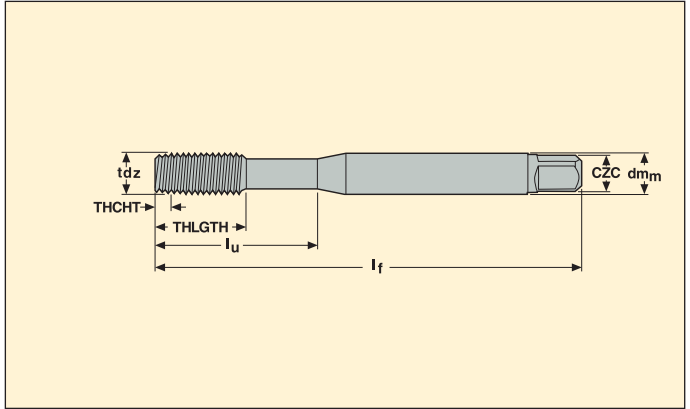
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTP- M12X1.75ISO6H-TB-N002-A	M12	1,75	-	9,00	83	23	110	9.00X7.00	3	DIN376	6H	B
MTP- M14X2.00ISO6H-TB-N002-A	M14	2,00	-	11,00	81	25	110	11.00X9.00	4	DIN376	6H	B
MTP- M16X2.00ISO6H-TB-N002-A	M16	2,00	-	12,00	68	25	110	12.00X9.00	4	DIN376	6H	B

Please check availability in current price and stock-list.

MF-V053



- Forming taps
- For cutting data see page 258
- Coating: TiN
- Substrate: HSS-E



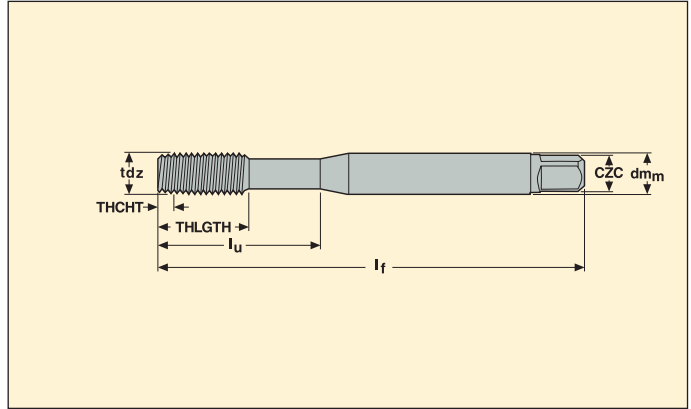
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MF- M3X0.50ISO6HX-XE-V053	M3	0,50	–	3,50	18	9	56	3.50X2.70	–	DIN2174	6HX	E
MF- M4X0.70ISO6HX-XE-V053	M4	0,70	–	4,50	21	12	63	4.50X3.40	–	DIN2174	6HX	E
MF- M5X0.80ISO6HX-XE-V053	M5	0,80	–	6,00	25	13	70	6.00X4.90	–	DIN2174	6HX	E
MF- M6X1.00ISO6HX-XE-V053	M6	1,00	–	6,00	30	15	80	6.00X4.90	–	DIN2174	6HX	E
MF- M8X1.25ISO6HX-XE-V053	M8	1,25	–	8,00	35	18	90	8.00X6.20	–	DIN2174	6HX	E
MF- M10X1.50ISO6HX-XE-V053	M10	1,50	–	10,00	39	20	100	10.00X8.00	–	DIN2174	6HX	E

Please check availability in current price and stock-list.

MF-V054



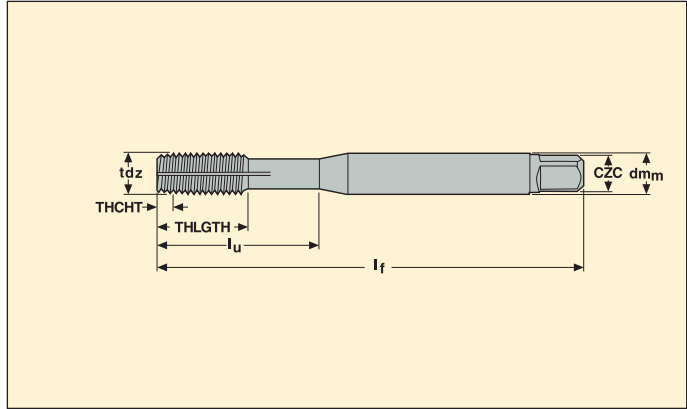
- For cutting data see page 258
- Coating: TiN
- Substrate: HSS-E



Part No.	Thread	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		tdz	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MF- M1X0.25ISO5HX-XC-V054	M1	0,25	-	2,50	20	5,5	40	2.50X2.10	-	DIN2174	5HX	C
MF- M1.1X0.25ISO5HX-XC-V054	M1.1	0,25	-	2,50	20	5,5	40	2.50X2.10	-	DIN2174	5HX	C
MF- M1.2X0.25ISO5HX-XC-V054	M1.2	0,30	-	2,50	20	5,5	40	2.50X2.10	-	DIN2174	5HX	C
MF- M1.4X0.30ISO5HX-XC-V054	M1.4	0,35	-	2,50	20	7	40	2.50X2.10	-	DIN2174	6HX	C
MF- M1.6X0.35ISO6HX-XC-V054	M1.6	0,35	-	2,50	20	8	40	2.50X2.10	-	DIN2174	6HX	C
MF- M1.7X0.35ISO6HX-XC-V054	M1.7	0,35	-	2,50	20	8	40	2.50X2.10	-	DIN2174	6HX	C
MF- M1.8X0.35ISO6HX-XC-V054	M1.8	0,35	-	2,50	20	8	40	2.50X2.10	-	DIN2174	6HX	C
MF- M2X0.40ISO6HX-XC-V054	M2	0,40	-	2,80	11	6	45	2.80X2.10	-	DIN2174	6HX	C
MF- M2.2X0.45ISO6HX-XC-V054	M2.2	0,45	-	2,80	12	7	45	2.80X2.10	-	DIN2174	6HX	C
MF- M2.3X0.40ISO6HX-XC-V054	M2.3	0,40	-	2,80	12	7	45	2.80X2.10	-	DIN2174	6HX	C
MF- M2.5X0.45ISO6HX-XC-V054	M2.5	0,45	-	2,80	14	8	50	2.80X2.10	-	DIN2174	6HX	C
MF- M2.6X0.45ISO6HX-XC-V054	M2.6	0,45	-	2,80	14	8	50	2.80X2.10	-	DIN2174	6HX	C

Please check availability in current price and stock-list.

MF-V055

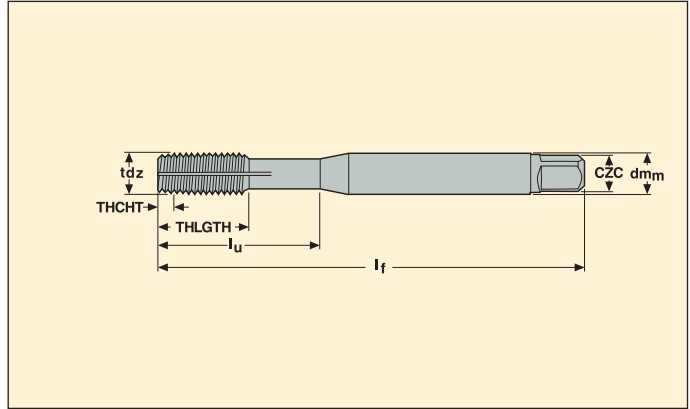


- Forming taps
- With channels for lubrication
- For cutting data see page 258
- Coating: TiN
- Substrate: HSS-E

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	I _u	THLGTH	I _f	CZC				
MF- M3X0.50ISO6HX-XC-V055	M3	0,50	-	3,50	18	9	56	3.50X2.70	-	DIN2174	6HX	C
MF- M4X0.70ISO6HX-XC-V055	M4	0,70	-	4,50	21	12	63	4.50X3.40	-	DIN2174	6HX	C
MF- M5X0.80ISO6HX-XC-V055	M5	0,80	-	6,00	25	13	70	6.00X4.90	-	DIN2174	6HX	C
MF- M6X1.00ISO6HX-XC-V055	M6	1,00	-	6,00	30	15	80	6.00X4.90	-	DIN2174	6HX	C
MF- M7X1.00ISO6HX-XC-V055	M7	1,00	-	7,00	30	15	80	7.00X5.50	-	DIN2174	6HX	C
MF- M8X1.25ISO6HX-XC-V055	M8	1,25	-	8,00	35	18	90	8.00X6.20	-	DIN2174	6HX	C
MF- M10X1.50ISO6HX-XC-V055	M10	1,50	-	10,00	39	20	100	10.00X8.00	-	DIN2174	6HX	C
MF- M12X1.75ISO6HX-XC-V055	M12	1,75	-	9,00	83	23	110	9.00X7.00	-	DIN2174	6HX	C
MF- M14X2.00ISO6HX-XC-V055	M14	2,00	-	11,00	81	25	110	11.00X9.00	-	DIN2174	6HX	C
MF- M16X2.00ISO6HX-XC-V055	M16	2,00	-	12,00	68	25	110	12.00X9.00	-	DIN2174	6HX	C
MF- M20X2.50ISO6HX-XC-V055	M20	2,50	-	16,00	95	30	140	16.00X12.00	-	DIN2174	6HX	C
MF- M24X3.00ISO6HX-XC-V055	M24	3,00	-	18,00	113	36	160	18.00X14.50	-	DIN2174	6HX	C
MF- M27X3.00ISO6HX-XC-V055	M27	3,00	-	20,00	97	36	160	20.00X16.00	-	DIN2174	6HX	C
MF- M30X3.50ISO6HX-XC-V055	M30	3,50	-	22,00	115	40	180	22.00X18.00	-	DIN2174	6HX	C
MF- M33X3.50ISO6HX-XC-V055	M33	3,50	-	25,00	113	40	180	25.00X20.00	-	DIN2174	6HX	C
MF- M36X4.00ISO6HX-XC-V055	M36	4,00	-	28,00	131	50	200	28.00X22.00	-	DIN2174	6HX	C
MF- M39X4.00ISO6HX-XC-V055	M39	4,00	-	32,00	102	50	200	32.00X24.00	-	DIN2174	6HX	C
MF- M42X4.50ISO6HX-XC-V055	M42	4,50	-	32,00	102	50	200	32.00X24.00	-	DIN2174	6HX	C
MF- M48X5.00ISO6HX-XC-V055	M48	5,00	-	36,00	147	60	250	36.00X29.00	-	DIN2174	6HX	C

Please check availability in current price and stock-list.

MF-V056

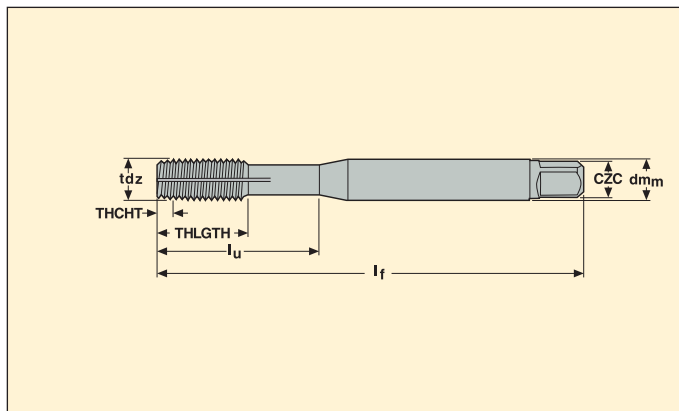


- For cutting data see page 258
- Coating: TiN
- Substrate: HSS-E

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	I _u	THLGTH	I _f	CZC				
MF- 4-40UNC-XC-V056	UNC 4-40	–	40	3,50	18	9	56	3.50X2.70	–	DIN2184-1	2BX	C
MF- 6-32UNC-XC-V056	UNC 6-32	–	32	4,00	20	11	56	4.00X3.00	–	DIN2184-1	2BX	C
MF- 8-32UNC-XC-V056	UNC 8-32	–	32	4,50	21	12	63	4.50X3.40	–	DIN2184-1	2BX	C
MF- 10-24UNC-XC-V056	UNC 10-24	–	24	6,00	25	13	70	6.00X4.90	–	DIN2184-1	2BX	C
MF- 12-24UNC-XC-V056	UNC 12-24	–	24	6,00	30	14	80	6.00X4.90	–	DIN2184-1	2BX	C
MF- 1/4-20UNC-XC-V056	UNC 1/4-20	–	20	7,00	30	15	80	7.00X5.50	–	DIN2184-1	2BX	C
MF- 5/16-18UNC-XC-V056	UNC 5/16-18	–	18	8,00	35	18	90	8.00X6.20	–	DIN2184-1	2BX	C
MF- 3/8-16UNC-XC-V056	UNC 3/8-16	–	16	10,00	39	20	100	10.00X8.00	–	DIN2184-1	2BX	C
MF- 7/16-14UNC-XC-V056	UNC 7/16-14	–	14	8,00	77	20	100	8.00X6.20	–	DIN2184-1	2BX	C
MF- 1/2-13UNC-XC-V056	UNC 1/2-13	–	13	9,00	83	23	110	9.00X7.00	–	DIN2184-1	2BX	C
MF- 5/8-11UNC-XC-V056	UNC 5/8-11	–	11	12,00	68	25	110	12.00X9.00	–	DIN2184-1	2BX	C
MF- 3/4-10UNC-XC-V056	UNC 3/4-10	–	10	14,00	81	30	125	14.00X11.00	–	DIN2184-1	2BX	C
MF- 7/8-9UNC-XC-V056	UNC 7/8-9	–	9	18,00	93	34	140	18.00X14.50	–	DIN2184-1	2BX	C
MF- 1-8UNC-XC-V056	UNC1-8	–	8	18,00	113	38	160	18.00X14.50	–	DIN2184-1	2BX	C

Please check availability in current price and stock-list.

MF-V057

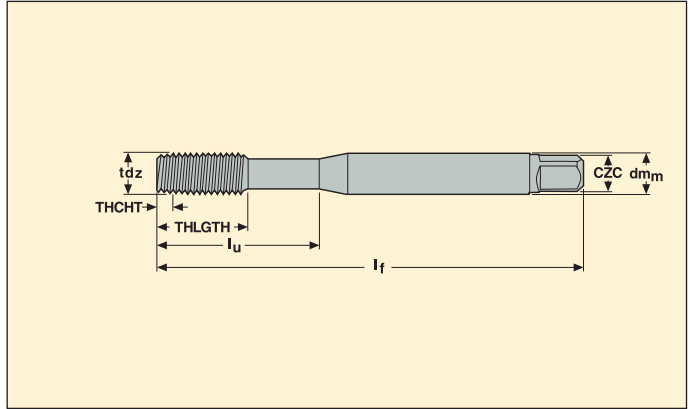


- For cutting data see page 258
- Coating: TiN
- Substrate: HSS-E

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	d _m	l _u	THLGTH	l _f	CZC				
MF- 10-32UNF-XC-V057	UNF 10-32	–	32	6,00	25	13	70	6.00X4.90	–	DIN2184-1	2BX	C
MF- 1/4-28UNF-XC-V057	UNF 1/4-28	–	28	7,00	30	15	80	7.00X5.50	–	DIN2184-1	2BX	C
MF- 5/16-24UNF-XC-V057	UNF 5/16-24	–	24	8,00	35	18	90	8.00X6.20	–	DIN2184-1	2BX	C
MF- 3/8-24UNF-XC-V057	UNF 3/8-24	–	24	10,00	39	20	100	10.00X8.00	–	DIN2184-1	2BX	C
MF- 7/16-20UNF-XC-V057	UNF 7/16-20	–	20	8,00	77	20	100	8.00X6.20	–	DIN2184-1	2BX	C
MF- 1/2-20UNF-XC-V057	UNF 1/2-20	–	20	9,00	83	23	110	9.00X7.00	–	DIN2184-1	2BX	C
MF- 5/8-18UNF-XC-V057	UNF 5/8-18	–	18	12,00	68	25	110	12.00X9.00	–	DIN2184-1	2BX	C
MF- 3/4-16UNF-XC-V057	UNF 3/4-16	–	16	14,00	81	30	125	14.00X11.00	–	DIN2184-1	2BX	C
MF- 1-12UNF-XC-V057	UNF1-12	–	12	18,00	113	38	160	18.00X14.50	–	DIN2184-1	2BX	C

Please check availability in current price and stock-list.

MF-V058



- Forming taps
- For cutting data see page 258
- Coating: TiN
- Substrate: HSS-E

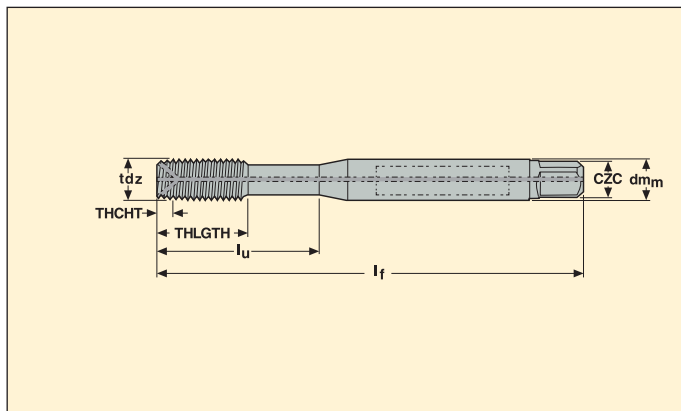
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MF- M3X0.50ISO6GX-XC-V058	M3	0,50	-	3,50	18	9	56	3.50X2.70	-	DIN2174	6GX	C
MF- M3.5X0.60ISO6GX-XC-V058	M3.5	0,60	-	4,00	20	11	56	4.00X3.00	-	DIN2174	6GX	C
MF- M4X0.70ISO6GX-XC-V058	M4	0,70	-	4,50	21	12	63	4.50X3.40	-	DIN2174	6GX	C
MF- M5X0.80ISO6GX-XC-V058	M5	0,80	-	6,00	25	13	70	6.00X4.90	-	DIN2174	6GX	C
MF- M6X1.00ISO6GX-XC-V058	M6	1,00	-	6,00	30	15	80	6.00X4.90	-	DIN2174	6GX	C
MF- M8X1.25ISO6GX-XC-V058	M8	1,25	-	8,00	35	18	90	8.00X6.20	-	DIN2174	6GX	C
MF- M10X1.50ISO6GX-XC-V058	M10	1,50	-	10,00	39	20	100	10.00X8.00	-	DIN2174	6GX	C
MF- M12X1.75ISO6GX-XC-V058	M12	1,75	-	9,00	83	23	110	9.00X7.00	-	DIN2174	6GX	C

Please check availability in current price and stock-list.

MF-V060-A



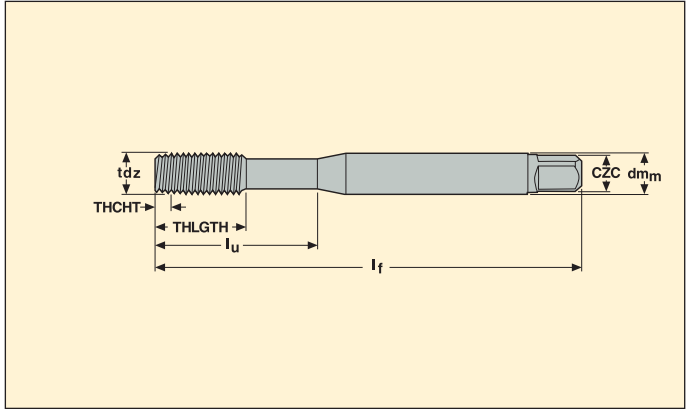
- Forming taps
- For cutting data see page 258
- Coating: TiN
- Substrate: HSS-E
- Internal coolant



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MF- M5X0.80ISO6HX-XC-V060-A	M5	0,80	–	6,00	21	13	70	6.00X4.90	–	DIN2174	6HX	C
MF- M6X1.00ISO6HX-XC-V060-A	M6	1,00	–	6,00	26	15	80	6.00X4.90	–	DIN2174	6HX	C
MF- M8X1.25ISO6HX-XC-V060-A	M8	1,25	–	8,00	30	18	90	8.00X6.20	–	DIN2174	6HX	C
MF- M10X1.50ISO6HX-XC-V060-A	M10	1,50	–	10,00	33	20	100	10.00X8.00	–	DIN2174	6HX	C
MF- M12X1.75ISO6HX-XC-V060-A	M12	1,75	–	9,00	83	23	110	9.00X7.00	–	DIN2174	6HX	C
MF- M14X2.00ISO6HX-XC-V060-A	M14	2,00	–	11,00	81	25	110	11.00X9.00	–	DIN2174	6HX	C
MF- M16X2.00ISO6HX-XC-V060-A	M16	2,00	–	12,00	68	25	110	12.00X9.00	–	DIN2174	6HX	C
MF- M18X2.50ISO6HX-XC-V060-A	M18	2,50	–	14,00	81	30	125	14.00X11.00	–	DIN2174	6HX	C
MF- M20X2.50ISO6HX-XC-V060-A	M20	2,50	–	16,00	95	30	140	16.00X12.00	–	DIN2174	6HX	C
MF- M22X2.50ISO6HX-XC-V060-A	M22	2,50	–	18,00	93	34	140	18.00X14.50	–	DIN2174	6HX	C
MF- M24X3.00ISO6HX-XC-V060-A	M24	3,00	–	18,00	113	38	160	18.00X14.50	–	DIN2174	6HX	C
MF- M27X3.00ISO6HX-XC-V060-A	M27	3,00	–	20,00	97	38	160	20.00X16.00	–	DIN2174	6HX	C
MF- M30X3.50ISO6HX-XC-V060-A	M30	3,50	–	22,00	115	45	180	22.00X18.00	–	DIN2174	6HX	C
MF- M33X3.50ISO6HX-XC-V060-A	M33	3,50	–	25,00	113	50	180	25.00X20.00	–	DIN2174	6HX	C
MF- M36X4.00ISO6HX-XC-V060-A	M36	4,00	–	28,00	131	55	200	28.00X22.00	–	DIN2174	6HX	C
MF- M39X4.00ISO6HX-XC-V060-A	M39	4,00	–	32,00	102	60	200	32.00X24.00	–	DIN2174	6HX	C
MF- M42X4.50ISO6HX-XC-V060-A	M42	4,50	–	32,00	102	60	200	32.00X24.00	–	DIN2174	6HX	C
MF- M48X5.00ISO6HX-XC-V060-A	M48	5,00	–	36,00	147	60	250	36.00X29.00	–	DIN2174	6HX	C

Please check availability in current price and stock-list.

MF-V063

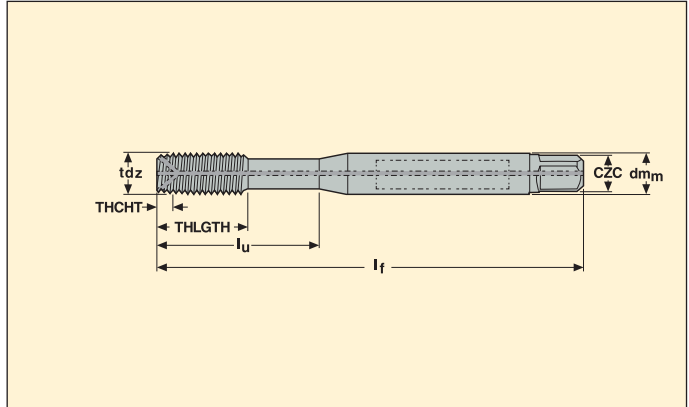


- Forming taps
- For cutting data see page 258
- Coating: TiN
- Substrate: HSS-E

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MF- M5X0.50ISO6HX-XC-V063	MF5x0.5	0,50	–	6,00	25	13	70	6.00X4.90	–	DIN2174	6HX	C
MF- M6X0.75ISO6HX-XC-V063	MF6x0.75	0,75	–	6,00	30	15	80	6.00X4.90	–	DIN2174	6HX	C
MF- M7X0.75ISO6HX-XC-V063	MF7x0.75	0,75	–	7,00	30	15	80	7.00X5.50	–	DIN2174	6HX	C
MF- M8X0.75ISO6HX-XC-V063	MF8x0.75	0,75	–	6,00	57	18	80	6.00X4.90	–	DIN2174	6HX	C
MF- M8X1.00ISO6HX-XC-V063	MF8x1.0	1,00	–	6,00	67	18	90	6.00X4.90	–	DIN2174	6HX	C
MF- M10X1.00ISO6HX-XC-V063	MF10x1.0	1,00	–	7,00	75	20	100	7.00X5.50	–	DIN2174	6HX	C
MF- M10X1.25ISO6HX-XC-V063	MF10x1.25	1,25	–	7,00	75	20	100	7.00X5.50	–	DIN2174	6HX	C
MF- M12X1.00ISO6HX-XC-V063	MF12x1.0	1,00	–	9,00	73	23	100	9.00X7.00	–	DIN2174	6HX	C
MF- M12X1.25ISO6HX-XC-V063	MF12x1.25	1,25	–	9,00	73	23	100	9.00X7.00	–	DIN2174	6HX	C
MF- M12X1.50ISO6HX-XC-V063	MF12x1.5	1,50	–	9,00	73	23	100	9.00X7.00	–	DIN2174	6HX	C
MF- M14X1.00ISO6HX-XC-V063	MF14x1.0	1,00	–	11,00	71	21	100	11.00X9.00	–	DIN2174	6HX	C
MF- M14X1.25ISO6HX-XC-V063	MF14x1.25	1,25	–	11,00	71	21	100	11.00X9.00	–	DIN2174	6HX	C
MF- M14X1.50ISO6HX-XC-V063	MF14x1.5	1,50	–	11,00	71	21	100	11.00X9.00	–	DIN2174	6HX	C
MF- M16X1.50ISO6HX-XC-V063	MF16x1.5	1,50	–	12,00	58	21	100	12.00X9.00	–	DIN2174	6HX	C

Please check availability in current price and stock-list.

MF-V063-A

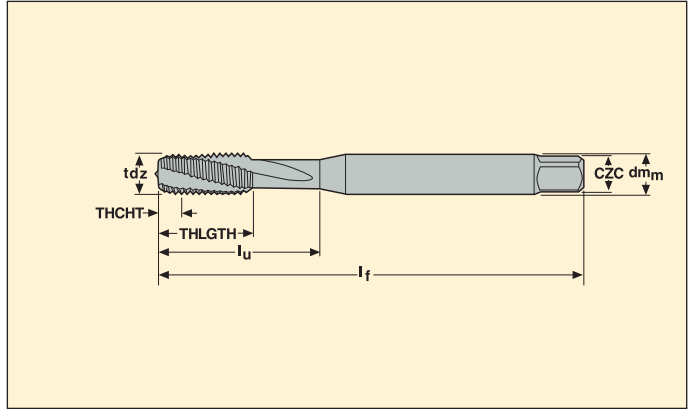


- For cutting data see page 258
- Coating: TiN
- Substrate: HSS-E
- Internal coolant

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MF- M5X0.50ISO6HX-XC-V063-A	MF5X0.5	0,50	–	6,00	25	13	70	6.00X4.90	–	DIN2174	6HX	C
MF- M6X0.75ISO6HX-XC-V063-A	MF6X0.75	0,75	–	6,00	30	15	80	6.00X4.90	–	DIN2174	6HX	C
MF- M8X0.75ISO6HX-XC-V063-A	MF8X0.75	0,75	–	6,00	57	15	80	6.00X4.90	–	DIN2174	6HX	C
MF- M8X1.00ISO6HX-XC-V063-A	MF8X1.0	1,00	–	6,00	67	18	90	6.00X4.90	–	DIN2174	6HX	C
MF- M10X0.75ISO6HX-XC-V063-A	MF10X0.75	0,75	–	7,00	67	18	90	7.00X5.50	–	DIN2174	6HX	C
MF- M10X1.00ISO6HX-XC-V063-A	MF10X1.0	1,00	–	7,00	67	18	90	7.00X5.50	–	DIN2174	6HX	C
MF- M10X1.25ISO6HX-XC-V063-A	MF10X1.25	1,25	–	7,00	77	20	100	7.00X5.50	–	DIN2174	6HX	C
MF- M12X1.00ISO6HX-XC-V063-A	MF12X1.0	1,00	–	9,00	73	21	100	9.00X7.00	–	DIN2174	6HX	C
MF- M12X1.25ISO6HX-XC-V063-A	MF12X1.25	1,25	–	9,00	73	21	100	9.00X7.00	–	DIN2174	6HX	C
MF- M12X1.50ISO6HX-XC-V063-A	MF12X1.5	1,50	–	9,00	73	21	100	9.00X7.00	–	DIN2174	6HX	C
MF- M14X1.00ISO6HX-XC-V063-A	MF14X1.0	1,00	–	11,00	71	21	100	11.00X9.00	–	DIN2174	6HX	C
MF- M14X1.25ISO6HX-XC-V063-A	MF14X1.25	1,25	–	11,00	71	21	100	11.00X9.00	–	DIN2174	6HX	C
MF- M14X1.50ISO6HX-XC-V063-A	MF14X1.5	1,50	–	11,00	71	21	100	11.00X9.00	–	DIN2174	6HX	C
MF- M16X1.00ISO6HX-XC-V063-A	MF16X1.0	1,00	–	12,00	58	21	100	12.00X9.00	–	DIN2174	6HX	C
MF- M16X1.50ISO6HX-XC-V063-A	MF16X1.5	1,50	–	12,00	58	21	100	12.00X9.00	–	DIN2174	6HX	C

Please check availability in current price and stock-list.

MTH-V011



- For cutting data see page 259
- Coating: TiN
- Substrate: HSS-E

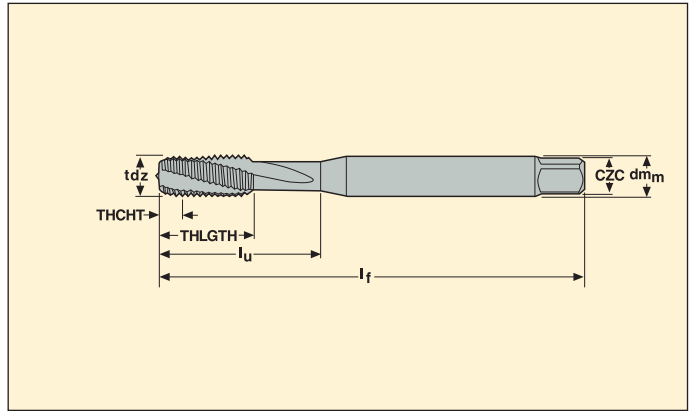
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	d _m	l _u	THLGTH	l _f	CZC				
MTH- M8X0.75ISO6HX-BC-V011	MF8X0.75	0,75	–	6,00	57	13	80	6.00X4.90	3	DIN374	6HX	C
MTH- M8X1.00ISO6HX-BC-V011	MF8X1	1,00	–	6,00	67	13	90	6.00X4.90	3	DIN374	6HX	C
MTH- M10X1.00ISO6HX-BC-V011	MF10X1	1,00	–	7,00	67	13	90	7.00X5.50	3	DIN374	6HX	C
MTH- M10X1.25ISO6HX-BC-V011	MF10X1.25	1,25	–	7,00	77	15	100	7.00X5.50	3	DIN374	6HX	C
MTH- M12X1.00ISO6HX-BC-V011	MF12X1	1,00	–	9,00	73	15	100	9.00X7.00	3	DIN374	6HX	C
MTH- M12X1.25ISO6HX-BC-V011	MF12X1.25	1,25	–	9,00	73	15	100	9.00X7.00	3	DIN374	6HX	C
MTH- M12X1.50ISO6HX-BC-V011	MF12X1.5	1,50	–	9,00	73	15	100	9.00X7.00	3	DIN374	6HX	C
MTH- M14X1.00ISO6HX-BC-V011	MF14X1	1,00	–	11,00	71	15	100	11.00X9.00	3	DIN374	6HX	C
MTH- M14X1.25ISO6HX-BC-V011	MF14X1.25	1,25	–	11,00	71	15	100	11.00X9.00	3	DIN374	6HX	C
MTH- M14X1.50ISO6HX-BC-V011	MF14X1.5	1,50	–	11,00	71	15	100	11.00X9.00	3	DIN374	6HX	C
MTH- M16X1.00ISO6HX-BC-V011	MF16X1	1,00	–	12,00	58	15	100	12.00X9.00	3	DIN374	6HX	C
MTH- M16X1.50ISO6HX-BC-V011	MF16X1.5	1,50	–	12,00	58	15	100	12.00X9.00	3	DIN374	6HX	C
MTH- M18X1.00ISO6HX-BC-V011	MF18X1	1,00	–	14,00	66	17	110	14.00X11.00	3	DIN374	6HX	C
MTH- M18X1.50ISO6HX-BC-V011	MF18X1.5	1,50	–	14,00	66	17	110	14.00X11.00	3	DIN374	6HX	C
MTH- M20X1.00ISO6HX-BC-V011	MF20X1	1,00	–	16,00	80	17	125	16.00X12.00	3	DIN374	6HX	C
MTH- M20X1.50ISO6HX-BC-V011	MF20X1.5	1,50	–	16,00	80	17	125	16.00X12.00	3	DIN374	6HX	C
MTH- M20X2.00ISO6HX-BC-V011	MF20X2	2,00	–	16,00	80	17	125	16.00X12.00	3	DIN374	6HX	C
MTH- M22X1.50ISO6HX-BC-V011	MF22X1.5	1,50	–	18,00	78	17	125	18.00X14.50	4	DIN374	6HX	C
MTH- M24X1.50ISO6HX-BC-V011	MF24X1.5	1,50	–	18,00	93	20	140	18.00X14.50	4	DIN374	6HX	C
MTH- M24X2.00ISO6HX-BC-V011	MF24X2	2,00	–	18,00	93	20	140	18.00X14.50	4	DIN374	6HX	C

Please check availability in current price and stock-list.

MTH-S015



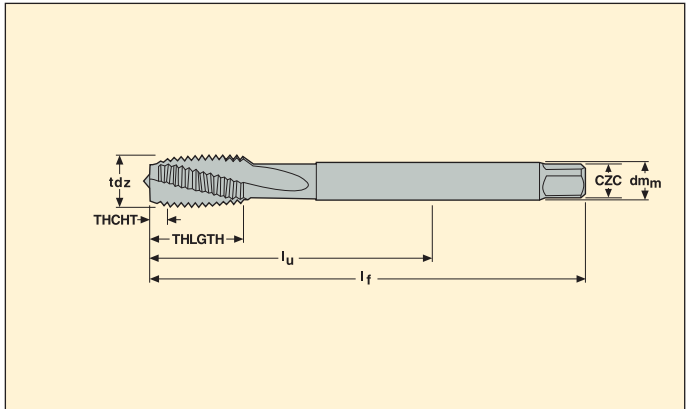
- For cutting data see page 259
- Coating: TiN
- Substrate: HSS-E



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M3X0.50ISO6H-BC-S015	M3	0,50	–	3,50	18	9	56	3.50X2.70	3	DIN371	6H	C
MTH- M4X0.70ISO6H-BC-S015	M4	0,70	–	4,50	21	11	63	4.50X3.40	3	DIN371	6H	C
MTH- M5X0.80ISO6H-BC-S015	M5	0,80	–	6,00	25	13	70	6.00X4.90	3	DIN371	6H	C
MTH- M6X1.00ISO6H-BC-S015	M6	1,00	–	6,00	30	15	80	6.00X4.90	3	DIN371	6H	C
MTH- M8X1.25ISO6H-BC-S015	M8	1,25	–	8,00	35	18	90	8.00X6.20	3	DIN371	6H	C
MTH- M10X1.50ISO6H-BC-S015	M10	1,50	–	10,00	39	20	100	10.00X8.00	3	DIN371	6H	C

Please check availability in current price and stock-list.

MTH-S020



- For cutting data see page 259
- Coating: TiN
- Substrate: HSS-E

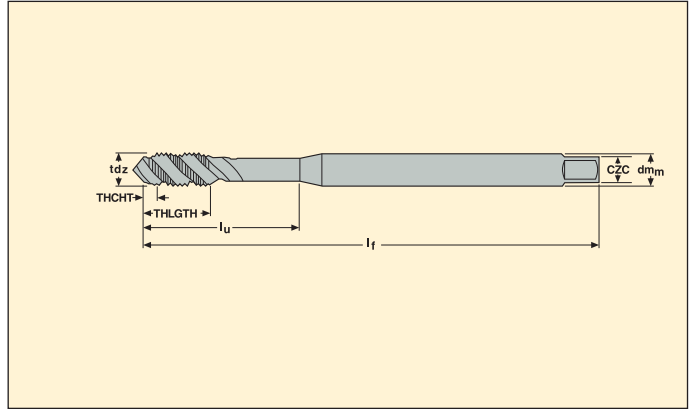
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M12X1.75ISO6H-BC-S020	M12	1,75	–	9,00	83	23	110	9.00X7.00	3	DIN376	6H	C
MTH- M14X2.00ISO6H-BC-S020	M14	2,00	–	11,00	81	25	110	11.00X9.00	3	DIN376	6H	C
MTH- M16X2.00ISO6H-BC-S020	M16	2,00	–	12,00	68	25	110	12.00X9.00	3	DIN376	6H	C
MTH- M18X2.50ISO6H-BC-S020	M18	2,50	–	14,00	81	30	125	14.00X11.00	3	DIN376	6H	C
MTH- M20X2.50ISO6H-BC-S020	M20	2,50	–	16,00	95	30	140	16.00X12.00	3	DIN376	6H	C
MTH- M22X2.50ISO6H-BC-S020	M22	2,50	–	18,00	93	34	140	18.00X14.50	4	DIN376	6H	C
MTH- M24X3.00ISO6H-BC-S020	M24	3,00	–	18,00	113	38	160	18.00X14.50	4	DIN376	6H	C
MTH- M27X3.00ISO6H-BC-S020	M27	3,00	–	20,00	97	38	160	20.00X16.00	4	DIN376	6H	C
MTH- M30X3.50ISO6H-BC-S020	M30	3,50	–	22,00	115	45	180	22.00X18.00	4	DIN376	6H	C
MTH- M33X3.50ISO6H-BC-S020	M33	3,50	–	25,00	113	50	180	25.00X20.00	4	DIN376	6H	C
MTH- M36X4.00ISO6H-BC-S020	M36	4,00	–	28,00	131	55	200	28.00X22.00	4	DIN376	6H	C

Please check availability in current price and stock-list.

MTH-V025



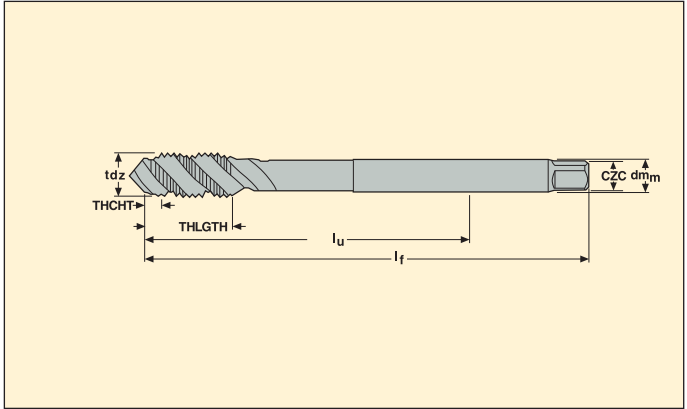
- For cutting data see page 259
- Coating: TiN
- Substrate: HSS-E



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M3X0.50ISO6H-BC-V025	M3	0,50	-	3,50	18	6	112	3.50X2.70	3	DIN371	6H	C
MTH- M4X0.70ISO6H-BC-V025	M4	0,70	-	4,50	21	7	112	4.50X3.40	3	DIN371	6H	C
MTH- M5X0.80ISO6H-BC-V025	M5	0,80	-	6,00	25	8	125	6.00X4.90	3	DIN371	6H	C
MTH- M6X1.00ISO6H-BC-V025	M6	1,00	-	6,00	30	10	125	6.00X4.90	3	DIN371	6H	C
MTH- M8X1.25ISO6H-BC-V025	M8	1,25	-	8,00	40	13	140	8.00X6.20	3	DIN371	6H	C
MTH- M10X1.50ISO6H-BC-V025	M10	1,50	-	10,00	50	15	160	10.00X8.00	3	DIN371	6H	C

Please check availability in current price and stock-list.

MTH-V026

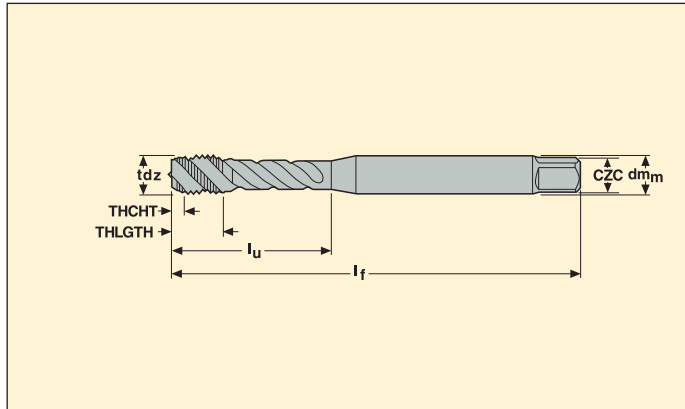


- For cutting data see page 259
- Coating: TiN
- Substrate: HSS-E

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	d _m	l _u	THLGTH	l _f	CZC				
MTH- M12X1.75ISO6H-BC-V026	M12	1,75	–	9,00	153	16	180	9.00X7.00	3	DIN376	6H	C
MTH- M14X2.00ISO6H-BC-V026	M14	2,00	–	11,00	151	20	180	11.00X9.00	3	DIN376	6H	C
MTH- M16X2.00ISO6H-BC-V026	M16	2,00	–	12,00	158	20	200	12.00X9.00	3	DIN376	6H	C
MTH- M20X2.50ISO6H-BC-V026	M20	2,50	–	16,00	179	25	224	16.00X12.00	4	DIN376	6H	C

Please check availability in current price and stock-list.

MTH-V028

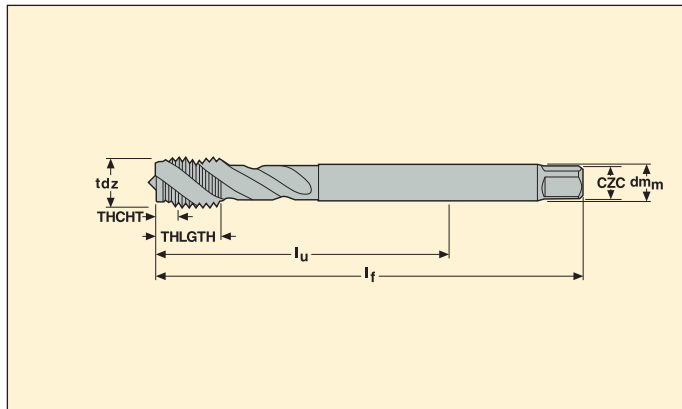


- For cutting data see page 259
- Coating: TiN
- Substrate: HSS-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M3X0.50ISO6G-BC-V028	M3	0,50	–	3,50	18	5,9	56	3.50X2.70	3	DIN371	6G	C
MTH- M4X0.70ISO6G-BC-V028	M4	0,70	–	4,50	21	6,7	63	4.50X3.40	3	DIN371	6G	C
MTH- M5X0.80ISO6G-BC-V028	M5	0,80	–	6,00	25	7,7	70	6.00X4.90	3	DIN371	6G	C
MTH- M6X1.00ISO6G-BC-V028	M6	1,00	–	6,00	31	10	80	6.00X4.90	3	DIN371	6G	C
MTH- M8X1.25ISO6G-BC-V028	M8	1,25	–	8,00	35	11,6	90	8.00X6.20	3	DIN371	6G	C
MTH- M10X1.50ISO6G-BC-V028	M10	1,50	–	10,00	39	15,1	100	10.00X8.00	3	DIN371	6G	C

Please check availability in current price and stock-list.

MTH-V029



- For cutting data see page 259
- Coating: TiN
- Substrate: HSS-PM ≤ M16, HSS-E > M16

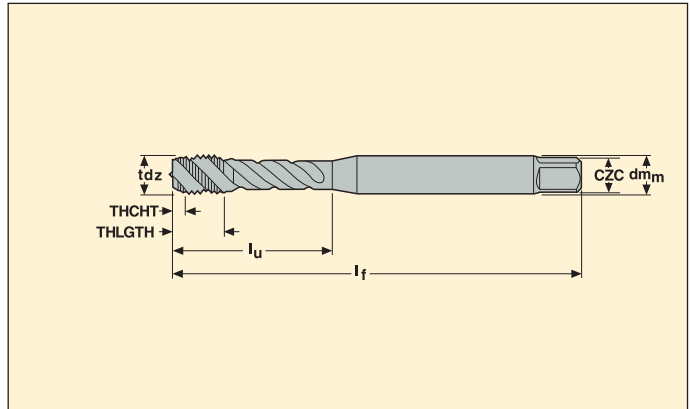
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M12X1.75ISO6G-BC-V029	M12	1,75	–	9,00	83	16	110	9.00X7.00	3	DIN376	6G	C
MTH- M14X2.00ISO6G-BC-V029	M14	2,00	–	11,00	81	20	110	11.00X9.00	3	DIN376	6G	C
MTH- M16X2.00ISO6G-BC-V029	M16	2,00	–	12,00	68	20	110	12.00X9.00	4	DIN376	6G	C
MTH- M20X2.50ISO6G-BC-V029	M20	2,50	–	16,00	95	25	140	16.00X12.00	4	DIN376	6G	C

Please check availability in current price and stock-list.

MTH-V030



- For cutting data see page 259
- Coating: TiN
- Substrate: HSS-E ≤ M2,5, HSS-PM >2,5



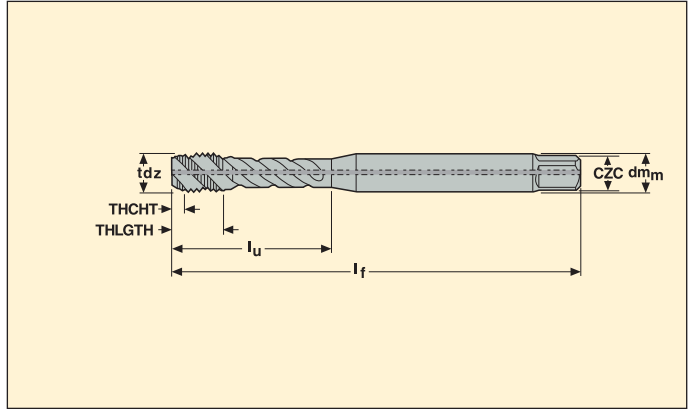
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M2X0.40ISO6H-BC-V030	M2	0,40	-	2,80	9	4	45	2.80X2.10	3	DIN371	6H	C
MTH- M2.5X0.45ISO6H-BC-V030	M2.5	0,45	-	2,80	12,5	4	50	2.80X2.10	3	DIN371	6H	C
MTH- M3X0.50ISO6H-BC-V030	M3	0,50	-	3,50	18	5,9	56	3.50X2.70	3	DIN371	6H	C
MTH- M3.5X0.60ISO6H-BC-V030	M3.5	0,60	-	4,00	20	6,3	56	4.00X3.00	3	DIN371	6H	C
MTH- M4X0.70ISO6H-BC-V030	M4	0,70	-	4,50	21	6,7	63	4.50X3.40	3	DIN371	6H	C
MTH- M5X0.80ISO6H-BC-V030	M5	0,80	-	6,00	21	7,7	70	6.00X4.90	3	DIN371	6H	C
MTH- M6X1.00ISO6H-BC-V030	M6	1,00	-	6,00	31	10	80	6.00X4.90	3	DIN371	6H	C
MTH- M7X1.00ISO6H-BC-V030	M7	1,00	-	7,00	31	10	80	7.00X5.50	3	DIN371	6H	C
MTH- M8X1.25ISO6H-BC-V030	M8	1,25	-	8,00	35	11,6	90	8.00X6.20	3	DIN371	6H	C
MTH- M10X1.50ISO6H-BC-V030	M10	1,50	-	10,00	39	15,1	100	10.00X8.00	3	DIN371	6H	C

Please check availability in current price and stock-list.

MTH-V030-A



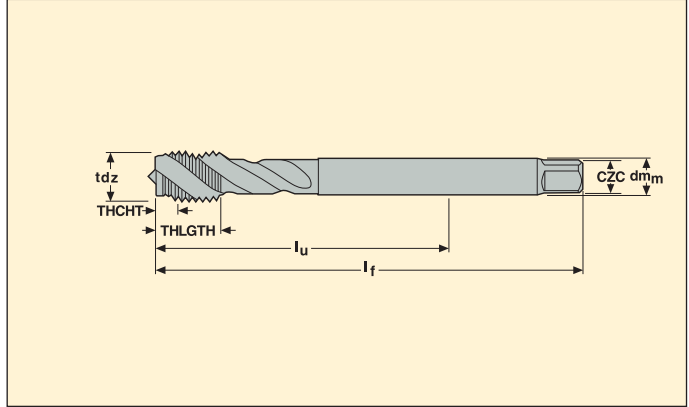
- For cutting data see page 259
- Coating: TiN
- Substrate: HSS-PM
- Internal coolant



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	$tctr$	THCHT
		mm	TPI	dm_m	I_u	THLGTH	I_f	CZC				
MTH- M4X0.70ISO6H-BC-V030-A	M4	0,70	–	4,50	21	6,7	63	4.50X3.40	3	DIN371	6H	C
MTH- M5X0.80ISO6H-BC-V030-A	M5	0,80	–	6,00	25	7,7	70	6.00X4.90	3	DIN371	6H	C
MTH- M6X1.00ISO6H-BC-V030-A	M6	1,00	–	6,00	30	10	80	6.00X4.90	3	DIN371	6H	C
MTH- M8X1.25ISO6H-BC-V030-A	M8	1,25	–	8,00	35	11,6	90	8.00X6.20	3	DIN371	6H	C
MTH- M10X1.50ISO6H-BC-V030-A	M10	1,50	–	10,00	39	15,1	100	10.00X8.00	3	DIN371	6H	C

Please check availability in current price and stock-list.

MTH-V033



- For cutting data see page 260
- Coating: TiN
- Substrate: HSS-PM ≤ M16, HSS-E > M16

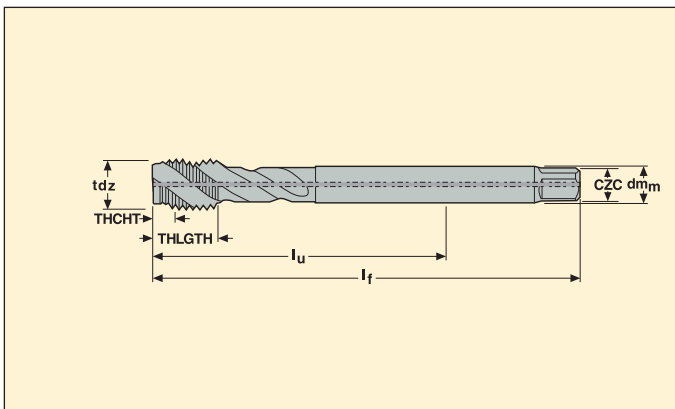
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	I _u	THLGTH	I _f	CZC				
MTH- M6X1.00ISO6H-BC-V033	M6	1,00	–	4,50	59	10	80	4.50X3.40	3	DIN376	6H	C
MTH- M8X1.25ISO6H-BC-V033	M8	1,25	–	6,00	67	13	90	6.00X4.90	3	DIN376	6H	C
MTH- M10X1.50ISO6H-BC-V033	M10	1,50	–	7,00	77	15	100	7.00X5.50	3	DIN376	6H	C
MTH- M12X1.75ISO6H-BC-V033	M12	1,75	–	9,00	83	16	110	9.00X7.00	3	DIN376	6H	C
MTH- M14X2.00ISO6H-BC-V033	M14	2,00	–	11,00	81	20	110	11.00X9.00	3	DIN376	6H	C
MTH- M16X2.00ISO6H-BC-V033	M16	2,00	–	12,00	68	20	110	12.00X9.00	4	DIN376	6H	C
MTH- M18X2.50ISO6H-BC-V033	M18	2,50	–	14,00	81	25	125	14.00X11.00	4	DIN376	6H	C
MTH- M20X2.50ISO6H-BC-V033	M20	2,50	–	16,00	95	25	140	16.00X12.00	4	DIN376	6H	C
MTH- M22X2.50ISO6H-BC-V033	M22	2,50	–	18,00	93	25	140	18.00X14.50	4	DIN376	6H	C
MTH- M24X3.00ISO6H-BC-V033	M24	3,00	–	18,00	113	30	160	18.00X14.50	4	DIN376	6H	C
MTH- M27X3.00ISO6H-BC-V033	M27	3,00	–	20,00	97	30	160	20.00X16.00	4	DIN376	6H	C
MTH- M30X3.50ISO6H-BC-V033	M30	3,50	–	22,00	115	36	180	22.00X18.00	4	DIN376	6H	C
MTH- M33X3.50ISO6H-BC-V033	M33	3,50	–	25,00	113	36	180	25.00X20.00	4	DIN376	6H	C
MTH- M36X4.00ISO6H-BC-V033	M36	4,00	–	28,00	131	40	200	28.00X22.00	4	DIN376	6H	C
MTH- M39X4.00ISO6H-BC-V033	M39	4,00	–	32,00	102	40	200	32.00X24.00	4	DIN376	6H	C
MTH- M42X4.50ISO6H-BC-V033	M42	4,50	–	32,00	102	45	200	32.00X24.00	4	DIN376	6H	C
MTH- M48X5.00ISO6H-BC-V033	M48	5,00	–	36,00	147	50	250	36.00X29.00	4	DIN376	6H	C
MTH- M52X5.00ISO6H-BC-V033	M52	5,00	–	40,00	120	50	250	40.00X32.00	5	DIN376	6H	C
MTH- M56X5.50ISO6H-BC-V033	M56	5,50	–	40,00	120	55	250	40.00X32.00	5	DIN376	6H	C
MTH- M64X6.00ISO6H-BC-V033	M64	6,00	–	50,00	178	60	315	50.00X39.00	6	DIN376	6H	C

Please check availability in current price and stock-list.

MTH-V033-A



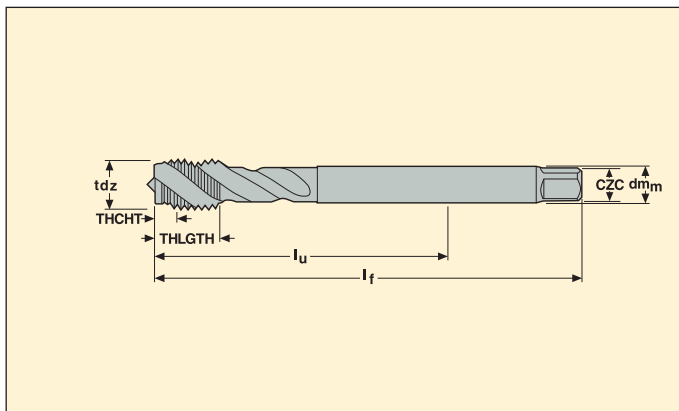
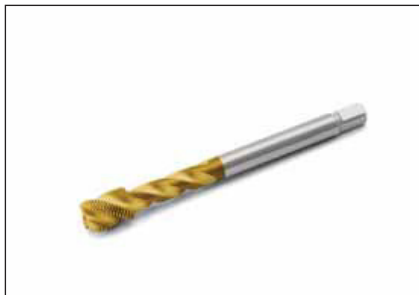
- For cutting data see page 260
- Coating: TiN
- Substrate: HSS-PM ≤M16, HSS-E >M16
- Internal coolant



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M12X1.75ISO6H-BC-V033-A	M12	1,75	–	9,00	83	16	110	9.00X7.00	3	DIN376	6H	C
MTH- M14X2.00ISO6H-BC-V033-A	M14	2,00	–	11,00	81	25	110	11.00X9.00	3	DIN376	6H	C
MTH- M16X2.00ISO6H-BC-V033-A	M16	2,00	–	12,00	68	20	110	12.00X9.00	4	DIN376	6H	C
MTH- M18X2.50ISO6H-BC-V033-A	M18	2,50	–	14,00	81	25	125	14.00X11.00	4	DIN376	6H	C
MTH- M20X2.50ISO6H-BC-V033-A	M20	2,50	–	16,00	95	25	140	16.00X12.00	4	DIN376	6H	C
MTH- M22X2.50ISO6H-BC-V033-A	M22	2,50	–	18,00	93	25	140	18.00X14.50	4	DIN376	6H	C
MTH- M24X3.00ISO6H-BC-V033-A	M24	3,00	–	18,00	113	30	160	18.00X14.50	4	DIN376	6H	C
MTH- M27X3.00ISO6H-BC-V033-A	M27	3,00	–	20,00	97	30	160	20.00X16.00	4	DIN376	6H	C
MTH- M30X3.50ISO6H-BC-V033-A	M30	3,50	–	22,00	115	36	180	22.00X18.00	4	DIN376	6H	C
MTH- M33X3.50ISO6H-BC-V033-A	M33	3,50	–	25,00	113	50	180	25.00X20.00	4	DIN376	6H	C
MTH- M36X4.00ISO6H-BC-V033-A	M36	4,00	–	28,00	131	55	200	28.00X22.00	4	DIN376	6H	C
MTH- M39X4.00ISO6H-BC-V033-A	M39	4,00	–	32,00	102	40	200	32.00X24.00	4	DIN376	6H	C
MTH- M42X4.50ISO6H-BC-V033-A	M42	4,50	–	32,00	102	45	200	32.00X24.00	4	DIN376	6H	C
MTH- M48X5.00ISO6H-BC-V033-A	M48	5,00	–	36,00	147	50	250	36.00X29.00	4	DIN376	6H	C
MTH- M52X5.00ISO6H-BC-V033-A	M52	5,00	–	40,00	120	50	250	40.00X32.00	5	DIN376	6H	C
MTH- M56X5.50ISO6H-BC-V033-A	M56	5,50	–	40,00	120	55	250	40.00X32.00	5	DIN376	6H	C
MTH- M64X6.00ISO6H-BC-V033-A	M64	6,00	–	50,00	178	60	315	50.00X39.00	6	DIN376	6H	C

Please check availability in current price and stock-list.

MTH-V038

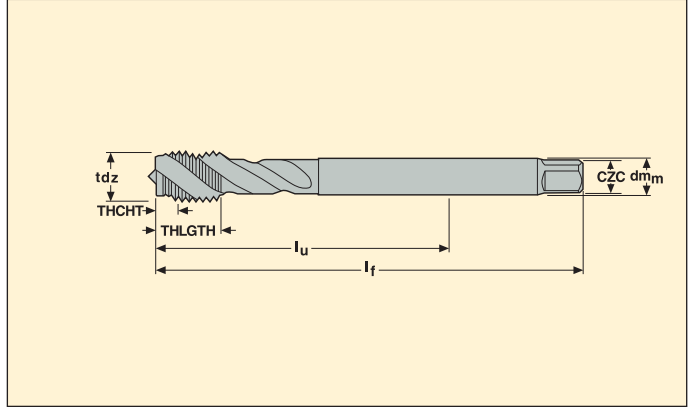


- For cutting data see page 260
- Coating: TiN
- Substrate: HSS-PM ≤ M16, HSS-E >16

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M4X0.50ISO6H-BC-V038	MF 4x0.5	0,50	–	2,80	43	6,8	63	2.80X2.10	3	DIN374	6H	C
MTH- M5X0.50ISO6H-BC-V038	MF 5x0.5	0,50	–	3,50	49	8,2	70	3.50X2.70	3	DIN374	6H	C
MTH- M6X0.75ISO6H-BC-V038	MF 6x0.75	0,75	–	4,50	59	10	80	4.50X3.40	3	DIN374	6H	C
MTH- M8X0.75ISO6H-BC-V038	MF 8x0.75	0,75	–	6,00	57	13	80	6.00X4.90	3	DIN374	6H	C
MTH- M8X1.00ISO6H-BC-V038	MF 8x1.0	1,00	–	6,00	67	13	90	6.00X4.90	3	DIN374	6H	C
MTH- M9X1.00ISO6H-BC-V038	MF9X1	1,00	–	7,00	67	17	90	7.00X5.50	3	DIN374	6H	C
MTH- M10X0.75ISO6H-BC-V038	MF 10x0.75	0,75	–	7,00	67	13	90	7.00X5.50	3	DIN374	6H	C
MTH- M10X1.00ISO6H-BC-V038	MF 10x1.0	1,00	–	7,00	67	13	90	7.00X5.50	3	DIN374	6H	C
MTH- M10X1.25ISO6H-BC-V038	MF 10x1.25	1,25	–	7,00	77	15	100	7.00X5.50	3	DIN374	6H	C
MTH- M11X1.00ISO6H-BC-V038	MF11X1	1,00	–	8,00	63	18	90	8.00X6.20	3	DIN374	6H	C
MTH- M11X1.25ISO6H-BC-V038	MF11X1.25	1,25	–	8,00	63	22	90	8.00X6.20	3	DIN374	6H	C
MTH- M12X1.00ISO6H-BC-V038	MF 12x1.0	1,00	–	9,00	73	15	100	9.00X7.00	3	DIN374	6H	C
MTH- M12X1.25ISO6H-BC-V038	MF 12x1.25	1,25	–	9,00	73	15	100	9.00X7.00	3	DIN374	6H	C
MTH- M12X1.50ISO6H-BC-V038	MF 12x1.5	1,50	–	9,00	73	15	100	9.00X7.00	3	DIN374	6H	C
MTH- M14X1.00ISO6H-BC-V038	MF 14x1.0	1,00	–	11,00	71	15	100	11.00X9.00	3	DIN374	6H	C
MTH- M14X1.25ISO6H-BC-V038	MF 14x1.25	1,25	–	11,00	71	15	100	11.00X9.00	3	DIN374	6H	C
MTH- M14X1.50ISO6H-BC-V038	MF 14x1.5	1,50	–	11,00	71	15	100	11.00X9.00	3	DIN374	6H	C
MTH- M16X1.00ISO6H-BC-V038	MF 16x1.0	1,00	–	12,00	58	15	100	12.00X9.00	4	DIN374	6H	C
MTH- M16X1.50ISO6H-BC-V038	MF 16x1.5	1,50	–	12,00	58	15	100	12.00X9.00	4	DIN374	6H	C
MTH- M18X1.00ISO6H-BC-V038	MF 18x1.0	1,00	–	14,00	66	17	110	14.00X11.00	4	DIN374	6H	C
MTH- M18X1.50ISO6H-BC-V038	MF 18x1.5	1,50	–	14,00	66	17	110	14.00X11.00	4	DIN374	6H	C
MTH- M20X1.00ISO6H-BC-V038	MF 20x1.0	1,00	–	16,00	80	17	125	16.00X12.00	4	DIN374	6H	C
MTH- M20X1.50ISO6H-BC-V038	MF 20x1.5	1,50	–	16,00	80	17	125	16.00X12.00	4	DIN374	6H	C

Please check availability in current price and stock-list.

MTH-V038

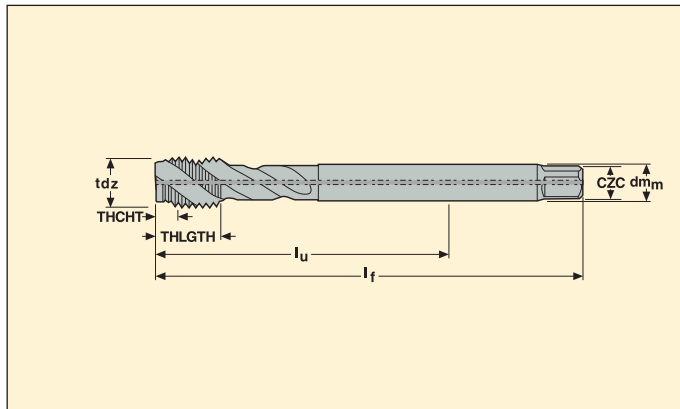


- For cutting data see page 260
- Coating: TiN
- Substrate: HSS-E-PM

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	I _u	THLGTH	I _f	CZC				
MTH- M22X1.50ISO6H-BC-V038	MF 22x1.5	1,50	–	18,00	78	17	125	18.00X14.50	4	DIN374	6H	C
MTH- M24X1.50ISO6H-BC-V038	MF 24x1.5	1,50	–	18,00	93	20	140	18.00X14.50	4	DIN374	6H	C
MTH- M24X2.00ISO6H-BC-V038	MF 24x2.0	2,00	–	18,00	93	20	140	18.00X14.50	4	DIN374	6H	C
MTH- M25X1.50ISO6H-BC-V038	MF 25x1.5	1,50	–	18,00	93	20	140	18.00X14.50	4	DIN374	6H	C
MTH- M26X1.50ISO6H-BC-V038	MF 26x1.5	1,50	–	18,00	93	20	140	18.00X14.50	4	DIN374	6H	C
MTH- M27X1.50ISO6H-BC-V038	MF 27x1.5	1,50	–	20,00	77	20	140	20.00X16.00	4	DIN374	6H	C
MTH- M27X2.00ISO6H-BC-V038	MF 27x2.0	2,00	–	20,00	77	20	140	20.00X16.00	4	DIN374	6H	C
MTH- M28X1.50ISO6H-BC-V038	MF 28x1.5	1,50	–	20,00	77	20	140	20.00X16.00	4	DIN374	6H	C
MTH- M30X1.50ISO6H-BC-V038	MF 30x1.5	1,50	–	22,00	85	20	150	22.00X18.00	4	DIN374	6H	C
MTH- M30X2.00ISO6H-BC-V038	MF 30x2.0	2,00	–	22,00	85	20	150	22.00X18.00	4	DIN374	6H	C

Please check availability in current price and stock-list.

MTH-V038-A

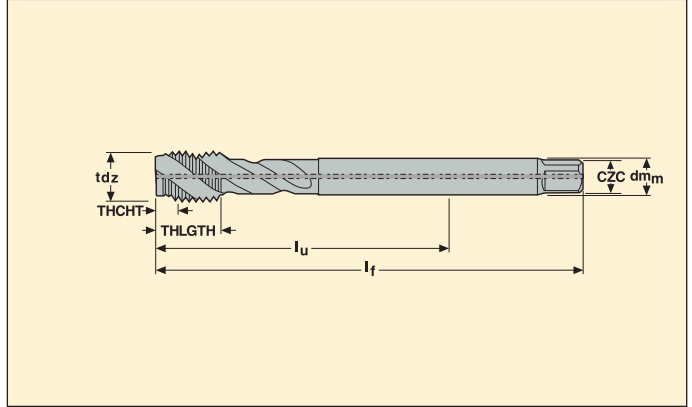


- For cutting data see page 260
- Coating: TiN
- Substrate: HSS-PM ≤ M16, HSS-E > M16
- Internal coolant

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M6X0.75ISO6H-BC-V038-A	MF6X0.75	0,75	–	4,50	59	10	80	4.50X3.40	3	DIN374	6H	C
MTH- M8X0.75ISO6H-BC-V038-A	MF8X0.75	0,75	–	6,00	57	13	80	6.00X4.90	3	DIN374	6H	C
MTH- M8X1.00ISO6H-BC-V038-A	MF8X1	1,00	–	6,00	67	13	90	6.00X4.90	3	DIN374	6H	C
MTH- M10X0.75ISO6H-BC-V038-A	MF10X0.75	0,75	–	7,00	67	13	90	7.00X5.50	3	DIN374	6H	C
MTH- M10X1.00ISO6H-BC-V038-A	MF10X1	1,00	–	7,00	67	13	90	7.00X5.50	3	DIN374	6H	C
MTH- M10X1.25ISO6H-BC-V038-A	MF10X1.25	1,25	–	7,00	77	15	100	7.00X5.50	3	DIN374	6H	C
MTH- M12X1.00ISO6H-BC-V038-A	MF12X1	1,00	–	9,00	73	15	100	9.00X7.00	3	DIN374	6H	C
MTH- M12X1.25ISO6H-BC-V038-A	MF12X1.25	1,25	–	9,00	73	15	100	9.00X7.00	3	DIN374	6H	C
MTH- M12X1.50ISO6H-BC-V038-A	MF12X1.5	1,50	–	9,00	73	15	100	9.00X7.00	3	DIN374	6H	C
MTH- M14X1.00ISO6H-BC-V038-A	MF14X1	1,00	–	11,00	71	15	100	11.00X9.00	3	DIN374	6H	C
MTH- M14X1.25ISO6H-BC-V038-A	MF14X1.25	1,25	–	11,00	71	15	100	11.00X9.00	3	DIN374	6H	C
MTH- M14X1.50ISO6H-BC-V038-A	MF14X1.5	1,50	–	11,00	71	15	100	11.00X9.00	3	DIN374	6H	C
MTH- M16X1.00ISO6H-BC-V038-A	MF16X1	1,00	–	12,00	58	15	100	12.00X9.00	4	DIN374	6H	C
MTH- M16X1.50ISO6H-BC-V038-A	MF16X1.5	1,50	–	12,00	58	15	100	12.00X9.00	4	DIN374	6H	C
MTH- M18X1.00ISO6H-BC-V038-A	MF18X1	1,00	–	14,00	66	17	110	14.00X11.00	4	DIN374	6H	C
MTH- M18X1.50ISO6H-BC-V038-A	MF18X1.5	1,50	–	14,00	66	17	110	14.00X11.00	4	DIN374	6H	C
MTH- M20X1.00ISO6H-BC-V038-A	MF20X1	1,00	–	16,00	80	17	125	16.00X12.00	4	DIN374	6H	C
MTH- M20X1.50ISO6H-BC-V038-A	MF20X1.5	1,50	–	16,00	80	17	125	16.00X12.00	4	DIN374	6H	C
MTH- M22X1.50ISO6H-BC-V038-A	MF22X1.5	1,50	–	18,00	78	17	125	18.00X14.50	4	DIN374	6H	C
MTH- M24X1.50ISO6H-BC-V038-A	MF24X1.5	1,50	–	18,00	93	20	140	18.00X14.50	4	DIN374	6H	C
MTH- M24X2.00ISO6H-BC-V038-A	MF24X2	2,00	–	18,00	93	20	140	18.00X14.50	4	DIN374	6H	C
MTH- M25X1.50ISO6H-BC-V038-A	MF25X1.5	1,50	–	18,00	93	20	140	18.00X14.50	4	DIN374	6H	C
MTH- M26X1.50ISO6H-BC-V038-A	MF26X1.5	1,50	–	18,00	93	20	140	18.00X14.50	4	DIN374	6H	C
MTH- M27X1.50ISO6H-BC-V038-A	MF27X1.5	1,50	–	20,00	77	20	140	20.00X16.00	4	DIN374	6H	C

Please check availability in current price and stock-list.

MTH-V038-A

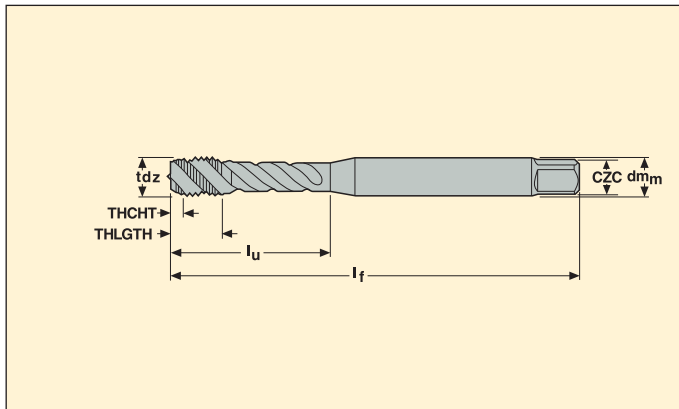
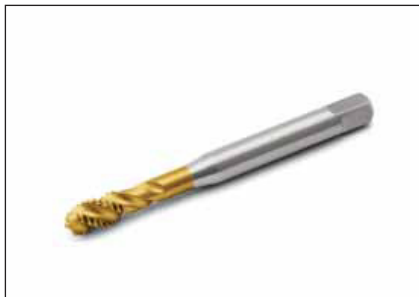


- For cutting data see page 260
- Coating: TiN
- Substrate: HSS-PM ≤ M16, HSS-E > M16
- Internal coolant

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M27X2.00ISO6H-BC-V038-A	MF27X2	2,00	-	20,00	77	20	140	20.00X16.00	4	DIN374	6H	C
MTH- M28X1.50ISO6H-BC-V038-A	MF28X1.5	1,50	-	20,00	77	20	140	20.00X16.00	4	DIN374	6H	C
MTH- M30X1.50ISO6H-BC-V038-A	MF30X1.50	1,50	-	22,00	85	20	150	22.00X18.00	4	DIN374	6H	C
MTH- M30X2.00ISO6H-BC-V038-A	MF30X2	2,00	-	22,00	85	20	150	22.00X18.00	4	DIN374	6H	C

Please check availability in current price and stock-list.

MTH-V040



- For cutting data see page 260
- Coating: TiN
- Substrate: HSS-PM

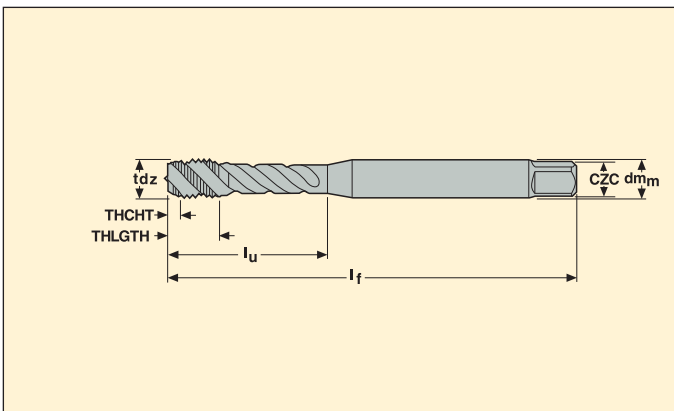
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- 4-40UNC-BC-V040	UNC 4-40	-	40	3,50	18	5,6	56	3.50X2.70	3	DIN2184-1	2B	C
MTH- 5-40UNC-BC-V040	UNC 5-40	-	40	3,50	18	5,6	56	3.50X2.70	3	DIN2184-1	2B	C
MTH- 6-32UNC-BC-V040	UNC 6-32	-	32	4,00	20	6,5	56	4.00X3.00	3	DIN2184-1	2B	C
MTH- 8-32UNC-BC-V040	UNC 8-32	-	32	4,50	21	6,5	63	4.50X3.40	3	DIN2184-1	2B	C
MTH- 10-24UNC-BC-V040	UNC 10-24	-	24	6,00	25	7,3	70	6.00X4.90	3	DIN2184-1	2B	C
MTH- 12-24UNC-BC-V040	UNC 12-24	-	24	6,00	30	10	80	6.00X4.90	3	DIN2184-1	2B	C
MTH- 1/4-20UNC-BC-V040	UNC 1/4-20	-	20	7,00	30	10	80	7.00X5.50	3	DIN2184-1	2B	C
MTH- 5/16-18UNC-BC-V040	UNC 5/16-18	-	18	8,00	35	12	90	8.00X6.20	3	DIN2184-1	2B	C
MTH- 3/8-16UNC-BC-V040	UNC 3/8-16	-	16	10,00	39	15	100	10.00X8.00	3	DIN2184-1	2B	C
MTH- 7/16-14UNC-BC-V040	UNC 7/16-14	-	14	8,00	75,75	15	100	8.00X6.20	3	DIN2184-1	2B	C
MTH- 1/2-13UNC-BC-V040	UNC 1/2-13	-	13	9,00	82,75	18	110	9.00X7.00	3	DIN2184-1	2B	C
MTH- 5/8-11UNC-BC-V040	UNC 5/8-11	-	11	12,00	67,75	20	110	12.00X9.00	4	DIN2184-1	2B	C

Please check availability in current price and stock-list.

MTH-V043



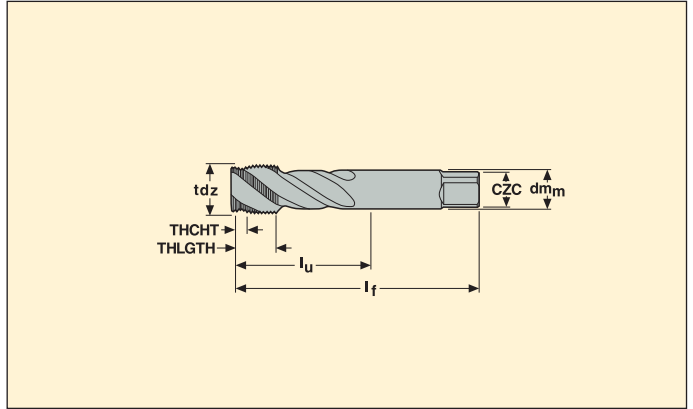
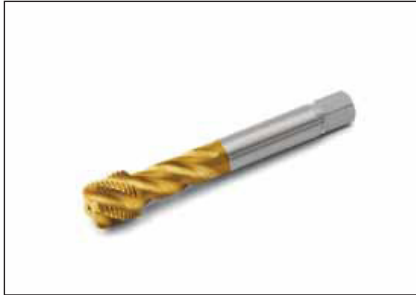
- For cutting data see page 260
- Coating: TiN
- Substrate: HSS-PM



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	d _m	l _u	THLGTH	l _f	CZC				
MTH- 8-36UNF-BC-V043	UNF 8-36	–	36	4,50	21	6,5	63	4.50X3.40	3	DIN2184-1	2B	C
MTH- 10-32UNF-BC-V043	UNF 10-32	–	32	6,00	25	7,3	70	6.00X4.90	3	DIN2184-1	2B	C
MTH- 1/4-28UNF-BC-V043	UNF 1/4-28	–	28	7,00	30	10	80	7.00X5.50	3	DIN2184-1	2B	C
MTH- 5/16-24UNF-BC-V043	UNF 5/16-24	–	24	8,00	35	12	90	8.00X6.20	3	DIN2184-1	2B	C
MTH- 3/8-24UNF-BC-V043	UNF 3/8-24	–	24	10,00	39	15	100	10.00X8.00	3	DIN2184-1	2B	C
MTH- 7/16-20UNF-BC-V043	UNF 7/16-20	–	20	8,00	75,75	15	100	8.00X6.20	3	DIN2184-1	2B	C
MTH- 1/2-20UNF-BC-V043	UNF 1/2-20	–	20	9,00	83	18	110	9.00X7.00	3	DIN2184-1	2B	C
MTH- 5/8-18UNF-BC-V043	UNF 5/8-18	–	18	12,00	67,75	20	110	12.00X9.00	4	DIN2184-1	2B	C
MTH- 9/16-18UNF-BC-V043	UNF 9/16-18	–	18	11,00	71	20	100	11.00X9.00	4	DIN2184-1	2B	C
MTH- 3/4-16UNF-BC-V043	UNF 3/4-16	–	16	14,00	77,5	25	125	14.00X11.00	4	DIN2184-1	2B	C
MTH- 7/8-14UNF-BC-V043	UNF 7/8-14	–	14	18,00	93	25	140	18.00X14.50	4	DIN2184-1	2B	C
MTH- 1-12UNF-BC-V043	UNF1-12	–	12	18,00	113	30	160	18.00X14.50	4	DIN2184-1	2B	C

Please check availability in current price and stock-list.

MTH-V045

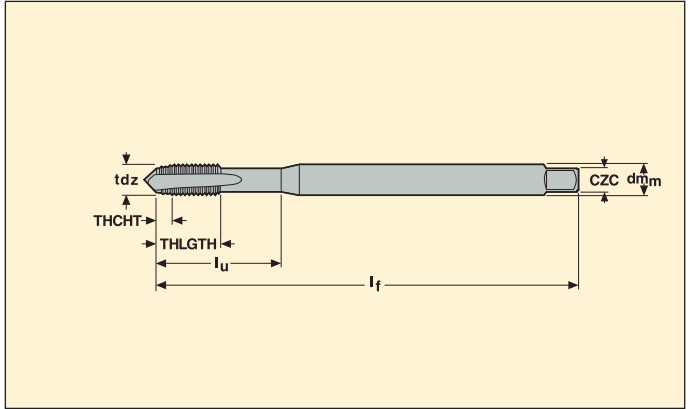


- For cutting data see page 260
- Coating: TiN
- Substrate: HSS-PM ≤ G3/8, HSS-E > G3/8

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	I _u	THLGTH	I _f	CZC				
MTH- 1/8-28G-BC-V045	G 1/8-28	-	28	7,00	67	13	90	7.00X5.50	3	DIN5156	NORMAL	C
MTH- 1/4-19G-BC-V045	G 1/4-19	-	19	11,00	71	15	100	11.00X9.00	3	DIN5156	NORMAL	C
MTH- 3/8-19G-BC-V045	G 3/8-19	-	19	12,00	58	15	100	12.00X9.00	4	DIN5156	NORMAL	C
MTH- 1/2-14G-BC-V045	G 1/2-14	-	14	16,00	80	18	125	16.00X12.00	4	DIN5156	NORMAL	C
MTH- 5/8-14G-BC-V045	G 5/8-14	-	14	18,00	78	18	125	18.00X14.50	4	DIN5156	NORMAL	C
MTH- 3/4-14G-BC-V045	G 3/4-14	-	14	20,00	77	20	140	20.00X16.00	4	DIN5156	NORMAL	C
MTH- 7/8-14G-BC-V045	G 7/8-14	-	14	22,00	85	20	150	22.00X18.00	4	DIN5156	NORMAL	C
MTH- 1-11G-BC-V045	G 1-11	-	11	25,00	93	22	160	25.00X20.00	4	DIN5156	NORMAL	C
MTH- 1.1/8-11G-BC-V045	G 1.1/8-11	-	11	28,00	101	22	170	28.00X22.00	4	DIN5156	NORMAL	C
MTH- 1.1/4-11G-BC-V045	G 1.1/4-11	-	11	32,00	72	22	170	32.00X24.00	4	DIN5156	NORMAL	C
MTH- 1.1/2-11G-BC-V045	G 1.1/2-11	-	11	36,00	87	23	190	36.00X29.00	4	DIN5156	NORMAL	C

Please check availability in current price and stock-list.

MTH-V001



- For cutting data see page 261
- Coating: TiN
- Substrate: HSS-E

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M3X0.50ISO6H-TB-V001	M3	0,50	–	3,50	18	9	112	3.50X2.70	3	DIN371	6H	B
MTH- M4X0.70ISO6H-TB-V001	M4	0,70	–	4,50	21	12	112	4.50X3.40	3	DIN371	6H	B
MTH- M5X0.80ISO6H-TB-V001	M5	0,80	–	6,00	25	13	125	6.00X4.90	3	DIN371	6H	B
MTH- M6X1.00ISO6H-TB-V001	M6	1,00	–	6,00	30	15	125	6.00X4.90	3	DIN371	6H	B
MTH- M8X1.25ISO6H-TB-V001	M8	1,25	–	8,00	40	18	140	8.00X6.20	3	DIN371	6H	B
MTH- M10X1.50ISO6H-TB-V001	M10	1,50	–	10,00	50	20	160	10.00X8.00	3	DIN371	6H	B

Please check availability in current price and stock-list.

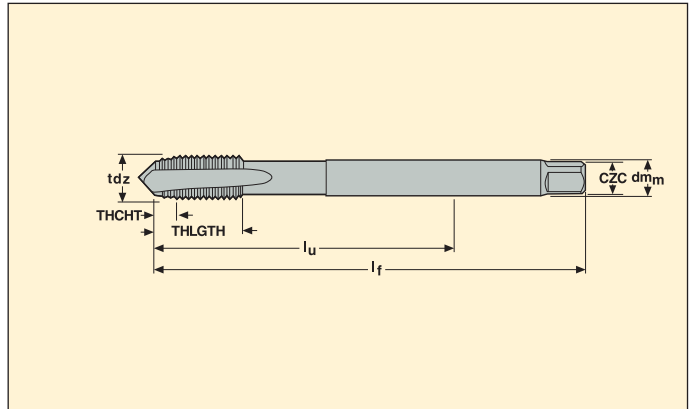
Holemaking - Threadmaster™ - Taps



MTH-V002



- For cutting data see page 261
- Coating: TiN
- Substrate: HSS-E



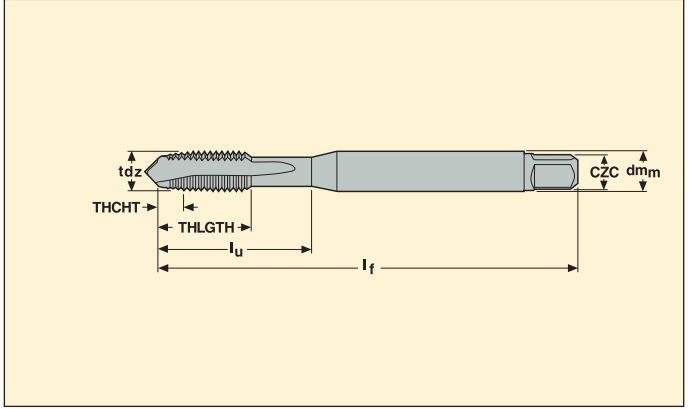
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm	lu	THLGTH	lf	CZC				
MTH- M12X1.75ISO6H-TB-V002	M12	1,75	-	9,00	153	23	180	9.00X7.00	3	DIN376	6H	B
MTH- M14X2.00ISO6H-TB-V002	M14	2,00	-	11,00	151	25	180	11.00X9.00	3	DIN376	6H	B
MTH- M16X2.00ISO6H-TB-V002	M16	2,00	-	12,00	158	25	200	12.00X9.00	3	DIN376	6H	B
MTH- M20X2.50ISO6H-TB-V002	M20	2,50	-	16,00	179	30	224	16.00X12.00	4	DIN376	6H	B

Please check availability in current price and stock-list.

MTH-V005



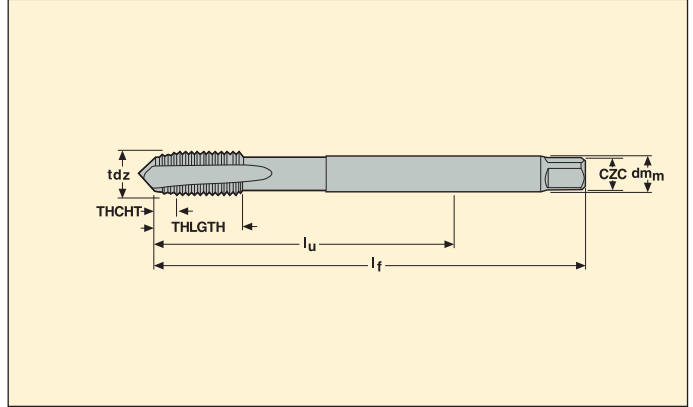
- For cutting data see page 261
- Coating: TiN
- Substrate: HSS-PM



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M3X0.50ISO6G-TB-V005	M3	0,50	–	3,50	18	8,9	56	3.50X2.70	3	DIN371	6G	B
MTH- M4X0.70ISO6G-TB-V005	M4	0,70	–	4,50	21	11,7	63	4.50X3.40	3	DIN371	6G	B
MTH- M5X0.80ISO6G-TB-V005	M5	0,80	–	6,00	25	12,6	70	6.00X4.90	3	DIN371	6G	B
MTH- M6X1.00ISO6G-TB-V005	M6	1,00	–	6,00	30	14,5	80	6.00X4.90	3	DIN371	6G	B
MTH- M8X1.25ISO6G-TB-V005	M8	1,25	–	8,00	35	17,4	90	8.00X6.20	3	DIN371	6G	B
MTH- M10X1.50ISO6G-TB-V005	M10	1,50	–	10,00	39	19,2	100	10.00X8.00	3	DIN371	6G	B

Please check availability in current price and stock-list.

MTH-V006



- For cutting data see page 261
- Coating: TiN
- Substrate: HSS-PM ≤ M16, HSS-E > M16

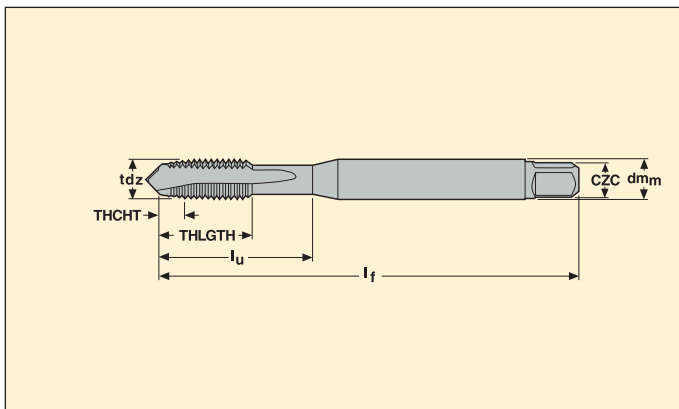
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M12X1.75ISO6G-TB-V006	M12	1,75	-	9,00	83	23	110	9.00X7.00	3	DIN376	6G	B
MTH- M16X2.00ISO6G-TB-V006	M16	2,00	-	12,00	68	25	110	12.00X9.00	3	DIN376	6G	B
MTH- M20X2.50ISO6G-TB-V006	M20	2,50	-	16,00	95	30	140	16.00X12.00	4	DIN376	6G	B

Please check availability in current price and stock-list.

MTH-V007



- For cutting data see page 261
- Coating: TiN
- Substrate: HSS-E ≤ M2,5, HSS-PM > M2,5



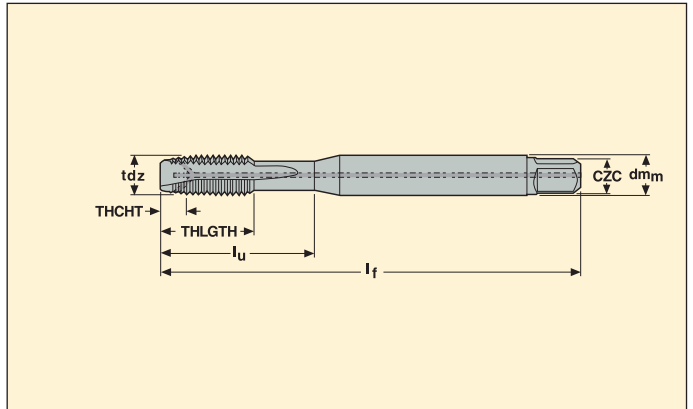
Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	d_m	I_u	THLGTH	I_f	CZC				
MTH- M2X0.40ISO6H-TB-V007	M2	0,40	-	2,80	9	6	45	2.80X2.10	2	DIN371	6H	B
MTH- M2.5X0.45ISO6H-TB-V007	M2.5	0,45	-	2,80	12,5	8	50	2.80X2.10	2	DIN371	6H	B
MTH- M3X0.50ISO6H-TB-V007	M3	0,50	-	3,50	18	8,9	56	3.50X2.70	3	DIN371	6H	B
MTH- M3.5X0.60ISO6H-TB-V007	M3.5	0,60	-	4,00	20	10,8	56	4.00X3.00	3	DIN371	6H	B
MTH- M4X0.70ISO6H-TB-V007	M4	0,70	-	4,50	21	11,7	63	4.50X3.40	3	DIN371	6H	B
MTH- M4.5X0.75ISO6H-TB-V007	M4.5	0,75	-	6,00	25	12,6	70	6.00X4.90	3	DIN371	6H	B
MTH- M5X0.80ISO6H-TB-V007	M5	0,80	-	6,00	25	12,6	70	6.00X4.90	3	DIN371	6H	B
MTH- M6X1.00ISO6H-TB-V007	M6	1,00	-	6,00	30	14,5	80	6.00X4.90	3	DIN371	6H	B
MTH- M7X1.00ISO6H-TB-V007	M7	1,00	-	7,00	30	14,5	80	7.00X5.50	3	DIN371	6H	B
MTH- M8X1.25ISO6H-TB-V007	M8	1,25	-	8,00	35	17,4	90	8.00X6.20	3	DIN371	6H	B
MTH- M10X1.50ISO6H-TB-V007	M10	1,50	-	10,00	39	19,2	100	10.00X8.00	3	DIN371	6H	B

Please check availability in current price and stock-list.

MTP-V007-A



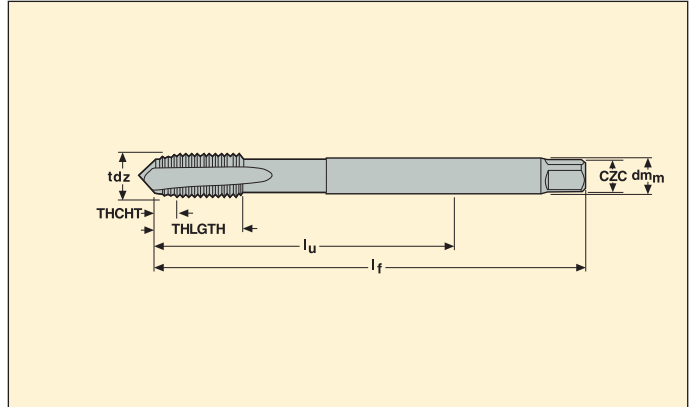
- For cutting data see page 261
- Coating: TiN
- Substrate: HSS-PM
- Internal coolant



Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTP- M4X0.70ISO6H-TB-V007-A	M4	0,70	–	4,50	21	6,7	63	4.50X3.40	3	DIN371	6H	B
MTP- M5X0.80ISO6H-TB-V007-A	M5	0,80	–	6,00	25	7,7	70	6.00X4.90	3	DIN371	6H	B
MTP- M6X1.00ISO6H-TB-V007-A	M6	1,00	–	6,00	30	10	80	6.00X4.90	3	DIN371	6H	B
MTP- M8X1.25ISO6H-TB-V007-A	M8	1,25	–	8,00	35	11,6	90	8.00X6.20	3	DIN371	6H	B
MTP- M10X1.50ISO6H-TB-V007-A	M10	1,50	–	10,00	39	15,1	100	10.00X8.00	3	DIN371	6H	B

Please check availability in current price and stock-list.

MTH/P-V008

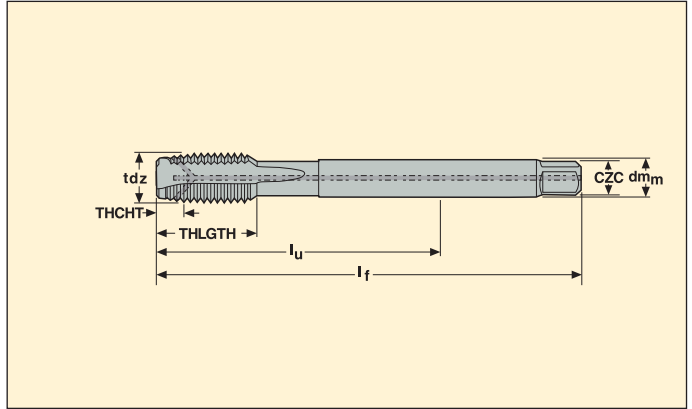


- For cutting data see page 261
- Coating: TiN
- Substrate: HSS-PM ≤ M16, HSS-E > M16

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M3X0.50ISO6H-TB-V008	M3	0,50	–	2,20	37	9,5	56	2.20X1.80	3	DIN376	6H	B
MTH- M4X0.70ISO6H-TB-V008	M4	0,70	–	2,80	43	11,9	63	2.80X2.10	3	DIN376	6H	B
MTH- M5X0.80ISO6H-TB-V008	M5	0,80	–	3,50	49	13,2	70	3.50X2.70	3	DIN376	6H	B
MTH- M6X1.00ISO6H-TB-V008	M6	1,00	–	4,50	59	15,1	80	4.50X3.40	3	DIN376	6H	B
MTH- M8X1.25ISO6H-TB-V008	M8	1,25	–	6,00	67	18	90	6.00X4.90	3	DIN376	6H	B
MTH- M10X1.50ISO6H-TB-V008	M10	1,50	–	7,00	77	19,8	100	7.00X5.50	3	DIN376	6H	B
MTH- M12X1.75ISO6H-TB-V008	M12	1,75	–	9,00	83	23	110	9.00X7.00	3	DIN376	6H	B
MTH- M14X2.00ISO6H-TB-V008	M14	2,00	–	11,00	81	25	110	11.00X9.00	3	DIN376	6H	B
MTH- M16X2.00ISO6H-TB-V008	M16	2,00	–	12,00	68	25	110	12.00X9.00	3	DIN376	6H	B
MTH- M18X2.50ISO6H-TB-V008	M18	2,50	–	14,00	81	30	125	14.00X11.00	4	DIN376	6H	B
MTH- M20X2.50ISO6H-TB-V008	M20	2,50	–	16,00	95	30	140	16.00X12.00	4	DIN376	6H	B
MTH- M22X2.50ISO6H-TB-V008	M22	2,50	–	18,00	93	34	140	18.00X14.50	4	DIN376	6H	B
MTH- M24X3.00ISO6H-TB-V008	M24	3,00	–	18,00	113	38	160	18.00X14.50	4	DIN376	6H	B
MTH- M27X3.00ISO6H-TB-V008	M27	3,00	–	20,00	97	38	160	20.00X16.00	4	DIN376	6H	B
MTH- M30X3.50ISO6H-TB-V008	M30	3,50	–	22,00	115	45	180	22.00X18.00	4	DIN376	6H	B
MTP- M33X3.50ISO6H-TB-V008	M33	3,50	–	25,00	113	50	180	25.00X20.00	4	DIN376	6H	B
MTP- M36X4.00ISO6H-TB-V008	M36	4,00	–	28,00	131	55	200	28.00X22.00	4	DIN376	6H	B

Please check availability in current price and stock-list.

MTP-V008-A

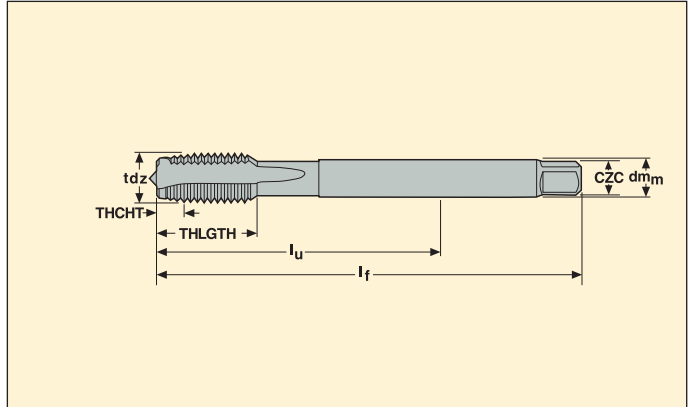


- For cutting data see page 261
- Coating: TiN
- Substrate: HSS-PM ≤ M16, HSS-E > M16
- Internal coolant

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTP- M12X1.75ISO6H-TB-V008-A	M12	1,75	-	9,00	83	16	110	9.00X7.00	3	DIN376	6H	B
MTP- M14X2.00ISO6H-TB-V008-A	M14	2,00	-	11,00	81	25	110	11.00X9.00	3	DIN376	6H	B
MTP- M16X2.00ISO6H-TB-V008-A	M16	2,00	-	12,00	68	20	110	12.00X9.00	4	DIN376	6H	B
MTP- M18X2.50ISO6H-TB-V008-A	M18	2,50	-	14,00	81	25	125	14.00X11.00	4	DIN376	6H	B
MTP- M20X2.50ISO6H-TB-V008-A	M20	2,50	-	16,00	95	25	140	16.00X12.00	4	DIN376	6H	B
MTP- M22X2.50ISO6H-TB-V008-A	M22	2,50	-	18,00	93	25	140	18.00X14.50	4	DIN376	6H	B
MTP- M24X3.00ISO6H-TB-V008-A	M24	3,00	-	18,00	113	30	160	18.00X14.50	4	DIN376	6H	B
MTP- M27X3.00ISO6H-TB-V008-A	M27	3,00	-	20,00	97	30	160	20.00X16.00	4	DIN376	6H	B
MTP- M30X3.50ISO6H-TB-V008-A	M30	3,50	-	22,00	115	36	180	22.00X18.00	4	DIN376	6H	B
MTP- M33X3.50ISO6H-TB-V008-A	M33	3,50	-	25,00	113	50	180	25.00X20.00	4	DIN376	6H	B
MTP- M36X4.00ISO6H-TB-V008-A	M36	4,00	-	28,00	131	55	200	28.00X22.00	4	DIN376	6H	B

Please check availability in current price and stock-list.

MTH/P-V014

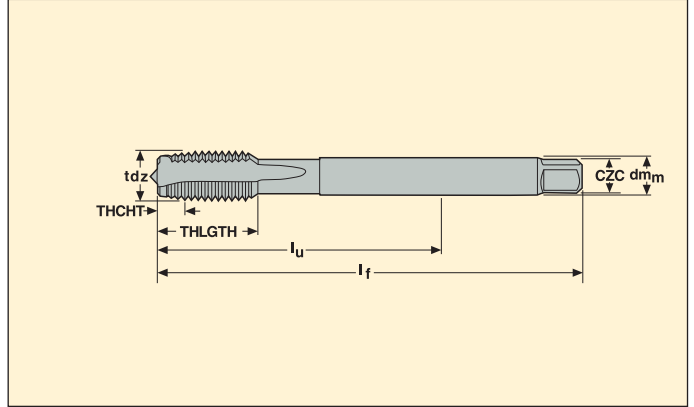


- For cutting data see page 262
- Coating: TiN
- Substrate: HSS-PM ≤ M16, HSS-E > M16

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	d _m	l _u	THLGTH	l _f	CZC				
MTH- M4X0.50ISO6H-TB-V014	MF 4x0.5	0,50	–	2,80	43	11,9	63	2.80X2.10	3	DIN374	6H	B
MTH- M5X0.50ISO6H-TB-V014	MF 5x0.5	0,50	–	3,50	49	13,2	70	3.50X2.70	3	DIN374	6H	B
MTH- M6X0.75ISO6H-TB-V014	MF 6x0.75	0,75	–	4,50	59	15,1	80	4.50X3.40	3	DIN374	6H	B
MTH- M8X0.75ISO6H-TB-V014	MF 8x0.75	0,75	–	6,00	57	14,9	80	6.00X4.90	3	DIN374	6H	B
MTH- M8X1.00ISO6H-TB-V014	MF 8x1.0	1,00	–	6,00	67	18	90	6.00X4.90	3	DIN374	6H	B
MTP- M9X1.00ISO6H-TB-V014	MF9X1	1,00	–	7,00	67	17	90	7.00X5.50	3	DIN374	6H	B
MTH- M10X0.75ISO6H-TB-V014	MF 10x0.75	0,75	–	7,00	67	17,6	90	7.00X5.50	3	DIN374	6H	B
MTH- M10X1.00ISO6H-TB-V014	MF 10x1.0	1,00	–	7,00	67	17,6	90	7.00X5.50	3	DIN374	6H	B
MTH- M10X1.25ISO6H-TB-V014	MF 10x1.25	1,25	–	7,00	77	19,8	100	7.00X5.50	3	DIN374	6H	B
MTP- M11X1.00ISO6H-TB-V014	MF11X1	1,00	–	8,00	63	18	90	8.00X6.20	3	DIN374	6H	B
MTP- M11X1.25ISO6H-TB-V014	MF11X1.25	1,25	–	8,00	63	22	90	8.00X6.20	3	DIN374	6H	B
MTH- M12X1.00ISO6H-TB-V014	MF 12x1.0	1,00	–	9,00	73	21	100	9.00X7.00	3	DIN374	6H	B
MTH- M12X1.25ISO6H-TB-V014	MF 12x1.25	1,25	–	9,00	73	21	100	9.00X7.00	3	DIN374	6H	B
MTH- M12X1.50ISO6H-TB-V014	MF 12x1.5	1,50	–	9,00	73	21	100	9.00X7.00	3	DIN374	6H	B
MTH- M14X1.00ISO6H-TB-V014	MF 14x1.0	1,00	–	11,00	71	21	100	11.00X9.00	3	DIN374	6H	B
MTH- M14X1.25ISO6H-TB-V014	MF 14x1.25	1,25	–	11,00	71	21	100	11.00X9.00	3	DIN374	6H	B
MTH- M14X1.50ISO6H-TB-V014	MF 14x1.5	1,50	–	11,00	71	21	100	11.00X9.00	3	DIN374	6H	B
MTH- M16X1.00ISO6H-TB-V014	MF 16x1.0	1,00	–	12,00	58	21	100	12.00X9.00	3	DIN374	6H	B
MTH- M16X1.50ISO6H-TB-V014	MF 16x1.5	1,50	–	12,00	58	21	100	12.00X9.00	3	DIN374	6H	B
MTH- M18X1.00ISO6H-TB-V014	MF 18x1.0	1,00	–	14,00	66	24	110	14.00X11.00	4	DIN374	6H	B
MTH- M18X1.50ISO6H-TB-V014	MF 18x1.5	1,50	–	14,00	66	24	110	14.00X11.00	4	DIN374	6H	B
MTH- M20X1.00ISO6H-TB-V014	MF 20x1.0	1,00	–	16,00	80	24	125	16.00X12.00	4	DIN374	6H	B

Please check availability in current price and stock-list.

MTH/P-V014

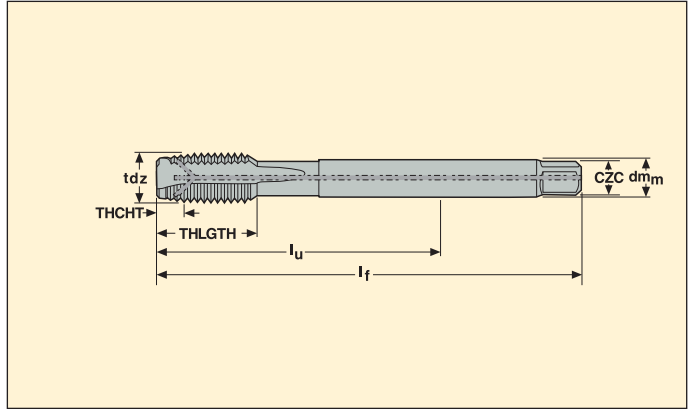


- For cutting data see page 262
- Coating: TiN
- Substrate: HSS-PM ≤ M16, HSS-E > M16

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTH- M20X1.50ISO6H-TB-V014	MF 20x1.5	1,50	-	16,00	80	24	125	16.00X12.00	4	DIN374	6H	B
MTH- M22X1.50ISO6H-TB-V014	MF 22x1.5	1,50	-	18,00	78	25	125	18.00X14.50	4	DIN374	6H	B
MTH- M24X1.50ISO6H-TB-V014	MF 24x1.5	1,50	-	18,00	93	28	140	18.00X14.50	4	DIN374	6H	B
MTH- M24X2.00ISO6H-TB-V014	MF 24x2.0	2,00	-	18,00	93	28	140	18.00X14.50	4	DIN374	6H	B
MTH- M25X1.50ISO6H-TB-V014	MF 25x1.5	1,50	-	18,00	93	28	140	18.00X14.50	4	DIN374	6H	B
MTH- M26X1.50ISO6H-TB-V014	MF 26x1.5	1,50	-	18,00	93	28	140	18.00X14.50	4	DIN374	6H	B
MTH- M27X1.50ISO6H-TB-V014	MF 27x1.5	1,50	-	20,00	77	28	140	20.00X16.00	4	DIN374	6H	B
MTH- M27X2.00ISO6H-TB-V014	MF 27x2.0	2,00	-	20,00	77	28	140	20.00X16.00	4	DIN374	6H	B
MTH- M28X1.50ISO6H-TB-V014	MF 28x1.5	1,50	-	20,00	77	28	140	20.00X16.00	4	DIN374	6H	B
MTH- M30X1.50ISO6H-TB-V014	MF 30x1.5	1,50	-	22,00	85	28	150	22.00X18.00	4	DIN374	6H	B
MTH- M30X2.00ISO6H-TB-V014	MF 30x2.0	2,00	-	22,00	85	28	150	22.00X18.00	4	DIN374	6H	B

Please check availability in current price and stock-list.

MTP-V014-A



- For cutting data see page 262
- Coating: TiN
- Substrate: HSS-PM ≤ M16, HSS-E > M16
- Internal coolant

Part No.	Thread tdz	Pitch		Dimensions in mm					No. of flutes	BSG	tctr	THCHT
		mm	TPI	dm _m	l _u	THLGTH	l _f	CZC				
MTP- M6X0.75ISO6H-TB-V014-A	MF6X0.75	0,75	–	4,50	59	15,1	80	4.50X3.40	3	DIN374	6H	B
MTP- M8X0.75ISO6H-TB-V014-A	MF8X0.75	0,75	–	6,00	57	14,9	80	6.00X4.90	3	DIN374	6H	B
MTP- M8X1.00ISO6H-TB-V014-A	MF8X1	1,00	–	6,00	67	18	90	6.00X4.90	3	DIN374	6H	B
MTP- M10X0.75ISO6H-TB-V014-A	MF10X0.75	0,75	–	7,00	67	17,6	90	7.00X5.50	3	DIN374	6H	B
MTP- M10X1.00ISO6H-TB-V014-A	MF10X1	1,00	–	7,00	67	17,6	90	7.00X5.50	3	DIN374	6H	B
MTP- M10X1.25ISO6H-TB-V014-A	MF10X1.25	1,25	–	7,00	77	19,8	100	7.00X5.50	3	DIN374	6H	B
MTP- M12X1.00ISO6H-TB-V014-A	MF12X1	1,00	–	9,00	73	21	100	9.00X7.00	3	DIN374	6H	B
MTP- M12X1.25ISO6H-TB-V014-A	MF12X1.25	1,25	–	9,00	73	21	100	9.00X7.00	3	DIN374	6H	B
MTP- M12X1.50ISO6H-TB-V014-A	MF12X1.5	1,50	–	9,00	73	21	100	9.00X7.00	3	DIN374	6H	B
MTP- M14X1.00ISO6H-TB-V014-A	MF14X1	1,00	–	11,00	71	21	100	11.00X9.00	3	DIN374	6H	B
MTP- M14X1.25ISO6H-TB-V014-A	MF14X1.25	1,25	–	11,00	71	21	100	11.00X9.00	3	DIN374	6H	B
MTP- M14X1.50ISO6H-TB-V014-A	MF14X1.5	1,50	–	11,00	71	21	100	11.00X9.00	3	DIN374	6H	B
MTP- M16X1.00ISO6H-TB-V014-A	MF16X1	1,00	–	12,00	58	21	100	12.00X9.00	3	DIN374	6H	B
MTP- M16X1.50ISO6H-TB-V014-A	MF16X1.5	1,50	–	12,00	58	21	100	12.00X9.00	3	DIN374	6H	B
MTP- M18X1.00ISO6H-TB-V014-A	MF18X1	1,00	–	14,00	66	24	110	14.00X11.00	4	DIN374	6H	B
MTP- M18X1.50ISO6H-TB-V014-A	MF18X1.5	1,50	–	14,00	66	24	110	14.00X11.00	4	DIN374	6H	B
MTP- M20X1.00ISO6H-TB-V014-A	MF20X1	1,00	–	16,00	80	24	125	16.00X12.00	4	DIN374	6H	B
MTP- M20X1.50ISO6H-TB-V014-A	MF20X1.5	1,50	–	16,00	80	24	125	16.00X12.00	4	DIN374	6H	B
MTP- M22X1.50ISO6H-TB-V014-A	MF22X1.5	1,50	–	18,00	78	25	125	18.00X14.50	4	DIN374	6H	B
MTP- M24X1.50ISO6H-TB-V014-A	MF24X1.5	1,50	–	18,00	93	28	140	18.00X14.50	4	DIN374	6H	B
MTP- M24X2.00ISO6H-TB-V014-A	MF24X2	2,00	–	18,00	93	28	140	18.00X14.50	4	DIN374	6H	B

Please check availability in current price and stock-list.



Set up – Run-out

Rotating tool

Max recommended run-out : 10-15 μm .

Hydraulic chuck , Shrinkfit, holder or precision collet holder is recommended.

For best run-out control, we recommend to use Precimaster Plus PMX-AD adjustable adapters, see page 351-352.



Static tool

Use Precimaster Plus floating holders PMX - FL, see page 354-353.



Floating holders allow reamer self-centring in pre-bore.

Coolant requirements

To reach maximum tool life and hole quality, the following coolant requirements should be observed.

Coolant through the tool is recommended.

External coolant supply can be used if reaming depth $< 2 \times D$.

Quality soluble oil with 40% minimum mineral oil.

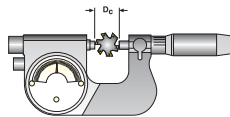
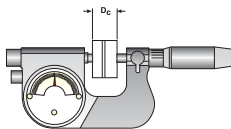
Neat oil recommended for stainless steel.

Concentration minimum 6–8%.

Filtration 30–50 μm .

Volume min 0,5 l/min/mm in tool diameter. (Ex: Reamer $\varnothing 10$, min volume is 5 l/min).

Diameter measurement



Gauge clock micrometer prior to \varnothing measurement.

Important!

Precimaster reamers have differential pitch between the teeth.

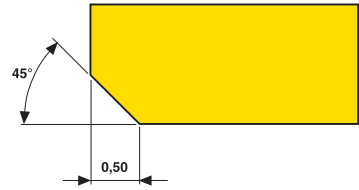
When measuring the diameter, make sure that you have 2 teeth 180° opposite.

Use clock micrometer and measuring blocks for gauging.

Geometry choice – Applications

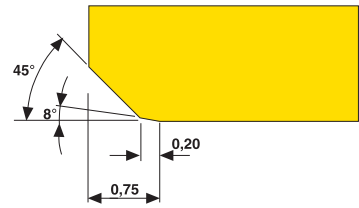
Lead geometry - EB45

Chip control +++
Surface Finish + (R_a 0,8 - 1,2 μm)
Versatile



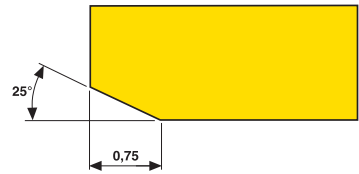
Lead geometry - EB845

Chip control ++
Surface finish+++ (R_a 0,2 - 0,8 μm)



Lead geometry - EB25

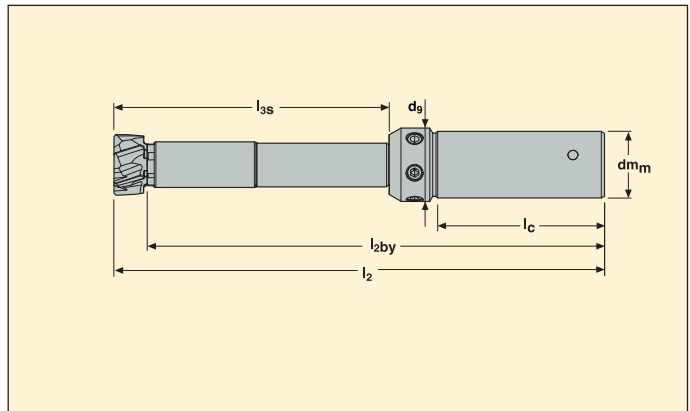
Feed performance +++
Surface finish ++ (R_a 0,4 - 0,8 μm)
Chip control +



Adjustable shanks for through holes Ø 10 to 60



- Cutting data see pages 355-356
- For choice of lead geometry EB45, EB845 or EB25 see page 350

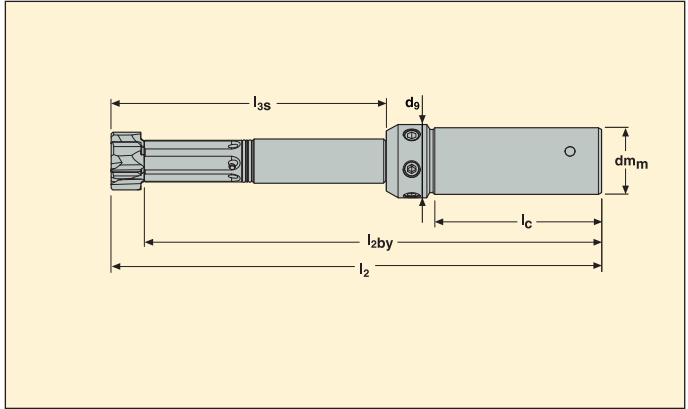


D _c	Part No.	Dimensions in mm					
		l ₂	l _{2by}	l _{3s}	l _c	d _{m_m}	d ₉
10-14,499	PMX06T-AD-05700-16N1	117	110	57	48	16	18
14,5-21,499	PMX08T-AD-08200-20N1	147	137	82	50	20	22
21,5-32,499	PMX12T-AD-10400-25N1	179	167	104	56	25	28
32,5-60	PMX16T-AD-12700-32N1	214	200	127	60	32	34

Spare parts

For shank	For Ø (mm)	Key	Setting key	Clamp kit	Coolant ring
PMX06T	10,00-14,499	2SMS795	2SMS795	PMX06-CLKI	RT06-KI
PMX08T	14,50-21,499	2.5SMS795	2.5SMS795	PMX08-CLKI	RT08-KI
PMX12T	21,50-32,499	4SMS795	3SMS795	PMX12-CLKI	RT12-KI
PMX16T	32,50-60,000	5SMS795	3SMS795	PMX16-CLKI	

Adjustable shanks for blind holes $\varnothing 10$ to 60



- Cutting data see pages 355-356
- For choice of lead geometry EB45, EB845 or EB25 see page 350

D _c	Part No.	Dimensions in mm					
		l ₂	l _{2by}	l _{3s}	l _c	d _m	d _g
10-14,499	PMX06B-AD-05700-16N1	117	110	57	48	16	18
14,5-21,499	PMX08B-AD-08200-20N1	147	137	82	50	20	22
21,5-32,499	PMX12B-AD-10400-25N1	179	167	104	56	25	28
32,5-60	PMX16B-AD-12700-32N1	214	200	127	60	32	34

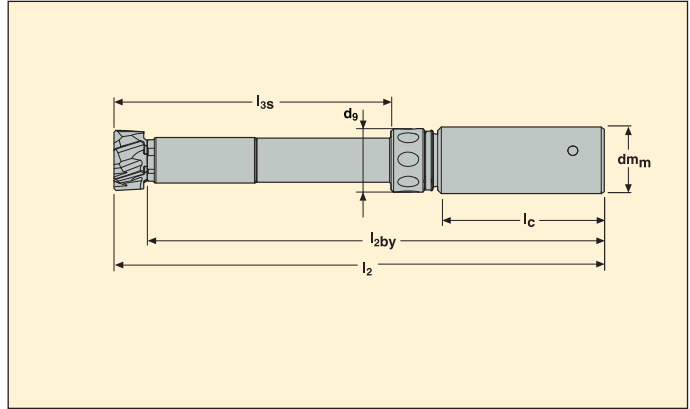
Spare parts

For shank	For \varnothing (mm)	Key	Setting key	Clamp kit
PMX06B	10,00-14,499	2SMS795	2SMS795	PMX06-CLKI
PMX08B	14,50-21,499	2.5SMS795	2.5SMS795	PMX08-CLKI
PMX12B	21,50-32,499	4SMS795	3SMS795	PMX12-CLKI
PMX16B	32,50-60,000	5SMS795	3SMS795	PMX16-CLKI

Floating shanks for through holes $\varnothing 10$ to 60



- Cutting data see pages 355-356
- For choice of lead geometry EB45, EB845 or EB25 see page 350

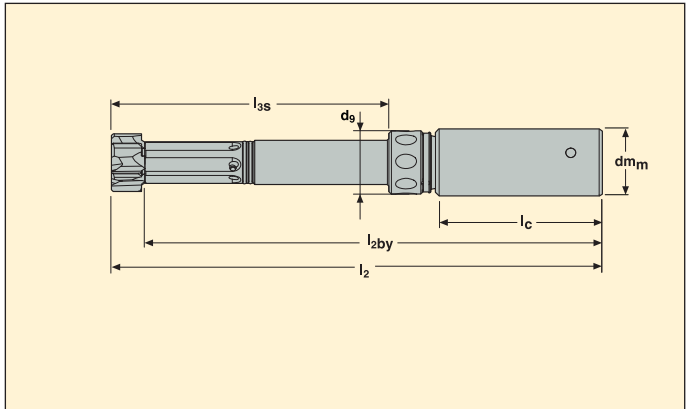


D _c	Part No.	Dimensions in mm					
		l ₂	l _{2by}	l _{3s}	l _c	dm _m	d _g
10-14,499	PMX06T-FL-05700-16N1	117	110	57	48	16	15
14,5-21,499	PMX08T-FL-08200-20N1	147	137	82	50	20	19
21,5-32,499	PMX12T-FL-10400-25N1	179	167	104	56	25	28
32,5-60	PMX16T-FL-12700-32N1	214	200	127	60	32	34

Spare parts

For shank	For \varnothing (mm)	Key	Clamp kit	Coolant ring
PMX06B	10,00-14,499	2SMS795	PMX06-CLKI	RT06-KI
PMX08B	14,50-21,499	2.5SMS795	PMX08-CLKI	RT08-KI
PMX12B	21,50-32,499	4SMS795	PMX12-CLKI	RT12-KI
PMX16B	32,50-60,000	5SMS795	PMX16-CLKI	

Floating shanks for blind holes $\varnothing 10$ to 60



- Cutting data see pages 355-356
- For choice of lead geometry EB45, EB845 or EB25 see page 350

D _c	Part No.	Dimensions in mm					
		l ₂	l _{2by}	l _{3s}	l _c	dm _m	d _g
10-14,499	PMX06B-FL-05700-16N1	117	110	57	48	16	15
14,5-21,499	PMX08B-FL-08200-20N1	147	137	82	50	20	19
21,5-32,499	PMX12B-FL-10400-25N1	179	167	104	56	25	28
32,5-60	PMX16B-FL-12700-32N1	214	200	127	60	32	34

Spare parts

For shank	For \varnothing (mm)	Key	Clamp kit
PMX06B	10,00-14,499	2SMS795	PMX06-CLKI
PMX08B	14,50-21,499	2.5SMS795	PMX08-CLKI
PMX12B	21,50-32,499	4SMS795	PMX12-CLKI
PMX16B	32,50-60,000	5SMS795	PMX16-CLKI

Cutting data – PM Plus...-EB845

SMG		a _p (Ø)		f		V _c				
		z=6	z=8	z=6	z=8	H15	CP20	RX2000	CF	RX1500
P3	PMX5/PMX6-EB845	0,10-0,20	0,1-0,30	0,20-0,90	0,3-1,20	-	60 (30-100)	80 (30-150)	180 (90-200)	220 (120-300)
P4	PMX5/PMX6-EB845	0,10-0,20	0,1-0,30	0,20-0,70	0,30-0,90	-	50 (30-80)	60 (30-120)	120 (80-150)	180 (90-200)
P5	PMX5/PMX6-EB845	0,10-0,20	0,1-0,30	0,20-0,70	0,30-0,90	20 (10-25)	50 (30-80)	60 (30-120)	120 (80-150)	180 (90-200)
P6	PMX5/PMX6-EB845	0,10-0,20	0,1-0,30	0,20-0,70	0,30-0,90	20 (10-25)	50 (30-80)	60 (30-120)	120 (80-150)	180 (90-200)
P7	PMX5/PMX6-EB845	0,10-0,20	0,1-0,30	0,20-0,70	0,30-0,90	20 (10-25)	50 (30-80)	60 (30-120)	120 (80-150)	180 (90-200)
P8	PMX5/PMX6-EB845	0,10-0,20	0,1-0,30	0,20-0,70	0,30-0,90	15 (10-20)	35 (20-60)	40 (20-80)	80 (60-120)	120 (80-180)
P11	PMX5/PMX6-EB845	0,10-0,20	0,1-0,30	0,20-0,70	0,30-0,90	15 (10-20)	35 (20-60)	40 (20-80)	80 (60-120)	120 (80-180)
M1	PMX5/PMX6-EB845	0,08-0,15	0,10-0,20	0,20-0,60	0,30-0,80	12 (9-15)	25 (15-40)	35 (20-70)	-	-
M2	PMX5/PMX6-EB845	0,08-0,15	0,10-0,20	0,20-0,60	0,30-0,80	-	25 (15-40)	35 (20-70)	-	-
M3	PMX5/PMX6-EB845	0,08-0,15	0,10-0,20	0,20-0,60	0,30-0,80	-	25 (15-40)	35 (20-70)	-	-
M4	PMX5/PMX6-EB845	0,08-0,15	0,10-0,20	0,20-0,60	0,30-0,80	-	20 (10-30)	25 (15-50)	-	-
M5	PMX5/PMX6-EB845	0,08-0,15	0,10-0,20	0,20-0,60	0,30-0,80	-	20 (10-30)	25 (15-50)	-	-
K1	PMX5/PMX6-EB845	0,10-0,20	0,10-0,25	0,30-0,90	0,3-1,20	25 (15-30)	60 (40-100)	80 (30-150)	-	220 (120-300)
K2	PMX5/PMX6-EB845	0,10-0,20	0,10-0,25	0,30-0,90	0,3-1,20	-	25 (20-40)	40 (30-70)	-	80 (50-100)
K3	PMX5/PMX6-EB845	0,10-0,20	0,10-0,25	0,30-0,90	0,3-1,20	25 (15-30)	60 (40-100)	80 (30-150)	-	220 (120-300)
K4	PMX5/PMX6-EB845	0,10-0,20	0,10-0,25	0,30-0,90	0,3-1,20	25 (15-30)	45 (30-70)	70 (40-120)	100 (70-150)	150 (80-200)
K5	PMX5/PMX6-EB845	0,10-0,20	0,10-0,25	0,30-0,90	0,3-1,20	25 (15-30)	45 (30-70)	70 (40-120)	100 (70-150)	150 (80-200)
K6	PMX5/PMX6-EB845	0,10-0,20	0,10-0,25	0,30-0,90	0,3-1,20	-	60 (40-100)	80 (30-150)	-	220 (120-300)
K7	PMX5/PMX6-EB845	0,10-0,20	0,10-0,25	0,30-0,90	0,3-1,20	-	60 (40-100)	80 (30-150)	-	220 (120-300)
S1	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,60	0,30-0,80	-	20 (10-25)	20 (10-25)	-	-
S2	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,60	0,30-0,80	-	20 (10-25)	20 (10-25)	-	-
S3	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,60	0,30-0,80	-	20 (10-25)	20 (10-25)	-	-
S11	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,60	0,30-0,80	20 (15-30)	30 (15-40)	40 (20-50)	-	-
S12	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,60	0,30-0,80	20 (15-30)	30 (15-40)	40 (20-50)	-	-
S13	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,60	0,30-0,80	20 (15-30)	30 (15-40)	40 (20-50)	-	-
H3	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,55	-	-	10 (8-15)	-	-
H5	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,55	-	-	10 (8-15)	-	-
H7	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,55	-	-	10 (8-15)	-	-
H8	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,55	-	-	10 (8-15)	-	-
H11	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,55	-	-	10 (8-15)	-	-
H12	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,55	-	-	10 (8-15)	-	-
H21	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,55	-	-	10 (8-15)	-	-
H31	PMX5/PMX6-EB845	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,55	-	-	10 (8-15)	-	-
PM1	PMX5/PMX6-EB845	0,10-0,20	0,1-0,30	0,20-0,60	0,30-0,80	-	50 (30-80)	70 (40-100)	-	-
PM2	PMX5/PMX6-EB845	0,10-0,20	0,1-0,30	0,20-0,60	0,30-0,80	-	50 (30-80)	70 (40-100)	-	-
PM3	PMX5/PMX6-EB845	0,10-0,20	0,1-0,30	0,20-0,60	0,30-0,80	-	50 (30-80)	70 (40-100)	-	-

Cutting data – PM Plus...-EB25

SMG		a _p (Ø)		f		V _c				
		z=6	z=8	z=6	z=8	H15	CP20	RX2000	CF	RX1500
P1	PMX5/PMX6-EB25	0,10-0,20	0,1-0,30	0,80-1,80	1-2,40	25 (15-30)	60 (30-100)	80 (30-150)	180 (90-200)	220 (120-300)
P2	PMX5/PMX6-EB25	0,10-0,20	0,1-0,30	0,80-1,80	1-2,40	25 (15-30)	60 (30-100)	80 (30-150)	180 (90-200)	220 (120-300)
P3	PMX5/PMX6-EB25	0,10-0,20	0,1-0,30	0,80-1,80	1-2,40	25 (15-30)	60 (30-100)	80 (30-150)	180 (90-200)	220 (120-300)
P4	PMX5/PMX6-EB25	0,10-0,20	0,1-0,30	0,80-1,80	1-2,40	20 (10-25)	50 (30-80)	60 (30-120)	120 (80-150)	180 (90-200)
P5	PMX5/PMX6-EB25	0,10-0,20	0,1-0,30	0,80-1,80	1-2,40	20 (10-25)	50 (30-80)	60 (30-120)	120 (80-150)	180 (90-200)
P6	PMX5/PMX6-EB25	0,10-0,20	0,1-0,30	0,80-1,80	1-2,40	20 (10-25)	50 (30-80)	60 (30-120)	120 (80-150)	180 (90-200)
P7	PMX5/PMX6-EB25	0,10-0,20	0,1-0,30	0,80-1,80	1-2,40	20 (10-25)	50 (30-80)	60 (30-120)	120 (80-150)	180 (90-200)
M1	PMX5/PMX6-EB25	0,08-0,15	0,10-0,20	0,8-1,20	1,0-2,0	-	25 (15-40)	35 (20-70)	-	-
K1	PMX5/PMX6-EB25	0,10-0,20	0,10-0,25	0,80-2,20	1-2,8	25 (15-30)	60 (40-100)	80 (30-150)	-	220 (120-300)
K2	PMX5/PMX6-EB25	0,10-0,20	0,10-0,25	0,80-1,80	1-2,40	-	25 (20-40)	40 (30-70)	-	80 (50-100)
K3	PMX5/PMX6-EB25	0,10-0,20	0,10-0,25	0,80-2,20	1-2,8	25 (15-30)	60 (40-100)	80 (30-150)	-	220 (120-300)
K4	PMX5/PMX6-EB25	0,10-0,20	0,10-0,25	0,80-2,20	1-2,8	25 (15-30)	45 (30-70)	70 (40-120)	100 (70-150)	150 (80-200)
K5	PMX5/PMX6-EB25	0,10-0,20	0,10-0,25	0,80-2,20	1-2,8	25 (15-30)	45 (30-70)	70 (40-120)	100 (70-150)	150 (80-200)
K6	PMX5/PMX6-EB25	0,10-0,20	0,10-0,25	0,80-1,80	1-2,40	-	60 (40-100)	80 (30-150)	-	220 (120-300)
K7	PMX5/PMX6-EB25	0,10-0,20	0,10-0,25	0,80-1,80	1-2,40	-	60 (40-100)	80 (30-150)	-	220 (120-300)
N1	PMX5/PMX6-EB25	0,10-0,20	0,10-0,30	0,80-2,20	1-2,8	50 (30-100)	-	-	-	-
N2	PMX5/PMX6-EB25	0,10-0,20	0,10-0,30	0,80-2,20	1-2,8	50 (30-100)	-	-	-	-
N3	PMX5/PMX6-EB25	0,10-0,20	0,10-0,30	0,80-2,20	1-2,8	50 (30-100)	-	-	-	-
N11	PMX5/PMX6-EB25	0,10-0,20	0,10-0,30	0,80-2,20	1-2,8	50 (30-100)	-	-	-	-
PM1	PMX5/PMX6-EB25	0,10-0,20	0,1-0,30	0,50-1,80	0,80-2	-	50 (30-80)	70 (40-100)	-	-
PM2	PMX5/PMX6-EB25	0,10-0,20	0,1-0,30	0,50-1,80	0,80-2	-	50 (30-80)	70 (40-100)	-	-
PM3	PMX5/PMX6-EB25	0,10-0,20	0,1-0,30	0,50-1,80	0,80-2	-	50 (30-80)	70 (40-100)	-	-

Cutting data – PM Plus...-EB45

SMG		a_p (Ø)		f		V_c				
		z=6	z=8	z=6	z=8	H15	CP20	RX2000	CF	RX1500
P1	PMX5/PMX6-EB45	0,10-0,20	0,1-0,30	0,30-0,90	0,40-1,20	25 (15-30)	60 (30-100)	80 (30-150)	180 (90-200)	220 (120-300)
P2	PMX5/PMX6-EB45	0,10-0,20	0,1-0,30	0,30-0,90	0,40-1,20	25 (15-30)	60 (30-100)	80 (30-150)	180 (90-200)	220 (120-300)
P3	PMX5/PMX6-EB45	0,10-0,20	0,1-0,30	0,30-0,90	0,40-1,20	25 (15-30)	60 (30-100)	80 (30-150)	180 (90-200)	220 (120-300)
P4	PMX5/PMX6-EB45	0,10-0,20	0,1-0,30	0,20-0,70	0,3-1	20 (10-25)	50 (30-80)	60 (30-120)	120 (80-150)	180 (90-200)
P5	PMX5/PMX6-EB45	0,10-0,20	0,1-0,30	0,20-0,70	0,3-1	20 (10-25)	50 (30-80)	60 (30-120)	120 (80-150)	180 (90-200)
P6	PMX5/PMX6-EB45	0,10-0,20	0,1-0,30	0,20-0,70	0,3-1	20 (10-25)	50 (30-80)	60 (30-120)	120 (80-150)	180 (90-200)
P7	PMX5/PMX6-EB45	0,10-0,20	0,1-0,30	0,20-0,70	0,3-1	20 (10-25)	50 (30-80)	60 (30-120)	120 (80-150)	180 (90-200)
P8	PMX5/PMX6-EB45	0,10-0,20	0,1-0,30	0,20-0,70	0,3-1	15 (10-20)	35 (20-60)	40 (20-80)	80 (60-120)	120 (80-180)
P11	PMX5/PMX6-EB45	0,10-0,20	0,1-0,30	0,20-0,70	0,3-1	15 (10-20)	35 (20-60)	40 (20-80)	80 (60-120)	120 (80-180)
M1	PMX5/PMX6-EB45	0,08-0,15	0,10-0,20	0,20-0,60	0,30-0,80	12 (9-15)	25 (15-40)	35 (20-70)	-	-
M2	PMX5/PMX6-EB45	0,08-0,15	0,10-0,20	0,20-0,60	0,30-0,80	-	25 (15-40)	35 (20-70)	-	-
M3	PMX5/PMX6-EB45	0,08-0,15	0,10-0,20	0,20-0,60	0,30-0,80	-	25 (15-40)	35 (20-70)	-	-
M4	PMX5/PMX6-EB45	0,08-0,15	0,10-0,20	0,20-0,60	0,30-0,80	-	20 (10-30)	25 (15-50)	-	-
M5	PMX5/PMX6-EB45	0,08-0,15	0,10-0,20	0,20-0,60	0,30-0,80	-	20 (10-30)	25 (15-50)	-	-
K1	PMX5/PMX6-EB45	0,10-0,20	0,10-0,25	0,30-0,90	0,40-1,20	25 (15-30)	60 (40-100)	80 (30-150)	-	220 (120-300)
K2	PMX5/PMX6-EB45	0,10-0,20	0,10-0,25	0,30-0,90	0,40-1,20	-	25 (20-40)	40 (30-70)	-	80 (50-100)
K3	PMX5/PMX6-EB45	0,10-0,20	0,10-0,25	0,30-0,90	0,40-1,20	25 (15-30)	60 (40-100)	80 (30-150)	-	220 (120-300)
K4	PMX5/PMX6-EB45	0,10-0,20	0,10-0,25	0,30-0,90	0,40-1,20	25 (15-30)	45 (30-70)	70 (40-120)	100 (70-150)	150 (80-200)
K5	PMX5/PMX6-EB45	0,10-0,20	0,10-0,25	0,30-0,90	0,40-1,20	25 (15-30)	45 (30-70)	70 (40-120)	100 (70-150)	150 (80-200)
K6	PMX5/PMX6-EB45	0,10-0,20	0,10-0,25	0,30-0,90	0,40-1,20	-	60 (40-100)	80 (30-150)	-	220 (120-300)
K7	PMX5/PMX6-EB45	0,10-0,20	0,10-0,25	0,30-0,90	0,40-1,20	-	60 (40-100)	80 (30-150)	-	220 (120-300)
N1	PMX5/PMX6-EB45	0,10-0,20	0,10-0,30	0,30-0,90	0,40-1,20	50 (30-100)	-	80 (30-150)	-	-
N2	PMX5/PMX6-EB45	0,10-0,20	0,10-0,30	0,30-0,90	0,40-1,20	50 (30-100)	-	80 (30-150)	-	-
N3	PMX5/PMX6-EB45	0,10-0,20	0,10-0,30	0,30-0,90	0,40-1,20	50 (30-100)	-	80 (30-150)	-	-
N11	PMX5/PMX6-EB45	0,10-0,20	0,10-0,30	0,30-0,90	0,40-1,20	50 (30-100)	-	80 (30-150)	-	-
S1	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,60	0,30-0,80	-	20 (10-25)	20 (10-25)	-	-
S2	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,60	0,30-0,80	-	20 (10-25)	20 (10-25)	-	-
S3	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,60	0,30-0,80	-	20 (10-25)	20 (10-25)	-	-
S11	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,60	0,30-0,80	20 (15-30)	30 (15-40)	40 (20-50)	-	-
S12	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,60	0,30-0,80	20 (15-30)	30 (15-40)	40 (20-50)	-	-
S13	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,60	0,30-0,80	20 (15-30)	30 (15-40)	40 (20-50)	-	-
H3	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,60	-	-	10 (8-15)	-	-
H5	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,60	-	-	10 (8-15)	-	-
H7	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,60	-	-	10 (8-15)	-	-
H8	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,60	-	-	10 (8-15)	-	-
H11	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,60	-	-	10 (8-15)	-	-
H12	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,60	-	-	10 (8-15)	-	-
H21	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,60	-	-	10 (8-15)	-	-
H31	PMX5/PMX6-EB45	0,08-0,15	0,10-0,15	0,20-0,40	0,30-0,60	-	-	10 (8-15)	-	-
PM1	PMX5/PMX6-EB45	0,10-0,20	0,1-0,30	0,30-0,90	0,40-1,20	-	50 (30-80)	70 (40-100)	-	-
PM2	PMX5/PMX6-EB45	0,10-0,20	0,1-0,30	0,30-0,90	0,40-1,20	-	50 (30-80)	70 (40-100)	-	-
PM3	PMX5/PMX6-EB45	0,10-0,20	0,1-0,30	0,30-0,90	0,40-1,20	-	50 (30-80)	70 (40-100)	-	-
TS1	PMX5/PMX6-EB45	0,10-0,15	0,1-0,20	0,30-0,90	0,40-1,20	20 (15-25)	-	40 (20-60)	-	-
TS2	PMX5/PMX6-EB45	0,10-0,15	0,1-0,20	0,30-0,90	0,40-1,20	20 (15-25)	-	40 (20-60)	-	-
TS3	PMX5/PMX6-EB45	0,10-0,15	0,1-0,20	0,30-0,90	0,40-1,20	20 (15-25)	-	40 (20-60)	-	-
TS4	PMX5/PMX6-EB45	0,10-0,15	0,1-0,20	0,30-0,90	0,40-1,20	20 (15-25)	-	40 (20-60)	-	-
TP1	PMX5/PMX6-EB45	0,10-0,15	0,1-0,20	0,30-0,90	0,40-1,20	20 (15-25)	-	40 (20-60)	-	-
TP2	PMX5/PMX6-EB45	0,10-0,15	0,1-0,20	0,30-0,90	0,40-1,20	20 (15-25)	-	40 (20-60)	-	-
TP3	PMX5/PMX6-EB45	0,10-0,15	0,1-0,20	0,30-0,90	0,40-1,20	20 (15-25)	-	40 (20-60)	-	-
TP4	PMX5/PMX6-EB45	0,10-0,15	0,1-0,20	0,30-0,90	0,40-1,20	20 (15-25)	-	40 (20-60)	-	-
GR1	PMX5/PMX6-EB45	0,10-0,30	0,1-0,40	0,30-0,90	0,40-1,20	40 (80-20)	-	60 (30-120)	-	-

SMG = Seco material group

a_p = mm

f = mm/rev

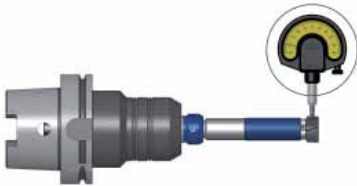
v_c = m/min

All cutting data are start values

Precimaster Plus Adjusting shanks set-up:



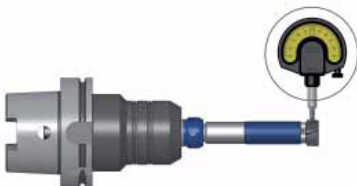
- 1) Mount tool in machine spindle
- 2) Set-up clock as shown



- 3) Rotate tool manually till lowest point is reached



- 4) Proceed to run-out compensation using adjusting screws. Direction as shown with arrows
- 5) Check run-out and repeat compensation if necessary



- 6) When maximum run-out is less than 5 μm , secure adjusting screws clamping to avoid losing adjustment

Precimaster Plus Floating shanks set-up:



1) Completely lock floating shank turning adjusting ring clockwise



2) Open floating shank 2 or 3 clicks turning adjusting ring anti-clockwise

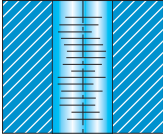
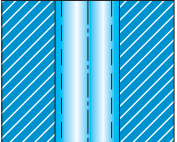
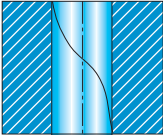
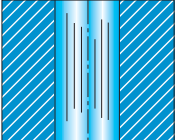
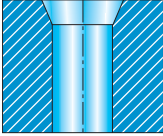
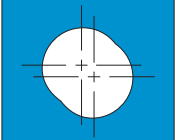
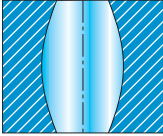
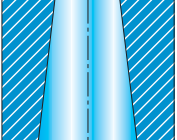


3) Proceed to further floating value adjustment if necessary

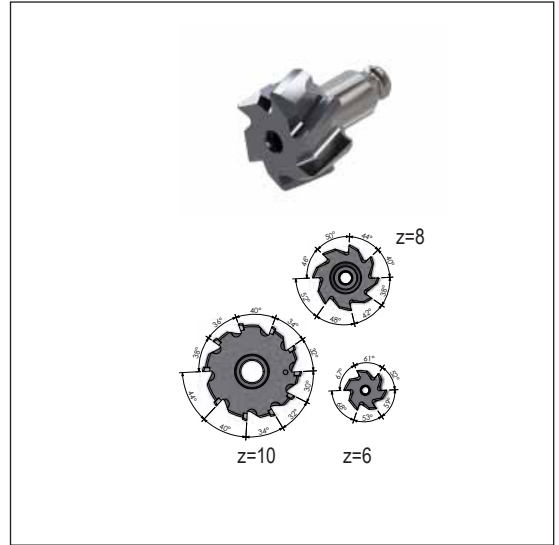
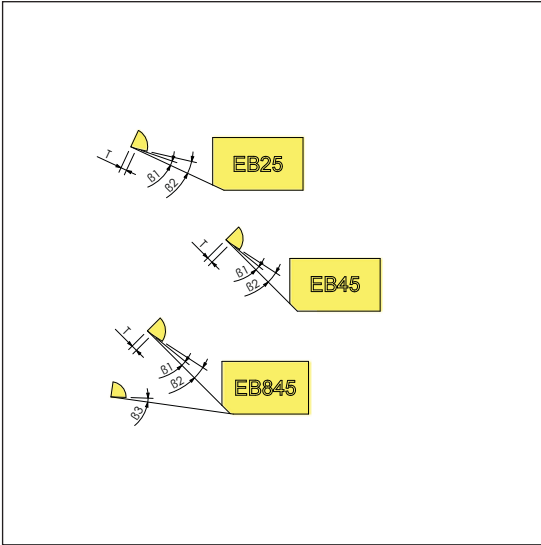
Too much floating value can create unstable conditions at bore entry.

Too few floating value can create vibrations and tapered bore.

Troubleshooting

<p>Poor surface finish</p> <ul style="list-style-type: none"> • Check material allowance. • Improve coolant conditions (outlet type, pressure, quality). • Reduce feed rate. 	<p>Too large diameter</p> <ul style="list-style-type: none"> • Improve centring (part/tool). 
<p>Retraction marks</p> <ul style="list-style-type: none"> • Improve coolant conditions (outlet type, pressure, quality). • Improve centring (part/tool). • Reduce feed-out speed. 	<p>Facets</p> <ul style="list-style-type: none"> • Improve centring (part/tool). • Check material allowance. 
<p>Tapered entry</p> <ul style="list-style-type: none"> • Reduce feed rate. • Improve centring (part/tool). • Reduce radial run-out. 	<p>Off centre/Ovality</p> <ul style="list-style-type: none"> • Improve clamping (workpiece deformation). • Check material allowance. • Improve centring (part/tool). 
<p>Deformed hole</p> <ul style="list-style-type: none"> • Improve clamping (workpiece deformation). 	<p>Tapered hole</p> <ul style="list-style-type: none"> • Improve centring (part/tool). 

Regrinding instructions for Precimaster Plus



Ø Precimaster Plus	β_1	β_2	β_3	t
10,00–14,499	8°	20°	8°	0,20
14,500–21,499	8°	20°	8°	0,20
21,500–32,499	8°	20°	8°	0,25
32,500–60,499	8°	20°	8°	0,30

Specifications

Diamond grinding wheel

Grain size:

D6 – For first clearance angle (β_1 – β_3)

D64 – For second clearance angle (β_2)

Important:

Regrinding reduces reamer diameter

Recoating may produce oversized diameter

Recoating may cause driving pin loosening

Max run-out on lead chamfers 10 μ m

Boring heads for Steadyline® bars

The new ranges of EPB boring heads with GL connections are designed to be used with the recently launched Steadyline® GL turning and boring bars.

This allows to use the same Steadyline® GL bar, to realise both static internal turning (using the wide range of turning heads) & rotating boring (using these new boring heads) operations.

Rotating rough and fine boring operations using Steadyline® damping features eliminate vibrations, achieve higher productivity and better surface qualities, and allow boring length up to 10 x D.

New rough boring heads EPB 610 with GL connection



New fine boring heads EPB 620 with GL connection

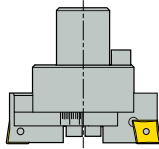


Existing GL turning heads and Steadyline® GL turning and boring bars

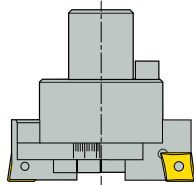


EPB 610 Rough boring heads – Overview

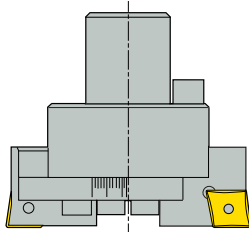
Graflex® connection



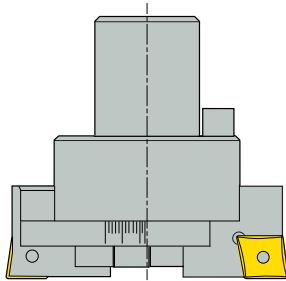
Ø 39-51 mm



Ø 50-65 mm

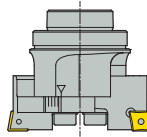


Ø 64-86 mm

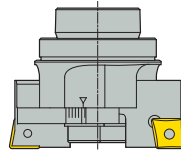


Ø 85-115 mm

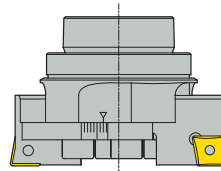
GL connection



Ø 36-46 mm



Ø 45-56 mm



Ø 55-69 mm

EPB 610 Rough boring heads – Guide

EPB 610 Graflex®, 4 compact rough boring heads for Ø 39 to 115 mm

Specific features

Compact design with Graflex® connection

- Short body to maximise the rigidity of the boring assembly
- Reduced weight for fast tool changing and spindle acceleration

Flexible

- Graflex® Modular System allowing to build up optimal boring assemblies



EPB 610 GL, 3 compact rough boring heads for Ø 36 to 69 mm

Specific features

Compact design with GL connection

- Boring head with GL connection. Their compact design achieves best damping performances when used on Steadyline® GL turning and boring bars
- Similar front end design as EPB 610 Graflex® heads in order to use insert holders common to EPB 610 Graflex® and EPB 610 GL heads



Specific features when used on Steadyline® GL turning and boring bars

- Boring performances, when used on long Steadyline® GL bars, are similar to non-damped shorter assemblies



Common features of rough boring heads EPB 610 Graflex® and EPB 610 GL

A rough boring head assembly is a combination of 1 body (head) and 2 insert holders

- Achieving geometrical hole precision starting from cast, flame cut or drilled hole
- Minimised unbalance thanks to a symmetrical design

Intuitive and fast setting

- Each insert holder features its push and pull setting mechanism allowing easy and fast setting of the diameter, using a pre-setter
- Diameter scales roughly visualise the insert holders positions

Insert holders

- A610...CC... insert holders achieve a 90° lead angle for rhombic inserts, 0° rake angle and 0° inclination angle
- The insert holders are suitable for both EPB 610 Graflex and EPB 610 GL heads

Productivity

- High rigidity resulting from a tight fitting of the insert holders into the head's body, and large clamping screws
- Possibility to take a depth of cut a_p up to half of the insert's width, maximising the chip removal rate and allowing a total exploitation of the inserts
- Staggered boring using a shim (part of heads delivery contents) to offset one insert holder in order to increase or to split the radial depth of cut
- Through coolant delivery directed towards the cutting edges

EPB 610 Rough boring heads – Guide

Symmetrical boring:

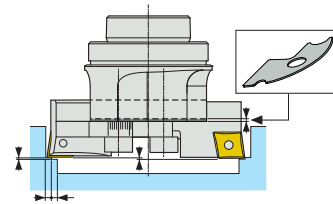
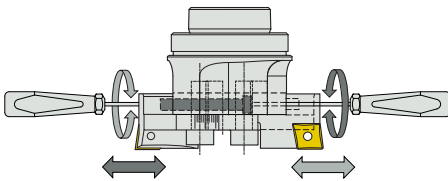
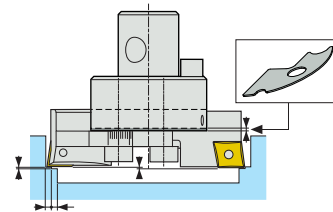
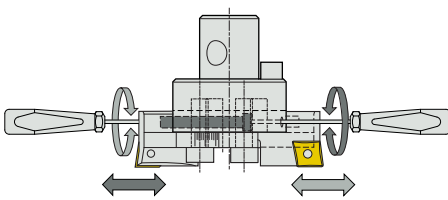
Symmetrical boring means both cutting edges are set on the same diameter and same height.

Staggered boring:

Staggered boring means one cutting edge is offset as a leading cutting edge, operating on a smaller diameter than the second edge set on the diameter to be realised. It requires a shim (part of the head delivery content) to be fitted between the boring head's body and one insert holder to achieve the (+) axial offset, see table below.

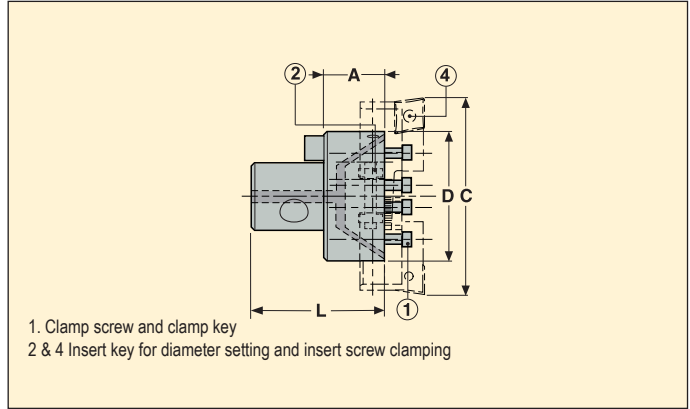
Shims thicknesses

Shim Part No.	Thickness (mm)
AU6103003	0,4
AU6104003	0,5
AU6105003	0,6
AU6106003	0,6





- Symmetrical and staggered boring modes are possible
- Individual insert holder adjusting driving mechanism
- Internal coolant supply against cutting edges



Machine side Graflex size	Capacity C Ø mm	Part No.	Dimensions in mm			Max. RPM **	
			A	D	L		
G3	39-51	A61030	23,5	34	43,5	7500	0,18
G4	50-65	A61040	21,5	43	45,5	5700	0,27
G5	64-86	A61050	25,0	54	55,0	4500	0,54
G6	85-115	A61060	29,0	63	69,0	3500	0,93

Insert holders have to be ordered separately, see page 367. ** Notes about max RPM, see Instruction pages. * Without insert holders.

Spare parts

For head	Tenon	Shim, staggered boring	Insert key	Clamp screw	Clamp key
A610 30	90M3	AU6103003	T15P-3	950DC0616	03HL05
A610 40	90M4	AU6104003	T15P-3	950D0616	03HL05
A610 50	90M5	AU6105003	T15P-3	950D0820	03HL06
A610 60	90M6	AU6106003	T15P-3	950D0822	03HL06

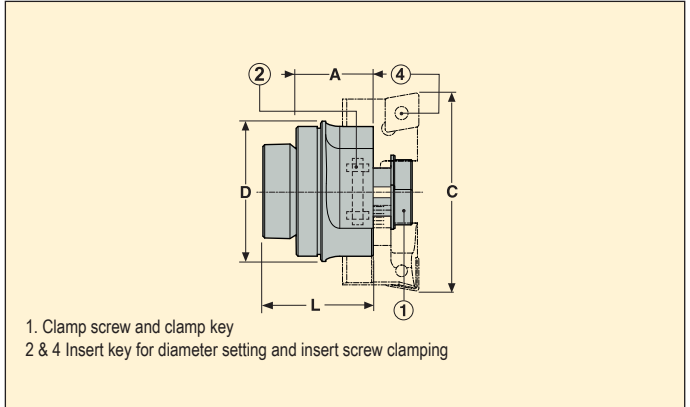
Please check availability in current price and stock-list.

EPB 610 GL – Rough boring heads, compact, with GL connection

GL



- Compact design and GL connection for best damping performance when used on Steadystate turning and boring bar GL
- Symmetrical and staggered boring modes are possible
- Individual insert holder adjusting driving mechanism
- Internal coolant supply against cutting edges



Machine side Graflex size	Capacity C Ø mm	Part No.	Dimensions in mm			Max. RPM **	KG*
			A	D	L		
GL32	36-46	GL32-0610-20	21,1	32	27,6	7500	0,10
GL40	45-56	GL40-0610-30	22,1	40	31,6	5700	0,20
GL50	55-69	GL50-0610-40	22,2	50	33,7	4500	0,30

Insert holders have to be ordered separately, see page 367. ** Notes about max RPM, see Instruction pages.

* Without insert holders.

Spare parts

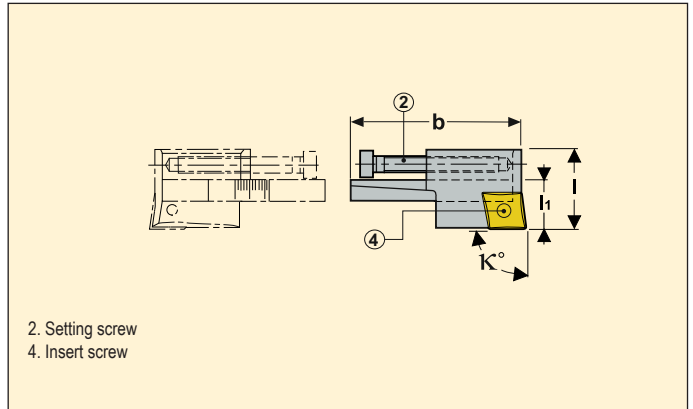
For head	Shim, staggered boring	Insert key	Clamp screw	Clamp key
GL32-0610-20	AU6102003	T07P-3	950DC0412	03HL03
GL40-0610-30	AU6103003	T15P-3	950DC0616	03HL05
GL50-0610-40	AU6104003	T15P-3	950D0616	03HL05

Please check availability in current price and stock-list.

Insert holders, for rough boring heads EPB 610



- Suitable for boring heads EPB 610 with Graflex or GL connection



For boring head	Capacity C Ø mm	Part No.	κ°	Dimensions in mm			Suitable insert size	KG
				l	l ₁	b		
GL32-0610-20	36-46	A61020CC0690	90	17,6	10,9	26	CC..0602..	0,1
A61030/ GL40-0610-30	39-51/45-56	A61030CC0990	90	21,6	12,9	33	CC...09T3...	0,1
A61040/ GL50-0610-40	50-65/55-69	A61040CC0990	90	22,5	13,8	43,8	CC...09T3...	0,1
A61050	64-86	A61050CC1290	90	27,5	17,3	57,4	CC...1204...	0,2
A61060	85-115	A61060CC1290	90	30,5	18,8	75	CC...1204...	0,3

Spare parts

For insert size	Setting screw	Insert screw
A61020CC0690	19A61020	C02504-T07P
A61030CC0990	19A61030	C04008-T15P
A61040CC0990	19A61040	C04008-T15P
A61050CC1290	19A61050	C05012-T15P
A61060CC1290	19A61060	C05012-T15P

Please check availability in current price and stock-list.
 Recommended inserts for boring, see Holemaking and Updates catalogues.
 Note: A key for insert screw clamping is part of EPB 610 heads delivery contents.

EPB 610 Rough boring heads – Instructions

Boring head assembling

- 1.1 Recommended tightening torques: Graflex connection, see Graflex Guide pages in Tooling catalogue.
- 1.2 Recommended tightening torques: GL connection, see Operating instructions supplied with the GL bars.



Fig 1.1

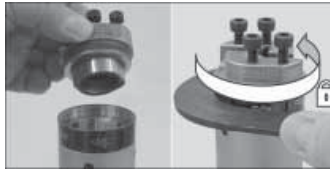


Fig 1.2

Insert holders fitting procedure



Fig 2.1

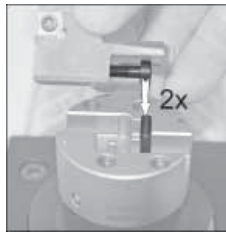


Fig 2.2



Fig 2.3

Diameter setting procedure

Diameter setting for symmetrical boring

3.3 See table "Recommended tightening torques".

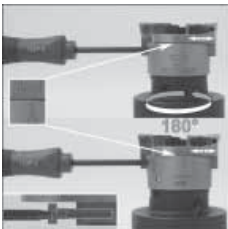


Fig 3.1



Fig 3.2

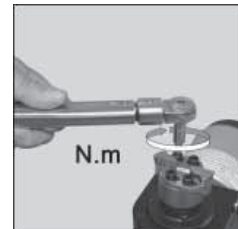


Fig 3.3

Diameter setting for staggered boring with a shim

4.1 & 4.3 See table "Recommended tightening torques and maximum feed per rev. when staggered".



Fig 4.1

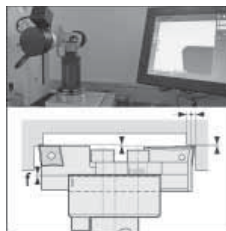


Fig 4.2

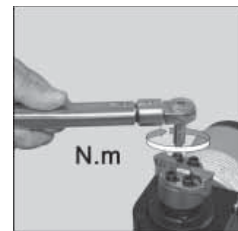


Fig 4.3

EPB 610 Rough boring heads – Instructions

Recommended tightening torques. Maximum feed per rev. when staggered

EPB 610 boring heads	A610 30	A610 40	A610 50	A610 60	GL32-0610-20	GL40-0610-30	GL50-0610-40
Tightening torque of clamp screws for insert holders clamping (N.m)	2 x 25	4 x 25	4 x 40	4 x 40	2 x 25	4 x 25	4 x 40
f Max. feed rate when staggered boring (mm/rev)	0,4	0,5	0,6	0,6	0,4	0,5	0,6

For further application details refer to the Operating instructions supplied with the boring heads and with the GL bars.

Recommended machining conditions

Spindle power:

As rough boring requires high machine power, we recommend to check that the machine is suitable. Staggered boring is a solution to reduce the power needs, as the feed is divided by two for the same total depth of cut, compared to symmetrical setting.

Optimum performance is obtained with through coolant (higher machining data, better surface finish, better chip evacuation, longer insert life).

Maximum speeds for EPB 610 rough boring heads

Note: The maximum speeds shown in boring heads Product pages are related to the boring head's mechanical design and balancing quality. Speeds inside these limits have to be chosen in regard to the other machining conditions, e.g. workpiece material, cutting edge (insert), tooling length, machine spindle.

By boring applications with Steadyline® bars, make sure not to overpass the max. RPM of the bars : See the Operating instructions supplied with the Steadyline® bars.

EPB 620 Fine boring heads - Guide

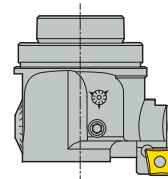
EPB 620 GL, 3 compact fine boring heads for Ø 34 to 69 mm

Compact design with GL connection

- Boring head with GL connection. Their compact design achieves best damping performances when used on Steadyline® GL turning and boring bars
- Boring performances, when used on long Steadyline® GL bars, are similar to non-damped shorter assemblies



GL connection

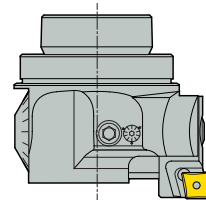


Ø 34-46 mm

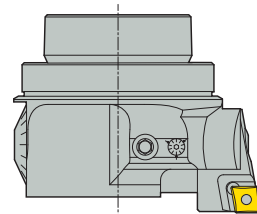
Common features of radial types fine boring heads EPB 620 and EPB 780/ 790

A radial type fine boring head is an assembly of a body (head) and a radially fitted insert holder.

- Similar front end design in order to use the same range of insert holders
- Micrometric adjustment:
Insert holder setting mechanism with a micrometric adjusting screw (1 increment = 0,01 mm on the diameter) and a vernier scale (resolution of 2,5 µm on the diameter)
The precision of the mechanism guarantees repeatable accuracy
- Angular orientation of the cutting edge according to DIN 69871/ISO 7388 for SA and ISO 12164 for HSK
- Coolant through the head directed towards the cutting edge
- Heads with insert holders are pre-balanced on median diameter setting



Ø 42-56 mm



Ø 52-69 mm



Insert holders

The wide range of fine boring, chamfering and back boring insert holders are suitable for EPB 780, EPB 790 and EPB 620 fine boring heads, radial types.

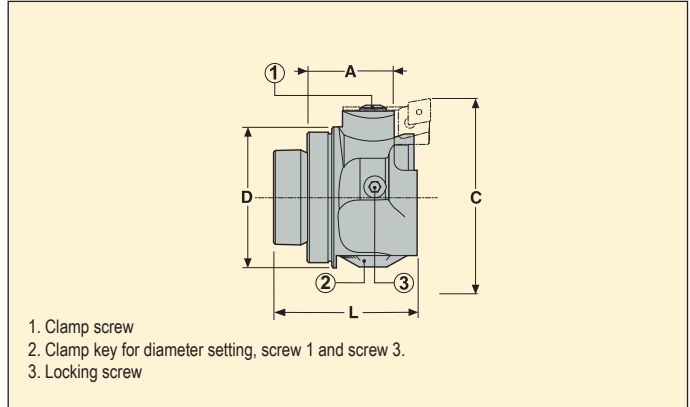
Holemaking – EPB 620 Fine boring heads

EPB 620 GL – Fine boring heads, compact, with GL connection

GL



- Compact design and GL connection for best damping performance when used on Steadyline turning and boring bar GL
- Adjusting increment 0.01mm and vernier 2,5µm, on the diameter
- Internal coolant supply against cutting edge



Machine side Graflex size	Capacity C ∅ mm	Part No.	Dimensions in mm			Max. RPM **	
			A	D	L		
GL32	34-46	GL32-0620-20	23,8	32	35,2	7000	0,13
GL40	42-56	GL40-0620-30	24,8	40	40,7	5600	0,22
GL50	52-69	GL50-0620-40	25,8	50	43,7	4800	0,32

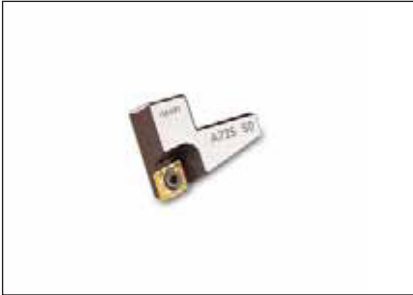
Insert holders common to EPB 780 / 790/ 620 boring heads : have to be ordered separately, see page 372-374. * Without insert holders. ** Notes about max RPM, see Instruction pages.

Spare parts

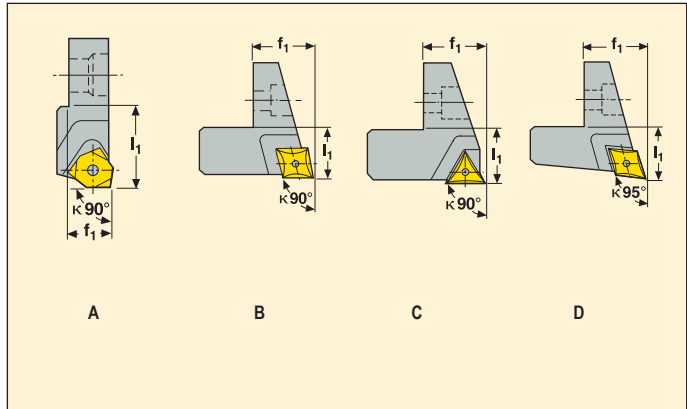
For head	Locking screw	Clamp screw	Clamp key
GL32-0620-20	950L0406	19TB0305	H2.0-2D
GL40-0620-30	950L0608	19TB04075	03M03C
GL50-0620-50	950L0608	19TB04075	03M03C

Please check availability in current price and stock-list.

Insert holders, for fine boring heads EPB 780/ 790/ 620



- Suitable for radial boring heads EPB 780/ 790/ 620



Insert holders type	For boring head	*	**	Insert holder size	Capacity \varnothing mm	Part No.	Dimensions in mm		Suitable insert size	Design	
							l_1	f_1			
90° for WB inserts	A78008 / A78009			09	15-23.5	A78209	7,2	4	WB...0301...	A	0,01
90° for CC inserts	A78010			10	23-31	A72510	10,3	4,5	CC...0602...	B	0,01
	A78020 & A79020/ GL32-0620-20			20	30-40/34-46	A72520	8,3	5	CC...0602...	B	0,02
	A78030 & A79030/ GL40-0620-30			30	39-51/42-56	A72530	10,3	8	CC...0602...	B	0,02
	A78040 & A79040/ GL50-0620-40			40	50-65/52-69	A72540	10,3	9,5	CC...0602...	B	0,02
	A78050 / A79050 / A7805AL			50	64-86	A72550	10,3	12,5	CC...0602...	B	0,02
	A78060 / A79060	*		60	85-115	A72560	16,5	18,9	CC...09T3...	B	0,08
	A78060 / A79060	*	**	65	114-144	A72565	16,5	33,7	CC...09T3...	B	0,09
	A78070			70	114-160	A72570	16,5	18,9	CC...09T3...	B	0,09
	A78070			75	159-205	A72575	16,5	41,7	CC...09T3...	B	0,12
90° for TC inserts	A78030 & A79030/ GL40-0620-30			30	39-51/42-56	A72430	10,3	7,9	TC...1102...	C	0,01
	A78040 & A79040/ GL50-0620-40			40	50-65/52-69	A72440	10,3	9,4	TC...1102...	C	0,02
	A78050 / A79050			50	64-86	A72450	10,3	12,4	TC...1102...	C	0,02
	A78060 / A79060	*		60	85-115	A72460	16,3	18,9	TC...1102...	C	0,08
	A78060 / A79060	*	**	65	114-144	A72465	16,5	33,7	TC...1102...	C	0,09
	A78070			70	114-160	A72470	16,3	18,9	TC...1102...	C	0,1
	A78070			75	159-205	A72475	16,5	41,7	TC...1102...	C	0,13
95° for CC inserts	A78010			10	23-31	A72610	10,3	4,5	CC...0602...	D	0,01
	A78020 & A79020/ GL32-0620-20			20	30-40/34-46	A72620	8,3	5	CC...0602...	D	0,01
	A78030 & A79030/ GL40-0620-30			30	39-51/42-56	A72630	10,3	8	CC...0602...	D	0,01
	A78040 & A79040/ GL50-0620-40			40	50-65/52-69	A72640	10,3	9,5	CC...0602...	D	0,02
	A78050 / A79050			50	64-86	A72650	10,3	12,5	CC...0602...	D	0,02
	A78060 / A79060	*		60	85-115	A72660	16,5	18,9	CC...09T3...	D	0,07
	A78060 / A79060	*	**	65	114-144	A72665	16,5	33,7	CC...09T3...	D	0,09
	A78070			70	114-160	A72670	16,5	18,9	CC...09T3...	D	0,09
	A78070			75	159-205	A72675	16,5	41,7	CC...09T3...	D	0,12

Please check availability in current price and stock-list.

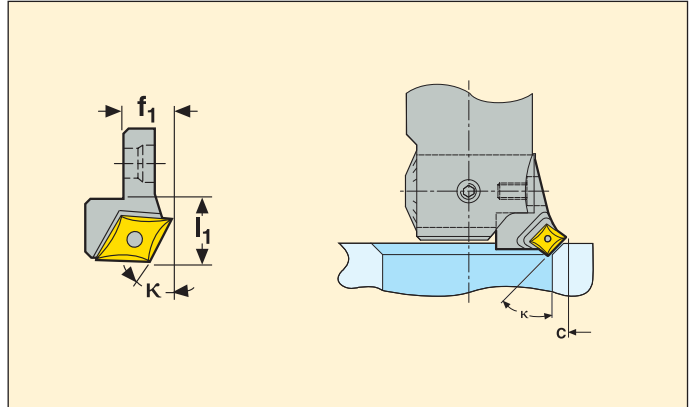
* The insert holders size 60 and 65 also fit onto the fine boring block for Bridge bar boring heads.

** The precision balancing of EPB A790 heads is not possible when using the large insert holders. For spare insert screws and spare insert keys, see page 375.

Chamfering insert holders, for fine boring heads EPB 780/ 790/ 620



- Suitable for radial boring heads EPB 780/ 790/ 620



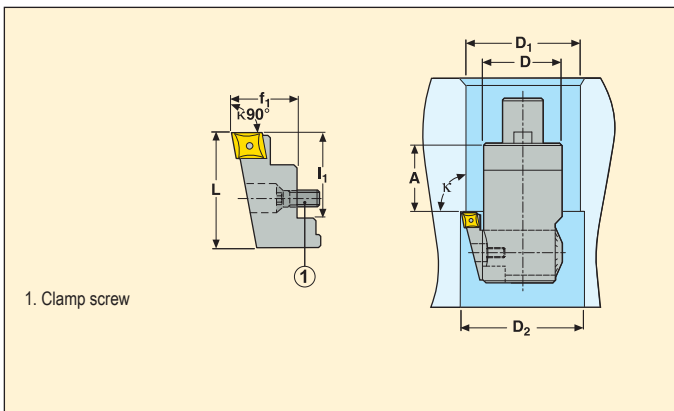
κ°	For boring head	Insert holder size	Capacity C Ø mm	Part No.	Dimensions in mm		Suitable insert size	KG
					l ₁	f ₁		
30°	A78010	10	23-31	A72910CC0630	10,8	4,5	CC...0602...	0,01
	A78020 & A79020/ GL32-0620-20	20	30-40/34-36	A72920CC0630	10	4,9	CC...0602...	0,01
	A78030 & A79030/ GL40-0620-30	30	39-51/42-56	A72930CC0630	10,5	8,1	CC...0602...	0,01
	A78040 & A79040/ GL50-0620-40	40	50-65/52-69	A72940CC0630	10,5	9,5	CC...0602...	0,02
	A78050 / A79050	50	64-86	A72950CC0630	10,5	12,5	CC...0602...	0,02
	A78060 / A79060	60	85-115	A72960CC0930	16,5	19,1	CC...09T3...	0,08
	A78070	70	114-160	A72970CC0930	16,4	18,8	CC...09T3...	0,09
45°	A78010	10	23-31	A72910CC0645	11,5	4,5	CC...0602...	0,01
	A78020 & A79020/ GL32-0620-20	20	30-40/34-46	A72920CC0645	10	5	CC...0602...	0,01
	A78030 & A79030/ GL40-0620-30	30	39-51/42-56	A72930CC0645	10,5	8,1	CC...0602...	0,01
	A78040 & A79040/ GL50-0620-40	40	50-65/52-69	A72940CC0645	10,5	9,5	CC...0602...	0,02
	A78050 / A79050	50	64-86	A72950CC0645	10,3	12,4	CC...0602...	0,02
	A78060 / A79060	60	85-115	A72960CC0945	16,5	19,1	CC...09T3...	0,07
	A78070	70	114-160	A72970CC0945	16,4	18,8	CC...09T3...	0,09

Please check availability in current price and stock-list.
For spare insert screws and spare insert keys, see page 375.

Fine back boring insert holders, for fine boring heads EPB 780/ 790/ 620



- Suitable for radial boring heads EPB 780/ 790/ 620
- The precision balancing of EPB 790 heads is not possible when using back-boring insert holders



For head	Back-boring capacity D2 Ø mm	κ°	Part No.	Dimensions in mm					Suitable insert size	
				A	D	L	l ₁	f ₁		
A78010 // A78020 & A79020 // GL32-0620-20	39.5-47.5 // 46-56 // 49.7-61.7	90	A789X10CC0690	16.5 // 21.5 // 7.75	21.5 // 27 // 32	22	16	12,8	CC...0602...	0,01
A78030 & A79030 // A78040 & A79040 // A78050 & A79050 // GL40-0620-30 // GL50-0620-40	53-65 // 61-76 // 69-91 // 57.6-70.2 // 67.6-80.2	90	A789X30CC0690	32 // 39 // 49 // 1.75 // 2.75	35 // 43 // 54 // 40 // 50	30	23	15	CC...0602...	0,03
A78060 & A79060	89-119	90	A789X60CC0690	50	70	50	38,5	21	CC...0602...	0,09
A78070	118-164	90	A789X70CC0690	60	95	50	38,5	21	CC...0602...	0,1

For the minimum access diameter D1 mini calculation, see page 377.

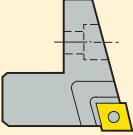


Spare parts*

For	Clamp screw	
A789X10CC0690	950F0308	
A789X30CC0690	950F0410	
A789X60CC0690	950F0620	
A789X70CC0690	950F0620	

Please check availability in current price and stock-list.

For spare insert screws and spare insert keys, see page 375. * The fine back boring insert holders delivery content includes a specific insert holder clamp screw, to be used instead of the standard clamp screw delivered with the boring heads.

Spare parts for insert holders

	Spare parts				
	Insert key			Insert screw	
					
For fine boring insert holders, chamfering insert holders and back boring insert holders	For insert size	Part No.	Torx Plus	Part No.	Torx Plus
	WB...0301...	T06P-2	06	C02035-T06P	06
	CC...0602...	T07P-3	07	C02504-T07P	07
	CC...09T3...	T15P-3	15	C04008-T15P	15
	TC...1102...	T07P-3	07	C02504-T07P	07

EPB 620 Fine boring heads - Instructions

Boring head assembling

1.2 Recommended tightening torques: GL connection, see Operating instructions supplied with the GL bars.



Fig 1.1



Fig 1.2

Insert holders fitting procedure

2.4 See table "Tightening torque of clamp screws for insert holders clamping".

2.5 Fit the insert with screw: tightening torque: 0,9 N.m.

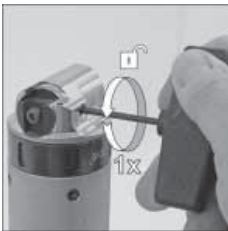


Fig 2.1



Fig 2.2



Fig 2.3



Fig 2.4



Fig 2.5

Diameter pre-setting procedure

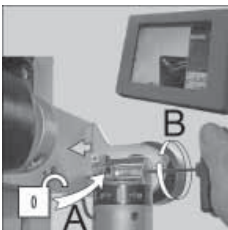


Fig 3.1

EPB 620 Fine boring heads - Instructions

Diameter fine setting procedure

4.2 See table “Tightening torque of locking screws for barrel position locking”.

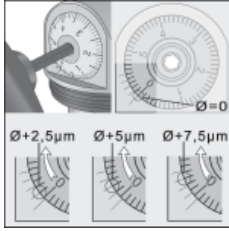


Fig 4.1



Fig 4.2

Recommended tightening torques

EPB 620 GL fine boring heads	GL32-0620-20	GL40-0620-30	GL50-0620-40
Tightening torque of clamp screws for insert holders clamping (N.m)	2	3,5	3,5
Tightening torque of locking screws for barrel position locking (N.m)	1	3,5	3,5

For further application details refer to the Operating instructions supplied with the boring heads and with the GL bars.

Back-boring instructions

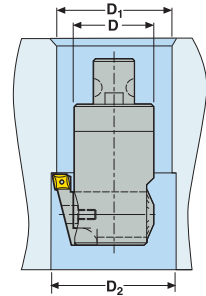
When using back-boring insert holders, please note the minimum access diameter (D1 min)* and the counterclockwise cutting action required. The back boring insert holders are delivered with a screw to fix them on the head; this has to replace the standard screw already fitted on the head.

* For head sizes 20 to 70: D1 min

$$= \frac{D_2 + D}{2} + 0,5$$

* For head sizes 08, 09 and 10: D1 min

$$= \frac{D_2 + D}{2} + 1$$



Recommended machining conditions

Best performances are obtained with through coolant (higher machining data, better surface, better chip evacuation).

Maximum speeds for EPB 620 fine boring heads

Note: The maximum speeds shown in boring heads Product pages are related to the boring head’s mechanical design and balancing quality. Speeds inside these limits have to be chosen in regard to the other machining conditions, e.g. workpiece material, cutting edge (insert), tooling length, machine spindle.

By boring applications with Steadyline® bars, make sure not to overpass the max. RPM of the bars : See the Operating instructions supplied with the Steadyline® bars.

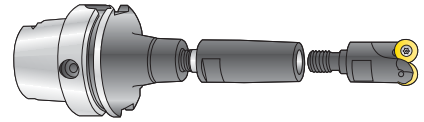
Launch of the additional (larger) Combimaster® size M20 Tooling, vs. existing sizes M6 to M16, for more rigidity. In the following pages we only show types with M20 additions. For remaining types without additions, see Tooling catalogue.

The modular milling solution for medium size cutters

Combimaster® tools achieve optimum access and shortest overhang.

Stability, precision and balance are improved vs. classic assemblies, e.g. Weldon or collet chucks. Extensions and reducers to realise optimum tool length.

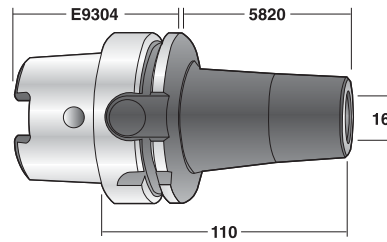
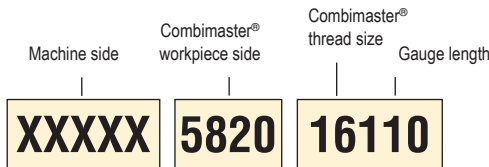
Modular: The Graflex® to Combimaster as well as Seco-Capto™ to Combimaster® arbors allow to mix systems. Combimaster® to Shrinkfit holders are also available to hold small tools.



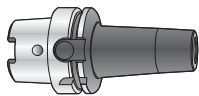
Balancing quality

Most Combimaster® holders are fine balanced, except Steadyline™ Combimaster® holders, being pre-balanced. See Product pages.

Combimaster® holders, code key

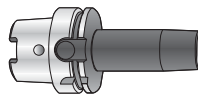


Combimaster® holders, workpiece side types



5820

Entirely tapered



5821

Cylindrical and front tapered*



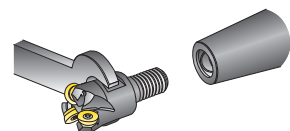
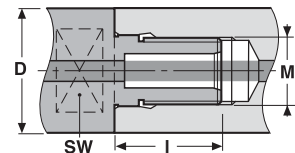
5822

Entirely cylindrical

* See specific shape in Product pages.

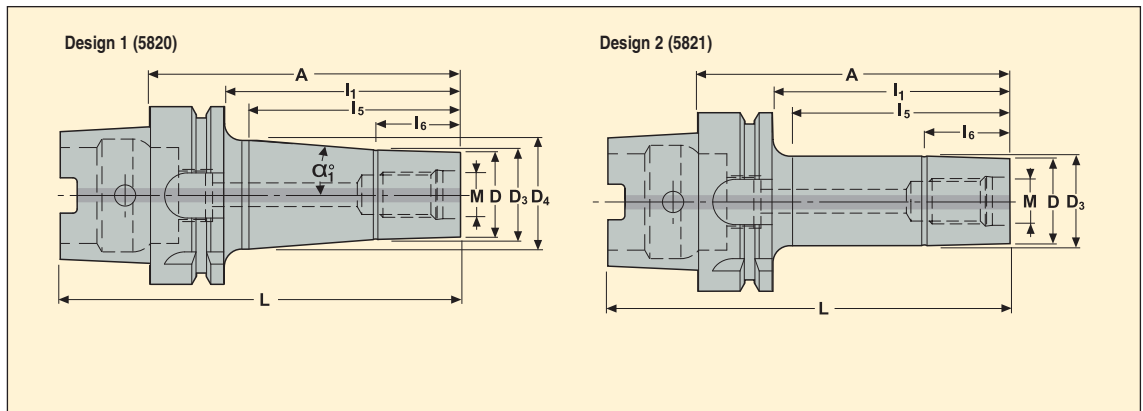
Recommended Combimaster® connections tightening torques

Combimaster size M	Tightening torque	Tightening key size SW (mm)	l (mm)	D (mm)
M6	10 Nm	9	13,50	11,0
M8	25 Nm	11	17,75	13,5
M10	40 Nm	15	18,75	18,5
M12	60 Nm	19	21,75	23,0
M16	80 Nm	26	22,75	30,0
M20	120 Nm	32	27,00	36,5



Combimaster® cutter heads

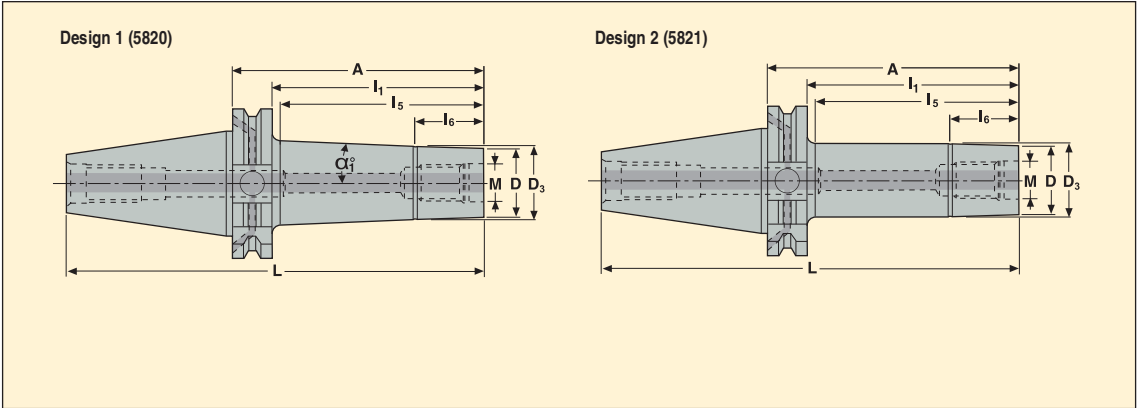
Note: Combimaster® cutter heads are shown in Machining Navigator Milling.



Machine side	Workpiece side	Part No.	Dimensions in mm									α_1°	Design	Balancing	KG
			A	L	I ₁	I ₅	I ₆	D	D ₃	D ₄					
HSK-A40	M6	E930258200645	45	65	25	15	10	11,0	11,7	13,5	10,2	1	1	0,30	
HSK-A63	M6	E930458200660	60	92	34	25	10	11,0	11,7	14,5	5,3	1	1	0,70	
	M8	E930458200860	60	92	34	25	10	13,5	15,7	18,5	5,3	1	1	0,70	
	M8	E930458200885	85	117	59	50	15	13,5	15,7	20,0	3,5	1	1	0,80	
	M10	E930458201060	60	92	34	25	10	18,5	19,7	23,0	6,3	1	1	0,80	
	M10	E930458201085	85	117	59	50	15	18,5	19,7	24,5	3,9	1	1	0,80	
	M10	E9304582010135	135	167	109	100	20	18,5	19,7	27,5	2,8	1	1	1,00	
	M10	E930458211060	60	92	34	25	10	18,5	18,5	–	–	2	1	0,70	
	M12	E930458201260	60	92	34	25	10	23,0	24,7	28,5	7,2	1	1	0,80	
	M12	E930458201285	85	117	59	50	20	23,0	24,7	30,0	5,0	1	1	0,90	
	M12	E9304582012110	110	142	84	75	25	23,0	24,7	31,5	3,9	1	1	1,00	
	M12	E9304582012135	135	167	109	100	30	23,0	24,7	33,0	3,4	1	1	1,20	
	M12	E930458211260	60	92	34	25	10	23,0	23,5	–	–	2	1	0,80	
	M12	E930458211285	85	117	59	50	20	23,0	23,5	–	–	2	1	0,80	
	M16	E930458201660	60	92	34	25	10	30,0	31,7	35,5	6,9	1	1	0,90	
	M16	E930458201685	85	117	59	50	20	30,0	31,7	37,0	5,0	1	1	1,10	
	M16	E9304582016110	110	142	84	75	25	30,0	31,7	38,5	3,9	1	1	1,20	
	M16	E9304582016135	135	167	109	100	30	30,0	31,7	40,0	3,4	1	1	1,40	
	M16	E9304582016185	185	217	159	150	35	30,0	31,7	50,0	4,5	1	1	2,10	
	M16	E930458211685	85	117	59	50	20	30,0	30,5	–	–	2	1	1,00	
	M16	E9304582116110	110	142	84	75	25	30,0	30,5	–	–	2	1	1,10	
M16	E9304582116135	135	167	109	100	30	30,0	30,5	–	–	2	1	1,20		
M20	E930458202065	65	97	39	30	10	36,5	37,5	44,5	6,4	1	1	1,00		
M20	E9304582020110	110	142	84	75	25	36,5	37,5	44,5	6,5	1	1	1,40		
M20	E9304582120110	110	142	84	75	25	36,5	37,0	–	–	2	1	1,20		
HSK-A100	M8	E930658200885	85	135	56	50	15	13,5	15,7	24,5	7,2	1	1	2,10	
	M10	E930658201085	85	135	56	50	15	18,5	19,7	29,0	7,6	1	1	2,20	
	M10	E9306582010110	110	160	81	75	20	18,5	19,7	32,5	6,6	1	1	2,30	
	M12	E930658201285	85	135	56	50	20	23,0	24,7	35,0	9,7	1	1	2,30	
	M12	E9306582012110	110	160	81	75	25	23,0	24,7	38,0	7,6	1	1	2,40	
	M12	E9306582012135	135	185	106	100	30	23,0	24,7	42,5	6,6	1	1	2,60	
	M12	E9306582012185	185	235	156	150	30	23,0	24,7	42,5	4,2	1	1	2,90	
	M16	E930658201685	85	135	56	50	30	30,0	31,7	42,5	10,2	1	1	2,40	
	M16	E9306582016135	135	185	106	100	30	30,0	31,7	49,0	7,0	1	1	2,90	
	M16	E9306582016185	185	235	156	150	35	30,0	31,7	50,0	4,5	1	1	3,30	
	M20	E930658202075	75	125	46	40	20	36,5	37,5	47,5	14,1	1	1	2,40	
	M20	E9306582020135	135	185	106	100	30	36,5	37,5	54,5	6,9	1	1	3,10	
M20	E9306582120110	110	160	81	75	25	36,5	37,0	–	–	2	1	2,60		

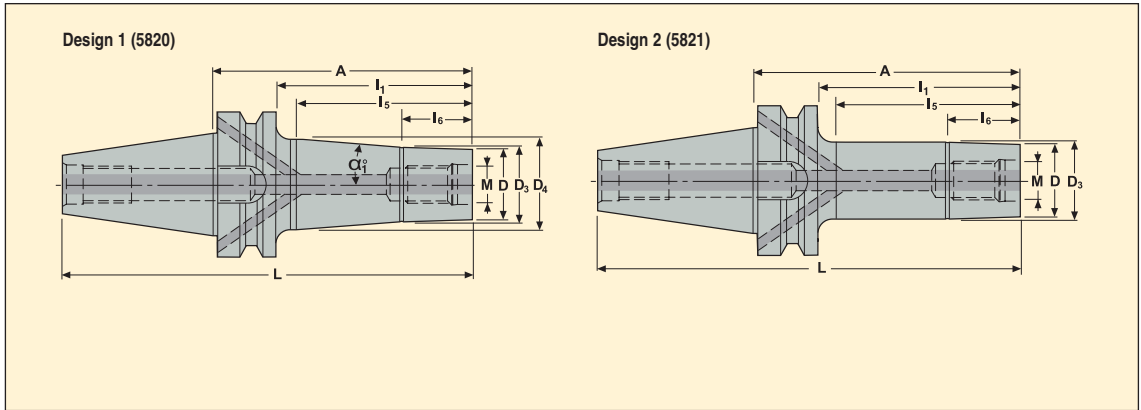
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For HSK sealing plugs, coolant tubes and tube spanners, see Additional equipment in Tooling catalogue.



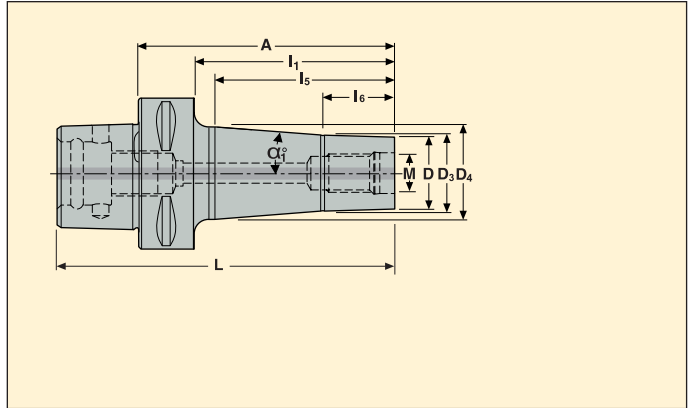
Machine side	Workpiece side	Part No.	Dimensions in mm									α_1°	Design	Balancing	
			A	L	I ₁	I ₅	I ₆	D	D ₃	D ₄					
DIN40 ADB	M20	E3469582020110	110	178,4	90,9	75	25	36,5	37,5	44,45	4,0	1	1	1,60	
	M20	E346958212045	45	113,4	25,9	20	10	36,5	37,0	-	-	2	1	1,00	
	M20	E346958212085	85	153,4	65,9	60	20	36,5	37,0	-	-	2	1	1,20	
DIN50 ADB	M20	E347158202095	95	196,75	75,9	65	25	36,5	37,5	50,5	9,3	1	1	3,20	
	M20	E3471582020145	145	246,75	125,9	115	20	36,5	37,5	52,5	6,9	1	1	4,00	
	M20	E3471582120110	110	211,75	90,9	80	25	36,5	37,0	-	-	2	1	3,20	

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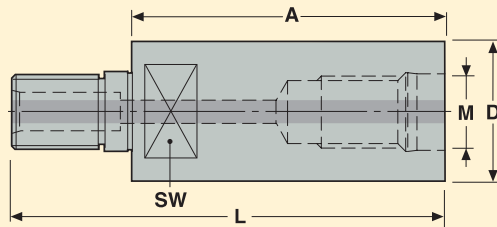
Machine side	Workpiece side	Part No.	Dimensions in mm								α_1°	Design	Balancing	
			A	L	I ₁	I ₅	I ₆	D	D ₃	D ₄				
Taper	Combimaster size													
BT40 ADB	M6	E341458200660	60	125,4	33	25	10	11,0	11,7	14,5	5,3	1	1	1,00
	M8	E341458210860	60	125,4	33	25	10	13,5	14,5	–	–	2	1	1,00
	M10	E341458201060	60	125,4	33	25	10	18,5	19,7	23,0	6,3	1	1	1,10
	M10	E341458201085	85	150,4	58	50	15	18,5	19,7	24,5	3,9	1	1	1,10
	M10	E3414582010135	135	200,4	108	100	20	18,5	19,7	27,5	2,8	1	1	1,30
	M10	E341458211060	60	125,4	33	25	10	18,5	19,7	–	–	2	1	1,00
	M12	E341458201240	40	105,4	13	5	5	23,0	24,7	24,7	0	1	1	1,00
	M12	E341458201260	60	125,4	33	25	10	23,0	24,7	28,5	7,2	1	1	1,10
	M12	E341458201285	85	150,4	58	50	20	23,0	24,7	30,0	5	1	1	1,20
	M12	E3414582012110	110	175,4	83	75	25	23,0	24,7	31,5	3,9	1	1	1,30
	M12	E3414582012135	135	200,4	108	100	30	23,0	24,7	33,0	3,4	1	1	1,40
	M12	E341458211260	60	125,4	33	25	10	23,0	23,5	–	–	2	1	1,10
	M12	E341458211285	85	150,4	58	50	20	23,0	23,5	–	–	2	1	1,10
	M16	E341458201640	40	105,4	13	5	5	30,0	31,7	31,7	0	1	1	1,10
	M16	E341458201660	60	125,4	33	25	10	30,0	31,7	35,5	7,2	1	1	1,20
	M16	E341458201685	85	150,4	58	50	20	30,0	31,7	37,0	5	1	1	1,30
	M16	E3414582016110	110	175,4	83	75	25	30,0	31,7	38,5	3,9	1	1	1,50
	M16	E3414582016135	135	200,4	108	100	30	30,0	31,7	40,5	3,6	1	1	1,70
	M16	E3414582016185	185	250,4	158	150	35	30,0	31,7	50,0	4,5	1	1	2,40
	M20	E3414582020110	110	175,4	83	75	25	36,5	37,5	44,5	4	1	1	1,70
M20	E341458212045	45	110,4	18	10	5	36,5	37,0	–	–	2	1	1,10	
M20	E341458212085	85	150,4	58	50	20	36,5	37,0	–	–	2	1	1,40	
BT50 ADB	M12	E341658201295	95	196,8	57	50	20	23,0	24,7	35,0	9,7	1	1	3,80
	M12	E3416582012145	145	246,8	107	100	30	23,0	24,7	41,0	6,6	1	1	4,10
	M12	E3416582012195	195	296,8	157	150	30	23,0	24,7	42,5	4,2	1	1	4,40
	M16	E341658201695	95	196,8	57	50	20	30,0	31,7	42,5	10,2	1	1	3,90
	M16	E3416582016145	145	246,8	107	100	30	30,0	31,7	49,0	7	1	1	4,40
	M16	E3416582016195	195	296,9	157	150	35	30,0	31,7	50,0	4,5	1	1	4,80
	M16	E3416582016245	245	346,8	207	200	35	30,0	31,7	55,0	4	1	1	5,40
	M16	E3416582016295	295	396,8	257	250	35	30,0	31,7	59,5	3,7	1	1	6,30
	M20	E341658202095	95	196,8	57	50	20	36,5	37,5	48,5	10,4	1	1	4,00
	M20	E3416582020145	145	246,8	107	100	30	36,5	37,5	54,5	6,9	1	1	4,60
		E3416582120110	110	211,8	72	65	25	36,5	37,0	–	–	2	1	4,10


Please check availability in current price and stock-list



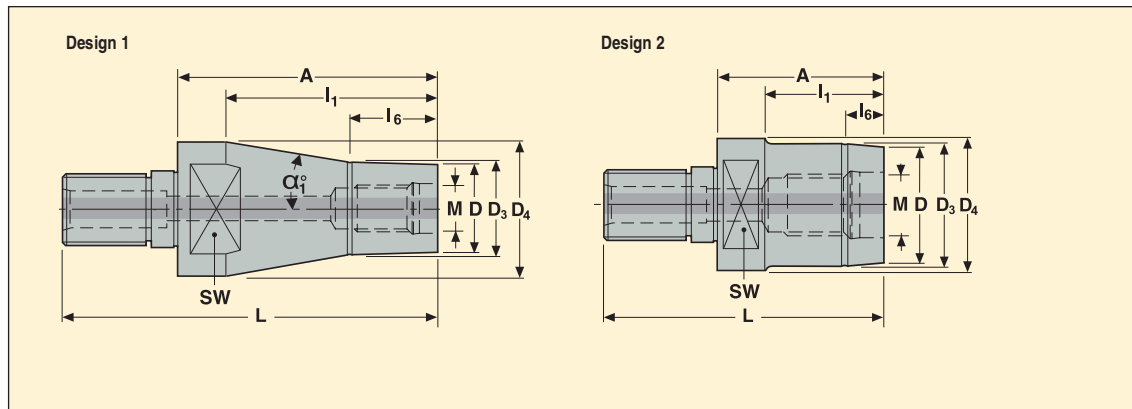
Machine side Taper Seco-Capto™	Workpiece side Combimaster size	Part No.	Dimensions in mm								α ₁ °	Balancing	 KG
			A	D	D ₃	D ₄	L	I ₁	I ₅	I ₆			
C3	M6	C3-391.5820-06030	30	11,0	11,7	13,5	49	12	10	5	10,2	1	0,14
	M8	C3-391.5820-08030	30	13,5	15,7	17,5	49	12	10	5	10,2	1	0,14
	M10	C3-391.5820-10030	30	18,5	19,7	22,0	49	12	10	5	13,2	1	0,15
	M12	C3-391.5820-12035	35	23,0	24,7	28,0	54	17	15	10	18,3	1	0,18
	M16	C3-391.5820-16040	40	30,0	31,7	32,0	59	–	–	10	0,9	1	0,23
C4	M6	C4-391.5820-06030	30	11,0	11,7	11,7	54	7	5	5	–	1	0,29
	M8	C4-391.5820-08030	30	13,5	15,7	15,7	54	7	5	5	–	1	0,26
	M10	C4-391.5820-10035	35	18,5	19,7	22,0	59	12	10	5	13,0	1	0,28
	M12	C4-391.5820-12040	40	23,0	24,7	28,0	64	17	15	10	18,3	1	0,33
	M16	C4-391.5820-16045	45	30,0	31,7	35,5	69	22	21	10	10,8	1	0,38
C5	M6	C5-391.5820-06050	50	11,0	11,7	14,5	80	27	25	10	5,3	1	0,49
	M8	C5-391.5820-08050	50	13,5	15,7	18,5	80	27	25	10	5,3	1	0,47
	M10	C5-391.5820-10050	50	18,5	19,7	23,0	80	27	25	10	6,3	1	0,52
	M12	C5-391.5820-12050	50	23,0	24,7	28,5	80	27	25	10	7,2	1	0,56
	M16	C5-391.5820-16075	75	30,0	31,7	37,0	105	52	50	20	5,0	1	0,75
C6	M20	C5-391.5820-20075	75	36,5	37,5	43,0	105	52	50	20	5,3	1	0,90
	M6	C6-391.5820-06050	50	11,0	11,7	14,0	88	25	20	10	6,6	1	0,84
	M8	C6-391.5820-08075	75	13,5	15,7	20,0	113	50	45	15	4,1	1	0,89
	M10	C6-391.5820-10075	75	18,5	19,7	24,0	113	50	45	15	4,1	1	0,93
	M12	C6-391.5820-12050	50	23,0	24,7	28,0	88	25	20	10	9,4	1	0,85
	M12	C6-391.5820-12075	75	23,0	24,7	29,5	113	50	45	20	5,5	1	0,99
	M16	C6-391.5820-16050	50	30,0	31,7	35,5	88	25	20	10	10,8	1	0,90
C8	M16	C6-391.5820-16075	75	30,0	31,7	37,0	113	50	45	20	6,1	1	1,09
	M20	C6-391.5820-20075	75	36,5	37,5	42,5	113	50	45	20	5,8	1	1,20
	M12	C8-391.5820-12085	85	23,0	24,7	35,0	133	52	50	20	9,7	1	2,04
	M16	C8-391.5820-16085	85	30,0	31,7	42,5	133	52	50	20	10,2	1	2,16

Please check availability in current price and stock-list



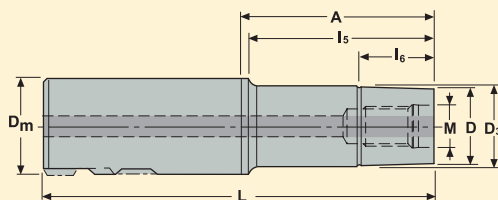
Machine side Combimaster (shank) size	Workpiece side Combimaster (bore) size	Part No.	Dimensions in mm				Balancing	 KG
			A	L	D	SW		
M6	M6	BS00658200625	25	38,5	11,0	9	2	0,10
M8	M8	BS00858200830	30	47,75	13,5	11	2	0,10
M10	M10	BS01058201035	35	53,75	18,5	15	2	0,10
M12	M12	BS01258201240	40	61,75	23,0	19	2	0,20
M16	M16	BS01658201640	40	62,75	30,0	26	2	0,20
M20	M20	BS02058202045	45	72	36,5	32	2	0,30

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Machine side Combimaster (shank) size	Workpiece side Combimaster (bore) size	Part No.	Dimensions in mm								α_1°	Design	Balancing	
			A	L	l ₁	l ₆	D	D ₃	D ₄	SW				
M8	M6	BS00858200625	25	42,75	14	6	11,0	11,7	13,5	11	6,4	1	2	0,10
	M10													
M10	M6	BS01058200635	35	53,75	22	6	11,0	11,7	18,5	15	12,0	1	2	0,10
	M8	BS01058200830	30	48,75	17	8	13,5	15,7	18,5	15	8,8	1	2	0,10
M12	M10	BS01258201035	35	56,75	24	8	18,5	19,7	23,0	19	5,9	1	2	0,10
M16	M10	BS01658201060	60	82,75	49	8	18,5	19,7	30,0	26	7,2	1	2	0,30
	M12	BS01658201240	40	62,75	29	8	23,0	24,7	30,0	26	7,2	1	2	0,20
M20	M16	BS02058201645	45	72	27	10	30,0	31,7	36,5	32	–	2	2	0,30

Please check availability in current price and stock-list



Machine side Weldon shank D _m	Workpiece side Combimaster size	Part No.	Dimensions in mm						Balancing	
			A	L	I ₅	I ₆	D	D ₃		
20	M10	BW02058211030	30	80	25	10	18,5	18,5	2	0,20
	M10	BW020582110102	102	152	97	20	18,5	18,5	2	0,40
25	M12	BW02558211245	45	101	40	20	23,0	23,5	2	0,40
	M12	BW025582112115	115	171	110	30	23,0	23,5	2	0,60
32	M16	BW03258211645	45	105	40	20	30,0	30,5	2	0,60
40	M20	BW040582120102	102	172	97	30	36,5	37,0	2	1,50

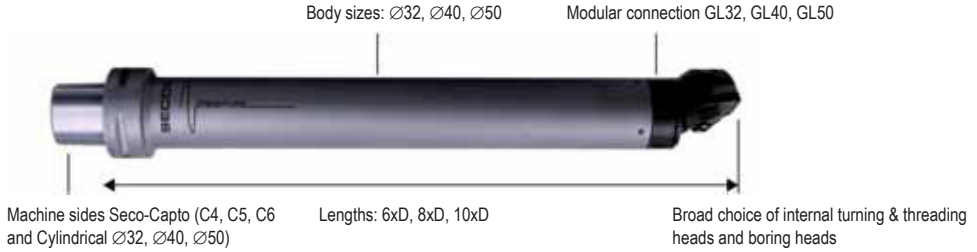
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Launch of Steadylite® holders GL which extend the Steadylite® tooling range: for Steadylite® Shell mill and Combimaster® holders, see Tooling catalogue.

EPB Steadylite® damping holders with a connection GL

The range :

- Available in 3 body sizes: $\varnothing 32$ mm, $\varnothing 40$ mm, $\varnothing 50$ mm
- Available with 3 GL workpiece side connection sizes: GL32, GL40, GL50
- Available in 3 lengths: 6xD, 8xD, 10xD



Increase your productivity

Every aspect of Steadylite® holders GL has been designed with a consideration for increasing productivity, capacity and profitability.

- Patented GL connection: cost and time savings due to quick change system with clamping nut using a fine pitch thread. Polylobe-based connection for centering accuracy and repeatability.
- Optimum damping effect through short and compact heads
- Flexibility by using same bars for turning, threading and boring
- Through coolant to improve tool life and chip evacuation

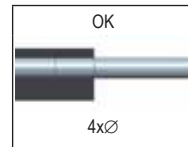
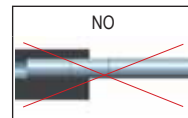


Machine clamping recommendations

Seco's top recommendation for clamping the bars onto the machines is to use bars with Seco-Capto™ machine sides due to several advantages:

- Maximum stability because of taper-face system and higher bending resistance
- High positioning accuracy of cutting edge

When Seco-Capto™ is not an option, Seco recommends to fit cylindrical bars in a split boring bar holder, inserted at optimum to 4xD.



Detailed operating instructions are part of bars delivery content.

Internal turning and threading heads GL: see MN Turning 2015.

Rough and fine boring heads GL: see page(s) 361, 361-377, 377

Steadyline® damping system, general information

The patented Steadyline® damping system

A built-in vibration absorber dampens the vibrations as soon as they are transmitted by the cutting tool to the body of the holder. It prevents them from spreading along the bar, thus limiting the deflection of the milling assembly.

As a result, Steadyline® vibration damping holders offer up to three times greater dynamic rigidity than equivalent solid holders.

The holders are ready to use, and offer the damping advantages regardless the type of rotating or static (turning) machining operation, the number of teeth in the cutter or the workpiece material.



Productivity booster

The Steadyline® vibration damping system allows longer assemblies, much higher cutting conditions, with quieter operation and optimum stability. Key benefits are increased productivity, improved surface finish and longer tool and spindle life.

Problem solver

Steadyline® holders are particularly recommended for:

- Milling, internal turning & threading and boring operations with long overhangs with predominantly radial forces.
- Machining of deep cavities in mould and die workpieces.
- Machining of complex monolithic (one piece) workpieces, particularly in the aerospace, automotive, power generation and oil and gas industries.

Steadyline® tooling range

For milling, holders with Steadyline® damping systems are available with Shell mill and Combimaster® tool connections. For internal turning, threading and boring, holders with Steadyline® damping and a GL tool connection are available: a same holder can be used for several operations, by interchange of tools with GL machine sides, see Turning and Holemaking catalogues.

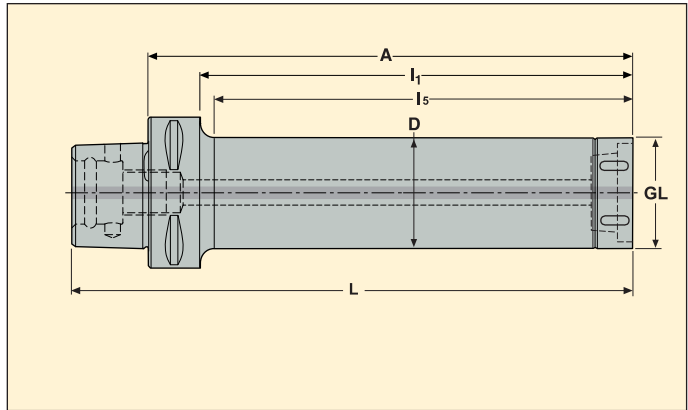
Steadyline® damping is also widely applicable on custom made tooling and tools, please inquire.

EPB GL – Seco-Capto™ to Steadyliner® GL holders

Seco-Capto™/ISO 26623-1



- With dynamic damping, ready to use
- With through coolant



Machine side Seco-Capto™ shank size	Workpiece side GL bore size	Part No.	Dimensions in mm					Max. RPM *	Balancing	
			A	D	L	I ₁	I ₅			
C4	GL32	C4-D32-160-GL32	160	32	189,3	140	137	4000	2	1,20
	GL32	C4-D32-224-GL32	224	32	253,3	204	201	4000	2	1,70
	GL32	C4-D32-288-GL32	288	32	317,5	268	265	4000	2	2,10
C5	GL32	C5-D32-160-GL32	160	32	195,5	140	136	4000	2	1,40
	GL32	C5-D32-224-GL32	224	32	259,5	204	200	4000	2	1,80
	GL32	C5-D32-288-GL32	288	32	323,5	268	264	4000	2	2,20
	GL40	C5-D40-208-GL40	208	40	244,5	188	184	3500	2	2,50
	GL40	C5-D40-288-GL40	288	40	324,3	268	264	3500	2	3,30
	GL40	C5-D40-368-GL40	368	40	404,5	348	344	3500	2	4,30
C6	GL32	C6-D32-160-GL32	160	32	203,5	135	129	4000	2	1,80
	GL32	C6-D32-224-GL32	224	32	267,3	199	193	4000	2	2,20
	GL32	C6-D32-288-GL32	288	32	331,5	263	257	4000	2	2,60
	GL40	C6-D40-208-GL40	208	40	252,5	183	177	3500	2	2,90
	GL40	C6-D40-288-GL40	288	40	332,3	263	257	3500	2	3,70
	GL40	C6-D40-368-GL40	368	40	412,5	343	337	3500	2	4,60
	GL50	C6-D50-268-GL50	268	50	313,5	243	238	2500	2	5,00
	GL50	C6-D50-368-GL50	368	50	413,5	343	338	2500	2	6,60
	GL50	C6-D50-468-GL50	468	50	513,5	443	438	2500	2	8,50

* Max. RPM only when used in rotating boring

Accessories

For nut of GL bore size	Replaceable end	Torque key
GL32	SL00-32	SL00-32.250
GL40	SL00-40	SL00-40.350
GL50	SL00-50	SL00-50.550

Spare Parts

For nut of GL bore size	Locking key
GL32	SL32
GL40	SL40
GL50	SL50

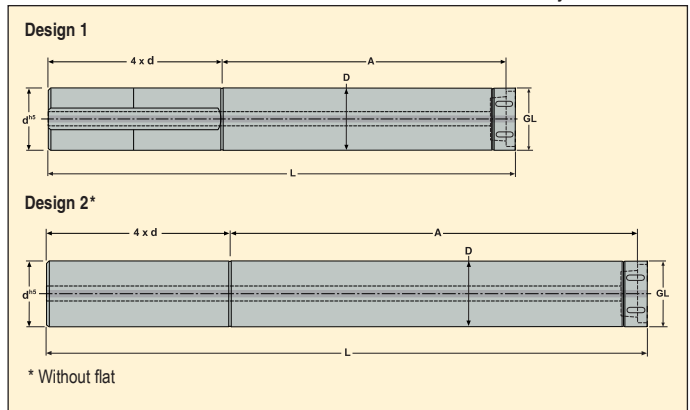
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EPB GL – Cylindrical to Steadyline® GL holders

Cylindrical shank



- With dynamic damping, ready to use
- With through coolant



Machine side	Workpiece side	Part No.	Dimensions in mm			Design	
			A	D	L		
32	GL32	D32-160-GL32	160	32	293,5	1	1,80
	GL32	D32-224-GL32	224	32	357,5	1	2,30
	GL32	D32-288-GL32	288	32	421,5	2	2,70
40	GL40	D40-208-GL40	208	40	374,5	1	3,80
	GL40	D40-288-GL40	288	40	454,5	1	4,60
	GL40	D40-368-GL40	368	40	534,5	2	5,50
50	GL50	D50-268-GL50	268	50	475,5	1	7,50
	GL50	D50-368-GL50	368	50	575,5	1	9,10
	GL50	D50-468-GL50	468	50	675,5	2	11,00

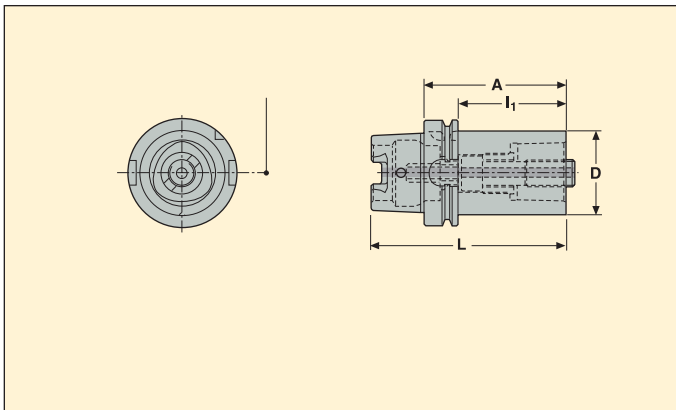
Accessories

For nut of GL bore size	Replaceable end	Torque key
GL32	SL00-32	SL00-32.250
GL40	SL00-40	SL00-40.350
GL50	SL00-50	SL00-50.550

Spare Parts

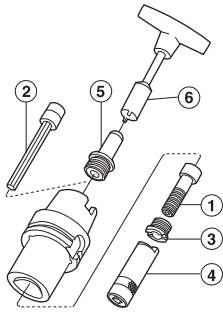
For nut of GL bore size	Locking key
GL32	SL32
GL40	SL40
GL50	SL50

Please check availability in current price and stock-list



Machine side Taper	Workpiece side Seco-Capto™ size	Part No.	Dimensions in mm				Balancing	KG
			A	D	L	I ₁		
HSK-A63	C3	C3-390.410-63075C	75	32	107	49	2	0,90
	C4	C4-390.410-63080C	80	40	112	54	2	1,06
	C5	C5-390.410-63090C	90	50	122	64	2	1,41
HSK-A100	C3	C3-390.410-100080A	80	32	130	51	2	2,30
	C4	C4-390.410-100090A	90	40	140	61	2	2,50
	C5	C5-390.410-100100A	100	50	150	71	2	2,90
	C6	C6-390.410-100110A	110	63	160	81	2	3,56
	C8	C8-390.410-100120A	120	80	170	91	2	4,72

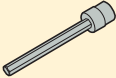

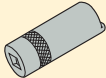
Please check availability in current price and stock-list
Failure to fit a coolant tube or coolant plug may result in damage to the machine spindle



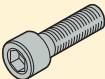


Accessories:
 2 = Extension key
 4 = Spanner
 6 = Key for coolant tube

Spare Parts:
 1 = Centre screw
 3 = Retaining nut
 5 = Coolant tube*

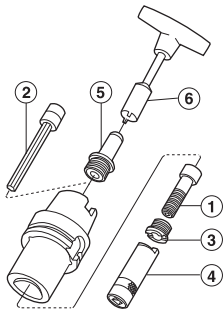
Accessories

For	Extension Key	Key	Spanner
			
C3-390.410-63075C	5680015-05	5680094-04	5680065-13
C3-390.410-100080A	5680015-05	5680094-06	5680065-13
C4-390.410-63080C	5680015-05	5680094-04	5680065-10
C4-390.410-100090A	5680015-05	5680094-06	5680065-10
C5-390.410-63090C	5680015-01	5680094-04	5680065-11
C5-390.410-100100A	5680015-01	5680094-06	5680065-11
C6	5680015-02	5680094-06	5680065-12
C8	5680015-02	5680094-06	5680065-12

Spare Parts*

For	Centre screw	Coolant tube	Retaining nut
			
C3-390.410-63075C	5512063-10	5692020-04	5512091-04
C3-390.410-100080A	5512063-10	5692020-06	5512091-04
C4-390.410-63080C	5512063-07	5692020-04	5512091-03
C4-390.410-100090A	5512063-07	5692020-06	5512091-03
C5-390.410-63090C	5512063-08	5692020-04	5512091-01
C5-390.410-100100A	5512063-08	5692020-06	5512091-01
C6	5512063-09	5692020-06	5512091-02
C8	5512063-09	5692020-06	5512091-02

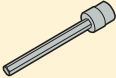

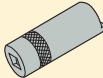
* A special coolant tube is delivered together with each Seco-Capto™ HSK basic holder



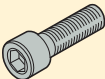


Accessories:
 2 = Extension key
 4 = Retaining nut spanner
 6 = Key for coolant tube

Spare Parts:
 1 = Centre screw
 3 = Retaining nut
 5 = Coolant tube*

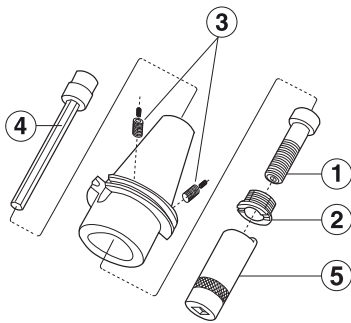
Accessories

For	Extension key	Key	Spanner
			
C4-390.411-63080	5680015-05	5680094-04	5680065-10
C4-390.411-100090	5680015-05	5680094-06	5680065-10
C5-390.411-63090	5680015-01	5680094-04	5680065-11
C5-390.411-100100	5680015-01	5680094-06	5680065-11
C6	5680015-02	5680094-06	5680065-12
C8	5680015-02	5680094-06	5680065-12

Spare Parts*

For	Centre screw	Coolant tube	Retaining nut
			
C4-390.411-63080	5512063-07	5692020-04	5512091-03
C4-390.411-100090	5512063-07	5692020-06	5512091-03
C5-390.411-63090	5512063-08	5692020-04	5512091-01
C5-390.411-100100	5512063-08	5692020-06	5512091-01
C6	5512063-09	5692020-06	5512091-02
C8	5512063-09	5692020-06	5512091-02

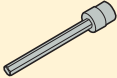
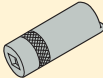
* A special coolant tube is delivered together with each Seco-Capto™ HSK basic holder



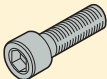


Accessories:
3 = Extension key
5 = Spanner

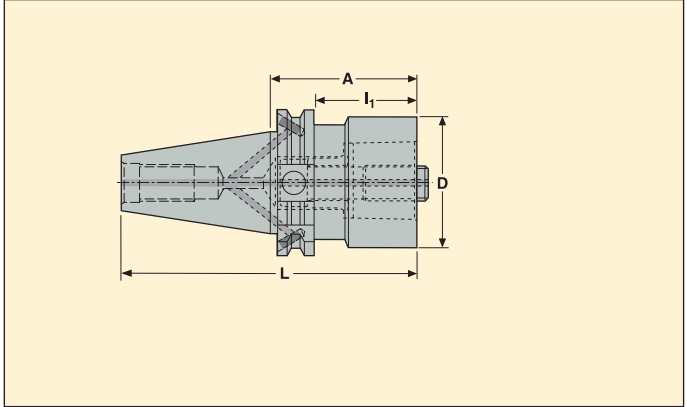
Spare Parts:
1 = Centre screw
2 = Retaining nut
3 = Sealing plugs

Accessories

For	Extension key	Spanner
		
C3-300	5680015-05	5680065-13
C3-400	5680015-05	5680065-13
C3-500	5680015-05	5680065-13
C4-400	5680015-05	5680065-10
C4-500	5680015-05	5680065-10
C5-400	5680015-01	5680065-11
C5-500	5680015-01	5680065-11
C6-400	5680015-01	5680065-12
C6-500	5680015-02	5680065-12
C8	5680015-02	5680065-12

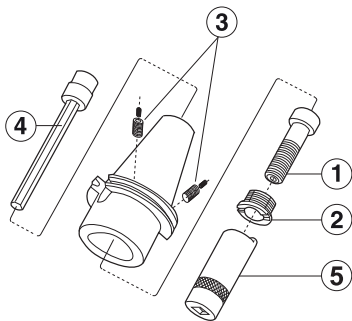
Spare Parts

For	Centre screw	Retaining nut	Sealing plugs
			
C3-300	5512063-10	5512091-04	–
C3-400	5512063-10	5512091-04	564301701
C3-500	5512063-10	5512091-04	564301702
C4-400	5512063-07	5512091-03	564301701
C4-500	5512063-07	5512091-03	564301702
C5-400	5512063-08	5512091-01	564301701
C5-500	5512063-08	5512091-01	564301702
C6-400	5512063-13	5512091-02	564301701
C6-500	5512063-09	5512091-02	564301702
C8	5512063-09	5512091-02	564301702



Machine side	Workpiece side	Part No.	*	Dimensions in mm				Balancing	KG	
				A	D	L	I ₁			
Taper	Seco-Capto™ size									
	DIN TF40 ADB									
	C3	C3-390B.540-40030		30	32	98,4	10,9	2	0,80	
	C4	C4-390B.540-40040		40	40	108,4	20,9	2	0,90	
	C5	C5-390B.540-40050		50	50	118,4	30,9	2	1,10	
	C6	C6-390B.540-40085	*	85	63	153,4	65,9	–	1,80	
DIN TF50 ADB	C3	C3-390.540-50030A		30	32	131,7	10,9	–	2,64	
	C3	C3-390.540-50060		60	32	161,7	40,9	–	2,90	
	C4	C4-390.540-50030A		30	40	131,7	10,9	–	2,65	
	C4	C4-390.540-50060		60	40	161,7	40,9	–	2,90	
	C5	C5-390.540-50030A		30	50	131,7	10,9	–	2,60	
	C5	C5-390.540-50070		70	50	171,7	50,9	–	3,20	
	C6	C6-390.540-50050A		50	63	151,7	30,9	–	2,40	
	C6	C6-390.540-50100		100	63	201,7	80,9	–	4,10	
	C8	C8-390.540-50070A		70	80	171,7	50,9	–	3,70	
	C8	C8-390.540-50120		120	80	221,7	100,9	–	5,60	

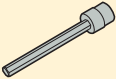
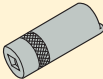
Please check availability in current price and stock-list * As on that holder(s) the machine side interface is weaker than the tool side, some caution with this area of usage is required ** Taper-Face (TF) holders have a larger flange towards machine side, with tight tolerances: They achieve taper and face contacts on machine spindles with Taper-Face dimensions. They are also usable on standard spindles, however a gap remains between spindle and flange faces.



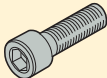


Accessories:
 3 = Extension key
 5 = Spanner

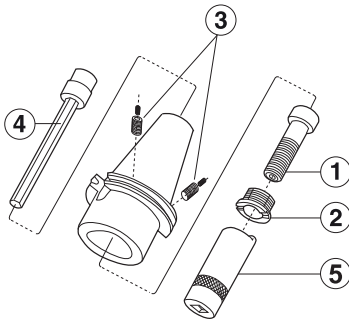
Spare Parts:
 1 = Centre screw
 2 = Retaining nut
 3 = Sealing plugs

Accessories

For	Extension key	Spanner
		
C3	5680015-05	5680065-13
C4	5680015-05	5680065-10
C5	5680015-01	5680065-11
C6	5680015-02	5680065-12
C6-390B.540-40085	5680015-01	5680065-12
C8	5680015-02	5680065-12

Spare Parts

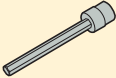
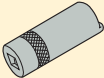
For	Centre screw	Retaining nut	Sealing plugs
			
C3-390.540-50030A	5512063-10	5512091-04	–
C3-390.540-50060	5512063-10	5512091-04	564301702
C3-390B.540-40030	5512063-10	5512091-04	564301701
C4-390.540-50030A	5512063-07	5512091-03	–
C4-390.540-50060	5512063-07	5512091-03	564301702
C4-390B.540-40040	5512063-07	5512091-03	564301701
C5-390.540-50030A	5512063-08	5512091-01	–
C5-390.540-50070	5512063-08	5512091-01	564301702
C5-390B.540-40050	5512063-08	5512091-01	564301701
C6-390.540-50050A	5512063-09	5512091-02	–
C6-390.540-50100	5512063-09	5512091-02	564301702
C6-390B.540-40085	5512063-13	5512091-02	564301701
C8-390.540-50070A	5512063-09	5512091-02	–
C8-390.540-50120	5512063-09	5512091-02	564301702



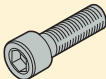


Accessories:
4 = Extension key
5 = Spanner

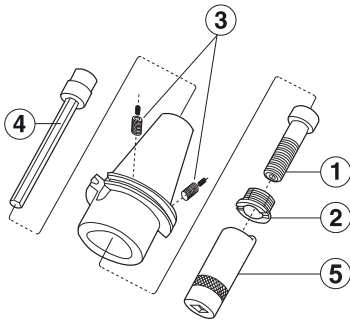
Spare Parts:
1 = Centre screw
2 = Retaining nut
3 = Sealing plugs

Accessories

For	Extension key	Spanner
		
C3-390.55	5680015-05	5680065-13
C3-390B.55	5680015-05	5680065-13
C3-390B.58	5680015-05	5680065-13
C4-390B.55	5680015-05	5680065-10
C4-390B.58	5680015-05	5680065-10
C5-390B.55	5680015-01	5680065-11
C5-390B.58	5680015-01	5680065-11
C6-390B.55	5680015-01	5680065-12
C6-390B.58	5680015-02	5680065-12
C8	5680015-02	5680065-12

Spare Parts

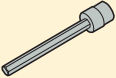
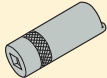
For	Centre screw	Retaining nut	Sealing plugs
			
C3-390.55	5512063-10	5512091-04	–
C3-390B.55	5512063-10	5512091-04	564301701
C3-390B.58	5512063-10	5512091-04	564301702
C4-390B.55	5512063-07	5512091-03	564301701
C4-390B.58	5512063-07	5512091-03	564301702
C5-390B.55	5512063-08	5512091-01	564301701
C5-390B.58	5512063-08	5512091-01	564301702
C6-390B.55	5512063-13	5512091-02	564301701
C6-390B.58	5512063-09	5512091-02	564301702
C8	5512063-09	5512091-02	564301702



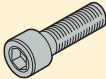


Accessories:
4 = Extension key
5 = Spanner

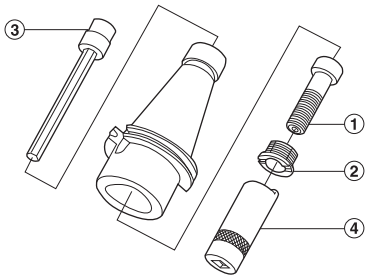
Spare Parts:
1 = Centre screw
2 = Retaining nut
3 = Sealing plugs

Accessories

For	Extension key	Spanner
		
C3-555	5680015-05	5680065-13
C3-558	5680015-05	5680065-13
C4-555	5680015-05	5680065-10
C4-558	5680015-05	5680065-10
C5-555	5680015-01	5680065-11
C5-558	5680015-01	5680065-11
C6-555	5680015-01	5680065-12
C6-558	5680015-02	5680065-12
C8	5680015-02	5680065-12

Spare Parts

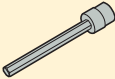
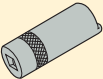
For	Centre screw	Retaining nut	Sealing plugs
			
C3-555	5512063-10	5512091-04	564301701
C3-558	5512063-10	5512091-04	564301702
C4-555	5512063-07	5512091-03	564301701
C4-558	5512063-07	5512091-03	564301702
C5-555	5512063-08	5512091-01	564301701
C5-558	5512063-08	5512091-01	564301702
C6-555	5512063-13	5512091-02	564301701
C6-558	5512063-09	5512091-02	564301702
C8	5512063-09	5512091-02	564301702



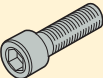

Accessories:
 3 = Extension key
 4 = Spanner

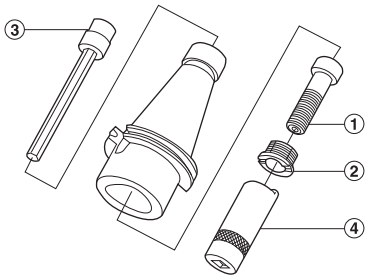
Spare Parts:
 1 = Centre screw
 2 = Retaining nut

Accessories

For	Extension key	Spanner
		
C5	5680015-01	5680065-11
C6	5680015-02	5680065-12
C8	5680015-02	5680065-12

Spare Parts

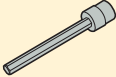
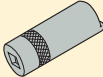
For	Centre screw	Retaining nut
		
C5	5512063-08	5512091-01
C6	5512063-09	5512091-02
C8	5512063-09	5512091-02



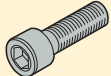

Accessories:
3 = Extension key
4 = Spanner

Spare Parts:
1 = Centre screw
2 = Retaining nut

Accessories

For	Extension Key	Spanner
		
C3	5680015-05	5680065-13
C4	5680015-05	5680065-10
C5	5680015-01	5680065-11
C6-400	5680015-01	5680065-12
C6-500	5680015-02	5680065-12
C8	5680015-02	5680065-12

Spare Parts

For	Centre screw	Retaining nut
		
C3	5512063-10	5512091-04
C4	5512063-07	5512091-03
C5	5512063-08	5512091-01
C6-400	5512063-13	5512091-02
C6-500	5512063-09	5512091-02
C8	5512063-09	5512091-02

Steels, ferritic and martensitic stainless steels

SMG	Description	Properties	Reference
P1	Free-cutting steels	$360 < R_m < 880$	11 SMn30 $R_m = 385 \text{ N/mm}^2$
P2	Low alloy ferritic steels, $C < 0.25\% \text{wt}$ Low alloy weldable general structural steels	$320 < R_m < 600$	S235JRG2 $R_m = 420 \text{ N/mm}^2$
P3	Ferritic & ferritic/pearlitic steels, $C < 0.25\% \text{wt}$ Weldable general structural steels Case hardening steels	$430 < R_m < 610$	16 MnCr 5 $R_m = 550 \text{ N/mm}^2$
P4	Low alloy general structural steels, $0.25\% < C < 0.67\% \text{wt}$ Low alloy Quench & Temper steels	$520 < R_m < 1200$	C 45E $R_m = 660 \text{ N/mm}^2$
P5	Structural steels, $0.25\% < C < 0.67\% \text{wt}$ Quench & Temper steels	$550 < R_m < 1200$	42 CrMo 4 $R_m = 700 \text{ N/mm}^2$
P6	Low alloy through hardening steels, $C > 0.67\% \text{wt}$ Low alloy spring and bearing steels	$520 < R_m < 1200$	C 100S $R_m = 600 \text{ N/mm}^2$
P7	Through hardening steels, $C > 0.67\% \text{wt}$ Spring and bearing steels	$600 < R_m < 1200$	100 Cr 6 $R_m = 650 \text{ N/mm}^2$
P8	Tool steels High Speed Steels (HSS)	$600 < R_m < 1200$	X 40 CrMoV 5 1 $R_m = 700 \text{ N/mm}^2$
P11	Ferritic & martensitic stainless steels	$415 < R_m < 1200$	X 20 Cr 13 $R_m = 675 \text{ N/mm}^2$

Free-cutting, austenitic and duplex stainless steels

SMG	Description	Properties	Reference
M1	Free-cutting austenitic stainless steels		X 10 CrNiS 18 9
M2	Low alloy austenitic stainless steels		X 5 CrNi 18 9
M3	Medium alloy austenitic stainless steels		X 2 CrNiMo 18 14 3
M4	High alloy austenitic and duplex stainless steels		X 2 CrNiMoN 22 5 3
M5	Difficult high alloy austenitic and duplex stainless steels		X 2 CrNiMoN 25 7 4

Cast irons

SMG	Description	Properties	Reference
K1	Grey cast irons (GCI)		EN-GJL-250
K2	Compacted graphite irons (CGI)		EN-GJV-400
K3	Malleable cast irons (MCI)		EN-GJMB-550-4
K4	Nodular cast irons (SGI)		EN-GJS-500-7
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
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

Superalloys and titanium

SMG	Description	Properties	Reference
S1	Iron based superalloys		Discalloy
S2	Cobalt based superalloys		Stellite 21
S3	Nickel based superalloys		Inconel 718
S11	Titanium, low alloyed, (α)		Ti
S12	Titanium, medium alloyed, ($\alpha+\beta$)		TiAl6V4
S13	Titanium, high alloyed, (near β and β)		Ti10V2Fe3Al

Hard materials

SMG	Description	Properties	Reference
H3	Case hardened steels	58 < HRC < 62	16 MnCr 5 60 HRC
H5	Quenched & Tempered steels	38 < HRC < 56	42 CrMo 4 50 HRC
H7	Quenched & Tempered steels Bearing steels	56 < HRC < 64	100 Cr 6 60 HRC
H8	Tool steels High Speed Steels	38 < HRC < 64	X 40 CrMoV 5 1 50 HRC
H11	Martensitic stainless steels	38 < HRC < 50	X 20 Cr 13 45 HRC
H12	Precipitation hardened stainless steels	33 < HRC < 50	X 5 CrNiCuNb 16 4 35 HRC
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
PM1	Low alloy PM materials		F-0008 Fe-0.7C
PM2	Medium alloy PM materials		FLC-4608 Fe2Cu1.8Ni0.5Mo0.2Mn0.8C
PM3	High alloy PM materials Exhaust valve seat materials		
HF1	Hard facing alloys Welded or plasma deposited iron based alloys		
HF2	Hard facing alloys Welded or plasma deposited cobalt and nickel based alloys		
CC1	Sintered tungsten carbide		G50

Plastics and Composites

SMG	Description	Properties	Reference
TS1	Thermosetting polymers		Urea formaldehyde (UF)
TS2	Thermosetting Carbon fibre composites		T300 T700 T800 HTA-S IMA - Epoxy (M21)...
TS3	Thermosetting Glass fibre composites		Epoxy - HX.(42.)/E glass (7781...)...
TS4	Thermosetting Aramide fibre composites		Kevlar 49
TP1	Thermoplastic polymers		Polycarbonate (PC)
TP2	Thermoplastic Carbon fibre composites		PPS/PEEK - T300..
TP3	Thermoplastic Glass fibre composites		PPS/PEEK - E glass or A glass...
TP4	Thermoplastic Aramide fibre composites		

Graphite

SMG	Description	Properties	Reference
GR1	Graphite		R 8500

SMG

SMG	EN	EN-Nr	W-Nr	DIN	AFNOR	BS	UNI	JIS	SS	UNS	
P1	11 SMn30	1.0715	1.0715	9 SMn 28	S 250	230 M 07	CF 9 SMn 28	SUM 22	1912	G12130	
	11 SMnPb30	1.0718	1.0718	9 SMnPb 28	S 250 Pb		CF 9 SMnPb 28	SUM 22 L	1914	G12134	
	10 S 20	1.0721	1.0721	10 S 20	10 F 1	210 M 15	CF 10 S 20				
				1.0722	10 SPb 20	10 PbF 2		CF 10 SPb 20			
	15 SMn13	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 SMn37	1.0736	1.0736	9 SMn 36	S 300	240 M 07	CF 9 SMn 36			G12150	
	11 SMnPb 37	1.0737	1.0737	9 SMnPb 36	S 300 Pb		CF 9 SMnPb 36		1926	G12144	
	S235JR	1.0037	1.0037	St 37-2	E 24-2		Fe 360 B	STKM 12 C	1311		
P2	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	AF 34 C 10, XC 10	045 M 10	C 10	S 10 C		G10100	
			1.0401	C 15	AF3 7 C 12, XC 18	080 M 15	C 15, C 16		1350	G10170	
	C22+N	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		
P3			1.5423	16 Mo 5		1503-245-420	16 Mo 5	SB 450 M		G45200	
	14 NiCr 14	1.5752	1.5752	14 NiCr 14	12 NC 15	655 M 13		SNC 815 (H)		G33106	
			1.5919	15 CrNi 6	16 NC 6	S 107	16 CrNi 4				
	18 NiCrMo 7 6	1.6587	1.6587	18 CrNiMo 7 6	18 NCD 6	820 A 16	18 NiCrMo 7				
	16 MnCr 5	1.7131	1.7131	16 MnCr 5	16 MC 5	527 M 17	16 MnCr 5	SCR 415	2511	G51170	
	16 MnCrS 5	1.7139	1.7139	16 MnCrS 5							
	20 MnCr 5	1.7147	1.7147	20 MnCr 5	20 MC 5		20 MnCr 5	SMnC 420 (H)		G51200	
	20 MnCrS 5	1.7149	1.7149	20 MnCrS 5	20 MnCrS 5			SMnC 21 H			
	13 CrMo 4 5	1.7335	1.7335	13 CrMo 4 4	15 CD 3,5	1501-620 Gr. 27	14 CrMo 4 5		2216		
			1.7337	16 CrMo 4 4	15 CD 4,5	1501-620 Gr. 27	14 CrMo 4 5		2216		
10 CrMo 9 10	1.7380	1.7380	10 CrMo 9 10	10 CD 9,10	1501-622 Gr. 31	12 CrMo 9 10		2218	J21890		
P4	C35+N		1.0501	C 35	AF 55 C 35	060 A 35	C 35		1550	G10350	
	E 335	1.0503	1.0503	C 45	AF 65 C 45	80 M 46	C 45	S 45 C	1650	G10430	
	C40+N		1.0511	C 40	AF 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+N	1.0601	1.0601	C 60	CC 55	080 A 62	C 60			G10600	
			1.1157	40 Mn 4	35 M 5	150 M 36				G10390	
	G 28 Mn6	1.1165	1.1165	30 Mn 5		120 M 36		SMn 1 H, SCMn 2		G13300	
	G 28 Mn6+QT	1.1165	1.1167	36 Mn 5	40 M 5	150 M 36		SMn 438 (H), SCMn 3	2120	G13350	
	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		
P5			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		
	42 CrMo 4	1.7225	1.1201	42 CrMo 4	42 CD 4	708 M 40	42 CrMo 4	SCM 440 (H)	2244	G41400	
	42 CrMo 4	1.7225	1.1201	42 CrMo 4	42 CD 4	708 M 40	42 CrMo 4	SCM 440 (H)	2244	G41400	
			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)		
P6	36CrNiMo4+TA		1.6511	36 CrNiMo 4	40 NCD 3	816 M 40	38 NiCrMo 4 (KB)			G98400	
	34 CrNiMo 6	1.6582	1.6582	34 CrNiMo 6	35 NCD 6	817 M 40	35 NiCrMo 6 (KW)	SNCM 447	2541		
	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	
			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	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	
	A 573 Gr. 58	18kp		Annealed	
	A 573 Gr. 70	St14kP		Annealed	
	1010	10		Annealed	
F.1110	1015	15		Annealed	
	1023	20		Annealed	
		17G1S		Annealed	
F.1511	1015	15		Annealed	
F.1120	1025	25		Annealed	
				Annealed	
	A 204 Gr. A			Annealed	
	4520			Annealed	
	3310, 9314	20X2H4A		Annealed	
	4320			Annealed	
				Annealed	
F.1516	5115	12KHN2		Annealed	
		18HG		Annealed	
	5120	20KH		Annealed	
	5120 H	20KH		Annealed	
	A 182-F11, F12	12KHM		Annealed	
	A 387 Gr. 12 Cl. 2			Annealed	
F.155	A 182-F22	12KH8		Annealed	
F.1130	1035	35		Annealed	
F.5110	1045	45		Annealed	
	1040	40		Annealed	
F.1150	1055	55		Annealed	
	1060	60		Annealed	
	1039	40G		Annealed	
	1330	30G2		Annealed	
F.411	1335	35G2		Annealed	
F.1135	1035	35		Annealed	
F.1140	1045	45		Annealed	
F.1150	1064	60		Annealed	
	1060	60		Annealed	
F.144	9255	55S2		Annealed	
F.1252	4142, 4140	38HM		Annealed	
F.1252	4142, 4140	38HM		Quenched & Tempered	
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		Annealed	
	5132	35KH		Quenched & Tempered	
	5140	40H		Quenched & Tempered	
F.1251	4130	20KHM		Quenched & Tempered	
				Quenched & Tempered	
F.143	6150	50KHFA		Quenched & Tempered	
F.1740	A 355 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 CrMoV 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 06-05-04-02		HS 6-5-2-5	SKH 55	2723	
	HS 2-10-1-8	1.3247	1.3247	S 2-10-1-8	Z 110 DKCVW 09-08-04	BM 42	HS 2-9-1-8	SKH 51		T11342
	HS 18-1-2-5	1.3255	1.3255	S 18-1-2-5	Z 80 WKCVCV 18-05-04-01	BT 4	HS 18-1-1-5	SKH 3		T12004
	HS 6-5-2	1.3343	1.3343	S 6-5-2	Z 85 WDCVCV 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 DCVWV 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	
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	J91540	
X 18 CrN 28	1.4749	1.4749	X 18 CrN 28	Z 18 C 25					2322	S44600
M1	X 10 CrNiS 18 9	1.4305	1.4305	X 10 CrNiS 18 9	Z 10 CNF 18.09	303 S 31	X 10 CrNi 18 09	SUS 303	2346	S30300
	X 12 CrNi 18 8	1.4300	1.4300	X 12 CrNi 18 8	Z 12 CN 18	302 S 25		SUS 302	2331	S30200
	X 5 CrNi 18 9	1.4301	1.4301	X 6 CrNi 18 10	Z 6 CN 18.09	304 S 31	X 5 CrNi 18 11	SUS 304	2333	S30400
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 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 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
M3	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 12 CrNi 25 21	1.4335	1.4335	X 12 CrNi 25 21	Z 12 CN 25.20	310 S 24	X 6 CrNi 26 20	SUH 310, SUS 310 S	2361	S31008
	X 2 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 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 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 CrNiSiN 21 11 2	1.4835	1.4893	X 9 CrNiSiN 21 11 2		310 S 31			2368	S30815
M4	X 2 CrNiMoSi 19 5	1.4424	1.4417	X 2 CrNiMoSi 19 5	Z 2 CND 18.05.03				2376	S31500
	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 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 NiCrMoCu 25 20 5	1.4539	1.4539	X 2 NiCrMoCu 25 20 5	Z 2 NCDU 25 20	904 S 13			2562	N08904
M5	X 2 CrNiMo 25 7 4	1.4410	1.4410	X 2 CrNiMo 25 7 4	Z 3 CND 25.07 Az		X 2 CrNiMo 25 7 4		2328	S32750
	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 6 NiCrTiMoV 25 15	1.4534	1.4534	X 3 CrNiMoAl 13 8 2						S13800
		1.4540	1.4540	X 4 CrNiCuNb 16 4	Z 4 CNUNb 16.4 M					S15500
	X 3 CrNiMoAl 13 8 2	1.4568	1.4568	X 7 CrNiAl 17 7	Z 9 CAN 17.7	301 S 81	X 7 CrNiAl 17 7	SUS 631	2388	S17700
	X 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 5 CrNiCuNb 16 4	1.4980	1.4943	X 4 NiCrTi 25 15	Z 6 NCTDV 25.15	HR 51		SUH 660	2570	S66286	

SMG

U.N.E. / I.H.A.	AISI / ASTM	GOST	Misc. Brands	Condition	Structure
F.520L	L2	11KHF		Annealed	
F.5220	O1	9KHVG		Annealed	
	O2	9G2F		Annealed	
F.5230	52100	SHKH15		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	Ferrite
F.3401	410, CA-15	12KH13, 08KH13		Annealed	Martensite
F.3113	430	12KH17		Annealed	Ferrite
F.5261	420	20KH13		Annealed	Martensite
F.3404	420	40KH13		Annealed	Martensite
	440 A			Annealed	Martensite
	440 B	95KH18		Annealed	Martensite
	440 C	95KH18		Annealed	Martensite
			F6NM	Annealed	Martensite
	446	15KH28		Annealed	Ferrite
F.3508	303	12KH19N9		Annealed	Austenite
	302	12KH18N9		Annealed	Austenite
F.3504	304, 304 H	08KH18N10		Annealed	Austenite
F.3504	304 L	03KH18N11		Annealed	Austenite
F.3517	301	07KH16N6		Annealed	Austenite
F.3534	316	08KH17H13M2T		Annealed	Austenite
F.3524	347	08KH18N12B		Annealed	Austenite
F.3541	304 LN	03KH18N11		Annealed	Austenite
	310 S	12KH25N20		Annealed	Austenite
	316 LN	03KH16N15M3		Annealed	Austenite
F.3533	316 L	03KH17N14M3		Annealed	Austenite
	317	08KH17H15M3T		Annealed	Austenite
			253 MA	Annealed	Austenite
			3RE60	Annealed	Duplex
	329			Annealed	Duplex
	329 LN		SAF 2205	Annealed	Duplex
	904L			Annealed	Super austenite
	F 53		SAF 2507	Annealed	Super duplex
			254 SMO	Annealed	Super austenite
	XM-13		PH13-8Mo	Solution treated	Austenite
	XM-12		15-5-PH	Solution treated	Martensite
	AMS 5528	09KH17N7YU1	17-7-PH	Solution treated	Austenite/ferrite
			654 SMO	Annealed	Super austenite
			Alloy 800	Annealed	Austenite
	660		A286	Solution treated	Austenite

SMG

SMG	EN	EN-Nr	W-Nr	DIN	AFNOR	BS	UNI	JIS	SS	UNS
K1	EN-GJL-150	0.6150	0.6150	GG-15	F1 15 D	Grade 150	G15	FC 150	01 15-00	F11601
	EN-GJL-200	0.6200	0.6200	GG-20	F1 20 D	Grade 220	G20	FC 200	01 20-00	F12101
	EN-GJL-215			GG-220 HB					02 19	
	EN-GJL-250	0.6250	0.6250	GG-25	F1 25 D	Grade 260	G25	FC 250	01 25-00	F12401
	EN-GJL-300	0.6300	0.6300	GG-30	F1 30 D	Grade 300	G30	FC 300	01 30-00	F13101
EN-GJL-350	0.6350	0.6350	GG-35	F1 35 D	Grade 350	G35	FC 350	01 35-00	F13502	
K2	EN-GJV-300			GJV-300						
	EN-GJV-350			GJV-350						
	EN-GJV-400			GJV-400						
	EN-GJV-450			GJV-450						
EN-GJV-500			GJV-500							
K3	EN-GJMB-550-4	0.8155		GTS-55-04	P 540/5	P 540/5	P 55-04	PCMP55-04	08 54-00	F24130
K4	EN-GJS-350-22	0.7033	0.7033	GGG-35.3	FGS 370-17	Grade 350/22		FCD 350-22L	07 17-15	
	EN-GJS-400-15	0.7040	0.7040	GGG-40	FGS 400-12	Grade 420/12	GS 400-12	FCD 400-18L	07 17-02	F32800
	EN-GJS-400-18	0.7043	0.7043	GGG-40.3	FGS 370-17	Grade 370/17	GSO 42/17		07 17-12	F32800
	EN-GJS-500-7	0.7050	0.7050	GGG-50	FGS 500-7	Grade 500/7	GS 500-7	FCD 500-7	07 27-02	F33800
	EN-GJS-600-3	0.7060	0.7060	GGG-60	FGS 600-3	Grade 600/3	GS 600-3	FCD 600-3	07 32-03	F34100
EN-GJS-700-2	0.7070	0.7070	GGG-70	FGS 700-2	Grade 700/2	GS 700-2	FCD 700-2	07 37-01	F34800	
K5	-									ADI grade 5
	EN-GJS-1000-5			GJS-1000-5						ADI grade 2
	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
K6	EN-GJLA-XNiCr 20-2	0.6660	0.6660	GGL-NiCr 20 2	FGL Ni20 Cr2	Grade F2			05 23-00	F41002
	EN-GJLA-XNiCr 30-3	0.6676	0.6676	GGL-NiCr 30 3	FGL Ni30 Cr3	Grade F3				F41004
	EN-GJLA-XNiCuCr15-6-2	0.6655	0.6655	GGL-NiCuCr 15 6 2	FGL Ni15 Cu6 Cr2	Grade F1				F41000
K7	EN-GJSA-XNi35	0.7683	0.7683	GGG-Ni 35	FGS Ni35					F43006
	EN-GJSA-XNiCr20-2	0.7660	0.7660	GGG-NiCr 20 2	FGS Ni20 Cr2	Grade S2				F43000
	EN-GJSA-XNiCr30-3	0.7676	0.7676	GGG-NiCr 30 3	FGS Ni30 Cr3	Grade S3				F43003
	EN-GJSA-XNiMn13-7	0.7652	0.7652	GGG-NiMn 13 7	FGS Ni13 Mn7	Grade S6			07 72-00	-
	EN-GJSA-XNiMn23-4	0.7673	0.7673	GGG-NiMn 23 4	FGS Ni23 Mn4	Grade S2M				F43010
N1	AW-1050A	Al99.5	3.0255	Al99.5	A-5/1050A	1B		(A1050)	4007	AA1050A
	AW-3103	AlMn1	3.0515	AlMn1		N3			4054	AA3103
	AW-3003	AlMn1Cu	3.0517	AlMn1Cu	A-M1/3003			A3003		AA3003
	AW-2014	AlCuSiMn	3.1255	AlCuSiMn	A-U4SG/2014	H15			4338	AA2014
	AW-2011	AlCuBiPb	3.1655	AlCuBiPb	A-U5PbBi/2011	FC1		A2011	4355	AA2011
	AC-46200	AlSi8Cu3(Si)	3.2161	G-AlSi8Cu3					4251	A13800
	AC-42000		3.2341	G-AlSi5Mg	A-S7G	LM25	3599	AC 4C	4244	
	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-5005	AlMg1	3.3315	AlMg1	A-G0.6	N41			4106	AA5005
	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
	MN65120	MgSe3Zn2Zr1	3.5103	G-MgSe3Zn2Zr1	ZRE1					M12330
	MG-P-63	MgAl6Zn	3.5612	G-MgAl6Zn	G-A6-21	MAG-E-121				M11600
MG-P-61	MgAl8Zn	3.5812	G-MgAl8Zn	(G-A7-Z1)						
N2	AW-6082	AlMgSi1	3.2315	AlMgSi1	A-SGM0.7/6082	H30			4212	AA6082
	AC-43400	AlSi10Mg(Fe)	3.2381	G-AlSi10Mg	A-S10G	LM9			4253	A13600
	AC-44200	AlSi12	3.2382	GD-AlSi12						
N3		AlSi17Cu5						ADC14		
N11	CC331G		2.0940.01	CuAl10Fe	CuAl10Fe	AB1			5710	C95200
	CC333G		2.0975.01	CuAl10Ni	CuAl10Ni5Fe5	AB2			5716	C95500
			2.0872	CuNi10Fe1Mn	CuNi10Fe1Mn	CN102			5667	C70600
				CuNi10Zn45						
	CW408J		2.0790	CuNi18Zn19Pb	CuNi18Zn19Pb1					C76300
	CW352H		2.1176	CuPb10Sn	CuSn10Pb10	LB2			5640	C93700
	CC480K		2.1050.01	CuSn10	CuSn10	CT1			5443	C90700
			2.1087	CuSn10Zn					5458	C90500
	CW452K	CuSn6	2.1020	CuSn6	CuSn6	PB103		C5191	5428	C51900
	CW502L	CuZn15	2.0240	CuZn15	CuZn15	CZ102		C2300	5112	C23000
	CW706R	CuZn28Sn1	2.0470	CuZn28Sn1					5220	C44300
	CW508L	CuZn37	2.0321	CuZn37	CuZn37	CZ108			5150	C27200
	CW717R	CuZn38Sn1	2.0530	CuZn38Sn1						C46400
	CW614N	CuZn39Pb3	2.0401	CuZn39Pb3	CuZn39Pb3	CZ121			5170	C38500
	CW612N	CuZn40Pb2	2.0402	CuZn40Pb2	CuZn39Pb2	CZ120			5168	C37800
	CW622N	CuZn44Pb2	2.0410	CuZn44Pb2		CZ104			5272	C68700

SMG

SMG	EN	EN-Nr	W-Nr	DIN	AFNOR	BS	UNI	JIS	SS	UNS	
S1											
S2											
S3	NiMo30		2.4810							N10002	
	NiMo16Cr15W		2.4819							N10276	
	NiCr19Fe19Nb5Mo3		2.4668							N07718	
	NiCr20TiAl		2.4669							N07750	
	NiCr20TiAl		2.4631							N07080	
	NiCr19Co18Mo4Ti3Al3									N07500	
NiCr20Co13Mo4Ti3Al			2.4654							N07001	
S11			3.7024								
S12										R54620	
S12	TiAl6V4		3.7164							R56320	
S13				TiV10Fe2Al3						R56400	
H3	16 MnCr 5	1.7131	1.7131	16 MnCr 5	16 MC 5	527 M 17	16 MnCr 5	SCR 415	2511	G51170	
H5	42 CrMo 4	1.7225	1.1201	42 CrMo 4	42 CD 4	708 M40	42 CrMo 4	SCM 440 (H)	2244	G41400	
	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	
	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	
H7	107 CrV 3	1.2210	1.2210	115 CrV 3	100 C 3		107 CrV 3 KU			T61202	
			1.2510		100 MnCrV 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	
H8	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	1.2379	X 155 CrVMo 12 1	Z 160 CDV 12	BD 2	X 155 CrVMo 12 1 KU	SKD 11		T30402	
			1.2436		X 210 CrW 12			X 215 CrW 12 1 KU	SKD 2	2312	
			1.2601		X 165 CrMoV 12			X 165 CrMoW 12 KU		2310	
			1.2713		55 NiCrMoV 6	55 NCDV 7			SKT 4		T61206
	HS 6-5-2-5	1.3243	1.3243	S 6-5-2-5	Z 85 WDKCV 06-05-05-04-02		HS 6-5-2-5	SKH 55	2723		
	HS 2-10-1-8	1.3247	1.3247	S 2-10-1-8	Z 110 DKCWV 09-08-04	BM 42	HS 2-9-1-8	SKH 51		T11342	
	HS 6-5-2	1.3343	1.3343	S 6-5-2	Z 85 WDCV 06-05-04-0	BM 2	HS 6-5-2	SKH 9, SKH 51	2722	T11302	
	HS 18-0-1	1.3355	1.3355	S 18-0-1	Z 80 WCV 18-04-01	BT 1	HS 18-0-1	SKH 2		T12001	
H11	X 20 Cr 13	1.4021	1.4021	X 20 Cr 13	Z 20 C 13	420 S 37	X 20 Cr 13	SUS 420 J 1	2303	S42000	
	X 70 CrMo 15	1.4109	1.4109	X 65 CrMo 14	Z 70 D 14			SUS 440 A		S44002	
	X 90 CrMoV 18	1.4112	1.4112	X 90 CrMoV 18	Z 2 CND 18 05	409 S 19	X CrTi 12	SUS 440 B	2327	S44003	
	X 105 CrMo 17	1.4125	1.4125	X 105 CrMo 17	Z 100 CD 17		X 105 CrMo 17	SUS 440 C		S44004	
H12	X 3 CrNiMoAl 13 8 2	1.4534	1.4534	X 3 CrNiMoAl 13 8 2						S13800	
	X 5 CrNiCuNb 16 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	1.4568	1.4568	X 7 CrNiAl 17 7	Z 9 CAN 17.7	301 S 81	X 7 CrNiAl 17 7	SUS 631	2388	S17700	
	X 6 NiCrTiMoV 25 15	1.4980	1.4943	X 4 NiCrTi 25 15	Z 6 NCTDV 25.15	HR 51		SUH 660	2570	S66286	
H21	X 120 Mn 12	1.3401	1.3401	X 120 Mn 12	Z 120 M 12	BW 10		SC MnH 1	2183		
H31	EN-GJN-HV520	0.9620	G-X330 NiCr 4 2	FB Ni4 Cr2 BC	Grade 2 A	Grade 2 A			05 12-00	F45001	
	EN-GJN-HV550	0.9625	G-X260 NiCr 4 2	FB Ni4 Cr2 HC	Grade 2 B	Grade 2 B			05 13-00	F45000	
	EN-GJN-HV600(XCr11)	0.9630	G-X300 CrNiSi 9 5 2	FB Cr9 Ni5	Grade 2 C, D, E	Grade 2 C, D, E			04 57-00	F45003	

SMG

U.N.E./I.H.A.	AISI / ASTM	GOST	Misc. Brands	Condition	Structure
			Discalloy	Precipitation hardened	
			Haynes 25		
			Stellite 21		
			Stellite 31		
			Hastelloy C		
		KHN65MV	Hastelloy C-276		
			IN 100		
			Inconel 718		
			Inconel X-750	Solution treated	
			Nimonic 80A		
			René 41		
			Udimet 500		
			Waspalloy		
			Ti	Commercially pure	Ti (α)
	AMS 4919		Ti 6-2-4-2	Annealed	Ti (α)
	AMS 4943		Ti 3Al-2.5V (grd 9)	Annealed	Ti ($\alpha+\beta$)
	AMS 4920, Grd 5	VT6	Ti 6Al-4V	Annealed	Ti ($\alpha+\beta$)
	AMS 4986		Ti 10V-2Fe-3Al	Annealed	Ti (β)
F.1516	5115	12KHN2		Case hardened	
F.1252	4142, 4140	38HM		Quenched & Tempered	
F.5103	1070	70		Quenched & Tempered	
F.5107	1078, 1080	75		Quenched & Tempered	
F.5117	1095			Quenched & Tempered	
F.5118	W 1	U10A		Quenched & Tempered	
	S1	5KHV2SF		Quenched & Tempered	
	5155			Quenched & Tempered	
F.520L	L2	11KHF		Quenched & Tempered	
F.5220	O1	9KHVG		Quenched & Tempered	
	O2	9G2F		Quenched & Tempered	
F.5230	52100	SHKH15		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	
F.5603	M2	R6M5		Quenched & Tempered	
	T1	R18		Quenched & Tempered	
F.5261	420	20KH13		Quenched & Tempered	Martensite
	440 A			Quenched & Tempered	Martensite
	440 B	95KH18		Quenched & Tempered	Martensite
	440 C	95KH18		Quenched & Tempered	Martensite
	XM-13		PH13-8Mo	Precipitation hardened	Martensite
	630		17-4-PH	Precipitation hardened	Martensite
	AMS 5528	09KH17N7YU1	17-7-PH	Precipitation hardened	Austenite/ferrite
	660		A286	Precipitation hardened	Austenite
	A128 Grade A				
	A532 IB (NiCr-LC)		Ni-Hard 2		White cast iron
	A532 IA (NiCr-HC)		Ni-Hard 1		White cast iron
	A532 ID (Ni-HiCr)		Ni-Hard 4		White cast iron

Cemented carbide inserts and insert carriers

Cemented carbide inserts and cemented carbide insert carriers from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.

These products meet all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.

Products do not contain mercury, lead, hexavalent chromium, cadmium, CFC, HCFC, flame retardants or solvents in concentrations that exceed specifications in the regulations.

Regrinding:

Wet or dry grinding can produce potentially hazardous dusts or mists that can irritate skin, eyes, nose, throat and result in lung damage or disease. To avoid injury use proper safety precautions and protective equipment.

Disposal:

Seco Tools will buy back used inserts and solid carbide tools for recycling. Inserts and solid carbide tools should be separated from other metal waste (steel, aluminium, copper etc).

All packing material is fully recyclable.

CBN and PCD inserts

Inserts from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.

This product meets all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.

Products do not contain mercury, lead, hexavalent chromium, cadmium, CFC, HCFC, flame retardants or solvents in concentrations that exceed specifications in the regulations.

Regrinding:

Wet or dry grinding can produce potentially hazardous dusts or mists that can irritate skin, eyes, nose, throat and result in lung damage or disease. To avoid injury use proper safety precautions and protective equipment.

Disposal:

Seco Tools will buy back used CBN- or PCD-tipped inserts for recycling. Inserts should be separated from other metal waste (steel, aluminium, copper etc). Solid CBN-inserts may be discarded as landfill waste.

All packing material is fully recyclable.

Black oxide insert carriers

Insert carriers from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.

This product meets all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.

Products do not contain mercury, lead, hexavalent chromium, cadmium, CFC, HCFC, flame retardants or solvents in concentrations that exceed specifications in the regulations.

Disposal:

Used insert carriers may be sent for recycling together with ordinary steel waste (swarf and discarded steel scrap) for recycling.

All packing material is fully recyclable.

Cermet inserts

Inserts from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.

This product meets all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.

Cermet grade C15M inserts do contain nickel and will leach nickel when in contact with the skin. Amount of leaching is higher than specified in norm SS-EN 1811 Reference test method for release of nickel from products intended to come into direct and prolonged contact with the skin. These norms are intended for products that are in direct and prolonged contact with the skin and are therefore not directly applicable for cermet inserts. Persons with known allergic reactions to nickel are advised to wear protective gloves when handling cermet inserts.

Regrinding:

Wet or dry grinding can produce potentially hazardous dusts or mists that can irritate skin, eyes, nose, throat and result in lung damage or disease. To avoid injury use proper safety precautions and protective equipment.

Disposal:

Used inserts may be recycled. Inserts should be separated from other metal waste (steel, aluminium, copper, etc) including cemented carbide inserts.

All packing material is fully recyclable.

Nickel coated insert carriers

Insert carriers from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.

This product meets all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.

Products do not contain mercury, lead, hexavalent chromium, cadmium, CFC, HCFC, flame retardants or solvents in concentrations that exceed specifications in the regulations.

Insert carriers do contain nickel and will leach nickel when in contact with the skin. Amount of leaching is not higher than norm SS-EN 1811 Reference test method for release of nickel from products intended to come into direct and prolonged contact with the skin.

These norms are intended for products that are in direct and prolonged contact with the skin and are therefore not directly applicable for insert carriers. Persons with known allergic reactions to nickel are advised to wear protective gloves when handling nickel coated insert carriers.

Disposal:

Used tools maybe sent for recycling together with ordinary steel waste (swarf and discarded steel scrap) for recycling.

All packing material is fully recyclable.

Intentionally added alloying elements

Grade	Cemented carbide										Coating						
	W	Ti	Ta	Nb	Co	Cr	Ni	Mo	C	N	Ti	Al	C	N	O	Si	Nb
CP20	■				■				■		■			■			
CP200	■				■	■			■		■			■			
CP300	■	■	■	■	■				■		■	■		■			
CP500	■				■	■			■		■	■		■			
CP600	■				■	■			■		■	■		■			
C15M	■	■	■	■	■		■	■	■	■							
CF	■		■		■		■	■	■								
CM	■		■		■		■	■	■								
DP2000	■		■	■	■				■		■	■	■	■	■		
DP3000	■	■	■	■	■				■	■	■	■	■	■	■		
F15M	■				■	■			■		■	■		■			
F25M	■	■			■	■			■		■	■		■			
F30M	■				■	■			■		■	■		■			
F40M	■				■	■			■		■	■		■			
HX	■				■	■			■		■						
H02	■		■		■	■			■		■						
H15	■				■	■			■		■						
H25	■				■	■			■		■						
KX	■				■	■			■		■						
MH1000	■				■	■			■		■	■		■			
MK1500	■		■		■				■		■	■	■	■	■		
MK2050	■		■		■	■			■		■	■	■	■		■	
MM4500	■				■	■			■		■	■	■	■	■		
MP1020	■	■	■	■	■				■		■						
MP1500	■		■	■	■				■		■	■	■	■	■		
MP2500	■		■	■	■				■		■	■	■	■	■		
MP3000	■				■	■			■		■	■	■	■	■		
MS2500	■		■	■	■				■		■	■	■	■	■		
MS2050	■				■	■			■		■	■	■	■			
RX1500	■		■		■		■	■	■		■	■	■	■	■		
RX2000	■		■		■	■			■		■	■	■	■	■		
T350M	■			■	■				■		■	■	■	■	■		
T25M	■			■	■				■		■	■	■	■	■		
TGK1500	■		■		■				■		■	■	■	■	■		
TGP25	■	■	■	■	■				■		■	■	■	■	■		
TGP35	■		■	■	■				■		■	■	■	■	■		
TGP45	■		■	■	■				■		■	■	■	■	■		
TH1000	■				■	■			■		■	■	■	■	■		■
TH1500	■				■	■			■		■	■	■	■	■		
TK1001	■				■	■			■		■	■	■	■	■		
TK2001	■		■		■	■			■		■	■	■	■	■		
TM2000	■	■	■	■	■				■	■	■	■	■	■	■		
TM4000	■	■	■	■	■				■	■	■	■	■	■	■		
TP0500	■	■	■	■	■				■		■	■	■	■	■		
TP0501	■	■	■	■	■	■			■		■	■	■	■	■		
TP1020	■	■	■	■	■				■	■	■						
TP1030	■	■	■	■	■				■	■	■	■	■	■		■	
TP1500	■	■	■	■	■				■	■	■	■	■	■	■		
TP1501	■	■	■	■	■				■	■	■	■	■	■	■		
TP200	■	■	■	■	■				■	■	■	■	■	■	■		
TP2500	■	■	■	■	■				■	■	■	■	■	■	■		
TP2501	■	■	■	■	■	■			■	■	■	■	■	■	■		
TP40	■		■	■	■				■		■	■	■	■			
TS2000	■				■	■			■		■	■	■	■			
TS2500	■		■		■				■		■	■	■	■			
T250D	■				■	■			■		■	■	■	■			
T400D	■				■	■			■		■	■	■	■			
T100R	■				■	■			■		■	■	■	■			
T60M	■	■	■	■	■				■		■	■	■	■			
883	■		■		■				■		■						
890	■				■	■			■		■						

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