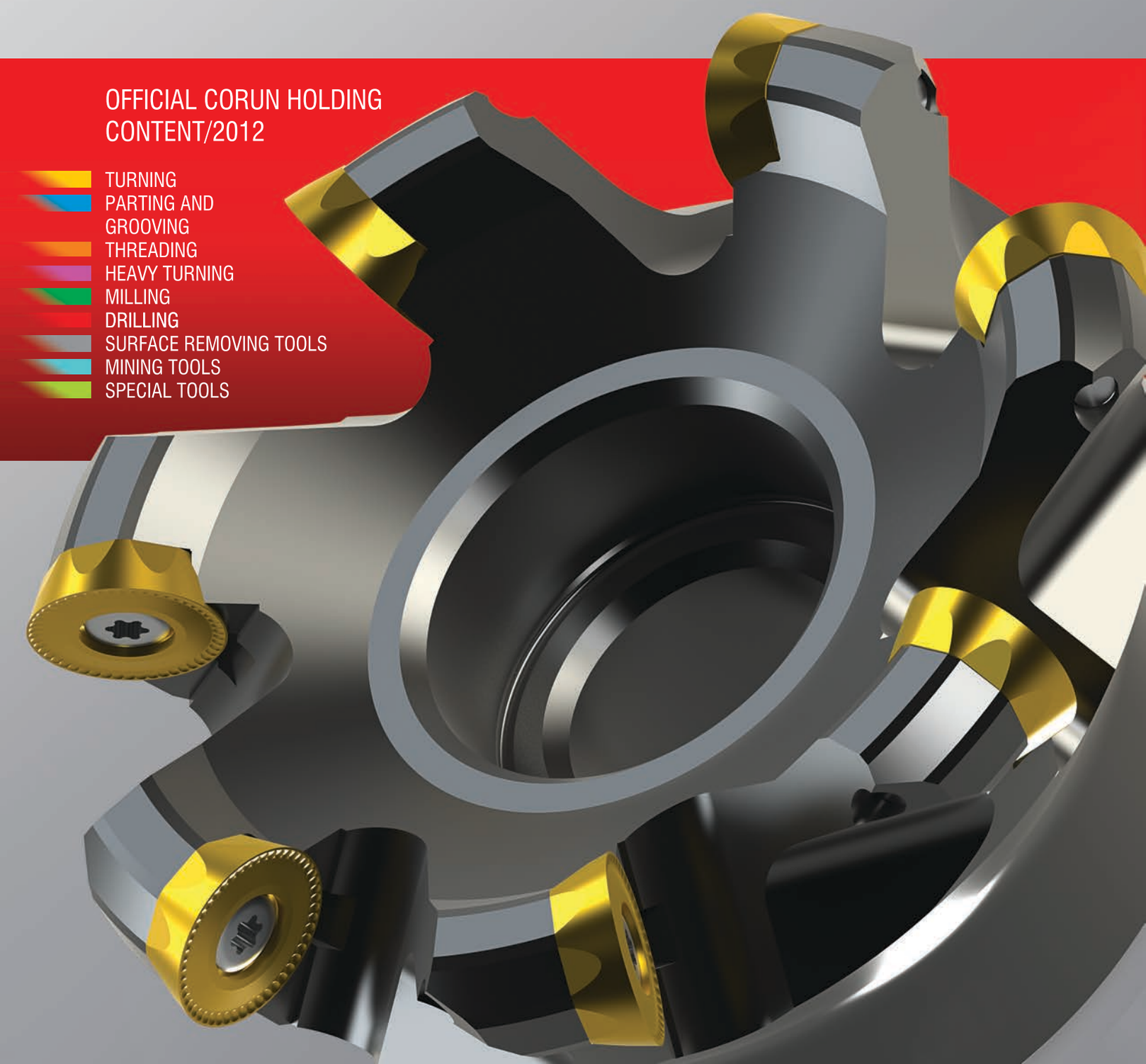
CORUN

CATALOGUE/2012

THE COMPLETE RANGE OF PRODUCTS

OFFICIAL CORUN HOLDING
CONTENT/2012

- TURNING
- PARTING AND GROOVING
- THREADING
- HEAVY TURNING
- MILLING
- DRILLING
- SURFACE REMOVING TOOLS
- MINING TOOLS
- SPECIAL TOOLS



TÜV PROFI CERT

EN ISO 9001 and EN ISO 14001

TÜV PROFI CERT

CERTIFICATE

Management system as per

EN ISO 9001:2008

Evidence of conformity with the above standard(s) has been furnished and is certified in accordance with TÜV PROFICERT procedures for

CORUN

CORUN D.O.O.
M. Obrenovića 2
31000 Užice
Serbia

scope

Design, development and manufacturing of cemented carbide tools, tool holders and cutter bodies for metal processing as well as other tools

Certificate registration No. 73 100 3250
Audit Report No. 4217 0496
Valid until 2012-08-22

IAF

TGA-ZM-05-07-00

TÜV HESSEN

Darmstadt, 2010-08-03
Certification body of TÜV Hessen
- Head of Certification body -

Page 1 of 1

This certification was conducted in accordance with the TÜV PROFICERT auditing and certification procedures and is subject to regular surveillance audits. Verifiable under www.tuev-club.de. Original certificates contain a glued on hologram.
TÜV Technische Überwachung Hessen GmbH, Rüdesheimerstr. 119, D-64285 Darmstadt, Tel. +49 6151 600331

TÜV PROFI CERT

CERTIFICATE

Management system as per

EN ISO 14001:2009

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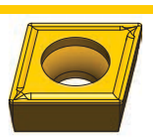
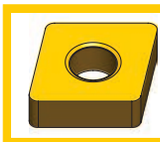
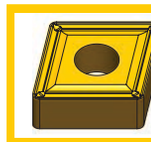
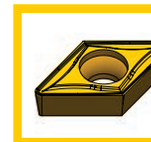
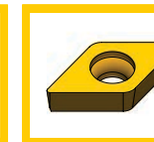
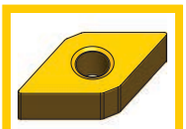
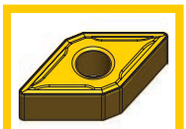
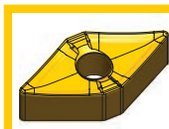
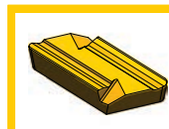
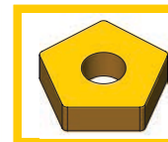
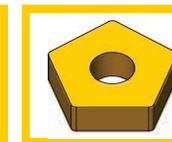
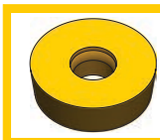
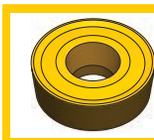
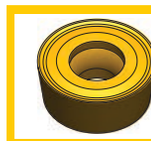
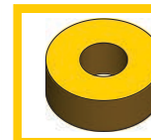
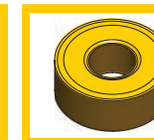
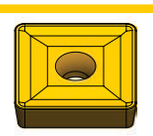
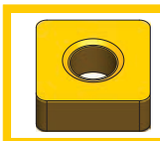
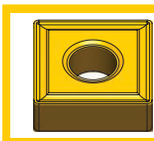
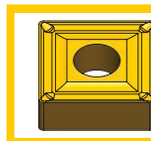
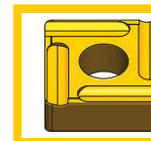
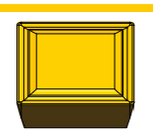
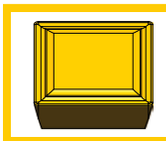
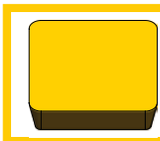
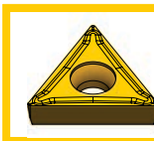
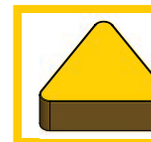
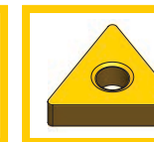
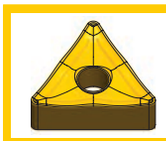
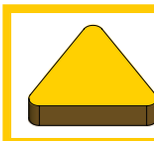
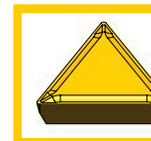
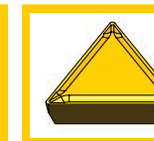
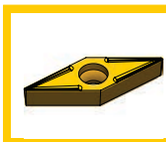
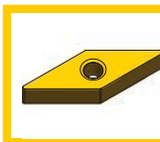
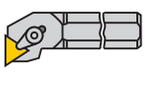
Q ЕПС

A. Turning inserts

S-MAX P | S-MAX U | S-MAX S | S-MAX

 CCMT A.b2	 CCMW A.b2	 CNMA A.a2	 CNMG A.a3	 CNMM A.a2	 DCMT A.b3	 DCMW A.b3
 DNMA A.a4	 DNMG A.a5	 DNMM A.a4	 KNUX 16 A.c2	 KNUX 22 A.c2	 PNEA A.a5	 PNMA A.a5
 PNMX A.a5	 PNUM A.a13	 RCMW A.a6	 RCMX A.a6	 RCMT A.a6	 RNGA A.a6	 RNMG A.a6
 SCMT A.b4	 SCMW A.b4	 SNMA A.a7	 SNMG A.a8	 SNMM A.a7	 SNMX A.a9	 SPGN A.c3
 SPGR A.c3	 SPMR A.c4	 SPUN A.c4	 TCMT A.b5	 TCMW A.b5	 TNGN A.c5	 TNMA A.a9
 TNMG A.a10	 TNMM A.a11	 TNUX A.a11	 TNUN A.c5	 TPGN A.c6	 TPGR A.c7	 TPMR A.c7
 TPUN A.c6	 VBMT A.b6	 VNMA A.a12	 WNMG A.a12	 WNUM A.a13		

A. Toolholders for external turning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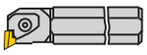
A.i2


CKUNR/L
A.i3


CSBPR/L
A.f2


CSDPR/L
A.f2


CSDPN
A.f2


CSKPR/L
A.f2

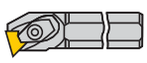

CSTPR/L
A.f2


CTBPR/L
A.f4


CTDPR/L
A.f4


CTFPR/L
A.f3


CTGPR/L
A.f4


CTKPR/L
A.i2


CTTPR/L
A.f4


MTGNR/L
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PCBNR/L
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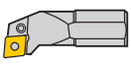
PCLNR/L
A.d2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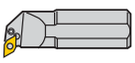
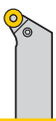
PDJNR/L
A.d2


PDUNR/L
A.g2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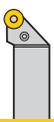
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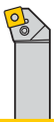
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PSBNR/L
A.d4


PSDNN
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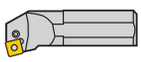
PSKNR/L
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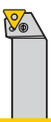
PSSNR/L
A.d4


PTDNR/L
A.d5


PTENN
A.d6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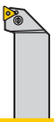
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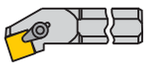
PTTNR/L
A.d5

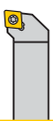

PWLNR/L
A.d7


R/L S31.9
A.i2


RS70.35
A.d2


R/L S70.5
A.f5


R/L S71.5
A.f5


SCLCR/L
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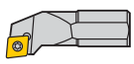
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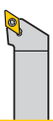
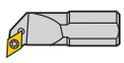
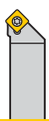
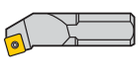

SDJCR/L
A.e2

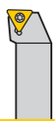

SDNCN
A.e2

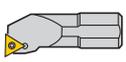

SDUCR/L
A.h2

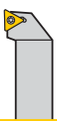

SSDCR/L
A.e3


SSDCN
A.e3

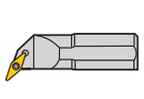

SSKCR/L
A.h3


STFCR/L
A.e3


STFCR/L
A.h3

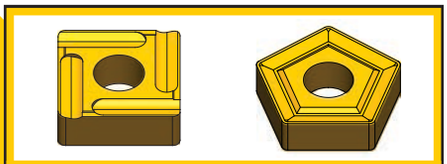

STGCR/L
A.e3


SVJBR/L
A.e4


SVQBR/L
A.h4


SVVBN
A.e4

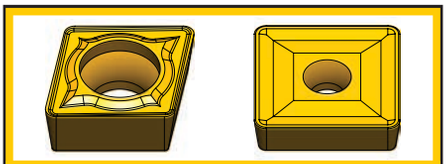
A. Turning



A.a.

S-MAX P inserts

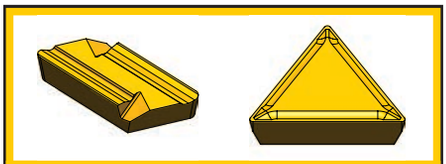
A.a1-A.a11



A.b.

S-MAX U inserts

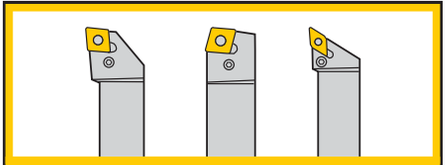
A.b1-A.b6



A.c.

S-MAX S inserts

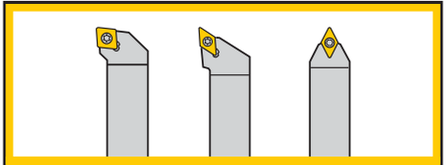
A.c1-A.c7



A.d.

S-MAX P toolholders for external turning

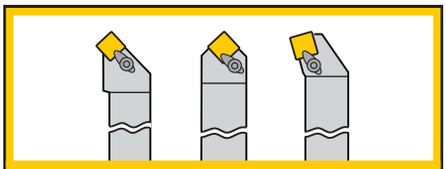
A.d1-A.d7



A.e.

S-MAX U toolholders for external turning

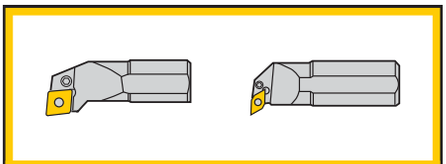
A.e1-A.e4



A.f.

S-MAX S toolholders for external turning

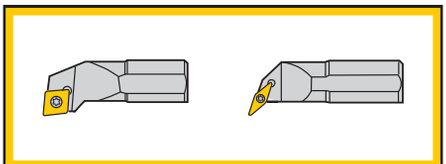
A.f1-A.f5



A.g.

S-MAX P toolholders for internal turning

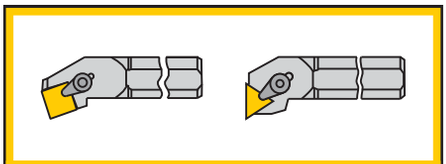
A.g1-A.g3



A.h.

S-MAX U toolholders for internal turning

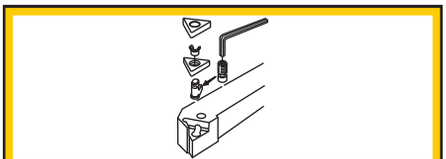
A.h1-A.h4



A.i.

S-MAX S toolholders for internal turning

A.i1-A.i3



A.j.

Spare parts

A.j1-.A.j6

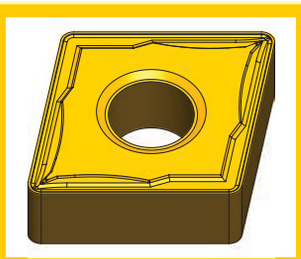
A.k.

Technical information

A.k1-A.k12

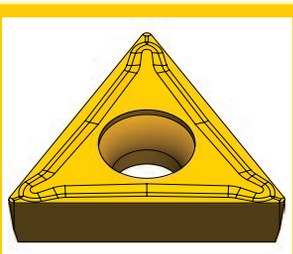
A. Summary of turning inserts geometries

Finishing



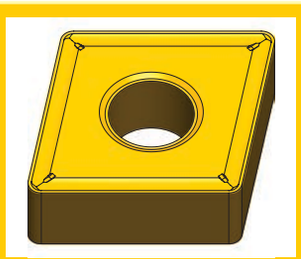
- 61

- CF

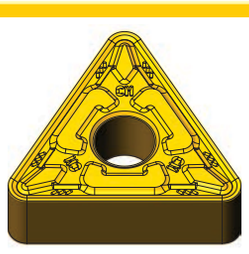


- UF

Medium

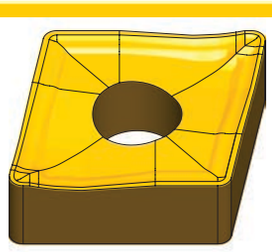


- 15

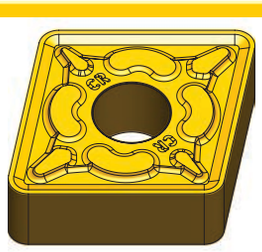


- CM

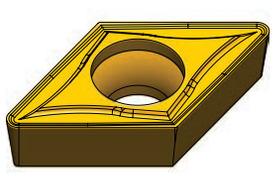
Roughing



- 71

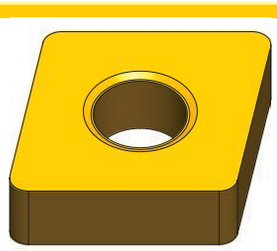


- CR

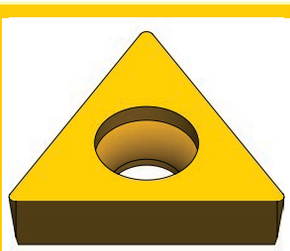


- UR

For materials with short chips



.NMA



.CMW

A. Code key, indexable inserts

C	N	M	G	12	04	12			—	CF
1	2	3	4	5	6	7	8	9		10

1 Inserts shape

85° A	82° B	80° C	55° D
75° E	H	55° K	L
86° M	O	P	R
S	T	35° V	80° W

2 Clearance angle

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

O Specific description

3 Tolerances IC and s

C	D	R
S	T	V
W	K	

Class s	
G M U	±0.130

Class IC	Tolerance class		
IC mm	G	M	U
3,970 5,000 5,560 6,000 6,350 8,000 9,525 10,000	±0.025	±0.050	±0.080

Class IC	Tolerance class		
IC mm	G	M	U
12,000 12,700	±0.025	±0.080	±0.130
15,875 16,000 19,050 20,000	±0.025	±0.100	±0.180

Class IC	Tolerance class		
IC mm	G	M	U
25,000 25,400	±0.025	±0.130	±0.250
31,750 32,000	±0.025	±0.150	±0.250

4 Inserts type

A	M	G	T	W	Q	N	R	F

X Special design

A. Code key, indexable inserts

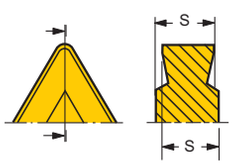
C	N	M	G	12	04	12			—	CF
1	2	3	4	5	6	7	8	9		10

5 Inserts size = cutting edge lenght, l mm

IC mm	IC	C	D	R	S	T	V	W	K
3,970	5/32”					06			
5,000				05					
5,560	7/32”					09			
6,000			06						
6,350	1/4”	06	07			11	11		
8,000				08					
9,525	3/8”	09	11	09	09	16	16	06	
10,000				10					
12,000				12					
12,700	1/2”	12	15	12	12	22	22	08	
15,875	5/8”	16		15	15	27			
16,000				16					16 *
19,050	3/4”	19		19	19	33			
20,000				20					
25,000				25					
25,400	1”	25		25	25				
31,750	5/4”			31					
32,000				32					

* For insert shape K(KNUX) only the theoretical cutting edge lenght is indicated

6 Insert thickness, s mm



01 s = 1,59
T1 s = 1,98
02 s = 2,38

03 s = 3,18
T3 s = 3,97
04 s = 4,76

05 s = 5,56
06 s = 6,35
07 s = 7,97

09 s = 9,52
10 s = 10,00
12 s = 12,00

7 Nose radius r_ε mm

M0, 00 r_ε = 0,0
04 r_ε = 0,4
08 r_ε = 0,8
12 r_ε = 1,2

16 r_ε = 1,6
24 r_ε = 2,4
32 r_ε = 3,0
40 r_ε = 4,0

M0 IC u mm
IC in mm
IC ь mm

00 IC u inch
IC in inch
IC ь inch

8 Cutting edge condition

F Sharp cutting edge

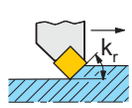
E ER-treated cutting edge

T Negative land

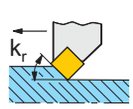
S Negative land and ER treated cutting edge

9 Tool style, feed direction

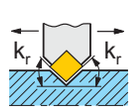
R



L



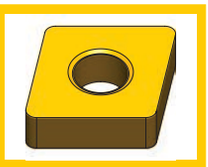
N



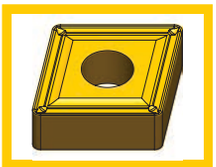
10 Manufactures option

X Chipbreaker code

A.a S-MAX P inserts

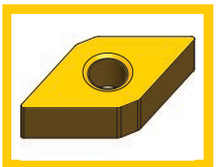


CNMA
A.a2

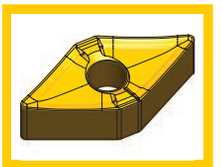


CNMM
A.a2

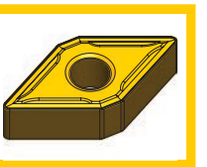
CNMG
A.a3



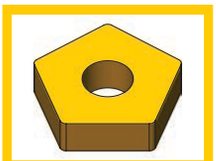
DNMA
A.a4



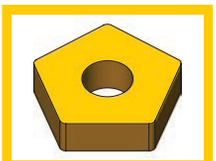
DNMM
A.a4



DNMG
A.a5

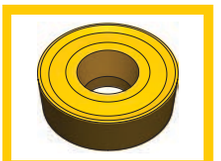


PNEA
A.a5

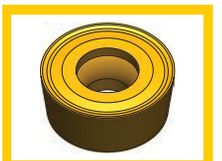


PNMA
A.a5

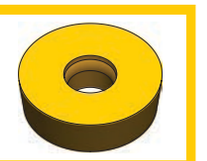
PNMX
A.a5



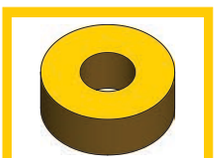
RCMX
A.a6



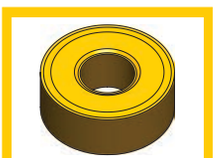
RCMT
A.a6



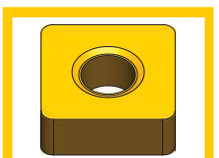
RCMW
A.a6



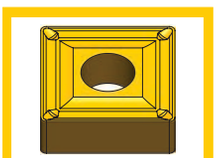
RNGA
A.a6



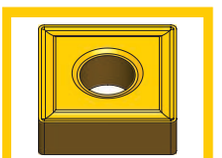
RNMG
A.a6



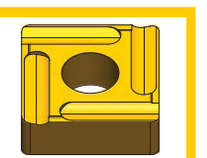
SNMA
A.a7



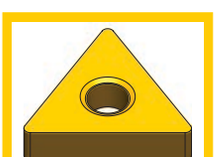
SNMM
A.a7



SNMG
A.a8

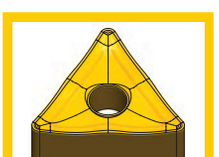


SNMX
A.a9

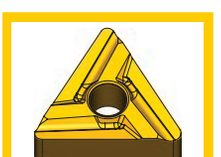


TNMA
A.a9

TNMG
A.a10



TNMM
A.a11



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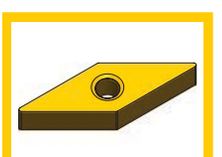


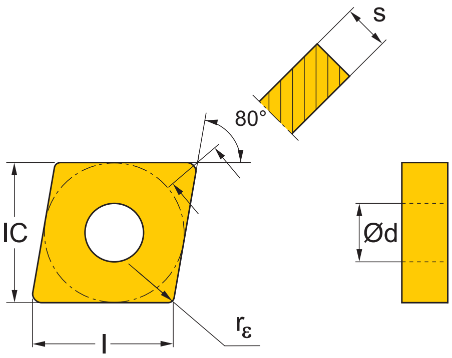
WNMA
A.a12

WNMG
A.a12

PNUM
A.a13

WNUM
A.a13

A.a S-MAX P inserts



Dimensions	l	IC	s	rε	Ød	
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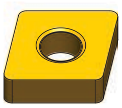
16	16.1	15.875	6.35	0.8-1.6	6.4	
19	19.3	19.050	6.35	0.8-1.6	7.9	



Application	S-MAX P	Ordering code	P CVD P20 2C20	P CVD P25 2C25	P CVD P15 4C15	P CVD P25 4C25	P CVD P35 4C35	P CVD P40 4C40	P PVD P20 7520	M CVD M15 2C15	M CVD M20 2C20	M CVD M25 2C25	M CVD M35 2C35	M CVD M40 2C40	M CVD M25 4C25	M CVD M35 4C35	M CVD M40 4C40	M PVD M20 7520	M PVD M35 7535	M - M20 K10F	M - M40 P6	K CVD K15 3C15	K CVD K15 4C15	K CVD K25 4C25	K PVD K15 715	K - K10 K1P	K - K15 K13A	K - K20 K10F	N PVD N20 720	N - N15 K13A	N - N20 K10F	S PVD S15 7515	S PVD S20 7520	S - S10 K1P	S - S15 K13A	S - S20 K10F	H CVD H15 4C15	H - H10 K1P	H - H20 K13A
For material with short chips	12	CNMA 120404																				●			◐												◐	◐	
		CNMA 120408																				●			◐												◐	◐	
		CNMA 120412																				●			◐												◐	◐	
	16	CNMA 160612																				●			◐												◐	◐	
		CNMA 160616																				●			◐												◐	◐	
	19	CNMA 190608																				●			◐												◐	◐	
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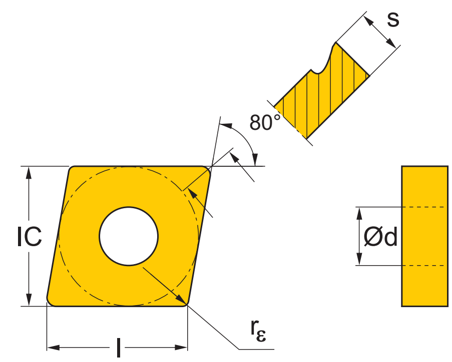
		CNMA 190616																				●			◐												◐	◐	



Dimensions	l	IC	s	rε	Ød	
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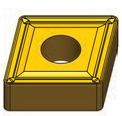
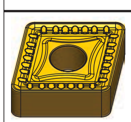
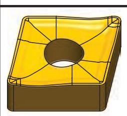
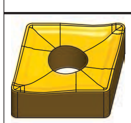
25	25.6	25.400	9.52	2.4	9.1	

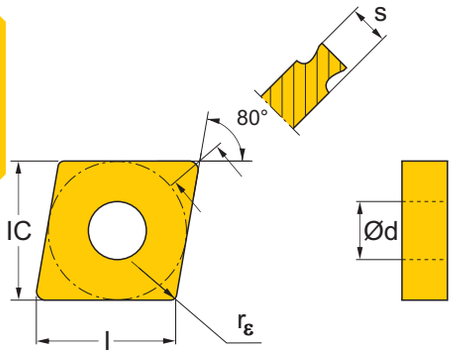






Application	S-MAX P	Ordering code	P CVD P20 2C20	P CVD P25 2C25	P CVD P15 4C15	P CVD P25 4C25	P CVD P35 4C35	P CVD P40 4C40	P PVD P20 7520	M CVD M15 2C15	M CVD M20 2C20	M CVD M25 2C25	M CVD M35 2C35	M CVD M40 2C40	M CVD M25 4C25	M CVD M35 4C35	M CVD M40 4C40	M PVD M20 7520	M PVD M35 7535	M - M20 K10F	M - M40 P6	K CVD K15 3C15	K CVD K15 4C15	K CVD K25 4C25	K PVD K15 715	K - K10 K1P	K - K15 K13A	K - K20 K10F	N PVD N20 720	N - N15 K13A	N - N20 K10F	S PVD S15 7515	S PVD S20 7520	S - S10 K1P	S - S15 K13A	S - S20 K10F	H CVD H15 4C15	H - H10 K1P	H - H20 K13A
Medium	12	CNMM 120404			●	◐			◐			●	◐					◐				◐			◐								◐						
		CNMM 120408				●	◐		◐			●	◐					◐				◐			◐								◐						
		CNMM 120412			●	◐			◐			●	◐						◐			◐			◐								◐						
		CNMM 120416			●	◐			◐			●	◐						◐			◐			◐								◐						
	19	CNMM 190608			●	◐						●	◐					◐				◐			◐								◐						
		CNMM 190612			●	◐						●	◐						◐			◐			◐								◐						
		CNMM 190616			●	◐						●	◐						◐			◐			◐								◐						
		CNMM 190624			●	◐						●	◐									◐			◐								◐						
	25	CNMM 250924-HR			●	◐						●	◐																										
Roughing	12	CNMM 120404-71			●	◐						●	◐					◐				◐			◐								◐						
		CNMM 120408-71			●	◐						●	◐						◐			◐			◐								◐						
		CNMM 120412-71			●	◐						●	◐						◐			◐			◐								◐						
	12	CNMM 120416-CR			●	◐						●	◐						◐			◐			◐								◐						
	19	CNMM 190616-CR			●	◐						●	◐						◐			◐			◐								◐						
	19	CNMM 190612-71			●	◐						●	◐									◐			◐								◐						

●First choice ◐Second choice

A.a S-MAX P inserts



Dimensions	l	IC	s	r_ε	Ød	
12	12.9	12.700	4.76	0.4-1.6	5.1	
16	16.1	15.875	6.35	0.8-1.6	6.4	
19	19.3	19.050	6.35	0.8-1.6	7.9	
25	25.6	25.400	9.52	2.4	9.1	

	S-MAX P		Ordering code	P								M										K							N			S						H		
				CVD						PVD		CVD				PVD	-			CVD		PVD	-			PVD	-			PVD	-			CVD	-						
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20	
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A	
Finishing		12	CNMG 120404-61			●	◐			◐	◐		●						◐				●			◐		◐						◐							
			CNMG 120408-61				●	◐		◐			●	◐					◐				●			◐		◐						◐							
		12	CNMG 120404-CF			●	◐			◐	◐		●						◐				●			◐		◐						◐							
			CNMG 120408-CF				●	◐		◐			●	◐					◐				●			◐		◐						◐							
Medium		12	CNMG 120404			●	◐			◐	◐		●						◐				●			◐		◐						◐							
			CNMG 120408				●	◐		◐			●	◐					◐				●			◐		◐						◐							
			CNMG 120412				●	◐		◐			●	◐					◐				◐		●	◐		◐						◐							
			CNMG 120416				●	◐		◐			●	◐					◐				◐		●	◐		◐						◐							
		12	CNMG 120404-15				●	◐		◐			●	◐					◐				●			◐		◐						◐							
			CNMG 120408-15				●	◐		◐			●	◐					◐						●	◐		◐						◐							
			CNMG 120412-15				●	◐		◐			●	◐					◐						●	◐		◐						◐							
		12	CNMG 120404-CM				●	◐		◐			●	◐					◐				●			◐		◐						◐							
			CNMG 120408-CM				●	◐		◐			●	◐					◐						●	◐		◐						◐							
			CNMG 120412-CM				●	◐		◐			●	◐					◐						●	◐		◐						◐							
		16	CNMG 160608-CM				●	◐		◐			●	◐					◐						●	◐		◐						◐							
			CNMG 160612-CM				●	◐		◐			●	◐					◐						●	◐		◐						◐							
			CNMG 160616-CM				●	◐		◐			●	◐					◐						●	◐		◐						◐							
		19	CNMG 190608				●	◐		◐			●	◐					◐						●	◐		◐						◐							
			CNMG 190612				●	◐		◐			●	◐					◐						●	◐		◐						◐							
			CNMG 190616				●	◐		◐			●	◐					◐						●	◐		◐						◐							
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Roughing		12	CNMG 120408-CR				●	◐		◐			●	◐					◐						●	◐		◐						◐							
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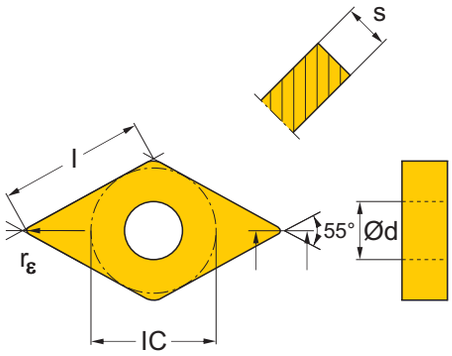
●First choice ◐Second choice

A.a S-MAX P inserts



Dimensions	l	IC	s	r_ε	Ød	
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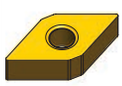
15	15.5	12.700	6.35	0.4-1.6	5.2	

	S-MAX P		Ordering code	P								M										K							N			S					H		
				CVD						PVD	CVD							PVD	-	CVD			PVD	-	PVD	-	PVD	-	CVD	-										
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
For material with short chips		11	**DNMA 110404**																				●	◐	◐	◐									◐	◐	◐			
			DNMA 110408																				●	◐	◐	◐									◐	◐	◐			
			DNMA 110412																				●	◐	◐	◐									◐	◐	◐			
		15	**DNMA 150604**																				●	◐	◐										◐	◐			
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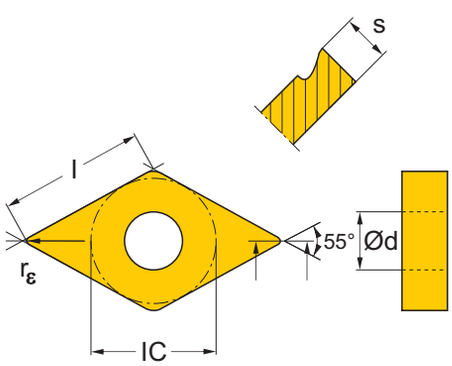


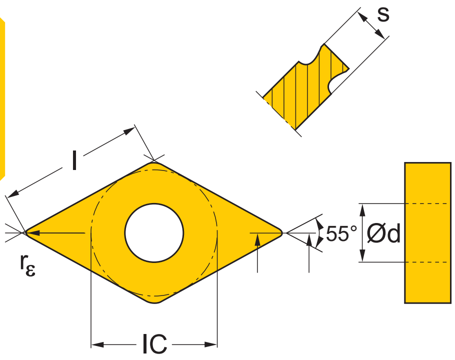
Dimensions	l	IC	s	r_ε	Ød	
15	15.5	12.700	6.35	0.4-1.2	5.2	

	S-MAX P		Ordering code	P								M										K							N			S					H		
				CVD						PVD	CVD							PVD	-	CVD			PVD	-	PVD	-	PVD	-	CVD	-										
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Roughing		15	**DNMM 150604-71**				●	◐				◐	●	◐			◐				◐															◐					
			DNMM 150608-71				●	◐				◐	◐	●				◐			◐															◐					
			DNMM 150612-71				●	◐				◐	◐	●				◐			◐															◐					
																																								

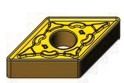
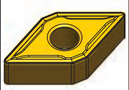
●First choice ◐Second choice

CORUN

A.a S-MAX P inserts



Dimensions	l	IC	s	rε	Ød	
11	11.6	9.525	4.76	0.4-1.2	3.81	
15	15.5	12.700	4.76	0.4-1.6	5.2	
15	15.5	12.700	6.35	0.4-1.6	5.2	

			P							M												K							N			S					H		
			CVD						PVD	CVD								PVD		-		CVD			PVD	-			PVD	-		PVD		-			CVD	-	
		S-MAX P Ordering code	P20 2C20	P25 2C25	P15 4C15	P25 4C25	P35 4C35	P40 4C40	P20 7520	M15 2C15	M20 2C20	M25 2C25	M35 2C35	M40 2C40	M25 4C25	M35 4C35	M40 4C40	M20 7520	M35 7535	M20 K10F	M40 P6	K15 3C15	K15 4C15	K25 4C25	K15 715	K10 K1P	K15 K13A	K20 K10F	N20 720	N15 K13A	N20 K10F	S15 7515	S20 7520	S10 K1P	S15 K13A	S20 K10F	H15 4C15	H10 K1P	H20 K13A
Finishing 	15	DNMG 150404-CF			●	◐			◐			●	◐					◐															◐		◐				
		DNMG 150408-CF				●	◐		◐			●	◐					◐															◐		◐				
		DNMG 150604-CF				●	◐		◐			●	◐					◐															◐		◐				
		DNMG 150608-CF				●	◐		◐			●	◐					◐															◐		◐				
Finishing 	15	DNMG 150604-61			●	◐			◐			●	◐					◐															◐		◐				
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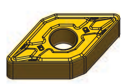
Medium 	11	DNMG 110404-CM			●	◐			◐			●	◐					◐															◐		◐				
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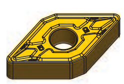
Medium 	15	DNMG 150404-CM			●	◐			◐			●	◐					◐															◐		◐				
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		DNMG 150412-CM				●	◐		◐			●	◐						◐														◐		◐				
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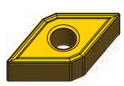
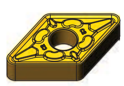
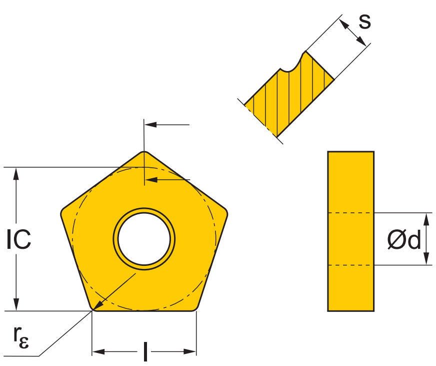
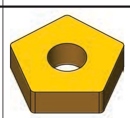
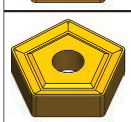
Medium 	15	DNMG 150604-15			●	◐			◐			●	◐					◐															◐		◐				
		DNMG 150608-15				●	◐		◐			●	◐					◐															◐		◐				
		DNMG 150612-15				●	◐		◐			●	◐						◐														◐		◐				
		DNMG 150616-15				●	◐		◐			●	◐						◐														◐		◐				
Roughing 	15	DNMG 150608-CR				●	◐					●	◐					◐															◐		◐				
		DNMG 150412-CR				●	◐					●	◐					◐															◐		◐				
		DNMG 150416-CR				●	◐					●	◐					◐															◐		◐				
		DNMG 150612-CR				●	◐					●	◐					◐															◐		◐				
		DNMG 150616-CR				●	◐					●	◐					◐															◐		◐				



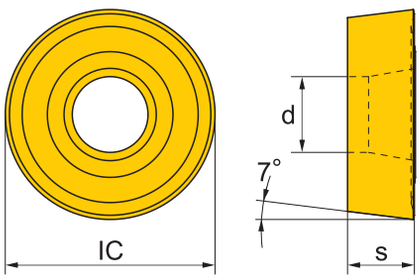
Dimensions	l	IC	s	rε	Ød	
11	11.0	15.785	4.76	0.8	6.35	
11	11.0	15.785	4.76	0.8	5.20	

			P							M												K							N			S					H		
			CVD						PVD	CVD								PVD		-		CVD			PVD	-			PVD	-		PVD		-			CVD	-	
		S-MAX P Ordering code	P20 2C20	P25 2C25	P15 4C15	P25 4C25	P35 4C35	P40 4C40	P20 7520	M15 2C15	M20 2C20	M25 2C25	M35 2C35	M40 2C40	M25 4C25	M35 4C35	M40 4C40	M20 7520	M35 7535	M20 K10F	M40 P6	K15 3C15	K15 4C15	K25 4C25	K15 715	K10 K1P	K15 K13A	K20 K10F	N20 720	N15 K13A	N20 K10F	S15 7515	S20 7520	S10 K1P	S15 K13A	S20 K10F	H15 4C15	H10 K1P	H20 K13A
For material with short chips 	11	PNMA 110408				●	◐					●	◐									●		◐	◐								◐				◐		◐
	11	PNEA 110408				●	◐					●	◐									●		◐	◐								◐				◐		◐
		PNEA 110416				●	◐					●	◐									●		◐	◐								◐				◐		◐
	11	PNMX 110408				●	◐					●	◐					◐	◐											◐			◐						

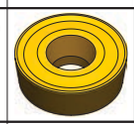
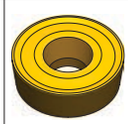
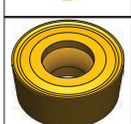
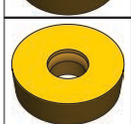
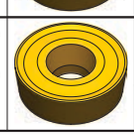
●First choice ◐Second choice

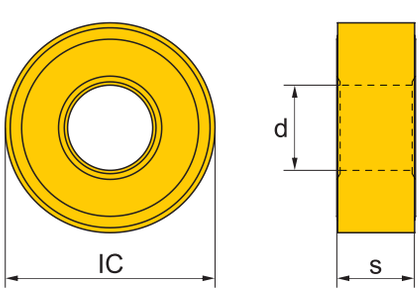
CORUN

A.a S-MAX P inserts

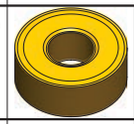
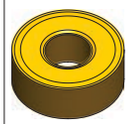
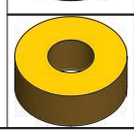


Dimensions	IC	s	Ød	
10	10.000	3.18	3.6	
12	12.000	4.76	4.2	
16	16.000	6.35	5.2 (5.56-MO)	
20	20.000	6.35	6.5	
25	25.000	7.94	7.2 (8.0-UK)	
32	32.000	9.52	9.7	

	S-MAX P		Ordering code	P CVD: 2C20	2C25	4C15	4C25	4C35	4C40	7520	P PVD: 2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	M - : M20	M40	K CVD: 3C15	4C15	4C25	K PVD: 715	K - : K1P	K10	K13A	K15	K10F	K20	N PVD: 720	N - : K13A	N15	K10F	N20	S PVD: 7515	S15	7520	S - : S20	K1P	S10	K13A	S15	K10F	S20	H CVD: 4C15	H15	H - : K1P	H10	K13A	H20
Finishing		10	RCMX 100300			●	◐			◐			●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						
			RCMX 1003MO			●	◐			◐			●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						
Medium		12	RCMX 120400			●	◐			◐			●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						
			RCMX 1204MO			●	◐			◐			●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						
		16	RCMX 160600			●	◐						●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						
			RCMX 1606MO			●	◐						●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						
		20	RCMX 200600			●	◐						●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						
			RCMX 2006MO			●	◐						●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						
		16	RCMT 1606MO			●	◐						●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						
		16	RCMW 160700			●	◐						●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐					◐	
Roughing		25	RCMX 250700-CD			●	◐						●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						
			RCMX 2507MO			●	◐						●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						
			RCMX 2507MO-UK			●	◐						●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						
		32	RCMX 3209MO			●	◐						●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						
			RCMX 3209MO-CD			●	◐						●	◐		◐			◐				●		●	◐	◐		◐			◐				◐				◐		◐		◐			◐						

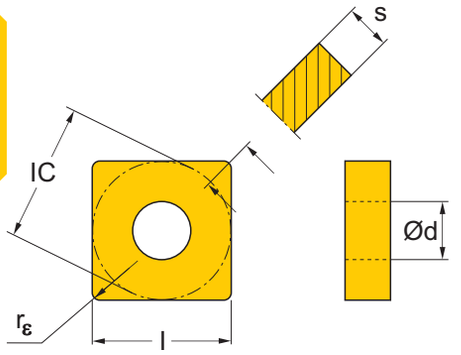


Dimensions	IC	s	Ød	
9	9.525	3.18	3.8	
12	12.700	4.76	5.2	
15	15.875	6.35	6.3	
19	19.050	6.35	7.9	

	S-MAX P		Ordering code	P CVD: 2C20	2C25	4C15	4C25	4C35	4C40	7520	P PVD: 2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	M - : M20	M40	K CVD: 3C15	4C15	4C25	K PVD: 715	K - : K1P	K10	K13A	K15	K10F	K20	N PVD: 720	N - : K13A	N15	K10F	N20	S PVD: 7515	S15	7520	S - : S20	K1P	S10	K13A	S15	K10F	S20	H CVD: 4C15	H15	H - : K1P	H10	K13A	H20
Finishing		9	RNMG 090300		◐		●	◐					●	◐				◐						●		◐	◐		◐											◐		◐											
Medium		12	RNMG 120400		◐		●	◐					●	◐				◐						●		◐	◐		◐											◐		◐											
		15	RNMG 150600		◐		●	◐					●	◐				◐						●		◐	◐		◐											◐		◐											
		19	RNMG 190600		◐		●	◐					●	◐				◐						●		◐	◐		◐											◐		◐											
		15	RNGA 150600		◐		●	◐					●	◐				◐						●		◐	◐		◐											◐		◐											

●First choice ◐Second choice

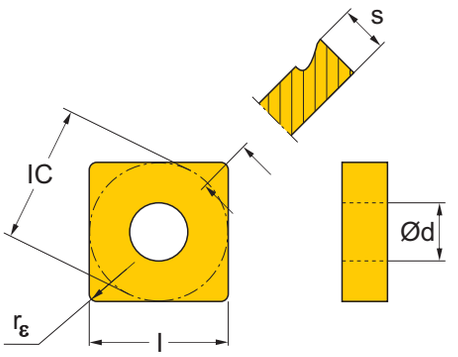
A.a S-MAX P inserts



Dimensions	l	IC	s	r_ε	Ød	
9	9.5	9.525	3.28	0.8	3.8	
12	12.7	12.700	4.76	0.8-3.0	5.2	
15	15.9	15.875	6.35	1.2-2.4	5.2	
19	19.0	19.050	6.35	0.8-1.6	7.9	
25	25.4	25.400	7.94	2.4	9.1	

For material with short chips

S-MAX P		Ordering code	P: CVD P20	P: CVD P25	P: CVD P15	P: CVD P25	P: CVD P35	P: CVD P40	P: PVD P20	M: CVD M15	M: CVD M20	M: CVD M25	M: CVD M35	M: CVD M40	M: PVD M25	M: PVD M35	M: - M20	M: - M40	K: CVD K15	K: CVD K15	K: PVD K25	K: PVD K15	K: - K10	K: - K15	K: - K20	N: PVD N20	N: - N15	N: - N20	S: PVD S15	S: PVD S20	S: - S10	S: - S15	S: - S20	H: CVD H15	H: - H10	H: - H20
			2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
	9	**SNMA 090308**																			●		◐		◐										◐	
	12	**SNMA 120404**																			●		◐		◐										◐	
		SNMA 120408																			●		◐		◐										◐	
		SNMA 120412																			●		◐		◐										◐	
		SNMA 120416																			●		◐		◐										◐	
		SNMA 120424																			●		◐		◐										◐	
		SNMA 120430																			●		◐		◐										◐	
	15	**SNMA 150612**																			●		◐		◐										◐	
		SNMA 150616																			●		◐		◐										◐	
	19	**SNMA 190608**																			●		◐		◐										◐	
		SNMA 190612																			●		◐		◐										◐	
		SNMA 190616																			●		◐		◐										◐	
	25	**SNMA 250724**																			●		◐		◐										◐	



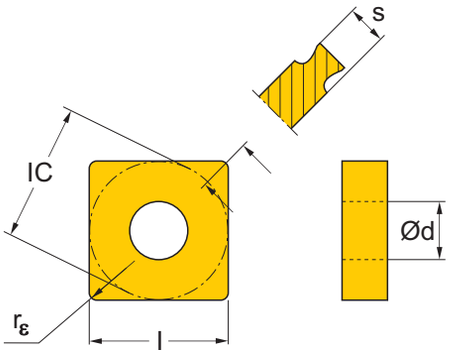
Dimensions	l	IC	s	r_ε	Ød	
9	9.5	9.525	3.18	0.4-0.8	3.8	
12	12.7	12.700	4.76	0.8-1.6	5.2	
15	15.9	15.875	6.35	1.2-2.4	5.2	
19	19.0	19.050	6.35	0.8-2.4	7.9	
25	25.4	25.400	9.52	1.6-2.4	9.1	

Roughing

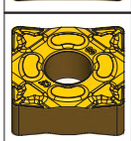
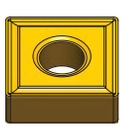
S-MAX P		Ordering code	P: CVD P20	P: CVD P25	P: CVD P15	P: CVD P25	P: CVD P35	P: CVD P40	P: PVD P20	M: CVD M15	M: CVD M20	M: CVD M25	M: CVD M35	M: CVD M40	M: PVD M25	M: PVD M35	M: - M20	M: - M40	K: CVD K15	K: CVD K15	K: PVD K25	K: PVD K15	K: - K10	K: - K15	K: - K20	N: PVD N20	N: - N15	N: - N20	S: PVD S15	S: PVD S20	S: - S10	S: - S15	S: - S20	H: CVD H15	H: - H10	H: - H20
			2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
	12	**SNMM 120404-71**				◐	●	◐				◐	●	◐			◐				◐												◐				
		SNMM 120408-71				◐	●	◐				◐	●	◐			◐				◐												◐				
		SNMM 120412-71				◐	●	◐				◐	●	◐			◐				◐												◐				
	19	**SNMM 190612-71**				◐	●	◐				◐	●	◐			◐				◐												◐				
	9	**SNMM 090304**				●	◐	◐				◐	●	◐			◐				◐												◐				
		SNMM 090308				●	◐	◐				◐	●	◐			◐				◐												◐				
	12	**SNMM 120404**				●	◐	◐				◐	●	◐																		◐				
		SNMM 120408				●	◐	◐				◐	●	◐																		◐				
		SNMM 120412				◐	●	◐				◐	●	◐			◐				◐												◐				
		SNMM 120416				◐	●	◐				◐	●	◐			◐				◐												◐				
	15	**SNMM 150612**				●	◐	◐				◐	●	◐																		◐				
		SNMM 150616				◐	●	◐				◐	●	◐			◐				◐												◐				
		SNMM 150624				◐	●	◐				◐	●	◐			◐				◐												◐				
	19	**SNMM 190608**				●	◐	◐				◐	●	◐																		◐				
		SNMM 190612				●	◐	◐				◐	●	◐																		◐				
		SNMM 190616				●	◐	◐				◐	●	◐																		◐				
		SNMM 190624				◐	●	◐				◐	●	◐			◐				◐												◐				
	25	**SNMM 250716**				●	◐	◐				◐	●	◐																		◐				
		SNMM 250724				◐	●	◐				◐	●	◐			◐				◐												◐				

●First choice ◐Second choice

A.a S-MAX P inserts

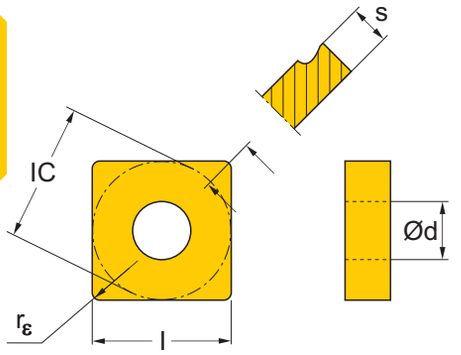


Dimensions	l	IC	s	r_ε	Ød	
9	9.5	9.525	3.18	0.4-0.8	3.8	
12	12.7	12.700	4.76	0.4-1.6	5.2	
15	15.9	15.875	6.35	1.6-2.4	5.2	
19	19.0	19.050	6.35	1.2-1.6	7.9	
25	25.4	25.400	7.94	1.6-2.4	9.1	

	S-MAX P		Ordering code	P							M								K							N			S					H		
						CVD				PVD			CVD			PVD	-		CVD		PVD	-		PVD	-		PVD	-		CVD	-					
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Finishing		12	SNMG 120408-61			◐	●	◐					●	◐					◐				●		◐	◐		◐					◐		◐				
		12	SNMG 120404-CF			●	◐	◐					●	◐					◐				●		◐	◐		◐					◐		◐				
			SNMG 120408-CF			◐	●	◐					●	◐					◐				●		◐	◐							◐		◐				
Medium		9	SNMG 090304			●	◐	◐					●	◐					◐				●		◐	◐		◐					◐		◐				
			SNMG 090308			◐	●	◐					●	◐					◐				●		◐	◐							◐		◐				
		12	SNMG 120404			●	◐	◐					●	◐					◐				●		◐	◐		◐					◐		◐				
			SNMG 120408			◐	●	◐					●	◐					◐				●		◐	◐							◐		◐				
			SNMG 120412			◐	●	◐					●	◐					◐				●		◐	◐							◐		◐				
			SNMG 120416			◐	●	◐					●	◐					◐				●		◐	◐							◐		◐				
		15	SNMG 150616			◐	●	◐					●	◐									●		◐								◐		◐				
		19	SNMG 190612			◐	●	◐					●	◐			◐						●		◐								◐		◐				
			SNMG 190616			◐	●	◐					●	◐			◐						●		◐								◐		◐				
		25	SNMG 250716				●	◐					●	◐			◐						●		◐								◐		◐				
			SNMG 250724				●	◐					●	◐			◐						●		◐								◐		◐				
		12	SNMG 120404-CM			●	◐	◐					●	◐					◐				●		◐	◐		◐					◐		◐				
			SNMG 120408-CM			◐	●	◐					●	◐					◐				●		◐	◐							◐		◐				
			SNMG 120412-CM			◐	●	◐					●	◐					◐				●		◐	◐							◐		◐				
		15	SNMG 150612-CM				●	◐					●	◐			◐						●		◐								◐		◐				
			SNMG 150616-CM				●	◐					●	◐			◐						●		◐								◐		◐				
		19	SNMG 190608-CM				●	◐					●	◐			◐						●		◐								◐		◐				
			SNMG 190612-CM				●	◐					●	◐			◐						●		◐								◐		◐				
			SNMG 190616-CM				●	◐					●	◐			◐						●		◐								◐		◐				
		9	SNMG 090308-15				●	◐					●	◐					◐				●		◐	◐							◐		◐				
		12	SNMG 120404-15			●	◐	◐					●	◐					◐				●		◐	◐		◐					◐		◐				
			SNMG 120408-15			◐	●	◐					●	◐					◐				●		◐	◐							◐		◐				
			SNMG 120412-15			◐	●	◐					●	◐					◐				●		◐	◐							◐		◐				
		19	SNMG 190612-15				●	◐					●	◐			◐						●		◐								◐		◐				
		25	SNMG 250716-15				●	◐					●	◐			◐						●		◐								◐		◐				
Roughing		12	SNMG 120408-CR				●	◐					●	◐					◐				●		◐	◐							◐		◐				
			SNMG 120412-CR				●	◐					●	◐					◐				●		◐	◐							◐		◐				
			SNMG 120416-CR				●	◐					●	◐					◐				●		◐	◐							◐		◐				
		15	SNMG 150612-CR				●	◐					●	◐			◐						●		◐								◐		◐				
			SNMG 150616-CR				●	◐					●	◐			◐						●		◐								◐		◐				
		19	SNMG 190608-CR				●	◐					●	◐			◐						●		◐								◐		◐				
			SNMG 190612-CR				●	◐					●	◐			◐						●		◐								◐		◐				
			SNMG 190616-CR				●	◐					●	◐			◐						●		◐								◐		◐				

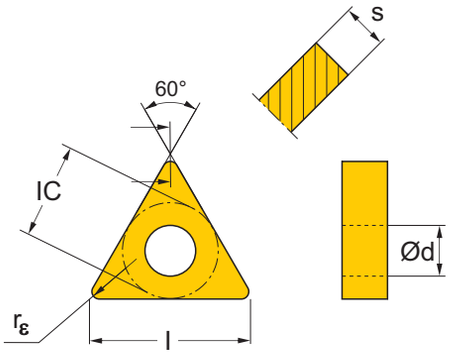
●First choice ◐Second choice

A.a S-MAX P inserts



Dimensions	l	IC	s	r_ε	Ød	
9	9.5	9.525	3.18	0.8	3.8	
15	15.9	15.875	6.35	1.2	7.9	
19	19.0	19.050	6.35	1.2	9.1	

	S-MAX P		Ordering code	P								M										K							N			S					H		
				CVD						PVD		CVD					PVD	-				CVD		PVD	-			PVD	-		PVD	-			CVD	-		
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
For material with short chips		9	SNMX 090308			◐	●	◐				●		◐					◐	◐	◐									◐				◐					
		15	SNMX 150612			◐	●	◐				●		◐					◐	◐	◐									◐				◐					
		19	SNMX 190612			◐	●	◐				●		◐					◐	◐	◐									◐				◐					



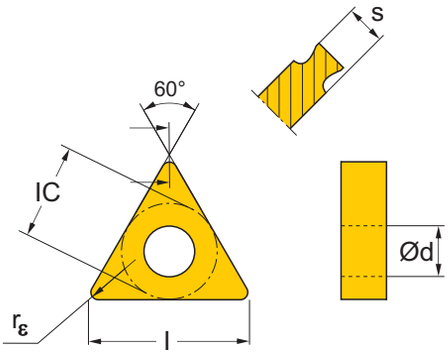
Dimensions	l	IC	s	r_ε	Ød	
11	11.0	6.350	4.76	0.4-0.8	2.3	
16	16.5	9.525	4.76	0.4-1.6	3.8	
22	22.0	12.700	4.76	0.8-1.6	5.2	

	S-MAX P		Ordering code	P								M										K							N			S					H		
				CVD						PVD		CVD					PVD	-				CVD		PVD	-			PVD	-		PVD	-			CVD	-		
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
For material with short chips		11	TNMA 110304																			●	◐			◐	◐							◐			◐		
			TNMA 110308																			●		◐		◐	◐							◐			◐		
		16	TNMA 160404																			●	◐			◐	◐							◐			◐		
			TNMA 160408																			●		◐		◐	◐							◐			◐		
			TNMA 160412																			●		◐		◐	◐							◐			◐		
			TNMA 160416																			●		◐		◐	◐							◐			◐		
		22	TNMA 220404																			●		◐		◐	◐							◐			◐		
			TNMA 220408																			●		◐		◐	◐							◐			◐		
			TNMA 220412																			●		◐		◐	◐							◐			◐		
			TNMA 220416																			●		◐		◐	◐							◐			◐		

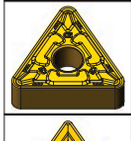
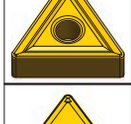
●First choice ◐Second choice

CORUN

A.a S-MAX P inserts



Dimensions	l	IC	s	r_ε	Ød	
11	11.0	6.350	3.18	0.4-0.8	2.3	
16	16.5	9.525	4.76	0.4-1.2	3.8	
22	22.0	12.700	4.76	0.4-1.6	5.2	

	S-MAX P		Ordering code	P							M								K							N			S					H		
				CVD						PVD	CVD						PVD	-	CVD			PVD	-		PVD	-		PVD	-				CVD	-		
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Finishing		11	TNMG 110304-CF			●	◐			◐			●						◐														◐						
			TNMG 110308-CF				●	◐		◐			●						◐														◐						
		16	TNMG 160404-61			●	◐			◐			●						◐														◐						
			TNMG 160408-61				●	◐		◐			●						◐														◐						
			TNMG 160412-61				●	◐		◐			●						◐														◐						
		22	TNMG 220408-61				●	◐		◐			●						◐														◐						
			TNMG 220412-61				●	◐		◐			●						◐														◐						
			TNMG 220416-61				●	◐		◐			●						◐														◐						
Medium		11	TNMG 110304			●	◐			◐			●						◐														◐						
			TNMG 110308				●	◐		◐			●						◐														◐						
		11	TNMG 110304-15			●	◐			◐			●						◐														◐						
		16	TNMG 160404			●	◐			◐			●						◐														◐						
			TNMG 160408				●	◐		◐			●						◐														◐						
			TNMG 160412				●	◐		◐			●						◐														◐						
		16	TNMG 160404-15			●	◐			◐			●						◐														◐						
			TNMG 160408-15				●	◐		◐			●						◐														◐						
			TNMG 160412-15				●	◐		◐			●						◐														◐						
		16	TNMG 160404-CM			●	◐			◐			●						◐														◐						
			TNMG 160408-CM				●	◐		◐			●						◐														◐						
			TNMG 160412-CM				●	◐		◐			●						◐														◐						
		22	TNMG 220404			●	◐			◐			●						◐														◐						
			TNMG 220408				●	◐		◐			●						◐														◐						
			TNMG 220412				●	◐		◐			●						◐														◐						
			TNMG 220416				●	◐		◐			●						◐														◐						
		22	TNMG 220404-15			●	◐			◐			●						◐														◐						
			TNMG 220408-15				●	◐		◐			●						◐														◐						
			TNMG 220412-15				●	◐		◐			●						◐														◐						
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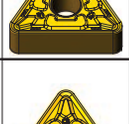
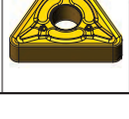
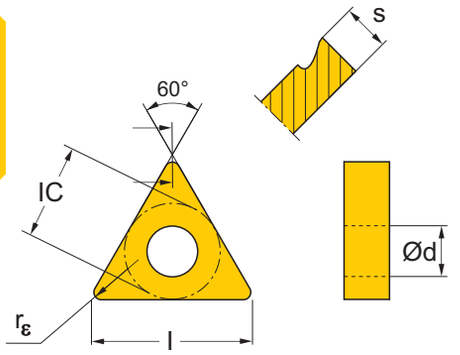
		22	TNMG 220404-CM			●	◐			◐			●						◐														◐						
			TNMG 220408-CM				●	◐		◐			●						◐														◐						
			TNMG 220412-CM				●	◐		◐			●						◐														◐						
Roughing		16	TNMG 160408-CR				●	◐		◐			●						◐														◐						
			TNMG 160412-CR				●	◐		◐			●						◐														◐						
		22	TNMG 220408-CR				●	◐		◐			●						◐														◐						
			TNMG 220412-CR				●	◐		◐			●						◐														◐						
			TNMG 220416-CR				●	◐		◐			●						◐														◐						

●First choice ◐Second choice

CORUN

A.a S-MAX P inserts



Dimensions	l	IC	s	r_ε	Ød	
16	16.5	9.525	4.76	0.4-1.6	3.8	
22	22.0	12.700	4.76	0.8-1.6	5.2	

	S-MAX P		Ordering code	P								M										K							N			S					H		
				CVD						PVD		CVD				PVD	-					CVD	PVD	-					PVD	-		PVD	-				CVD	-		
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Medium		16	TNMM 160404			●	◐	◐					◐	●				◐				◐													◐					
			TNMM 160408			◐	●	◐					◐	●				◐				◐													◐					
			TNMM 160412			◐	●	◐					◐	●				◐				◐													◐					
		22	TNMM 202404			●	◐	◐					◐	●				◐				◐													◐					
			TNMM 220408			◐	●	◐					◐	●				◐				◐													◐					
			TNMM 220412			◐	●	◐					◐	●				◐				◐													◐					
			TNMM 220416			◐	●	◐					◐	●				◐				◐													◐					
Roughing		16	TNMM 160404-71				●	◐	◐				◐	●	◐			◐				◐													◐					
			TNMM 160408-71				●	◐	◐				◐	●	◐			◐				◐													◐					
			TNMM 160412-71				●	◐	◐				◐	●	◐			◐				◐													◐					
		22	TNMM 220404-71				●	◐	◐				◐	●	◐			◐				◐													◐					
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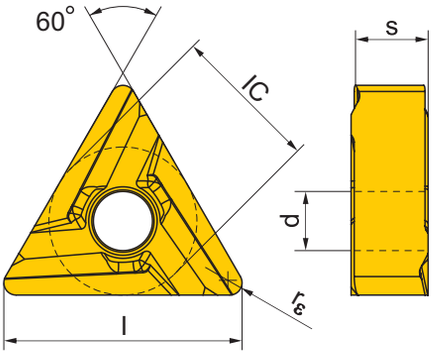


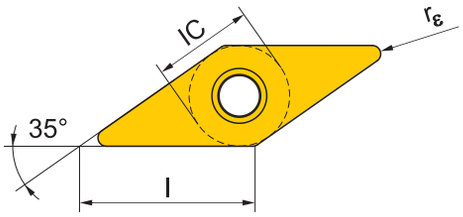
Dimensions	l	IC	s	r_ε	Ød	
16	16.5	9.525	4.76	0.8	3.81	

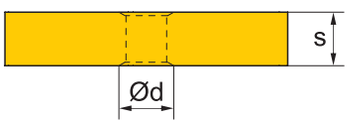
	S-MAX P		Ordering code	P								M										K							N			S					H		
				CVD						PVD		CVD				PVD	-					CVD	PVD	-					PVD	-		PVD	-				CVD	-		
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Roughing and medium		16	TNUX 160408-R14		◐		●	◐					●	◐		◐			◐	◐			●			◐		◐			◐			◐			◐				

●First choice ◐Second choice

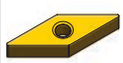
CORUN

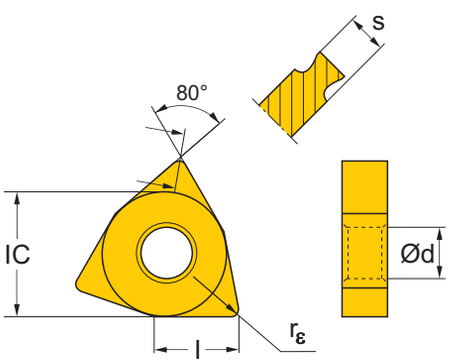
A.a S-MAX P inserts



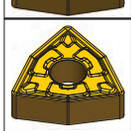
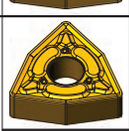


Dimensions	l	IC	s	r_ε	Ød	
16	16.5	9.525	4.76	0.4-0.8	4.4	

			S-MAX P	Ordering code	P							M											K										N			S						H	
							CVD				PVD			CVD				PVD	-			CVD		PVD	-			PVD	-		PVD	-			CVD	-								
					P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20			
					2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A			
Medium		16	VNMA 160404					◐						◐						◐				●		◐	◐								◐		◐		◐		◐			
			VNMA 160408					◐						◐						◐				●		◐	◐								◐		◐		◐		◐			



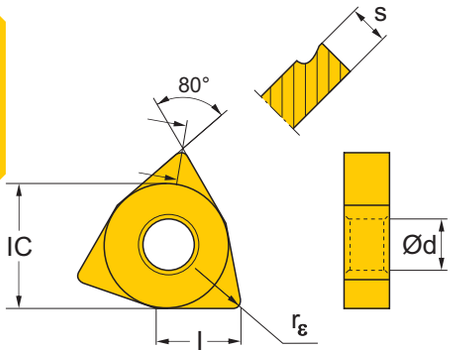
Dimensions	l	IC	s	r_ε	Ød	
8	8.0	12.700	4.76	0.4-1.2	5.2	

			S-MAX P	Ordering code	P							M											K										N			S						H	
							CVD				PVD			CVD				PVD	-			CVD		PVD	-			PVD	-		PVD	-			CVD	-								
					P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20			
					2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A			
Medium		8	WNMG 080408-QM				◐	●	◐					◐	●	◐						◐	●	●					◐					◐		◐				◐					
			WNMG 080412-QM				◐	●	◐					◐	●	◐						◐	●	●					◐					◐		◐				◐					
		8	WNMG 080404-CM				◐	●	◐					◐	●	◐		◐				◐	◐						◐					◐		◐			◐	◐				
			WNMG 080408-CM				◐	●	◐					◐	●	◐						◐	◐						◐					◐		◐			◐	◐				
			WNMG 080412-CM				◐	●	◐					◐	●	◐						◐	◐						◐					◐		◐			◐	◐				
Roughing		8	WNMG 080408-CR					◐	●	◐					◐	●	◐						◐						◐					◐		◐			◐	◐				
			WNMG 080412-CR					◐	●	◐					◐	●	◐						◐						◐					◐		◐			◐	◐				
		8	WNMG 080408-CFM				●	◐	◐			◐		●	◐							◐							◐					◐		◐			◐	◐				

●First choice ◐Second choice

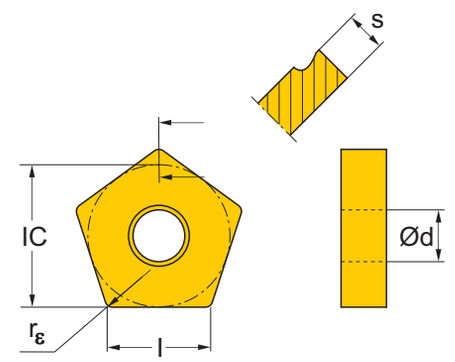
CORUN

A.a S-MAX P inserts



Dimensions	l	IC	s	r_ε	Ød	
8	8.0	12.700	4.76	0.8	5.2	
10	10.0	15.875	4.76	0.8	6.35	
12	12.0	19.050	6.35	0.12	7.93	

		S-MAX P	Ordering code	P								M								K							N			S					H		
				CVD						PVD		CVD					PVD	-		CVD		PVD	-			PVD	-		PVD	-			CVD	-		
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Medium		8	WNUM 080408				●	◐		◐			●	◐				◐			◐	◐	◐	●					◐				◐				◐		
		10	WNUM 100408				●	◐		◐			●	◐				◐			◐	◐	◐	●					◐				◐				◐		
		12	WNUM 120612				●	◐		◐			●	◐				◐			◐	◐	◐	●					◐				◐				◐		



Dimensions	l	IC	s	r_ε	Ød	
11	11.0	15.785	4.76	0.8	6.35	
13	13.0	19.050	6.35	1.2	7.93	

		S-MAX P	Ordering code	P								M								K							N			S					H		
				CVD						PVD		CVD					PVD	-		CVD		PVD	-			PVD	-		PVD	-			CVD	-		
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Medium		11	PNUM 110408				●	◐		◐			●	◐				◐			◐	◐	◐	●					◐				◐				◐		
		13	PNUM 130612				●	◐		◐			●	◐				◐			◐	◐	◐	●					◐				◐				◐		

●First choice ◐Second choice

CORUN

CORUN

Notes

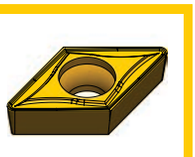
A.b S-MAX U inserts

CCMT

A.b2

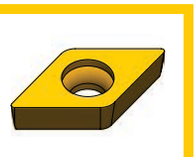
CCMW

A.b2



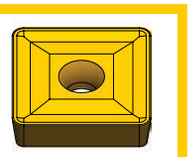
DCMT

A.b3



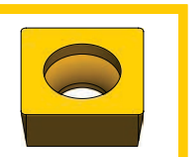
DCMW

A.b3



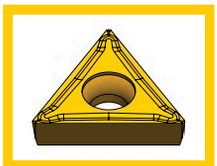
SCMT

A.b4



SCMW

A.b4

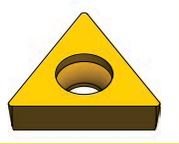


TCMT-UF

A.b5

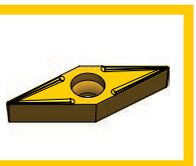
TCMT-UR

A.b5



TCMW

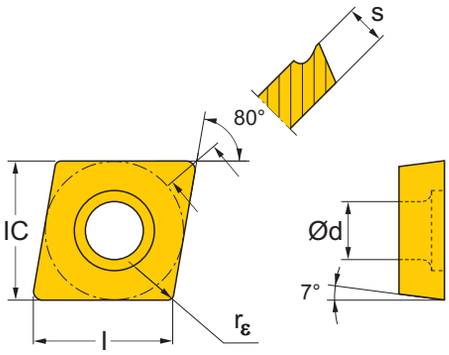
A.b5



VBMT

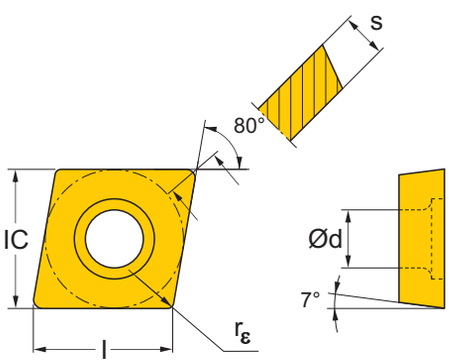
A.b6

A.b S-MAX U inserts



Dimensions	l	IC	s	r_ε	Ød	
6	6.5	6.350	2.38	0.2-0.8	2.8	
9	9.7	9.525	3.97	0.2-0.8	4.4	
16	16.1	15.875	5.50	0.8	5.5	

	S-MAX U		Ordering code	P							M								K							N			S					H		
						CVD				PVD			CVD				PVD	-		CVD		PVD	-			PVD	-		PVD	-			CVD	-		
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Finishing		6	CCMT 060204-UF			●	◐	◐		◐			◐	◐					●				●		◐	◐	◐			●				●					●	
		9	CCMT 09T302-UF			●	◐	◐		◐			◐	◐					●				●		◐	◐	◐			●				●					●	
			CCMT 09T304-UF				●	◐		◐			◐		◐				●				●		◐	◐	◐			●				●					●	
Medium		16	CCMT 160508-W				●	◐		◐		●							◐	◐	◐		●		◐	◐	◐			●				●					●	
Roughing		9	CCMT 09T304-UR				●	◐	◐	◐			◐	●			◐			◐					●	◐	◐			●				●					●	
			CCMT 09T308-UR				●	◐	◐	◐			◐	●			◐			◐					●	◐	◐			●				●					●	



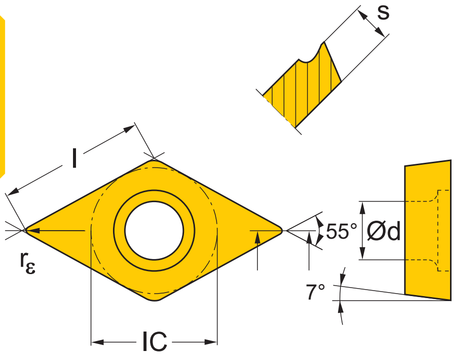
Dimensions	l	IC	s	r_ε	Ød	
6	6.5	6.350	2.38	0.2-0.8	2.8	
9	9.7	9.525	3.97	0.2-0.8	4.4	
16	16.1	15.875	5.50	0.8	5.5	

	S-MAX U		Ordering code	P							M								K							N			S					H		
						CVD				PVD			CVD				PVD	-		CVD		PVD	-			PVD	-		PVD	-			CVD	-		
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Finishing		6	CCMW 060204			●	◐				◐		●						●				●		◐		◐			●				◐					◐	◐
		9	CCMW 09T304			●	◐				◐		●						●				●		◐		◐			●				◐					◐	◐
			CCMW 09T308			◐	●					◐	●						◐				●		◐		◐			◐				◐					◐	◐
		16	CCMW 160508			◐	●					◐	●						◐				●		◐		◐			◐				◐					◐	◐

●First choice ◐Second choice

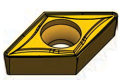
CORUN

A.b S-MAX U inserts

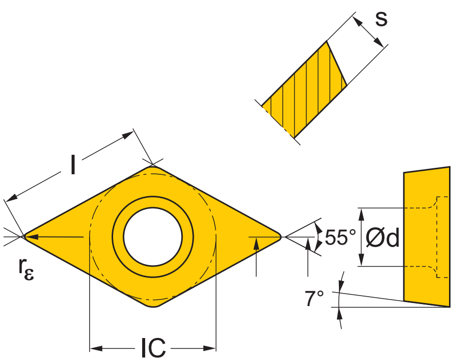


Dimensions	l	IC	s	rε	Ød	
11	11.6	9.525	3.97	0.4-1.2	4.4	

Roughing

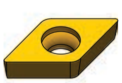


S-MAX U	Ordering code	P							M												K							N			S					H		
		CVD						PVD	CVD								PVD		-		CVD			PVD	-			PVD	-		PVD		-			CVD	-	
		P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
		2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
11	DCMT 11T304-UR			◐	●	◐		◐			◐	◐	◐		◐		◐			◐	◐					◐			◐			◐		◐			◐	
	DCMT 11T308-UR			◐	●	◐		◐			◐	◐	◐		◐		◐			◐	◐					◐			◐			◐		◐			◐	



Dimensions	l	IC	s	rε	Ød	
11	11.6	9.525	3.97	0.4-1.2	4.4	

For material with short chips

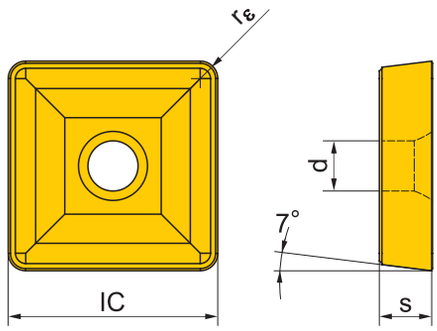


S-MAX U	Ordering code	P							M												K							N			S					H		
		CVD						PVD	CVD								PVD		-		CVD			PVD	-			PVD	-		PVD		-			CVD	-	
		P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
		2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
11	DCMW 11T304			◐					◐		◐			◐						◐	◐			◐		◐			◐					◐			◐	

●First choice ◐Second choice

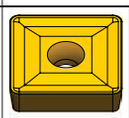
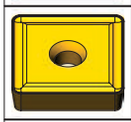
CORUN

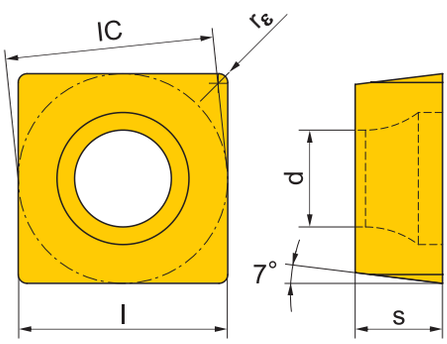
A.b S-MAX U inserts



Dimensions	IC	s	r_ε	Ød	
38	38.1	9.525	3.2	9.2	

Roughing

S-MAX U		Ordering code	P: CVD						PVD	M: CVD							PVD	-	K: CVD		PVD		-			N: PVD		-		S: PVD			-			H: CVD		-	
			P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	K15	K15	K25	K15	K10	K13A	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
			2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
	38	SCMT 380932				◐	●					●	◐	◐			◐				◐	◐		◐														
	38	SCMT 380932-TS				◐	●	◐				◐	●	◐			◐				◐	◐		◐														
	38	SCMT 380932-HR				◐	●	◐				◐	●	◐			◐				◐	◐		◐														



Dimensions	l	IC	s	r_ε	Ød	
9	9.5	9.525	3.97	0.4-0.8	4.4	

For material with short chips

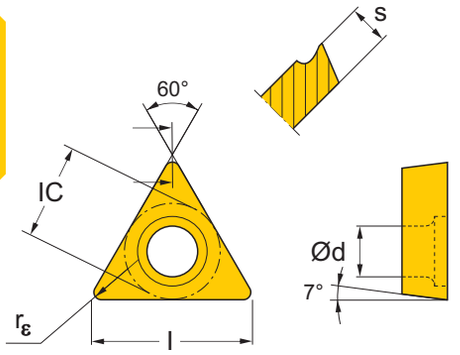
S-MAX U		Ordering code	P: CVD						PVD	M: CVD							PVD	-	K: CVD		PVD		-			N: PVD		-		S: PVD			-			H: CVD		-	
			P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	K15	K15	K25	K15	K10	K13A	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
			2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
	9	SCMW 09T308				◐	●	◐				◐	◐	●			◐				●						◐			◐				◐			◐	◐	

●First choice ◐Second choice

CORUN

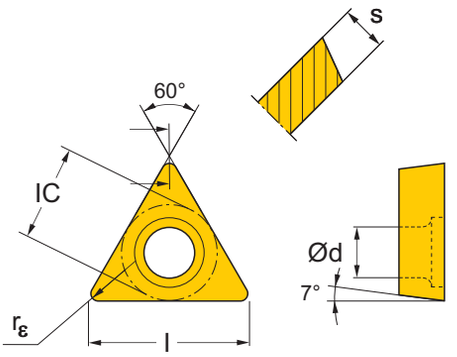
A.b S-MAX U inserts

A



Dimensions	l	IC	s	r_ε	Ød	
11	11.0	6.350	2.38	0.2-0.8	2.8	
16	16.5	9.525	3.94	0.4-0.8	4.4	
22	22.0	12.700	3.94	0.8	4.4	

	S-MAX U		Ordering code	P							M								K						N			S				H	
				CVD						PVD	CVD						PVD	-	CVD		PVD	-		PVD	-	PVD		-			CVD	-	
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Finishing		11	TCMT 110202-UF			◐	●	◐				◐	◐	●				◐			◐	●	●					◐		◐			◐		◐			●	
			TCMT 110208-UF			◐	●	◐				◐	◐	●				◐			◐	●	●					◐		◐			◐		◐			●	
		16	TCMT 16T304-UF			◐	●	◐				◐	◐	●				◐			◐	●					◐		◐			◐		◐			●	
		22	TCMT 220408-UF			◐	●	◐				◐	◐	●				◐			◐	●					◐		◐			◐		◐			●	
Roughing		11	TCMT 110204-UR			◐	●	◐				◐	◐	●				◐			◐	●					◐		◐			◐		◐			●	



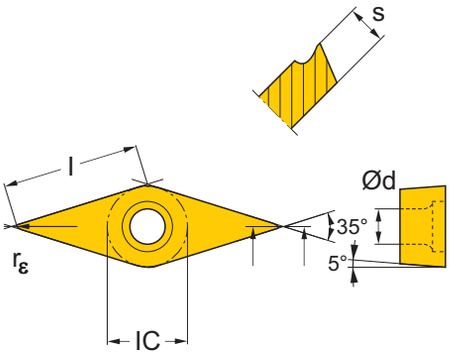
Dimensions	l	IC	s	r_ε	Ød	
11	11.0	6.350	2.38	0.2-0.8	2.8	
16	16.5	9.525	3.94	0.4-0.8	4.4	
22	22.0	12.700	3.94	0.8	4.4	

	S-MAX U		Ordering code	P							M								K						N			S				H	
				CVD						PVD	CVD						PVD	-	CVD		PVD	-		PVD	-	PVD		-			CVD	-	
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
For material with short chips		11	TCMW 110202				●				◐	●			◐			◐			◐	◐	◐					◐		◐			◐		◐			◐	
			TCMW 110208				●				◐	●			◐			◐			◐	◐	◐					◐		◐			◐		◐			◐	
		16	TCMW 16T304				●				◐	●			◐			◐			◐	◐	◐					◐		◐			◐		◐			◐	
		22	TCMW 220408				●				◐	●			◐			◐			◐	◐	◐					◐		◐			◐		◐			◐	

●First choice ◐Second choice

CORUN

A.b S-MAX U inserts



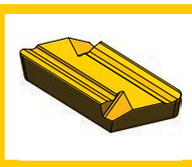
Dimensions	l	IC	s	r_ε	Ød	
16	16.6	9.525	4.76	0.4-1.2	4.4	

	S-MAX U		Ordering code	P							M										K							N			S					H		
						CVD				PVD			CVD				PVD	-			CVD	PVD	-			PVD	-		PVD	-			CVD	-			
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Roughing		16	VBMT 160404-UR			●	◐	◐		◐	●		◐	◐					◐				●			◐		◐						◐		◐				
			VBMT 160408-UR			◐	●	◐		◐			●	◐					◐				●			◐		◐						◐		◐				

A.c S-MAX and S-MAX S inserts

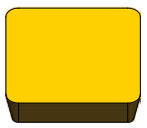
S-MAX | S-MAX S

A

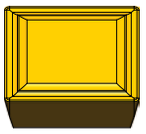


KNUX 16
A.c2

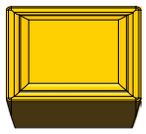
KNUX 22
A.c2



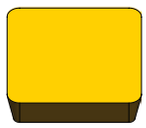
SPGN
A.c3



SPGR
A.c3

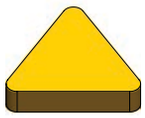


SPMR
A.c4

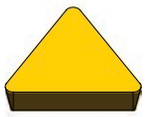


SPUN
A.c4

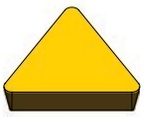
TNGN
A.c5



TNUN
A.c5

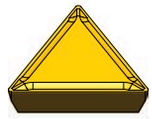


TPGN
A.c6



TPUN
A.c6

TPGR
A.c7

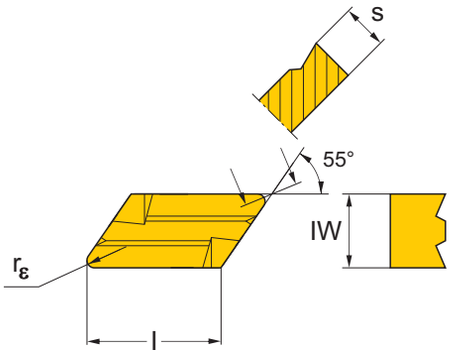


TPMR
A.c7

A.c S-MAX and S-MAX S inserts

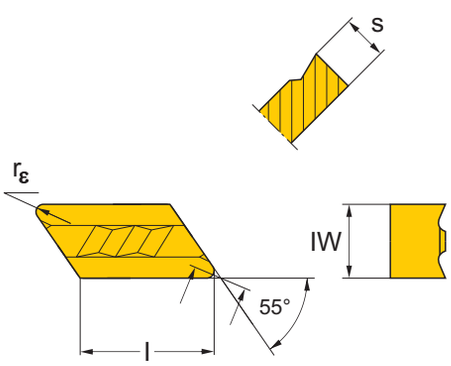
S-MAX | S-MAX S

A



Dimensions	l	IW	s	r_ε		
16	16.5	9.525	4.76	0.5-1.5		

	S-MAX		Ordering code	P							M								K						N			S					H	
				CVD						PVD	CVD						PVD	-	CVD			PVD	-		PVD	-		PVD	-			CVD	-	
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Finishing		16	KNUX 160405R11			◐	●	◐			◐	●	◐								◐	●					◐	◐			◐				◐			◐	
			KNUX 160405L11			◐	●	◐			◐	●	◐								◐	●					◐	◐			◐				◐			◐	
			KNUX 160405R12			◐	●	◐			◐	●	◐								◐	●					◐	◐			◐				◐			◐	
			KNUX 160405L12			◐	●	◐			◐	●	◐								◐	●					◐	◐			◐				◐			◐	
		16	KNUX 160410R11			◐	●	◐			◐	●	◐								◐	●					◐	◐			◐				◐			◐	
			KNUX 160410L11			◐	●	◐			◐	●	◐								◐	●					◐	◐			◐				◐			◐	
			KNUX 160410R12			◐	●	◐			◐	●	◐								◐	●					◐	◐			◐				◐			◐	
			KNUX 160410L12			◐	●	◐			◐	●	◐								◐	●					◐	◐			◐				◐			◐	
		16	KNUX 160415R12				◐	●	◐			◐	●	◐							◐	●					◐	◐			◐				◐			◐	
			KNUX 160415L12				◐	●	◐			◐	●	◐							◐	●					◐	◐			◐				◐			◐	
			KNUX 160415R13				◐	●	◐			◐	●	◐							◐	●					◐	◐			◐				◐			◐	
			KNUX 160415L13				◐	●	◐			◐	●	◐							◐	●					◐	◐			◐				◐			◐	



Dimensions	l	IW	s	r_ε		
22	22.0	9.525	4.76	1.5		

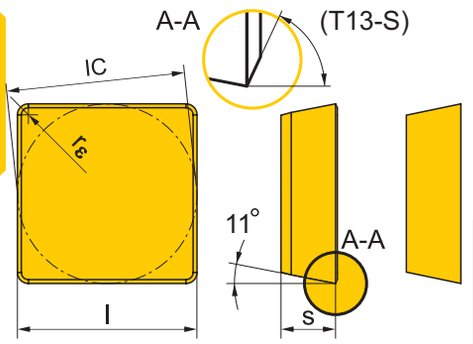
	S-MAX		Ordering code	P							M								K						N			S					H	
				CVD						PVD	CVD						PVD	-	CVD			PVD	-		PVD	-		PVD	-			CVD	-	
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Finishing		22	KNUX 220415-L25			◐	●	◐				●	◐	◐		●					◐	●					◐			◐				◐			◐	

●First choice ◐Second choice

CORUN

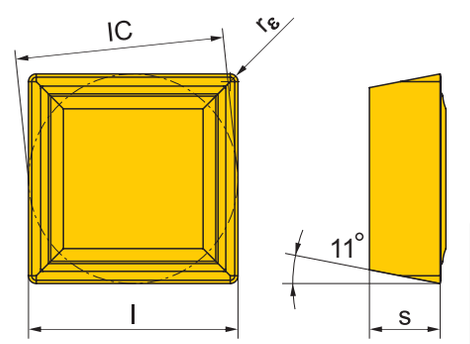
A.c S-MAX and S-MAX S inserts

S-MAX | **S-MAX S**



Dimensions	l	IC	s	r_ε	T13	S
9	9.50	9.525	3.18	0.4-1.2	-	-
12	12.70	12.700	3.18	0.0-3.0	0.5/15°	-
15	15.87	15.875	4.76	1.6	-	0.2/20°
19	19.05	19.050	4.76	0.0	-	-

	S-MAX		Ordering code	P								M										K							N			S						H		
				CVD						PVD		CVD					PVD	-				CVD		PVD		-			PVD	-		PVD		-			CVD	-		
				P20	P25	P15	P25	P35	P40	P20		M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520		2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Roughing		9	SPGN 090304				●	◐		◐				●	◐		◐			◐	◐		◐	●		◐	◐		◐		◐			◐		◐		◐		
			SPGN 090308				●	◐		◐				●	◐		◐			◐	◐		◐	●		◐	◐		◐		◐			◐		◐		◐		
			SPGN 090312				◐	◐		◐				●	◐		◐			◐	◐		◐	●		◐	◐		◐		◐			◐		◐		◐		
		12	SPGN 120300				●	◐		◐				●	◐		◐			◐	◐		◐	●		◐	◐		◐		◐			◐		◐		◐		
			SPGN 120304				●	◐		◐				●	◐		◐			◐	◐		◐	●		◐	◐		◐		◐			◐		◐		◐		
			SPGN 120308				●	◐		◐				●	◐		◐			◐	◐		◐	●		◐	◐		◐		◐			◐		◐		◐		
			SPGN 120312				●	◐		◐				●	◐		◐			◐	◐		◐	●		◐	◐		◐		◐			◐		◐		◐		
			SPGN 120330				●	◐						●	◐		◐			◐	◐		◐	●		◐	◐		◐		◐			◐		◐		◐		
			SPGN 120332				●	◐						●	◐		◐			◐	◐		◐	●		◐	◐		◐		◐			◐		◐		◐		
		12	SPGN 120312-T13				●	◐						●	◐		◐			◐	◐		◐	●		◐	◐		◐					◐		◐		◐		
			SPGN 120332-T13				●	◐						●	◐		◐			◐	◐		◐	●		◐	◐		◐					◐		◐		◐		
		15	SPGN 150416				●	◐						●	◐		◐			◐	◐		◐	●		◐	◐		◐		◐			◐		◐		◐		
		15	SPGN 150408-S				●	◐						●	◐		◐			◐	◐		◐	●		◐	◐		◐					◐		◐		◐		
		19	SPGN 190400				●	◐		◐				●	◐		◐			◐	◐		◐	●		◐	◐		◐		◐			◐		◐		◐		
			SPGN 190402				●	◐		◐				●	◐		◐			◐	◐		◐	●		◐	◐		◐		◐			◐		◐		◐		



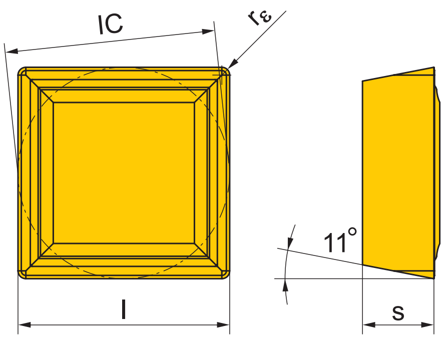
Dimensions	l	IC	s	r_ε		
9	9.5	9.525	3.18	0.4-0.8		
12	12.7	12.700	3.18	0.4-1.2		

	S-MAX S		Ordering code	P								M										K							N			S						H		
				CVD						PVD		CVD					PVD	-				CVD		PVD		-			PVD	-		PVD		-			CVD	-		
				P20	P25	P15	P25	P35	P40	P20		M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520		2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Roughing		9	SPGR 090304				●	◐												◐			◐	●		◐	◐		◐								◐		◐		
			SPGR 090308				●	◐												◐			◐	●		◐	◐		◐								◐		◐		
		12	SPGR 120304				●	◐												◐			◐	●		◐	◐		◐								◐		◐		
			SPGR 120308				●	◐												◐			◐	●		◐	◐		◐								◐		◐		
			SPGR 120312				●	◐												◐			◐	●		◐	◐		◐								◐		◐		

●First choice ◐Second choice

CORUN

A.c S-MAX and S-MAX S inserts



Dimensions	l	IC	s	rε		
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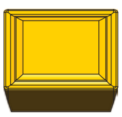
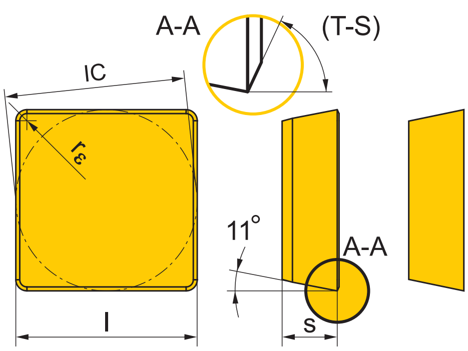
12	12.7	12.700	3.18	0.4-1.2		

S-MAX S – Finishing



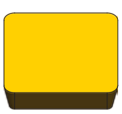
Size	Ordering code	P CVD 2C20 P20	P CVD 2C25 P25	P CVD 4C15 P15	P CVD 4C25 P25	P CVD 4C35 P35	P CVD 4C40 P40	P PVD 7520 P20	M CVD 2C15 M15	M CVD 2C20 M20	M CVD 2C25 M25	M CVD 2C35 M35	M CVD 2C40 M40	M CVD 4C25 M25	M CVD 4C35 M35	M CVD 4C40 M40	M PVD 7520 M20	M PVD 7535 M35	M - K10F M20	M - P6 M40	K CVD 3C15 K15	K CVD 4C15 K15	K CVD 4C25 K25	K PVD 715 K15	K - K1P K10	K - K13A K15	K - K10F K20	N PVD 720 N20	N - K13A N15	N - K10F N20	S PVD 7515 S15	S PVD 7520 S20	S - K1P S10	S - K13A S15	S - K10F S20	H CVD 4C15 H15	H - K1P H10	H - K13A H20
9	SPMR 090304				●	◐											◐			◐	●		◐	◐		◐								◐		◐		
	SPMR 090308				●	◐											◐			◐	●		◐	◐		◐								◐		◐		
12	SPMR 120304				●	◐											◐			◐	●		◐	◐		◐								◐		◐		
	SPMR 120308				●	◐											◐			◐	●		◐	◐		◐								◐		◐		
	SPMR 120312				●	◐											◐			◐	●		◐	◐		◐								◐		◐		



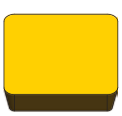
Dimensions	l	IC	s	rε	S	T
9	9.5	9.525	3.18	0.4-0.8	-	-
12	12.7	12.700	3.18	0.4-1.2	-	-
15	15.875	15.875	4.76	1.6	0.2/20°	-
19	19.0	19.050	4.76	0.4-1.6	-	-
25	25.4	25.400	6.35	1.6-2.0	-	0.6/25°

S-MAX

Finishing



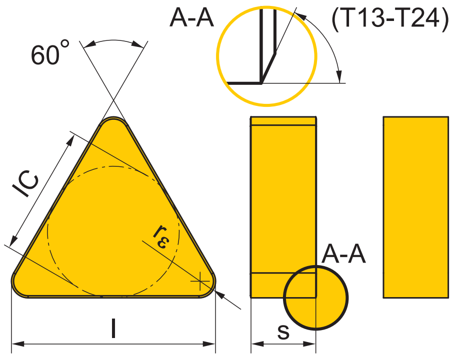
Medium



Application	Size	Ordering code	P CVD 2C20 P20	P CVD 2C25 P25	P CVD 4C15 P15	P CVD 4C25 P25	P CVD 4C35 P35	P CVD 4C40 P40	P PVD 7520 P20	M CVD 2C15 M15	M CVD 2C20 M20	M CVD 2C25 M25	M CVD 2C35 M35	M CVD 2C40 M40	M CVD 4C25 M25	M CVD 4C35 M35	M CVD 4C40 M40	M PVD 7520 M20	M PVD 7535 M35	M - K10F M20	M - P6 M40	K CVD 3C15 K15	K CVD 4C15 K15	K CVD 4C25 K25	K PVD 715 K15	K - K1P K10	K - K13A K15	K - K10F K20	N PVD 720 N20	N - K13A N15	N - K10F N20	S PVD 7515 S15	S PVD 7520 S20	S - K1P S10	S - K13A S15	S - K10F S20	H CVD 4C15 H15	H - K1P H10	H - K13A H20
Finishing	9	SPUN 090304				●	◐		◐			◐						●			◐	●		◐	◐		◐			◐			◐					◐	
		SPUN 090308				●	◐		◐			◐						●			◐	●		◐	◐		◐			◐			◐					◐	
	12	SPUN 120304				●	◐		◐			◐						●			◐	●		◐	◐		◐			◐			◐					◐	
		SPUN 120308				●	◐		◐			◐						●			◐	●		◐	◐		◐			◐			◐					◐	
		SPUN 120312				●	◐		◐			◐						●			◐	●		◐	◐		◐			◐			◐					◐	
Medium	15	SPUN 150416-T				●	◐		◐													●		◐	◐		◐						◐					◐	
	15	SPUN 150416-S				●	◐		◐													●		◐	◐		◐			◐			◐					◐	
	19	SPUN 190404				●	◐		◐			◐						●			◐	●		◐	◐		◐			◐			◐					◐	
		SPUN 190412				●	◐		◐			◐						●			◐	●		◐	◐		◐			◐			◐					◐	
		SPUN 190416				●	◐		◐			◐						●			◐	●		◐	◐		◐			◐			◐					◐	
	25	SPUN 250616-T				●	◐		◐													●		◐	◐		◐			◐			◐					◐	
		SPUN 250620-T				●	◐		◐													●		◐	◐		◐			◐			◐					◐	

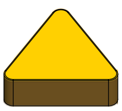
●First choice ◐Second choice

A.c S-MAX and S-MAX S inserts

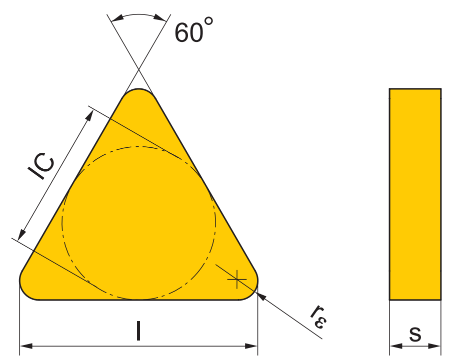


Dimensions	l	IC	s	rε	T13	T24
16	16.5	9.525	3.15	1.2-1.6	-	-
16	16.5	9.525	4.76	0.8-1.6	-	0.15/15°
22	22.0	12.700	6.35	1.6	0.2/25°	-

Medium



S-MAX	Ordering code	P CVD 2C20 (P20)	P CVD 2C25 (P25)	P CVD 4C15 (P15)	P CVD 4C25 (P25)	P CVD 4C35 (P35)	P CVD 4C40 (P40)	P PVD 7520 (P20)	M CVD 2C15 (M15)	M CVD 2C20 (M20)	M CVD 2C25 (M25)	M CVD 2C35 (M35)	M CVD 2C40 (M40)	M CVD 4C25 (M25)	M CVD 4C35 (M35)	M CVD 4C40 (M40)	M PVD 7520 (M20)	M PVD 7535 (M35)	M - K10F (M20)	M - P6 (M40)	K CVD 3C15 (K15)	K CVD 4C15 (K15)	K CVD 4C25 (K25)	K PVD 715 (K15)	K - K1P (K10)	K - K13A (K15)	K - K10F (K20)	N PVD 720 (N20)	N - K13A (N15)	N - K10F (N20)	S PVD 7515 (S15)	S PVD 7520 (S20)	S - K1P (S10)	S - K13A (S15)	S - K10F (S20)	H CVD 4C15 (H15)	H - K1P (H10)	H - K13A (H20)
16	TNGN 160312				●	◐															●		◐	◐		◐								◐			◐	
	TNGN 160316																																					
16	TNGN 160408				●	◐															●		◐	◐		◐								◐			◐	
	TNGN 160412				●	◐															●		◐	◐		◐								◐			◐	
	TNGN 160416				●	◐															●		◐	◐		◐								◐			◐	
16	TNGN 160412-T13				●	◐															●		◐	◐		◐								◐			◐	
16	TNGN 160416-T24				●	◐															●		◐	◐		◐								◐			◐	
22	TNGN 220616				●	◐															●		◐	◐		◐								◐			◐	
22	TNGN 220616-T24				●	◐															●		◐	◐		◐								◐			◐	



Dimensions	l	IC	s	rε		
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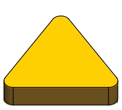
16	16.5	9.525	4.76	0.8-1.6		

Medium

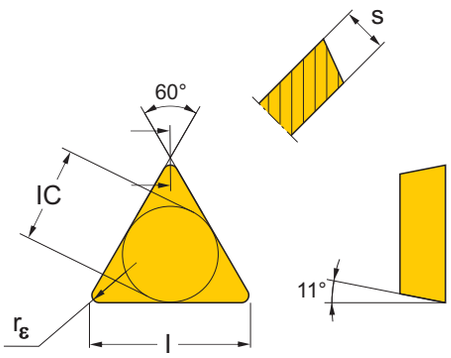


S-MAX	Ordering code	P CVD 2C20 (P20)	P CVD 2C25 (P25)	P CVD 4C15 (P15)	P CVD 4C25 (P25)	P CVD 4C35 (P35)	P CVD 4C40 (P40)	P PVD 7520 (P20)	M CVD 2C15 (M15)	M CVD 2C20 (M20)	M CVD 2C25 (M25)	M CVD 2C35 (M35)	M CVD 2C40 (M40)	M CVD 4C25 (M25)	M CVD 4C35 (M35)	M CVD 4C40 (M40)	M PVD 7520 (M20)	M PVD 7535 (M35)	M - K10F (M20)	M - P6 (M40)	K CVD 3C15 (K15)	K CVD 4C15 (K15)	K CVD 4C25 (K25)	K PVD 715 (K15)	K - K1P (K10)	K - K13A (K15)	K - K10F (K20)	N PVD 720 (N20)	N - K13A (N15)	N - K10F (N20)	S PVD 7515 (S15)	S PVD 7520 (S20)	S - K1P (S10)	S - K13A (S15)	S - K10F (S20)	H CVD 4C15 (H15)	H - K1P (H10)	H - K13A (H20)
16	TNUN 160308				●	◐															●		◐	◐		◐								◐			◐	
	TNUN 160312				●	◐															●		◐	◐		◐								◐			◐	
16	TNUN 160408				●	◐															●		◐	◐		◐								◐			◐	
	TNUN 160412				●	◐															●		◐	◐		◐								◐			◐	
	TNUN 160416				●	◐															●		◐	◐		◐								◐			◐	

●First choice ◐Second choice

A.c S-MAX and S-MAX S inserts

S-MAX | S-MAX S



Dimensions	l	IC	s	r_ε		
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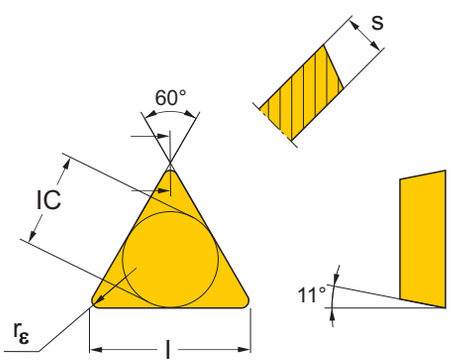
16	16.5	9.525	3.18	0.0-3.0		
22	22.0	12.700	4.76	0.0-3.0		

	S-MAX		Ordering code	P								M										K								N			S						H		
				CVD						PVD		CVD				PVD	-					CVD		PVD	-			PVD	-			PVD	-			CVD	-		
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20	
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A	
Medium		9	TPGN 090204			●	◐			◐			◐	◐					●	◐			●		◐		◐	◐		●	◐			◐	◐	◐			◐		
		11	TPGN 110300			●	◐			◐			◐	◐					●	◐			●		◐		◐	◐		◐	◐			◐	◐	◐			◐		
			TPGN 110304			●	◐			◐			◐	◐					●	◐			●		◐		◐	◐		◐	◐			◐	◐	◐			◐		
			TPGN 110308				●	◐		◐			◐	●					◐	◐			●		◐			◐		◐	◐			◐		◐		◐	◐		
			TPGN 110316				●	◐		◐			◐	●					◐	◐			●		◐			◐		◐	◐			◐		◐		◐	◐		
		16	TPGN 160300			●	◐			◐			◐	◐					◐	◐			●		◐		◐	◐		◐	◐			◐	◐	◐			◐		
			TPGN 160304			●	◐			◐			◐	◐					◐	◐			●		◐		◐	◐		◐	◐			◐	◐	◐			◐		
			TPGN 160308				●	◐		◐			◐	●					◐	◐			●		◐			◐		◐				◐		◐		◐	◐		
			TPGN 160312				●	◐		◐			◐	●					◐	◐			●		◐			◐		◐				◐		◐		◐	◐		
			TPGN 160316				●	◐		◐			◐	●					◐	◐			●		◐			◐		◐				◐		◐		◐	◐		
			TPGN 160330				●	◐		◐			◐	●					◐	◐			●		◐			◐		◐				◐		◐		◐	◐		
		16	TPGN 160408				◐	◐		◐			◐	●					◐	◐			●		◐			◐		◐											
Roughing		22	TPGN 220400			●	◐			◐			◐	◐					●	◐			●		◐		◐	◐		◐	◐			◐	◐	◐			◐		
			TPGN 220402			●	◐			◐			◐	◐					●	◐			●		◐		◐	◐		◐	◐			◐	◐	◐			◐		
			TPGN 220408				●	◐		◐			◐	●					◐	◐			●		◐			◐		◐				◐		◐		◐	◐		
			TPGN 220412				●	◐		◐			◐	●					◐	◐			●		◐			◐		◐				◐		◐		◐	◐		
			TPGN 220416				●	◐		◐			◐	●					◐	◐			●		◐			◐		◐				◐		◐		◐	◐		
			TPGN 220430				●	◐		◐			◐	◐					◐	◐			●		◐			◐		◐				◐		◐		◐	◐		



Dimensions	l	IC	s	r_ε		
11	11.0	6.350	3.18	0.4-1.6		
16	16.5	9.525	3.18	0.4-1.6		
22	22.0	12.700	4.76	0.8-3.0		
33	32.5	18.700	6.35	2.0		

	S-MAX		Ordering code	P								M										K								N			S						H		
				CVD						PVD		CVD				PVD	-					CVD		PVD	-			PVD	-			PVD	-			CVD	-		
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20	
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A	
Medium		11	TPUN 110304			●	◐			◐			◐						●	◐			●		◐	◐					◐			◐	◐	◐			◐		
			TPUN 110308				●	◐		◐			◐						●	◐			●		◐	◐					◐				◐	◐			◐		
			TPUN 110316				●	◐		◐			◐						●	◐			●		◐	◐					◐				◐	◐			◐		
		16	TPUN 160304			●	◐			◐			◐						●	◐			●		◐	◐					◐			◐	◐	◐			◐		
			TPUN 160308				●	◐		◐			◐						●	◐			●		◐	◐					◐				◐	◐			◐		
			TPUN 160312				●	◐		◐			◐						●	◐			●		◐	◐					◐				◐	◐			◐		
			TPUN 160316				●	◐		◐			◐						●	◐			●		◐	◐					◐				◐	◐			◐		
		16	TPUN 160408				●	◐		◐			◐						●	◐			●		◐	◐					◐				◐	◐			◐		
			TPUN 160412				●	◐		◐			◐						●	◐			●		◐	◐					◐				◐	◐			◐		
Roughing		22	TPUN 220408				●	◐						◐						●	◐			●		◐	◐					◐				◐	◐			◐		
			TPUN 220412				●	◐						◐						●	◐			●		◐	◐					◐				◐	◐			◐		
			TPUN 220430				●	◐						◐						●	◐			●		◐	◐					◐				◐	◐			◐		
		33	TPUN 330620				●	◐		◐				◐			◐			●				●		◐						◐				◐	◐			◐		

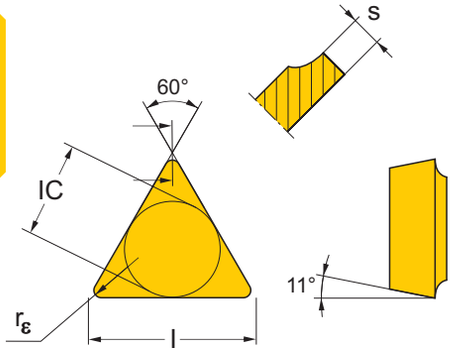
●First choice ◐Second choice

CORUN

A.c S-MAX and S-MAX S inserts

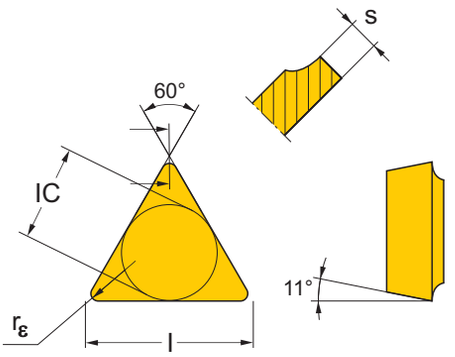
S-MAX | S-MAX S

A



Dimensions	l	IC	s	r_ε		
9	9.6	5.556	2.38	0.2-0.8		
11	11.0	6.350	3.18	0.4-0.8		
16	16.5	9.525	3.18	0.4-1.2		

	S-MAX S		Ordering code	P							M										K							N			S					H		
				CVD						PVD	CVD						PVD	-			CVD		PVD	-				PVD	-		PVD	-				CVD	-		
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Finishing		9	TPGR 090202	◐		◐	●	◐		◐													●		◐	◐	◐												◐	
			TPGR 090204	◐		◐	●	◐		◐													●		◐	◐	◐												◐	
			TPGR 090208	◐		◐	●	◐		◐													●		◐	◐	◐												◐	
		11	TPGR 110304-21	◐		◐	●	◐		◐													●		◐	◐	◐													
		11	TPGR 110304	◐		◐	●	◐		◐													●		◐	◐	◐												◐	
			TPGR 110308	◐		◐	●	◐		◐													●		◐	◐	◐												◐	
		16	TPGR 160304	◐		◐	●	◐		◐													●		◐	◐	◐												◐	
			TPGR 160308	◐		◐	●	◐		◐													●		◐	◐	◐												◐	
			TPGR 160312	◐		◐	●	◐		◐													●		◐	◐	◐												◐	



Dimensions	l	IC	s	r_ε		
9	9.6	5.556	2.38	0.2-0.8		
11	11.0	6.350	3.18	0.4-0.8		
16	16.5	9.525	3.18	0.4-1.2		

	S-MAX S		Ordering code	P							M										K							N			S					H		
				CVD						PVD	CVD						PVD	-			CVD		PVD	-				PVD	-		PVD	-				CVD	-		
				P20	P25	P15	P25	P35	P40	P20	M15	M20	M25	M35	M40	M25	M35	M40	M20	M35	M20	M40	K15	K15	K25	K15	K10	K15	K20	N20	N15	N20	S15	S20	S10	S15	S20	H15	H10	H20
				2C20	2C25	4C15	4C25	4C35	4C40	7520	2C15	2C20	2C25	2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	3C15	4C15	4C25	715	K1P	K13A	K10F	720	K13A	K10F	7515	7520	K1P	K13A	K10F	4C15	K1P	K13A
Finishing		9	TPMR 090202		◐	●	◐	◐		◐													●		◐	◐	◐												◐	
			TPMR 090204		◐	●	◐	◐		◐													●		◐	◐	◐												◐	
			TPMR 090208		◐	◐	●	◐		◐													●		◐	◐	◐												◐	
		11	TPMR 110304		◐	●	◐	◐		◐													●		◐	◐	◐												◐	
			TPMR 110308		◐	◐	●	◐		◐													●		◐	◐	◐												◐	
Medium		16	TPMR 160304		◐	●	◐	◐		◐													●		◐	◐	◐												◐	
			TPMR 160308		◐	◐	●	◐		◐													●		◐	◐	◐												◐	
			TPMR 160312		◐	◐	●	◐		◐													●		◐	◐	◐												◐	

●First choice ◐Second choice

CORUN

CORUN

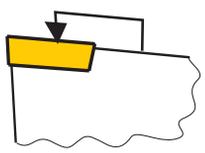
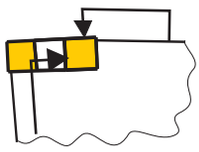
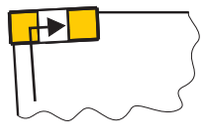
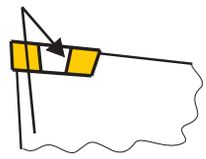
Notes

A. Code key holder for external turning

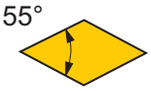
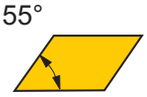
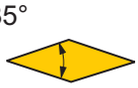
A

P	S	K	N	R		20	20	K	12	
1	2	3	4	5		6	7	8	9	10

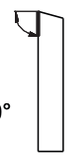
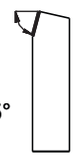
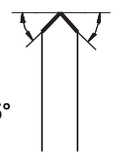
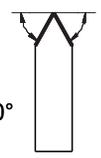
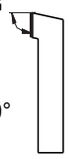
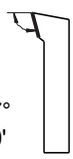
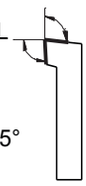
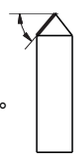
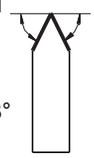
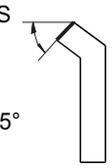
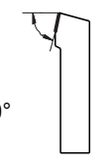
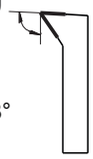
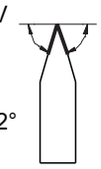
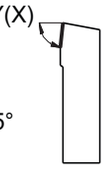
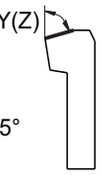
1 Clamping designation

C	M	P	S
			
Top clamping	Top and hole clamping	Hole clamping	Screw clamping

2 Inserts shape

C 80° 	D 55° 
K 55° 	R 
S 	T 
V 35° 	W 80° 

3 Holder style, entering angle

A 90° 	B 75° 	D 45° 	E 60° 	F 90° 
G 90° 	H 107° 30' 	J 93° 	K 75° 	L 95° 
M 50° 	N 63° 	Q 117° 	R 75° 	S 45° 
T 60° 	U 93° 	V 72° 	Y(X) 85° 	Y(Z) 85° 

A. Code key holder for external turning

ISO

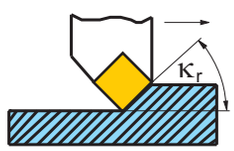
P	S	K	N	R	20	20	K	12	
1	2	3	4	5	6	7	8	9	10

4 Clearance angle on major cutting edge α_n

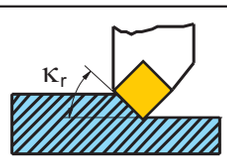
B 5°	C 7°
D 15°	E 20°
F 25°	N 0°
P 11°	O

5 Hand of tool

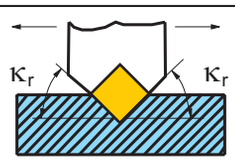
R



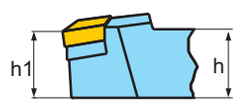
L



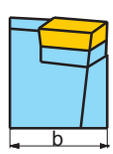
N



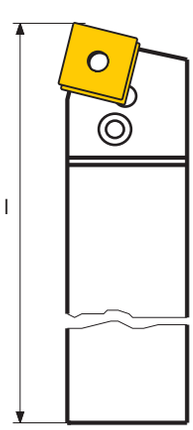
6 Shank height



7 Shank widht



8 Tool lenght



A = 32	Q = 180
B = 40	R = 200
C = 50	S = 250
D = 60	T = 300
E = 70	U = 350
F = 80	V = 400
G = 90	W = 450
H = 100	Y = 500
J = 110	X = SPECIAL
K = 125	
L = 140	
M = 150	
N = 160	
P = 170	

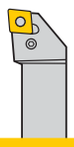
9 Cuting edge lenght

C	D	R
S	T	V
W	K	X

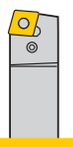
10 Manufactures option

- Chipbreaker code

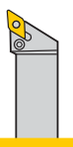
A.d S-MAX P toolholders for external turning



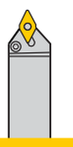
PCLNR/L A.d2



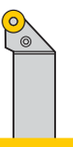
PCBNR/L A.d2



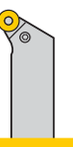
PDJNR/L A.d3



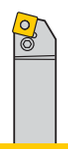
RS70.35 A.d3



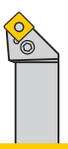
PRGNR/L A.d3



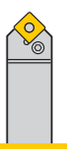
PRGCR/L A.d3



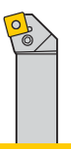
PSBNR/L A.d4



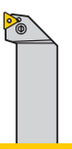
PSSNR/L A.d4



PSDNN/L A.d4



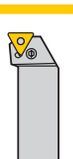
PRKNR/L A.d4



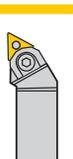
PTGNR/L A.d5

PTTNR/L A.d5

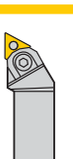
PTDNR/L A.d5



PTFN/L A.d5



MTJNR/L A.d6



MTGNR/L A.d6

PTENN A.d6

PWLNR/L A.d7

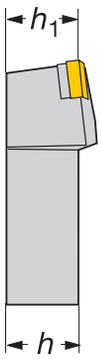
A.d S-MAX P toolholders for external turning

S-MAX P
Lever

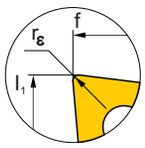
CNMM

CNMG

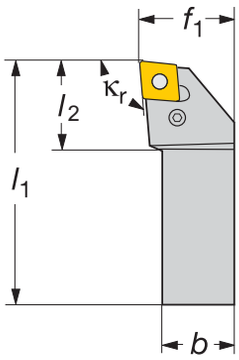
CNMA



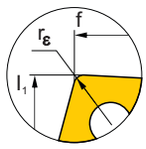
PCLNR



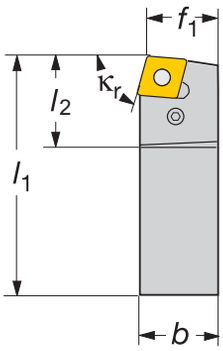
K_r 95°
Inserts angle



PCBNR



K_r 75°
Inserts angle



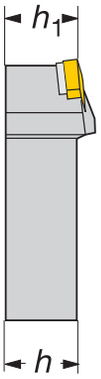
Inserts angle		Ordering code	Dimensions (mm)							Spare parts				Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Lever	Screw	Shim	Shim pin	
	9	**PCLNR/L 1616H09**	16	16	100	25	20	-6	-6					CNMG 090308
		PCLNR/L 2020K09	20	20	125	27	25	-6	-6	174.3-840M	174.3-820M	5322 230-02		CNMG 090308
		PCLNR/L 2525M09	25	25	150	27	32	-6	-6					CNMG 090308
	12	**PCLNR/L 1616H12**	16	16	100	26.1	20	-6	-6	174.3-848M	174.3-858			CNMG 120408
		PCLNR/L 2020K12	20	20	125	29.4	25	-6	-6			171.31-850M		CNMG 120408
		PCLNR/L 2525M12	25	25	150	30	32	-6	-6	174.3-841M	174.3-821			CNMG 120408
		PCLNR/L 3225P12	32	25	170	30	32	-6	-6					CNMG 120408
	12	**PCLNR/L 1616H12-M**	16	16	100	36.1	20	-6	-6	174.3-848M	174.3-858	171.31-850M		CNMG 120408
	16	**PCLNR/L 2525M16**	25	25	150	32.6	32	-6	-6					CNMG 160612
		PCLNR/L 3225P16	32	25	170	32.6	32	-6	-6	438.3-840	438.3-831	171.31-852		CNMG 160612
		PCLNR/L 3232P16	32	32	170	32.6	40	-6	-6					CNMG 160612
	19	**PCLNR/L 2525M19**	25	25	150	38	32	-6	-6					CNMG 190612
		PCLNR/L 3225P19	32	32	170	38	32	-6	-6					CNMG 190612
		PCLNR/L 3232P19	32	32	170	38	40	-6	-6	174.3-842M	174.3-822M	171.31-851M		CNMG 190612
		PCLNR/L 4040S19	40	40	250	37.8	50	-6	-6					CNMG 190612
	25	**PCLNR/L 4040S 25**	40	40	250	47	50	-6	-6					CNMG 250924
		PCLNR/L 5050T 25	50	50	300	47	60	-6	-6	174.3-844M	174.3-827	5322 230-01		CNMG 250924
	12	**PCBNR/L 2525M12**	25	25	150	29.0	22	-6	-6	174.3-841M	174.3-821	171.31-850M		CNMG 120408
	16	**PCBNR/L 2525M16**	25	25	150	31.7	22	-6	-6					CNMG 160612
		PCBNR/L 3225P 16	32	25	170	31.7	22	-6	-6	438.3-840	438.3-831	171.31-852		CNMG 160612
		PCBNR/L 3232P16	32	32	170	31.7	27	-6	-6					CNMG 160612
	19	**PCBNR/L 3232P19**	32	32	170	37.9	27	-6	-6	174.3-842M	174.3-822M	171.31-851M		CNMG 190612
		PCBNR/L 4040S19	40	40	250	37.2	35	-6	-6					CNMG 190612

A.d S-MAX P toolholders for external turning

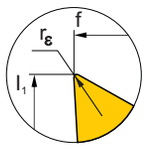
A

S-MAX P
Lever

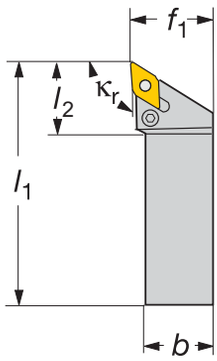
DNMM
DNMG
DNMA



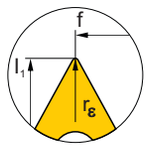
PDJNR/L



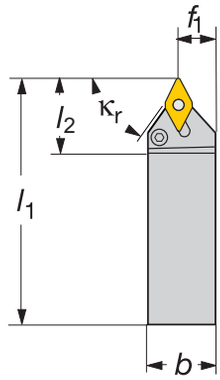
Kr 93°
Inserts angle

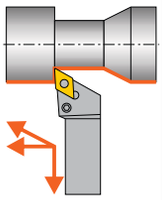
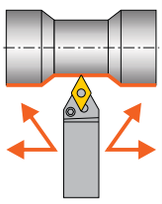


RS70.35



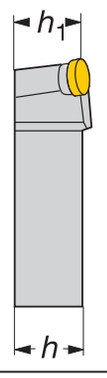
Kr 63°
Inserts angle



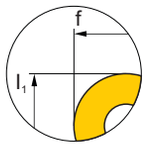
Inserts angle		Ordering code	Dimensions (mm)							Spare parts				Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Lever	Screw	Shim	Shim pin	
	11	PDJNR/L 1616H11	16	16	100	30	20	-6	-7	5432 001-01	174.3-820M	174.1-862(2.5)	5322 255-01	DNMG 110408
		PDJNR/L 2020K11	20	20	125	30	25	-6	-7					DNMG 110408
		PDJNR/L 2525M11	25	25	150	30	32	-6	-7					DNMG 110408
		PDJNR/L 3225P11	32	25	170	30	32	-6	-7					DNMG 110408
	15	PDJNR/L 2020K15	20	20	125	34.7	25	-6	-7	174.3-847M	174.3-830	171.35-850M	174.3-861	DNMG 150608
		PDJNR/L 2525M15	25	25	150	34.7	32	-6	-7					DNMG 150608
		PDJNR/L 3225P15	32	25	170	34.7	32	-6	-7					DNMG 150608
		PDJNR/L 3232P15	32	32	170	34.7	40	-6	-7					DNMG 150608
	15	R/LS70.35-4025-15	40	25	145	36.5	12	-6	-6	174.3-847M	174.3-830	171.35-850M	174.3-861	DNMG 150608
		R/LS70.35-5032-15	50	35	155	36.5	16.8	-6	-6					DNMG 150608

S-MAX P
Lever

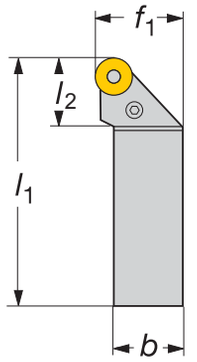
RCMX
RNMG



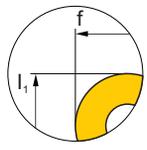
PRGNR



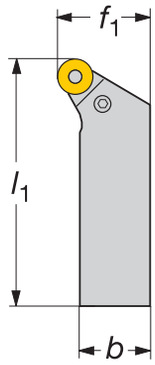
Inserts angle

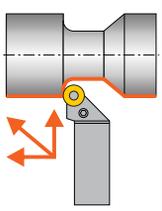
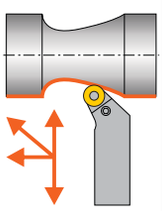


PRGCR



Inserts angle

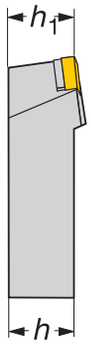


Inserts angle		Ordering code	Dimensions (mm)							Spare parts				Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Lever	Screw	Shim	Shim pin	
	9	PRGNR/L 2020K09	20	20	125	20.8	25	-6	-6	174.3-840M	174.3-820M	176.3-850	174.3-863	RNMG 090300
	12	PRGNR/L 2525M12	25	25	150	27.2	32	-6	-6	174.3-841M	174.3-821	176.3-851M	174.3-861	RNMG 120400
	15	PRGNR/L 3225P15	32	32	170	33.2	32	-6	-6	174.3-843M	174.3-825	176.3-854M	174.3-864	RNMG 150600
	19	PRGNR/L 3225P19	32	32	170	38.0	40	-6	-6	174.3-842M	174.3-822M	176.3-852M	174.3-862	RNMG 150600
	10	PRGCR/L 2020K10	20	20	125	-	25	0	0	176.39-840	174.3-834	176.39-850	174.3-863	RCMX 100300
	12	PRGCR/L 2525M12	25	25	150	-	32	0	0	176.39-841	174.3-820M	176.39-851	174.3-863	RCMX 120400
	16	PRGCR/L 3225P16	32	25	170	-	32	0	0	176.39-842	174.3-833	176.39-852	174.3-867	RCMX 160600
	20	PRGCR/L 3232P20	32	32	170	-	40	0	0	176.39-843	174.3-825	176.39-853	174.3-864	RCMX 200600

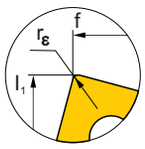
A.d S-MAX P toolholders for external turning

S-MAX P
Lever

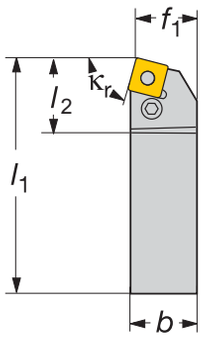
SNMM
SNMG
SNMA



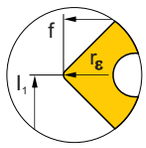
PSBNR



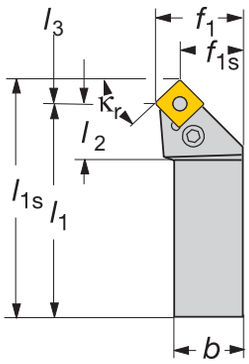
K_r 75°
Inserts angle

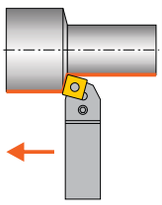
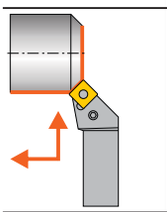


PSSNR



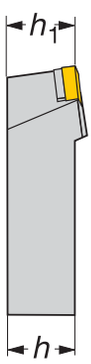
K_r 45°
Inserts angle



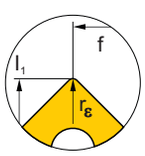
Inserts angle		Ordering code	Dimensions (mm)							Spare parts				Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Lever	Screw	Shim	Shim pin	
	9	PSBNR/L 1616H09	16	16	100	20.8	13	-6	-6	174.3-840M	174.3-820M	176.3-850	174.3-863	SNMG 090308
	12	PSBNR/L 2020K12	20	20	125	27.5	17	-6	-6	174.3-841M	174.3-821	176.3-851M	174.3-861	SNMG 120408
		PSBNR/L 2525M12	25	25	150	27.5	22	-6	-6					SNMG 120408
		PSBNR/L 3225P12	32	25	170	27.5	22	-6	-6					SNMG 120408
	15	PSBNR/L 2525M15	25	25	150	32.0	22	-6	-6	438.3-840	438.3-831	174.3-857	174.3-864	SNMG 150612
		PSBNR/L 3225P15	32	32	170	32.0	22	-6	-6					SNMG 150612
		PSBNR/L 3232P15	32	32	170	32.0	27	-6	-6					SNMG 150612
	19	PSBNR/L 3232P19	32	32	170	39.2	27	-6	-6	174.3-842M	174.3-822M	176.3-852M	174.3-862	SNMG 190612
		PSBNR/L 4040S19	40	40	250	41.5	35	-6	-6					SNMG 190612
	25	PSBNR/L 4040S25	40	40	250	47.5	35	-6	-6	174.3-844M	174.3-827	174.3-853M	174.3-865	SNMG 250724
		PSBNR/L 5050T25	50	50	300	47.5	43	-6	-6					SNMG 250724
	9	PSSNR/L 2020K09	20	20	125	28.0	25	-8	0	174.3-840M	174.3-820M	176.3-850	174.3-863	SNMG 090308
	12	PSSNR/L 2020K12	20	20	125	37.6	25	-8	0	174.3-841M	174.3-821	176.3-851M	174.3-861	SNMG 120408
		PSSNR/L 2525M12	25	25	150	37.6	32	-8	0					SNMG 120408
		PSSNR/L 3225P12	32	25	170	37.6	32	-8	0					SNMG 120408
	15	PSSNR/L 2525M15	25	25	150	34.0	32	-8	0	438.3-840	438.3-831	174.3-857	174.3-864	SNMG 150612
		PSSNR/L 3225P15	32	25	170	34.0	32	-8	0					SNMG 150612
		PSSNR/L 3232P15	32	32	170	34.0	40	-8	0					SNMG 150612
	19	PSSNR/L 3232P19	32	32	170	53.8	40	-8	0	174.3-842M	174.3-822M	176.3-852M	174.3-862	SNMG 190612
		PSSNR/L 4040S19	40	40	250	54.0	50	-8	0					SNMG 190612

S-MAX P
Lever

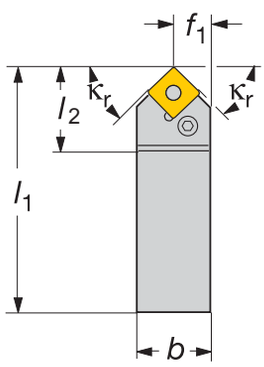
SNMM
SNMG
SNMA



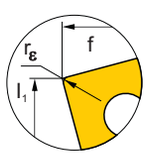
PSDNN



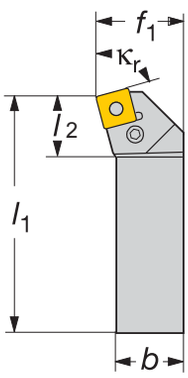
K_r 45°
Inserts angle

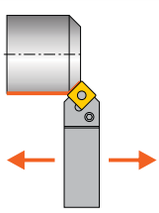
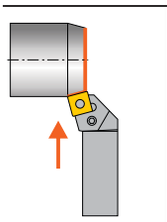


PSKNR



K_r 75°
Inserts angle

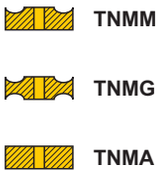


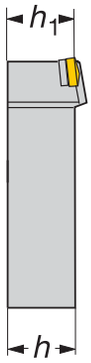
Inserts angle		Ordering code	Dimensions (mm)							Spare parts				Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Lever	Screw	Shim	Shim pin	
	9	PSDNN 1010E09	10	10	70	20	5.3	-7	0	174.3-845-1	174.3-829	-	-	SNMG 090308
		PSDNN 1212F09	12	12	80	20	6.3	-7	0					SNMG 090308
		PSDNN 1616H09	16	16	100	21	8.3	-7	0	174.3-840M	174.3-820M	174.3-850	174.3-863	SNMG 090308
	12	PSDNN 2020K12	20	20	125	27.6	10.3	-7	0	174.3-841M	174.3-821	174.3-851M	174.3-861	SNMG 120408
		PSDNN 2525M12	25	25	150	27.6	12.8	-7	0					SNMG 120408
		PSDNN 3225P12	32	25	170	27.6	12.8	-7	0					SNMG 120408
	19	PSDNN 3225P19	32	25	170	40.4	13	-7	0	174.3-842M	174.3-822M	174.3-852M	174.3-862	SNMG 190612
		PSDNN 3232P19	32	32	170	40.4	16.5	-7	0					SNMG 190612
	25	PSDNN 4040S25	40	40	250	48.8	21	-7	0	174.3-844M	174.3-827	174.3-853M	174.3-865	SNMG 250724
														SNMG 250724
	9	PSKNR/L 1616H09	16	16	100	16.5	20	-6	-6	174.3-840M	174.3-820M	174.3-850	174.3-863	SNMG 090308
	12	PSKNR/L 2020K12	20	20	125	22.7	25	-6	-6	174.3-841M	174.3-821	174.3-851M	174.3-861	SNMG 120408
		PSKNR/L 2525M12	25	25	150	22.7	32	-6	-6					SNMG 120408
		PSKNR/L 3225P12	32	25	170	22.7	32	-6	-6					SNMG 120408
	15	PSKNR/L 2525M15	25	25	150	28.2	32	-6	-6	438.3-840	438.3-831	174.3-857	174.3-864	SNMG 150612
	19	PSKNR/L 3232P19	32	32	170	37.5	40	-6	-6	174.3-842M	174.3-822M	174.3-852M	174.3-862	SNMG 190612

A.d S-MAX P toolholders for external turning

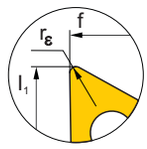
A

S-MAX P
Lever

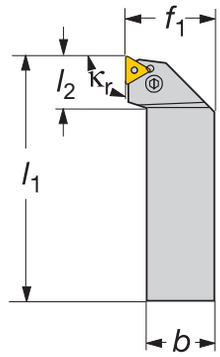




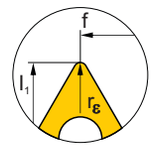
PTGNR



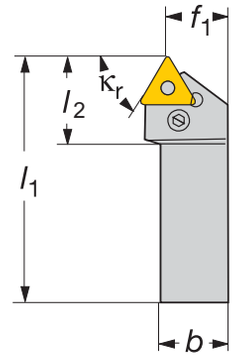
K_r 91°
Inserts angle

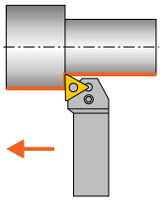
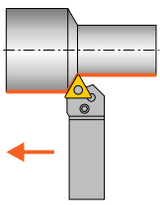


PTTNR

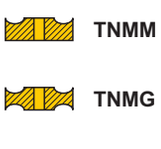


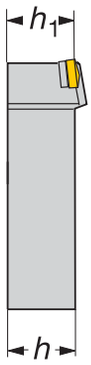
K_r 60°
Inserts angle



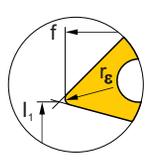
Inserts angle		Ordering code	Dimensions (mm)							Spare parts				Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Lever	Screw	Shim	Shim pin	
	11	PTGNR/L 1212F11	12	12	80	15.6	16	-6	-6	174.3-846-1	174.3-829	-	-	TNMG 110304
	16	PTGNR/L 1616H16	16	16	100	20.2	20	-6	-6	174.3-840M	174.3-820M	179.3-850M	174.3-860	TNMG 160408
		PTGNR/L 2020K16	20	20	125	20.2	25	-6	-6					TNMG 160408
		PTGNR/L 2525M16	25	25	150	20.2	32	-6	-6					TNMG 160408
	22	PTGNR/L 2525M22	25	25	150	28.7	32	-6	-6	174.3-841M	174.3-821	179.3-852M	174.3-861	TNMG 220408
		PTGNR/L 3225P22	25	25	170	28.7	32	-6	-6					TNMG 220408
		PTGNR/L 3232P22	32	32	170	28.7	40	-6	-6					TNMG 220408
	11	PTTNR/L 1212F11	12	12	80	19.1	11	-6	-6	174.3-846-1	174.3-829	-	-	TNMG 110304
	16	PTTNR/L 1616H16	16	16	100	23.4	13	-6	-6	174.3-840M	174.3-820M	179.3-850M	174.3-860	TNMG 160408
		PTTNR/L 2020K16	20	20	125	25.9	17	-6	-6					TNMG 160408
	22	PTTNR/L 2525M22	25	25	150	31.9	22	-6	-6	174.3-841M	174.3-821	179.3-852M	174.3-861	TNMG 220408
		PTTNR/L 3225P22	32	25	170	31.9	22	-6	-6					TNMG 220408

S-MAX P
Lever

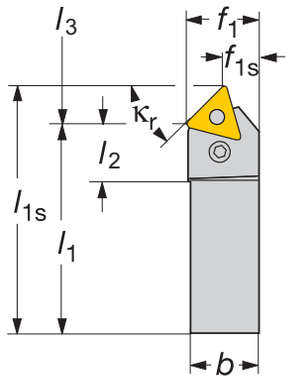




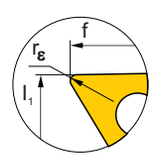
PTDNR



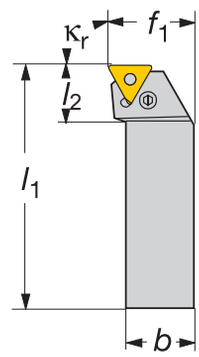
K_r 45°
Inserts angle

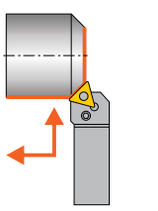
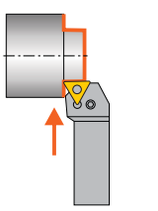


PTFNR



K_r 91°
Inserts angle

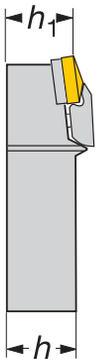


Inserts angle		Ordering code	Dimensions (mm)							Spare parts				Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Lever	Screw	Shim	Shim pin	
	22	PTDNR/L 2525M22	25	25	150	47.5	27	-7	0	174.3-841M	174.3-821	179.3-852M	174.3-861	TNMG 220408
		PTDNR/L 3225P22	32	25	170	47.5	27	-7	0					TNMG 220408
	16	PTFNR/L 1616H16	16	16	100	19.7	20	-6	-6	174.3-840M	174.3-820M	179.3-850	174.3-860	TNMG 160408
		PTFNR/L 2020K16	20	20	125	20.2	25	-6	-6					TNMG 160408
		PTFNR/L 2525M16	25	25	150	20.2	32	-6	-6					TNMG 160408
	22	PTFNR/L 2525M22	25	25	150	25.2	32	-6	-6	174.3-841M	174.3-821	179.3-852M	174.3-861	TNMG 220408
		PTFNR/L 3225P22	32	25	170	25.2	32	-6	-6					TNMG 220408
		PTFNR/L 3232P22	32	32	170	25.2	40	-6	-6					TNMG 220408

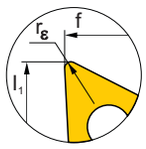
A.d S-MAX P toolholders for external turning

S-MAX P
Clamp set

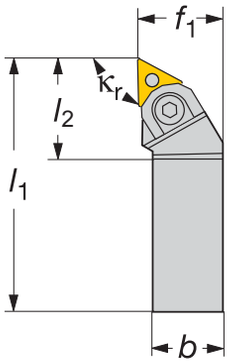
TNMM
TNMG
TNMA



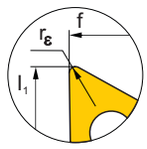
MTJNR



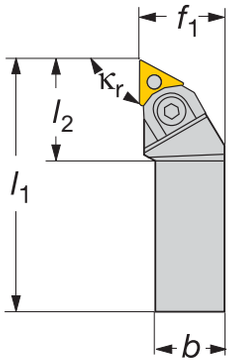
K_r 93°
Inserts angle

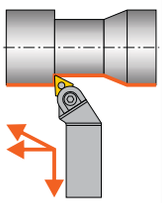
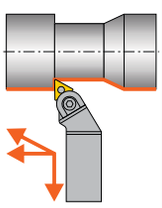


MTGNR



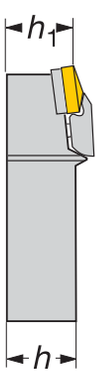
K_r 91°
Inserts angle



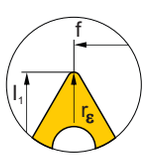
Inserts angle		Ordering code	Dimensions (mm)							Spare parts				Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Clamp set	Screw	Shim	Shim pin	
	16	MTJNR/L 2020K16	20	20	125	30.8	25	-6	-6	170.38-820-1	170.38-845	170.3-852	170.3-870	TNMG 160408
		MTJNR/L 2525M16	25	25	150	30.8	32	-6	-6					TNMG 160408
	22	MTJNR/L 2525M22	25	25	150	34.8	32	-6	-6	170.38-821-1	170.38-845	170.3-855	170.3-871	TNMG 220408
		MTJNR/L 3225P22	32	25	170	34.8	32	-6	-6					TNMG 220408
	22	MTGNR/L 2525M22	25	25	150	34.8	32	-6	-6	170.38-821-1	170.38-845	170.3-855	170.3-871	TNMG 220408
		MTGNR/L 3225P22	32	25	170	34.8	32	-6	-6					TNMG 220408

S-MAX P
Clamp set

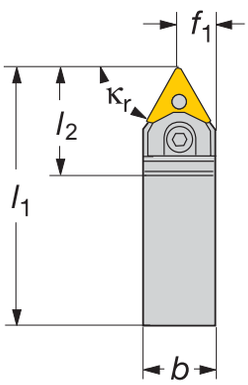
TNMM
TNMG
TNMA

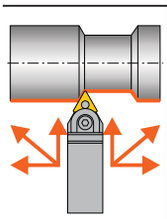


PTENN



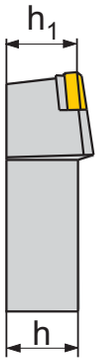
K_r 60°
Inserts angle



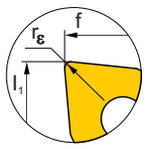
Inserts angle		Ordering code	Dimensions (mm)							Spare parts				Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Clamp set	Screw	Shim	Shim pin	
	22	PTENN 2525M22-W	25	25	150	35.7	13	-8	-	170.38-824-1	170.38-845	170.3-855	170.3-871	TNMG 220408
		PTENN 3225P22-W	32	25	170	35.7	13	-8	-					TNMG 220408
		PTENN 3232P22-W	32	32	170	35.7	16.5	-8	-					TNMG 220408

A.d S-MAX P toolholders for external turning

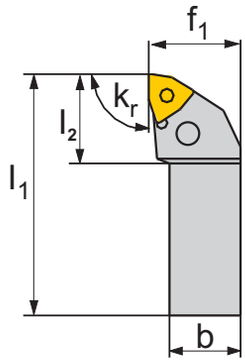
S-MAX P
Lever

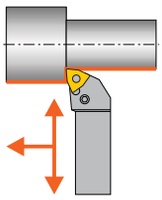


PWLNR



K_r 95°
Inserts angle

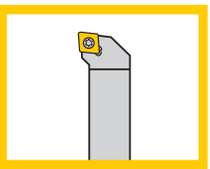


Inserts angle		Ordering code	Dimensions (mm)							Spare parts				Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Lever	Screw	Shim	Shim pin	
	8	**PWLNR/L 2020K08**	20	20	125	25.5	25.35	-6	-6	174.3-841M	174.3-821	5322.331-08	174.3-861	WNMG 060408
		PWLNR/L 2525M08	25	25	150	28.3	32.35	-6	-6					WNMG 060408
		PWLNR/L 3232P08	32	32	170	28.3	40.35	-6	-6					WNMG 060408

CORUN

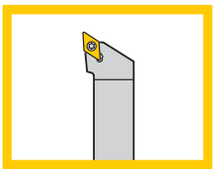
Notes

A.e S-MAX U toolholders for external turning



SCLCR/L

A.e2

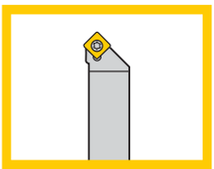


SDJCR/L

A.e2

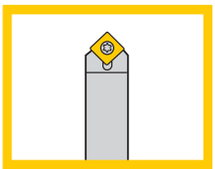
SDNCN

A.e2



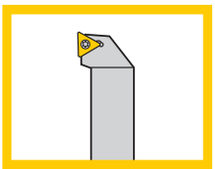
SSDCR/L

A.e3



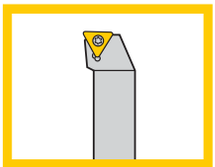
SSDCN

A.e3



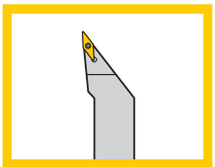
STGCR/L

A.e3



STFCR/L

A.e3



SVJBR/L

A.e4

SVVBN

A.e4

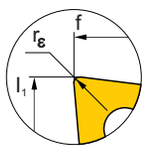
A.e S-MAX U toolholders for external turning

S-MAX U
Screw clamp

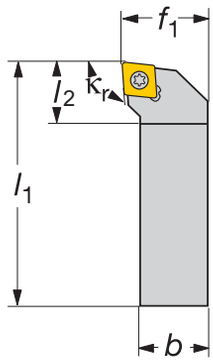
CCMT

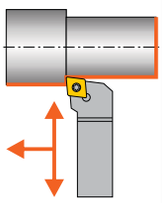
CCMW

SCLCR



K_r 95°
Inserts angle

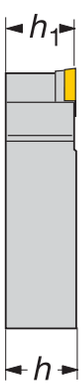


Inserts angle		Ordering code	Dimensions (mm)							Spare parts			Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Insert screw	Shim	Shim screw	
	6	SCLCR/L 0808D06	8	8	60	13.0	10	0	0	5513 020-03	-	-	CCMT 060204
		SCLCR/L 1010E06	10	10	70	13.0	12	0	0				CCMT 060204
	9	SCLCR/L 1212F09-M	12	12	80	19.5	16	0	0	5513 020-10	-	-	CCMT 09T308
		SCLCR/L 1616H09	16	16	100	18.0	20	0	0				CCMT 09T308
		SCLCR/L 2020K09	20	20	125	18.0	25	0	0				CCMT 09T308
	12	SCLCR/L 2020K12	20	20	125	25.0	25	0	0	5513 020-18	5322 232-02	5512 090-03	CCMT 120408
		SCLCR/L 2525M12	25	25	150	26.0	32	0	0				CCMT 120408

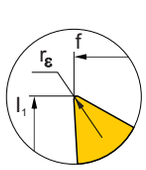
S-MAX U
Screw clamp

DCMT

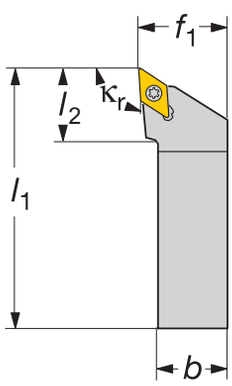
DCMW



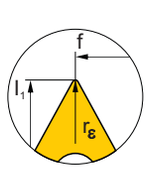
SDJCR



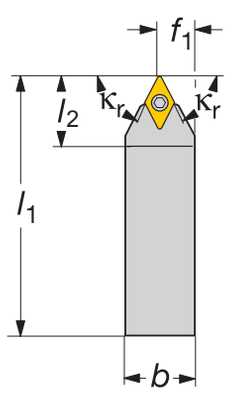
K_r 93°
Inserts angle

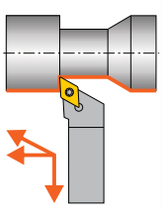
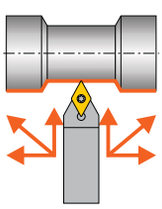


SDNCN



K_r 63°
Inserts angle



Inserts angle		Ordering code	Dimensions (mm)							Spare parts			Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Insert screw	Shim	Shim screw	
	7	SDJCR/L 1010E07	10	10	70	17	12	0	0	5513 020-03	-	-	DCMT 070204
		SDJCR/L 1212F07	12	12	80	19	16	0	0				DCMT 070204
		SDJCR/L 1616H07	16	16	100	19	20	0	0				DCMT 070204
		SDJCR/L 2020K07	20	20	125	22	25	0	0				DCMT 070204
	11	SDJCR/L 1616H11	16	16	100	26.0	20	0	0	5513 020-10	-	-	CCMT 11T308
		SDJCR/L 2020K11	20	20	125	26.0	26	0	0				CCMT 11T308
		SDJCR/L 2525M11	25	25	150	30.0	32	0	0				CCMT 11T308
	11	SDNCN 1616H11	16	16	100	25.0	8.8	0	0	5513 020-10	-	-	CCMT 11T308
		SDNCN 2020K11	20	20	125	25.0	10.5	0	0				CCMT 11T308
		SDNCN 2525M11	25	25	150	25.0	13.0	0	0				CCMT 11T308

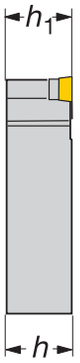
A.e S-MAX U toolholders for external turning

A

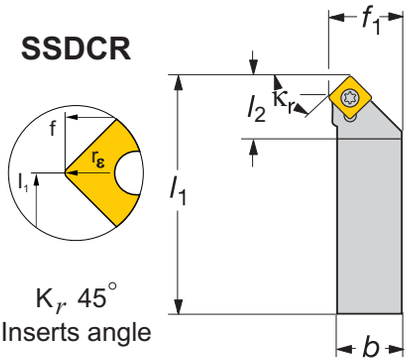
S-MAX U
Screw clamp

SCMT

SCMW

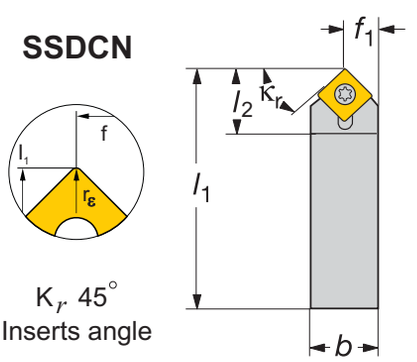


SSDCR

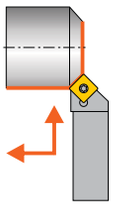
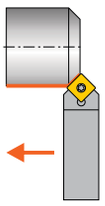


K_r 45°
Inserts angle

SSDCN



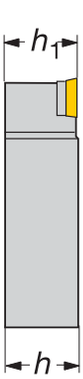
K_r 45°
Inserts angle

Inserts angle		Ordering code	Dimensions (mm)							Spare parts			Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Insert screw	Shim	Shim screw	
	9	SSDCR/L 1616H09	16	16	100	21.5	17	0	0	5513 020-01	5322 420-01	5512 090-01	SCMT 09T308
		SSDCR/L 2020K09	20	20	125	25.0	22	0	0				CCMT 09T308
	12	SSDCR/L 2020K12	20	20	116.7	15.7	22	0	0	5513 020-18	5322 420-02	5512 090-03	SCMT 120408
		SSDCR/L 2525M12	25	25	141.7	15.7	27	0	0				SCMT 120408
	9	SSDCN 1212F09-M	12	12	80	15.5	6	0	0	5513 020-10	-	-	SCMT 09T308
		SSDCN 1616H09	16	16	100	15.5	8	0	0		5322 420-01	-	SCMT 09T308

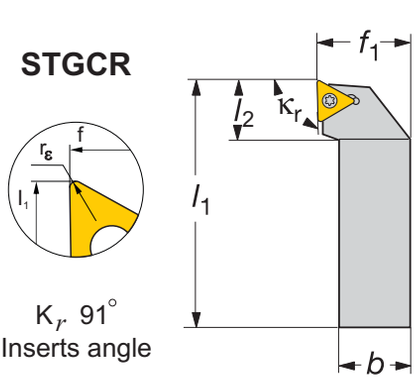
S-MAX U
Screw clamp

TCMT

TCMW

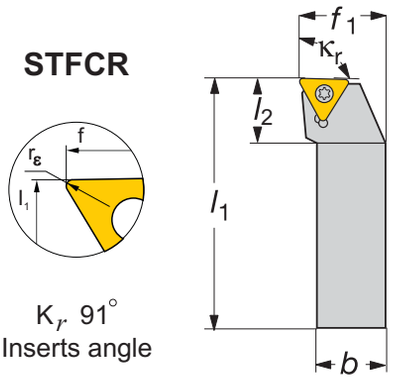


STGCR

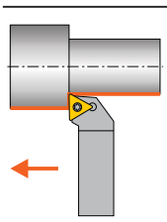
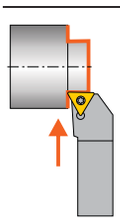


K_r 91°
Inserts angle

STFCR



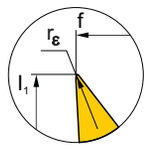
K_r 91°
Inserts angle

Inserts angle		Ordering code	Dimensions (mm)							Spare parts			Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Insert screw	Shim	Shim screw	
	9	STGCR/L 0808D09	8	8	60	13.8	10	0	0	5513 020-05	-	-	TCMT 090204
		STGCR/L 1010E09	10	10	70	11.8	12	0	0				TCMT 090204
	11	STGCR/L 1212F11	12	12	80	16.3	16	0	0	5513 020-03	-	-	TCMT 110304
		STGCR/L 1616H11	16	16	100	16.3	16	0	0				TCMT 110304
	16	STGCR/L 1616H16	16	16	100	25.0	20	0	0	5513 020-10	-	-	TCMT 16T308
		STGCR/L 2020K16	20	20	125	26.0	25	0	0				TCMT 16T308
		STGCR/L 2525M16	25	25	150	27.0	32	0	0				TCMT 16T308
	9	STFCR/L 0808D09	8	8	60	14.0	10	0	0	5513 020-05	-	-	TCMT 090204
		STFCR/L 1010E09	10	10	70	14.0	12	0	0				TCMT 090204
	11	STFCR/L 1212F11	12	12	80	16.0	16	0	0	5513 020-03	-	-	TCMT 110304
		STFCR/L 1616H11	16	16	100	16.0	20	0	0				TCMT 110304
	16	STFCR/L 1616H16	16	16	100	22.0	20	0	0	5513 020-10	-	-	TCMT 16T308
		STFCR/L 2020K16	20	20	125	22.0	25	0	0				TCMT 16T308
		STFCR/L 2525M16	25	25	150	24.0	32	0	0				TCMT 16T308

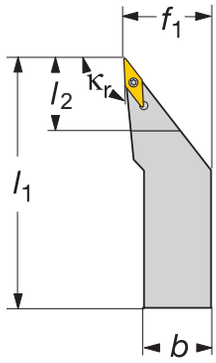
A.e S-MAX U toolholders for external turning

S-MAX U
Screw clamp

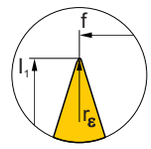
SVJBR



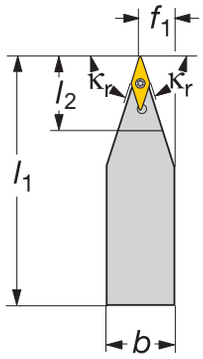
K_r 93°
Inserts angle

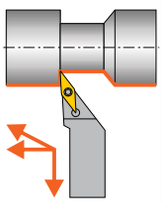
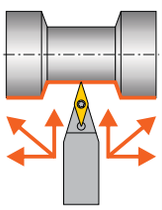


SVVBN



K_r 72° 30'
Inserts angle



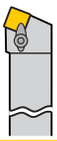
Inserts angle		Ordering code	Dimensions (mm)							Spare parts			Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Insert screw	Shim	Shim screw	
	11	SVJBR/L 1212F11	12	12	80	27.0	16	0	0	5513 020-03	-	-	VBMT 110304
		SVJBR/L 1616H11	16	16	100	27.0	20	0	0				VBMT 110304
		SVJBR/L 2020K11	20	20	125	27.0	25	0	0				VBMT 110304
	16	SVJBR/L 2020K16	20	20	125	31.5	25	0	0	5513 020-10	-	-	VBMT 160408
		SVJBR/L 2525M16	25	25	150	31.5	32	0	0				VBMT 160408
		SVJBR/L 3225P16	32	25	170	31.5	32	0	0				VBMT 160408
	11	SVVBN 1212F11	12	12	80	27.0	6.3	0	0	5513 020-03	-	-	VBMT 110304
		SVVBN 1616H11	16	16	100	27.0	8.3	0	0				VBMT 110304
		SVVBN 2020K11	20	20	125	27.0	10.3	0	0				VBMT 110304
	16	SVVBN 2020K16	20	20	125	31.5	10.6	0	0	5513 020-10	-	-	VBMT 160408
		SVVBN 2525M16	25	25	150	31.5	13.1	0	0				VBMT 160408
		SVVBN 3225P16	32	25	170	31.5	13.1	0	0				VBMT 160408

A.f S-MAX S toolholders for external turning

S-MAX | S-MAX S

CBPR/L

A.f2



CSTPR/L

A.f2

CSDPR/L

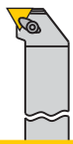
A.f2

CSDPN

A.f2

CSKPR/L

A.f2

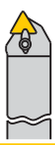


CTFPR/L

A.f3

CTBPR/L

A.f4

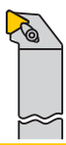


CTTPT/L

A.f4

CTDPR/L

A.f4



CTGPR/L

A.f4

R/L S70.5

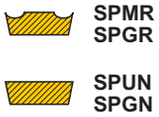
A.f5

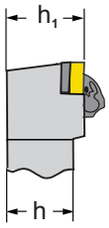
R/L S71.5

A.f5

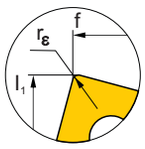
A.f S-MAX S toolholders for external turning

S-MAX S
Top clamp

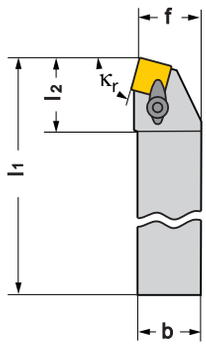




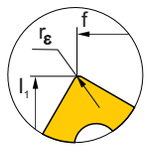
CSBPR



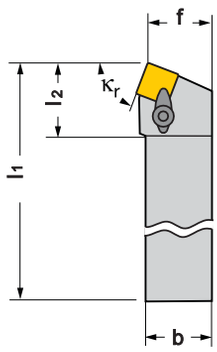
K_r 75°
Inserts angle

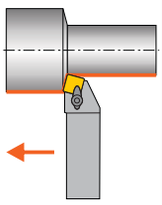
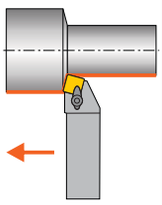


CSTPR

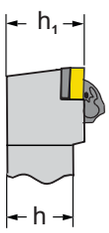


K_r 60°
Inserts angle

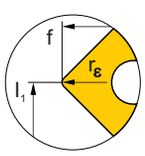


Inserts angle		Ordering code	Dimensions (mm)							Spare parts			Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Clamp set	Shim	Shim pin	
	9	CSBPR/L 1616H09	16	16	100	22.7	13	6	0	174.9-830-2	174.2-853	174.1-869	SPMR 090304
		CSBPR/L 2020K09	20	20	125	24.1	17	6	0				SPMR 090304
	12	CSBPR/L 2020K12	20	20	125	30.1	17	6	0	174.9-832-2	174.2-850	174.1-865	SPMR 120304
		CSBPR/L 2525M12	25	25	150	30.1	22	6	0				SPMR 120304
	12	CSTPR/L 2020K12	20	20	125	29.6	17	6	0	174.9-832-2	174.2-850	174.1-865	SPMR 120304

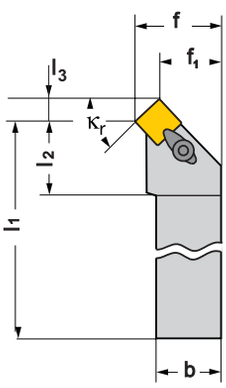
S-MAX S
Top clamp



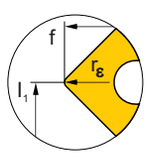
CSDPR



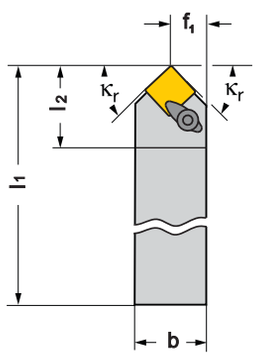
K_r 45°
Inserts angle

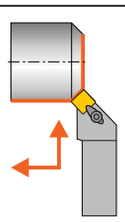
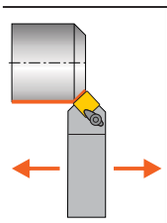


CSDPN



K_r 45°
Inserts angle

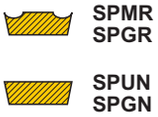


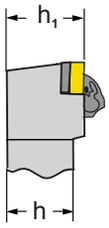
Inserts angle		Ordering code	Dimensions (mm)							Spare parts			Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Clamp set	Shim	Shim pin	
	12	CSDPR/L 2020K12	20	20	125	35.0	22	6	0	174.9-832-2	174.2-850	174.1-865	SPMR 120304
		CSDPR/L 2525M12	25	25	150	35.0	27	6	0				SPMR 120304
	12	CSDPN 2020K12	20	20	125	29.0	10.3	6	0	174.9-832-2	174.2-850	174.1-865	SPMR 120304
		CSDPN 2525M12	25	25	150	29.0	12.8	6	0				SPMR 120304

A.f S-MAX S toolholders for external turning

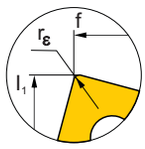
A

S-MAX S
Top clamp

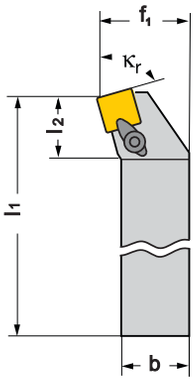




CSKPR

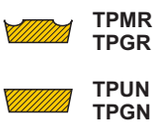


K_r 75°
Inserts angle

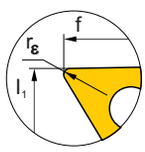


Inserts angle		Ordering code	Dimensions (mm)							Spare parts			Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Clamp set	Shim	Shim pin	
	9	CSKPR/L 1616H09	16	16	100	20.0	20	6	0	174.9-832-0	174.2-856	174.1-869	SPUN 090308
		CSKPR/L 2020K09	20	20	125	20.5	25	6	0				SPUN 090308
	12	CSKPR/L 2525M12	25	25	150	25.4	32	6	0	174.9-832-2	174.2-850	174.1-865	SPUN 120308

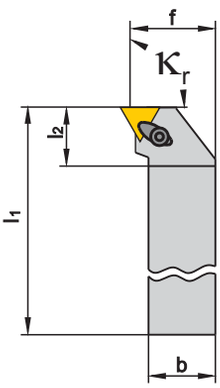
S-MAX S
Top clamp



CTFPR



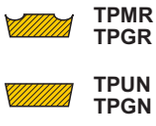
K_r 91°
Inserts angle

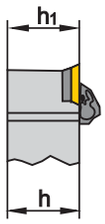


Inserts angle		Ordering code	Dimensions (mm)							Spare parts			Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Clamp set	Shim	Shim pin	
	9	CTFPR/L 1010E09	10	10	70	12.5	12	0	0	172.9-825-1	-	-	SPUN 090308
	11	CTFPR/L 1212F11	12	12	80	15.6	16	0	0	174.9-830-2	-	-	TPUN 110304
		CTFPR/L 1616H11	16	16	100	14.4	20	0	0				TPUN 110304
		CTFPR/L 2020K11	20	20	125	16.0	25	0	0				TPUN 110304
	16	CTFPR/L 2020K16	20	20	125	20.0	25	0	0	174.9-832-2	175.2-850	174.1-865	TPUN 160308
		CTFPR/L 2525M16	25	25	150	20.0	32	0	0				TPUN 160308

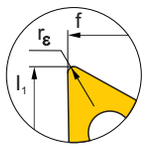
A.f S-MAX S toolholders for external turning

S-MAX S
Top clamp

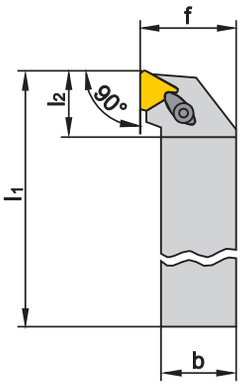




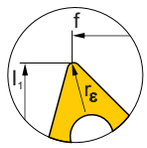
CTGPR



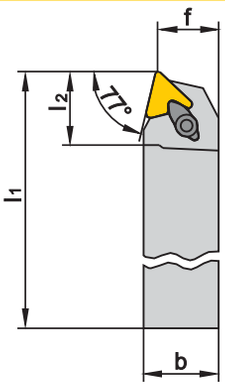
K_r 91°
Inserts angle

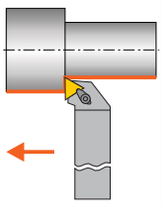
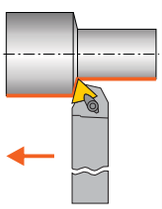


CTBPR

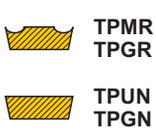


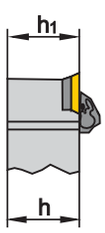
K_r 75°
Inserts angle



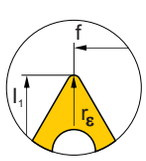
Inserts angle		Ordering code	Dimensions (mm)							Spare parts			Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Clamp set	Shim	Shim pin	
	9	CTGPR/L 1010E09	10	10	70	15.0	12	6	0	172.9-825-1	-	-	TPGN 090204
	11	CTGPR/L 1212F11	12	12	80	17.0	16	6	0	174.9-830-2	-	-	TPMR 110304
		CTGPR/L 1616H11	16	16	100	17.0	20	6	0				TPMR 110304
		CTGPR/L 2020K11	20	20	125	19.0	25	6	0				TPMR 110304
	16	CTGPR/L 2020K16	20	20	125	25.1	25	6	0	174.9-832-2	175.2-850	174.1-865	TPMR 160304
		CTGPR/L 2525M16	25	25	150	25.1	32	6	0				TPMR 160304
	11	CTBPR/L 1212F11	12	12	80	19.2	11	6	0	174.9-830-2	-	-	TPMR 110304
		CTBPR/L 1616H11	16	16	100	20	13	6	0				TPMR 110304

S-MAX S
Top clamp

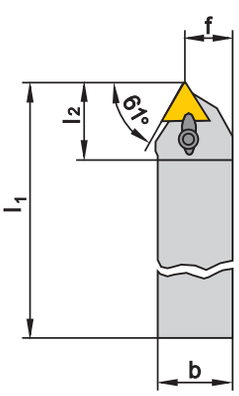




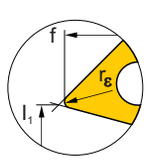
CTTPR



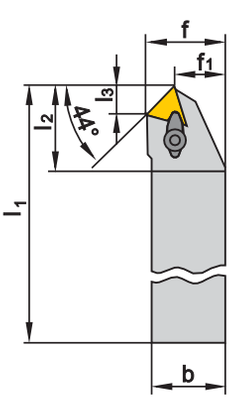
K_r 60°
Inserts angle

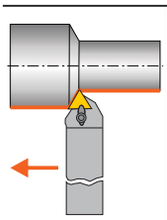
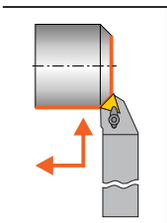


CTDPR



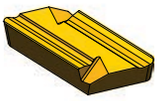
K_r 45°
Inserts angle



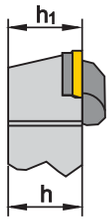
Inserts angle		Ordering code	Dimensions (mm)							Spare parts			Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	Clamp set	Shim	Shim pin	
	9	CTTPR/L 1010E09	10	10	70	16.4	9	6	0	172.9-825-1	-	-	TPGN 090204
	11	CTTPR/L 2020K11	20	20	125	23.4	17	6	0	174.9-830-2	-	-	TPUN 110304
	16	CTTPR/L 2020K16	20	20	125	28.2	17	6	0	174.9-832-2	175.2-850	174.1-865	TPUN 160308
		CTTPR/L 2525M16	25	25	150	28.2	22	6	0				TPUN 160308
	11	CTDPR/L 1212F11	12	12	80	22.0	13	6	0	174.9-830-2	-	-	TPMR 110304
		CTDPR/L 1616H11	16	16	100	22.0	17	6	0				TPMR 110304
	16	CTDPR/L 2020K16	20	20	125	27.4	22	6	0	174.9-832-2	175.2-850	174.1-865	TPMR 160304
		CTDPR/L 2525M16	25	25	150	27.4	27	6	0				TPMR 160304

A.f S-MAX S toolholders for external turning

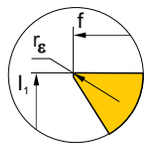
S-MAX S
Top clamp



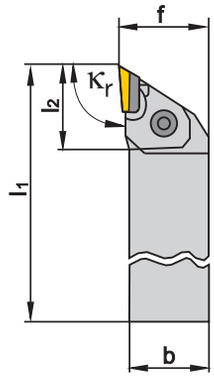
KNUX



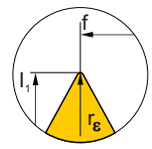
R/L S71.5



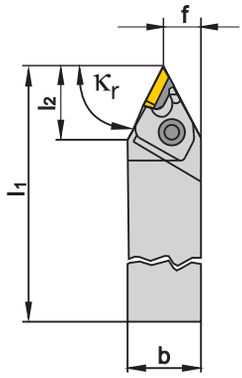
K_r 93°
Inserts angle

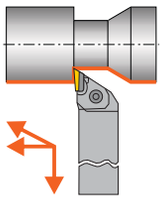
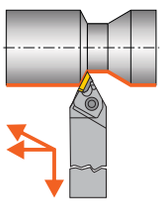


R/L S70.5



K_r 63°
Inserts angle



Inserts angle		Ordering code	Dimensions (mm)							Spare parts				Inserts to use
			h=h1	b	l1	l2	f1	γ°	λ°	R Clamp set	L	R Shim	L	
	16	R/LS71.5-2525M-16	25	25	150	32.0	28.7	-6	0	R170.5-824	L170.5-825	R170.5-851	L170.5-851	KNUX 160405
		R/LS71.5-3225M-16	32	25	180	32.0	28.7	-6	0					KNUX 160405
		R/LS71.5-4025M-16	40	25	200	32.0	28.7	-6	0	R170.5-824	L170.5-825	R170.5-851	L170.5-851	KNUX 160405
		R/LS71.5-5032M-16	50	32	225	32.0	35.0	-6	0					KNUX 160405
	16	R/LS70.5-4025M-16	40	25	145	37.0	14.3	-6	0	R170.5-824	L170.5-825	R170.5-851	L170.5-851	KNUX 160405
		R/LS70.5-5032M-16	50	32	155	37.0	16.8	-6	0					KNUX 160405

CORUN

Notes

A. Code key for boring bars

S	40	V	—	S	C	L	C	R	—	12	—	
1	2	3		4	5	6	7	8		9		10

1 Type of shank

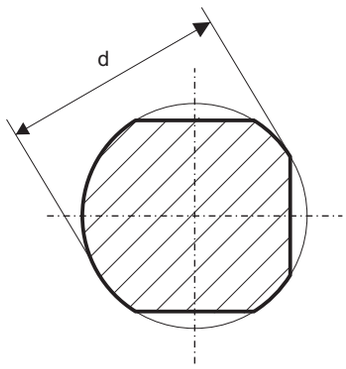
A

Steel shank with internal coolant suply

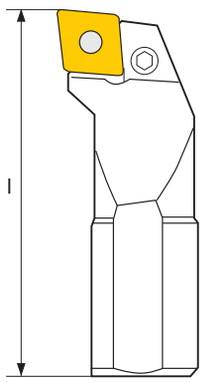
S

Steel shank

2 Shank diameter



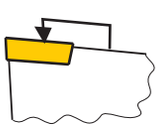
3 Tool lenght l mm



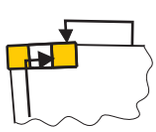
F = 80
H = 100
K = 125
M = 150
P = 170
Q = 180
R = 200
S = 250
T = 300
U = 350
V = 400
W = 450
Y = 500
X = special

4 Clamping system

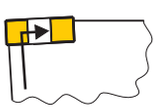
C



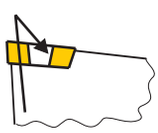
M



P



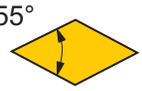
S



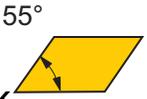
5 Inserts shape

80°
C

55°
D



55°
K



R

S

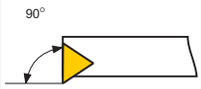
T

35°
V

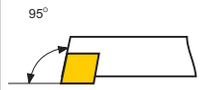
80°
W

6 Holder style, enternig angle

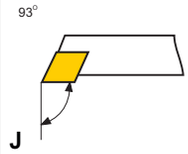
90°
F



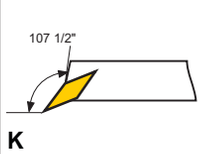
95°
L



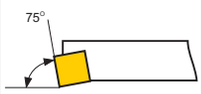
93°
J



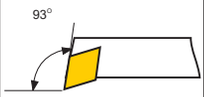
107 1/2"
K



75°
K



93°
U



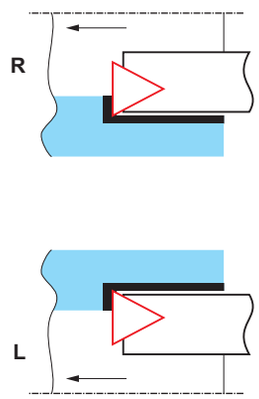
A. Code key for boring bars

S	40	V	–	S	C	L	C	R	–	12	–	
1	2	3		4	5	6	7	8		9		10

7 Clearance angle on major cutting edge α_n

B 5°	C 7°
E 20°	N 0°
P 11°	O

8 Hand of tool



9 Cutting edge length, l mm

C	D	R
S	T	V
W	K	

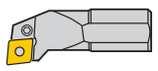
10 Manufactures option

When required a supplementrary symbol
or max. 3 letters may be added to the
ISO code, separated by a dash, e.g.:

D = extended f-dimension, + 1,0 mm
E = extended f-dimension, + 2,0 mm
R = round shank
W = wedge design
X = back boring

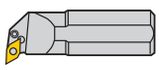
A.g S-MAX P toolholders for internal turning

A



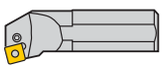
PCLNR/L

A.g2



PDUNR/L

A.g2



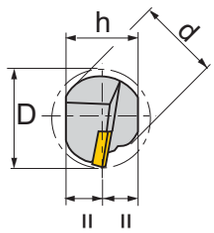
PSKNR/L

A.g3

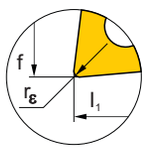
A.g S-MAX P toolholders for internal turning

S-MAX P
Lever

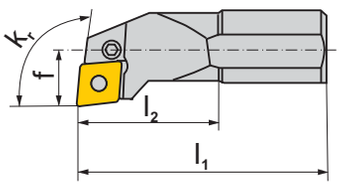
CNMM
CNMG
CNMA



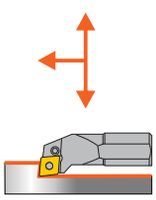
PCLNR



K_r 95°
Inserts angle

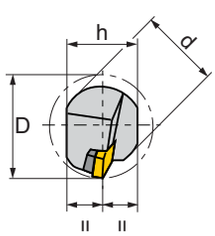


Inserts angle		Ordering code	Dimensions (mm)								Spare parts			Inserts to use
			d	h	l_1	l_2	f	D	γ°	λ°	Lever	Screw	Shim	
	12	S25T-PCLNR/L 12	25	23	300	37.8	17	32	-6	-10	438.3-841-1	438.3-832M	-	CNMG 120404
		S32U-PCLNR/L 12	32	30	350	40.0	22	40	-6	-11	174.3-848M	174.3-858	171.31-850M	CNMG 120404
		S40V-PCLNR/L 12	40	37	400	56.0	27	50	-6	-10	174.3-841M	174.3-821		CNMG 120404
	19	S50W-PCLNR/L 19	50	47	450	63.0	35	63	-6	-11	174.3-849M	174.3-822M	171.31-851M	CNMG 190608

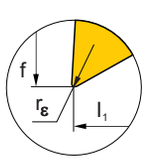


S-MAX P
Lever

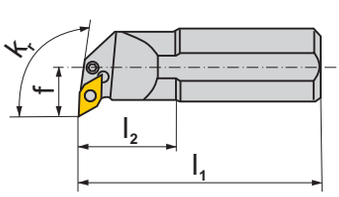
DNMM
DNMG
DNMA



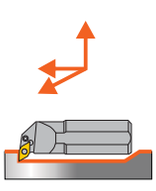
PDUNR



K_r 93°
Inserts angle



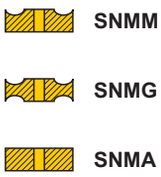
Inserts angle		Ordering code	Dimensions (mm)								Spare parts			Inserts to use
			d	h	l_1	l_2	f	D	γ°	λ°	Liver	Screw	Shim	
	11	S25T-PDUNR/L 11	25	23	300	35	17	32	-6	-11	5432 015-021	438.3-830	5322 255-01	DNMG 110408
		S32U-PDUNR/L 11	32	30	350	40	22	40	-6	-10	5432 001-01	174.3-820M		DNMG 110408
	15	S40V-PDUNR/L 15	40	37	400	56	27	50	-6	-11	174.3-847M	174.3-830	171.35-850M	DNMG 150608
		S50W-PDUNR/L 15	50	47	450	63	35	63	-6	-10				DNMG 150608

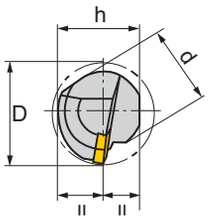


A.g S-MAX P toolholders for internal turning

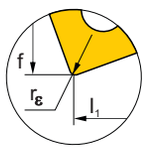
A

S-MAX P
Lever

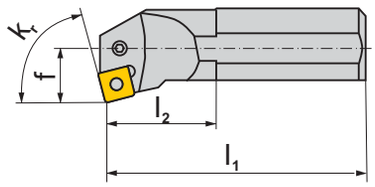




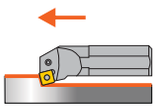
PSKNR



K_r 75°
Inserts angle



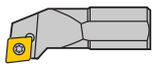
Inserts angle		Ordering code	Dimensions (mm)								Spare parts			Inserts to use
			d	h	l_1	l_2	f	D	γ°	λ°	Lever	Screw	Shim	
	12	**S25T-PSKNR/L 12**	25	23	300	36.8	17	32	-6	-11	438.3-841-1	438.3-832M		SNMG 120408
		S32U-PSKNR/L 12	32	30	350	37.8	22	40	-6	-10	174.3-848M	174.3-858	174.3-851M	SNMG 120408
		S40V-PSKNR/L 12	40	37	400	49.8	27	50	-6		174.3-841M	174.3-821		SNMG 120408
										-10				
	19	**S50W-PSKNR/L 19**	50	47	450	60.0	35	63	-6	-9	174.3-849M	174.3-822M	174.3-852M	SNMG 190612



CORUN

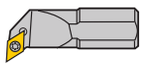
Notes

A.h S-MAX U toolholders for internal turning



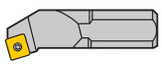
SCLCR/L

A.h2



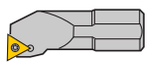
SDUCR/L

A.h2



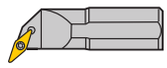
SSKCR/L

A.h3



STFCR/L

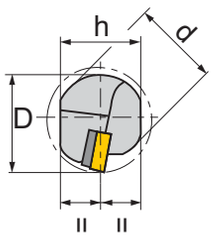
A.h3



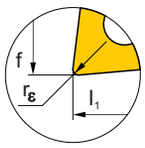
SVQBR/L

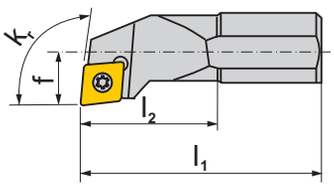
A.h4

S-MAX U
Screw clamp



SCLCR

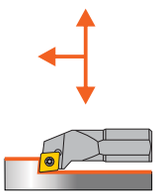




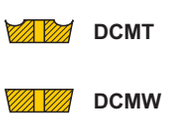
K_r 95°
Inserts angle

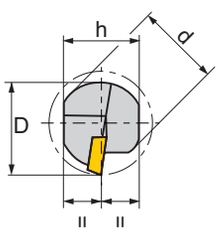
CC...

Inserts angle		Ordering code	Dimensions (mm)								Spare parts			Inserts to use
			d	h	l_1	l_2	f	D	γ°	λ°	Insert screw	Shim	Shim screw	
	6	**S08K-SCLCR/L 06**	8	7	125	18.0	5	10	0	-12	5513 020-03	-	-	CCMW 060204
		S12M-SCLCR/L 06	12	11	150	24.5	9	16	0	-15				CCMW 060204
		S16R-SCLCR/L 06	16	15	200	32.5	11	20	0	-12				CCMW 060204
	9	**S16R-SCLCR/L 09-M**	16	15	200	32.5	11	20	0	-12	5513 020-10	-	-	CCMW 09T304
		S20S-SCLCR/L 09-M	20	18	250	30.7	13	25	0	-8				CCMW 09T304
		S25T-SCLCR/L 09-M	25	23	300	45.0	17	32	0	-6				CCMW 09T304
	12	**S25T-SCLCR/L 12**	25	23	300	45.0	17	32	0	-6	5513 020-17	-	5512 090-01	CC.. 120204
		S32U-SCLCR/L 12	32	30	350	50.0	22	40	0	-10	5513 020-18	5322 232-02	5512 090-03	CC.. 120204
		S40V-SCLCR/L 12	40	37	400	60.0	25	50	0	-8				CC.. 120204

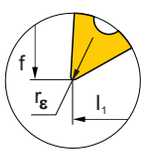


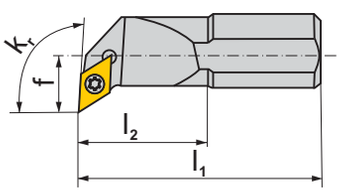
S-MAX U
Screw clamp





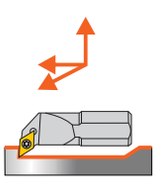
SDUCR





K_r 93°
Inserts angle

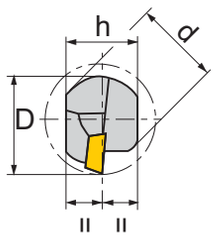
Inserts angle		Ordering code	Dimensions (mm)								Spare parts			Inserts to use
			d	h	l_1	l_2	f	D	γ°	λ°	Insert screw	Shim	Shim screw	
	7	**S10K-SDUCR/L 07**	10	9	125	19.8	7	13	0	-15	5513 020-03	-	-	DC.. 070204
		S12M-SDUCR/L 07	12	11	150	22.0	9	16	0	-10				DC.. 070204
		S16R-SDUCR/L 07	16	15	200	27.0	11	20	0	-8				DC.. 070204
	11	**S20S-SDUCR/L 11-M**	20	18	250	30.4	13	25	0	-6	5513 020-10	-	-	DCMW 11T304
		S25T-SDUCR/L 11-M	25	23	300	46.0	17	32	0	-6				DCMW 11T304



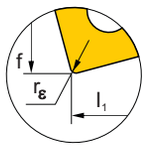
S-MAX U
Screw clamp

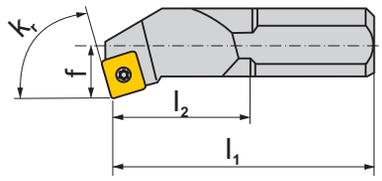
CCMT

CCMW



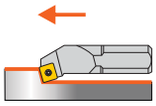
SSKCR





K_r 75°
Inserts angle

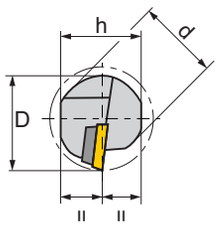
Inserts angle		Ordering code	Dimensions (mm)								Spare parts			Inserts to use
			d	h	l_1	l_2	f	D	γ°	λ°	Insert screw	Shim	Shim screw	
	9	**S16R-SSKCR/L 09M**	16	15	200	32.5	11	20	0	-1	5513 020-02	-	-	CCMW 09T304
		S20S-SSKCR/L 09M	20	18	250	29.7	13	25	0	-6				CCMW 09T304
	12	**S25T-SSKCR/L 12**	25	23	300	44.8	17	32	0	-8	5513 020-17	-	-	CC.. 120204
		S32U-SSKCR/L 12	32	30	350	51.0	22	40	0	-10	5513 020-18	5322 420-02	5512 090-03	CC.. 120204



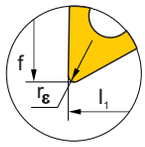
S-MAX U
Screw clamp

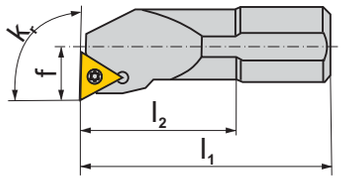
TCMT

TCMW



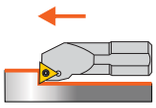
STFCR





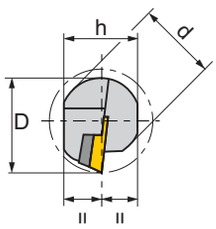
K_r 91°
Inserts angle

Inserts angle		Ordering code	Dimensions (mm)								Spare parts			Inserts to use
			d	h	l_1	l_2	f	D	γ°	λ°	Insert screw	Shim	Shim screw	
	9	**S10K-STFCR/L 09**	10	9	125	22.5	7	13	0	-15	5513 020-05	-	-	TCMT 090204
		S12M-STFCR/L 09	12	11	150	28.0	9	16	0	-10				TCMT 090204
	11	**S12M-STFCR/L 11**	12	11	150	30.0	9	16	0	-10	5513 020-03	-	-	TCMT 110202
		S16R-STFCR/L 11	16	15	200	35.0	11	20	0	-6				TCMT 110202
		S20S-STFCR/L 11	20	18	250	29.7	13	25	0	-3				TCMT 110202
	16	**S25T-STFCR/L 16-M**	25	23	300	36.8	17	32	0	-6	5513 020-10	-	-	TCMT 16T304
		S32U-STFCR/L 16	32	30	350	43.2	22	40	0	-10				TCMT 16T304
		S40V-STFCR/L 16	40	37	400	60.0	27	50	0	-8				TCMT 16T304

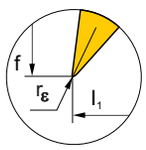


A.h S-MAX U toolholders for internal turning

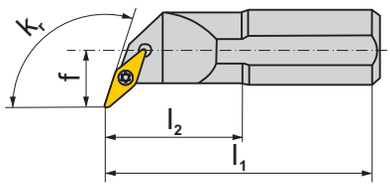
S-MAX U
Screw clamp



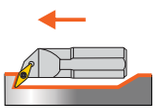
SVQBR



K_r 107° 30'
Inserts angle



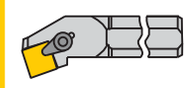
Inserts angle		Ordering code	Dimensions (mm)								Spare parts			Inserts to use
			d	h	l_1	l_2	f	D	γ°	λ°	Insert screw	Shim	Shim screw	
	11	**S16R-SVQBR/L 11**	16	15	200	32.4	13	22	0	-7	5513 020-003	-	-	VB.. 110404
		S20S-SVQBR/L 11	22	18	250	33.4	15	27	0	-6				VB.. 110404
		S25T-SVQBR/L 11	25	23	300	39.4	18	33	0	-4				VB.. 110404
	16	**S25T-SVQBR/L 16**	25	23	300	40.0	18	33	0	-6	5513 020-010	-	-	VBMT 160404
		S32U-SVQBR/L 16	32	30	350	43.6	22	40	0	-8				VBMT 160404
		S40V-SVQBR/L 16	40	37	400	64.0	27	50	0	-8				VBMT 160404



A.i S-MAX S toolholders for internal turning

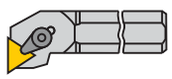
S-MAX | S-MAX S

A



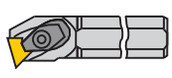
R/L S31.9

A.i2



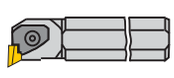
CFTPR/L

A.i2



CTKPR

A.i2

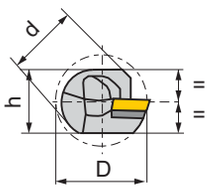


CKUNR/L

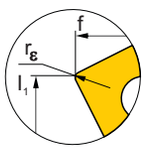
A.i3

S-MAX S
Top clamp

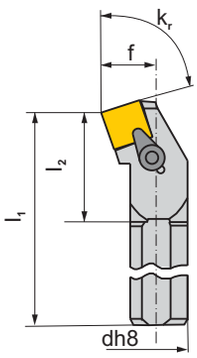
SPMR
SPGR
SPGN
SPUN



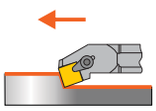
R S31.9



K_r 75°
Inserts angle

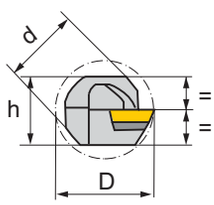


Inserts angle		Ordering code	Dimensions (mm)								Spare parts			Inserts to use
			d	h	l_1	l_2	f	D	γ°	λ°	Clamp set	Shim	Shim pin	
	9	**R S31.9-16-09**	16	15	160	32	11	20	3	-3	174.9-830-1	-	-	SP.. 090304
		R S31.9-20-09	20	18	250	40	14.1	27	6	0				SP.. 090304
	12	**R S31.9-25-12**	25	23	300	46	18	34	6	0	174.9-832-1	-	-	SP.. 120304
		R S31.9-32-12	32	30	350	51	22.5	43	6	0		174.2-850	174.1-865	SP.. 120304

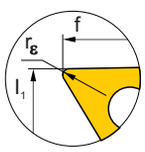


S-MAX S
Top clamp

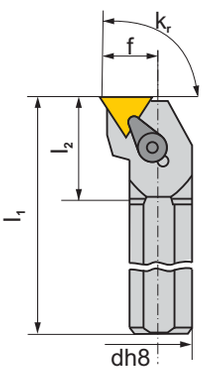
TPMR
TPGR
TPGN
TPUN



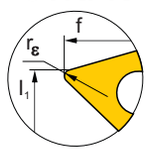
R S36.9 CTFPR



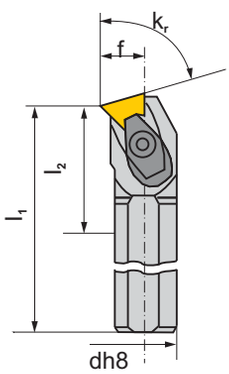
K_r 91°
Inserts angle



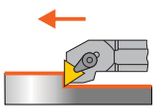
R S31.9 CTKPR



K_r 75°
Inserts angle

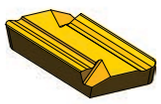


Inserts angle		Ordering code	Dimensions (mm)								Spare parts			Inserts to use
			d	h	l_1	l_2	f	D	γ°	λ°	Clamp set	Shim	Shim pin	
	9	**R/L S36.9-12-09**	12	11	140	24.0	9	16	6	-3	172.9-825-1	-	-	TP.. 090204
	11	**S12M-CTFPR/L 11**	12	11	150	24.0	9	16	6	-6	172.9-826-1	-	-	TP.. 110304
		R/L S36.9-16-11	16	15	160	32	11	20	6	-3	174.9-830-1			TP.. 110304
		R/L S36.9-20-11	20	18	250	43	14.1	27	6	0				TP.. 110304
	16	**R/L S36.9-25-16**	25	23	300	49.0	18	34	6	0	174.9-832-1	175.2-850	174.1-865	TP.. 160304
		R/L S36.9-32-16	32	30	350	54	22.5	43	6	0				TP.. 160304
		R/L S36.9-40-16	40	37	315	54	28	50	6	0	174.9-832-2			TP.. 160304
	9	**R S31.9-12-09**	12	11	140	24	9	16	6	-3	172.9-825-1	-	-	TP.. 090204

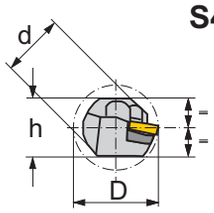


A.i S-MAX S toolholders for internal turning

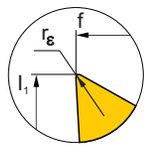
S-MAX
Top clamp



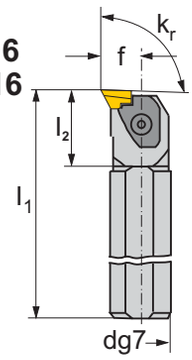
KNUX

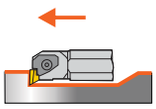


S32U-CKUNR/L 16
S40W-CKUNR/L 16



K_r 93°
Inserts angle

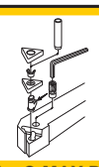


Inserts angle		Ordering code	Dimensions (mm)								Spare parts				Inserts to use
			d	h	l_1	l_2	f	D	γ°	λ°	R Clamp set	L	R Shim	L	
	16	**S32U-CKUNR/L 16**	32	30	350	54	22	44	-6	-10	170.5-825	170.5-824	170.5-851	170.5-851	KNUX 160405
		S40W-CKUNR/L 16	40	37	450	60	27	48	-6	-8					KNUX 160405

CORUN

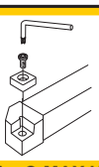
Notes

A.j Spare parts



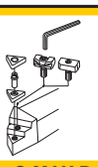
A.j.1.Spare parts for S-MAX P toolhoders
-lever clamp

A.j2



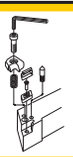
A.j.2.Spare parts for S-MAX U toolhoders
-screw clamp

A.j3



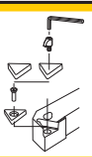
A.j.3.Spare parts for S-MAX P toolholders
-wedge clamp

A.j4



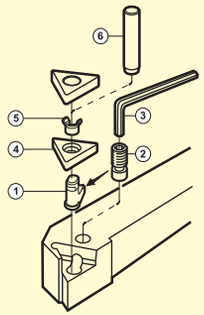
A.j.4.Spare parts for S-MAX toolholders
-wedge clamp

A.j5

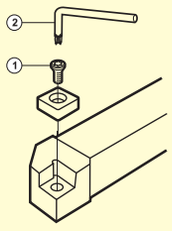


A.j.5.Spare parts for S-MAX S toolholders
-top clamp

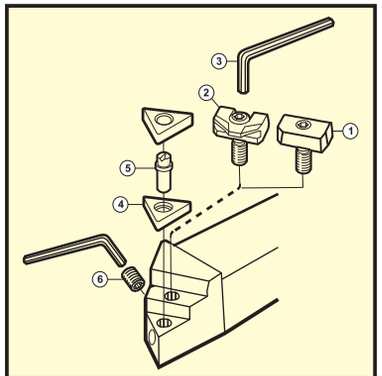
A.j6



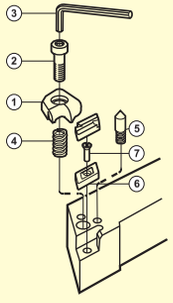
Cutting edge lenght	Shank size		Standard parts								Optional parts			
			①	②	③	④			⑤	⑥	④			⑤
	Toolholders	Boring bars	Level	Screw	Key (size, mm)	Shim	For insert thickness	Radius	Shim pin	Chim pin punch	Shim	For insert thickness	Radius	Shim pin
12	-	25	438.3-841-1	438.3-832-1	174.1-863(2.5)	-	-	-	-	-	-	-	-	-
	1616	32	174.3-848M	174.3-858	174.1-864(3.0)	171.31.850M	4.76	0.4-1.6	174.3-861	174.3-871	-	-	-	-
	2020-3225	40	174.3-841M	174.3-821	174.1-864(3.0)	171.31.850M	4.76	0.4-1.6	174.3-861	174.3-871	-	-	-	-
19	-	50	174.3-849M	174.3-822M	174-815 (4.0)	171.31.851M	6.35	0.4-2.4	174.3-868	174.3-872	-	-	-	-
	2525-4040	-	174.3-842M	174.3-822M	174-815 (4.0)	171.31.851M	6.35	0.4-2.4	174.3-862	174.3-872	-	-	-	-
15	2020-3232	40-50	174.3-847M	174.3-830	174.1-864(3.0)	171.31.850M	6.35	1.2-1.6	174.3-861	174.3-871	171.35-851M	6.35	0.4-0.8	-
09	2020	-	174.3-840M	174.3-820M	170.3-860(2.5)	176.3-850	3.18	-	174.3-863	174.3-870	-	-	-	-
12	2525	-	174.3-841M	174.3-821	174.1-864(3.0)	176.3-851M	4.76	-	174.3-861	174.3-871	-	-	-	-
15	3225	-	174.3-843M	174.3-825	174.1-864(3.0)	176.3-854M	6.35	-	174.3-864	174.3-873	-	-	-	-
19	3232	-	174.3-842M	174.3-822M	174-815 (4.0)	176.3-852M	6.35	-	174.3-862	174.3-872	-	-	-	-
10	2020	-	176.39-840	174.3-834	170.3-864(1.98)	176.3-850	3.18	-	174.3-863	174.3-870	-	-	-	-
12	2525	-	176.39-841	174.3-820M	170.3-860(2.5)	176.3-851	4.76	-	174.3-863	174.3-870	-	-	-	-
16	3225	-	176.39-842	174.3-833	170.3-860(2.5)	176.3-852	6.35	-	174.3-867	174.3-871	-	-	-	-
20	3232	-	176.39-843	174.3-825	174.1-864(3.0)	176.3-853	6.35	-	174.3-864	174.3-873	-	-	-	-
09	1010-1212	-	174.3-845-1	174.3-829	174.1-870(1.98)	-	-	-	-	-	-	-	-	-
	1616-2020	-	174.3-840M	174.3-820M	170.3-860(2.5)	174.3-850	3.18	0.4-1.2	174.3-863	174.3-870	-	-	-	-
12	-	25	438.3-841-1	438.3-832M	174.1-863(2.5)	-	-	-	-	-	-	-	-	-
	-	32	174.3-848M	174.3-858	174.1-864(3.0)	174.3-851M	4.76	0.4-1.2	174.3-861	174.3-871	174.3-856	4.76	1.6-2.4	-
	2020-3225	40	174.3-841M	174.3-821	174.1-864(3.0)	174.3-851M	4.76	0.4-1.2	174.3-861	174.3-871	174.3-856	4.76	1.6-2.4	-
19	-	-	174.3-849M	174.3-822M	174-815 (4.0)	174.3-852M	6.35	0.8-2.4	174.3-868	174.3-872	-	-	-	-
	3225-4040	-	174.3-842M	174.3-822M	174-815 (4.0)	174.3-855M	6.35	0.8-2.4	174.3-862	174.3-872	-	-	-	-
25	4040-5050	-	174.3-844M	174.3-827	186-843	174.3-853M	7.94	1.6-3.2	174.3-865	174.3-874	-	-	-	-
11	1212	-	174.3-846-1	174.3-829	170.3-864(1.98)	-	-	-	-	-	-	-	-	-
16	1616-2525	-	174.3-840M	174.3-820M	170.3-860(2.5)	179.3-850M	4.76	0.4-0.8	174.3-860	174.3-870	179.3-858	4.76	1.2-1.6	-
22	2525-3232	-	174.3-841M	174.3-821	174.1-864(3.0)	179.3-852M	4.76	1.2-1.6	174.3-861	174.3-871	179.3-853M	4.76	0.4-0.8	-



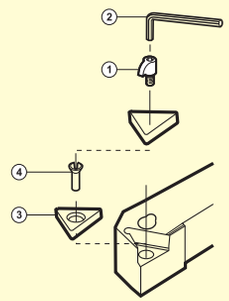
Cutting edge lenght	Shank size		Standard parts								Optional parts			
			①	②										
	Toolholders	Boring bar	Insert screw (thread)	Key (size, mm)	Shim	For insert thickness	Radius	Shim screw	Key (size, mm)		Shim	For insert thickness	Radius	
06	0808-1010	12-16	5513 020-03 (M2.5)	416.1-860										
09	1212 1616-2020 -	25 - 16-20	5513 020-10 (M3.5)	416.1-864										
11	- - 1616-2525	20 25 -	5513 020-10 (M3.5)	416.1-864										
09	- 1212 1616-2020	16-20 - -	5513 020-10 (M3.5)	416.1-864										
09	0808-1010	10-12	5513 020-05 (M2.2)	416.1-860										
11	1212-1616	12-20	5513 020-03 (M2.5)	416.1-860										
16	- 1616-2525	25 32-40	5513 020-10 (M3.5)	416.1-864										
11	1212-2020	16-25	5513 020-03 (M2.5)	416.1-860										
16	2020-3225	25-40	5513 020-10 (M3.5)	416.1-864										



Cutting edge lenght	Shank size		Standard parts									
			①	②	③	④			⑤	⑥		
	Toolholders	Boring bar	Wedge set	Wedge clamp set	Key (size, mm)	Shim	For insert thickness	Radius	Pin	Screw	Key (size, mm)	
16	2020-2525	-	-	170.38-820-1	174.3-863 (2.5)	170.3-852	4.76	0.4-1.6	170.3-870	170.38-845	174.1-864 (3.0)	
22	2525-3225	-	-	170.38-820-1	174.3-864 (3.0)	170.3-855 170.3-856	4.76	1.2-1.6 0.4-0.8	170.3-871	170.38-845	174.1-864 (3.0)	
22-W	2525-3232	-	170.38-824-1	-	174-815 (4.0)	170.3-855 170.3-856	4.76	1.2-1.6 0.4-0.8	170.3-871	170.38-845	174.1-864 (3.0)	



Cutting edge lenght	Shank size		Standard parts											
			①		②	③	④	⑤	⑥				⑦	
	Toolholders	Boring bar	Clamp right hand	Clamp left hand	Screw	Key (size, mm)	Spring	Spring and pin	Shim right hand	Shim left hand	For insert thickness	Radius	Shim pin	
16	2525-5032	-	170.5-824	170.5-825	170.5-865	174-815 (4.0)	170.5-848	170.5-841	R170.5-851	L170.5-851	4.76	1.0	174.1-866	
	-	32-40	170.5-825	170.5-824	170.5-865	174-815 (4.0)	170.5-848	170.5-821	L170.5-851	R170.5-851	4.76	1.0	174.1-866	

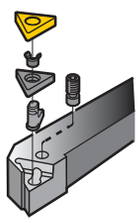
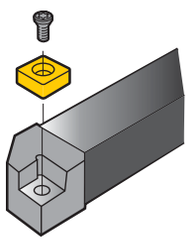
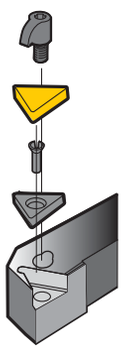
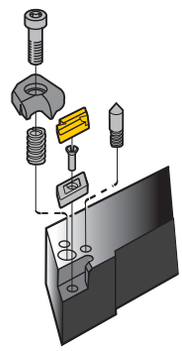
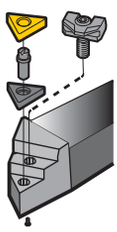
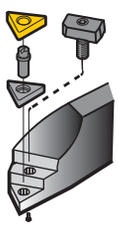


Cutting edge lenght	Shank size		Standard parts					
			①	②	③			④
	Toolholders	Boring bar	Clamp	Key (size, mm)	Shim	For insert thickness	Radius	Shim pin
09	-	16-20	174.9-830-1	174.1-863 (2.5)	-	-	-	-
	1616-2020	-	174.9-830-2	174.1-863 (2.5)	174.2-853	3.18	0.4-0.8	174.1-865 174.1-869
12	-	25	174.9-832 -1	174.1-864 (3.0)	-	-	-	-
	-	32	174.9-832-1	174.1-864 (3.0)	174.2-850	3.18	0.4-1.2	174.1-865
	2020-2525	-	174.9-832-2	174.1-864 (3.0)	174.2-850	3.18	0.4-1.2	174.1-865
09	1010	12	172.9-825-1	174.1-862 (1.5)	-	-	-	-
11	-	12	172.9-826-1	174.1-863 (2.5)	-	-	-	-
	-	16-20	174.9-830-1	174.1-863 (2.5)	-	-	-	-
	1212-2020	-	174.9-830-2	174.1-863 (2.5)	-	-	-	-
16	-	25	174.9-832-1	174.1-864 (3.0)	-	-	-	-
	-	32	174.9-832-1	174.1-864 (3.0)	175.2-850	3.18	0.4-1.2	174.1-865
	2020-2525	40	174.9-832-2	174.1-864 (3.0)	175.2-850	3.18	0.4-1.2	174.1-865

A.k Technical information

A

Selecting the correct tool and cutting data
Factors influencing the choice of tools: ❖Workpiece ◆Material ◆Design ◆Accuracy/Finish ❖Machine ◆Power ◆Rigidity ◆Holding ❖Tool ◆Cutting data ◆Performance ◆Quality
1. Selecting clamping system
2. Selecting toolholder
3. Selecting the inserts
4. Selecting the insert geometries
5. Selecting the insert size
6. Selecting the nose radius
7. Selecting the insert grade
8. Selecting the data recommendations
9. Optimization and tool life
10. Insert wear

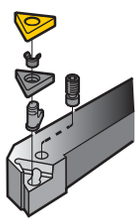
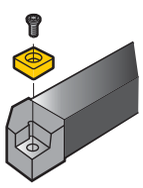
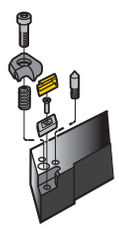
S-MAX P	S-MAX U	S-MAX S	S-MAX
			
			
			

A
k1

A.k Technical information

1. Select clamping system

Clamping systems:
- S-MAX P
- S-MAX U
- S-MAX S
- S-MAX

	Clamping system			
	S-MAX P	**S-MAX U**	**S-MAX S**	**S-MAX**
Selecting the clamping system				
External roughing turning	**5**	**2**	**2**	**4**
External finishing turning	**4**	**5**	**4**	**4**
Internal roughing turning	**5**	**2**	**2**	**4**
Internal finishing turning	**4**	**5**	**5**	**4**
Chip flow	**5**	**5**	**3**	**3**
Indexing time	**5**	**2**	**4**	**3**
Accessibility	**4**	**5**	**5**	**5**

S-MAX P
Clamping system lever or wedge
Use negative inserts
High stability
Rough turning

S-MAX U
Clamping system screw
Use positive inserts
Good chip flow
Finish turning

S-MAX S
Clamping system clamp set
Use positive inserts
Rapid insert replacement
Medium Machining

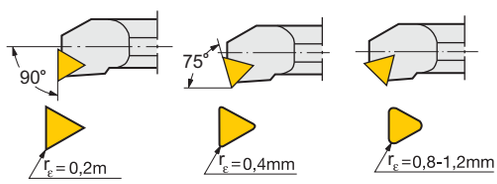
S-MAX
Clamping system top clamping set
Use KNUX and other inserts
Copy turning
Wide area of turning

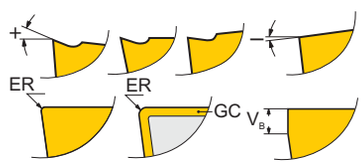
A.k Technical information

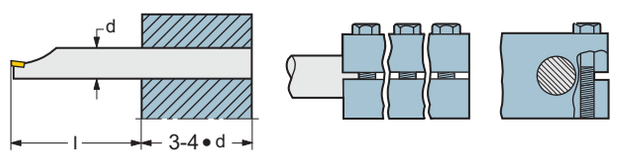
2. Select toolholder

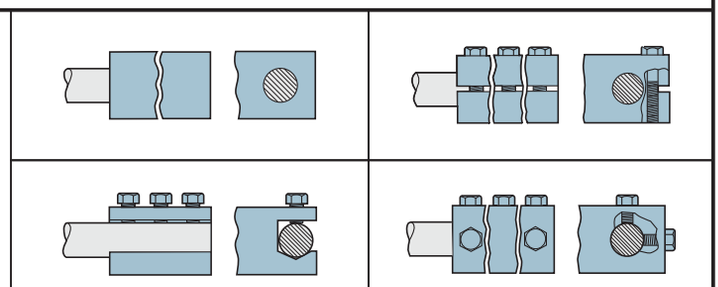
General recommendations:

- Select posible type toolholders according workpiece and entering angle
- Some toolholders have variant directions machining.
- Boring bars with entering angle 90° have low vibrations. Changing entering angle grow vibrations.
- Toolholders have determinate inserts type and size.
- Select max. section of toolholder for external turning.
- Select max. diametar of boring bars
- Select smallest possible overhang for boring bars.
- Select rigid clamping type for toolholder
- Coolant supply improve surface quality and moving chip.









3. Selecting the insert

General recommendations:

- During making of choice of toolholders You should make choice of inserts
- Sometimes it's better to choose an insert first, and then go back and choose a suitable toolholder
- Inserts S shape have 4 (8) cutting edges, and inserts K shape only 2 cutting edges
- Inserts V, K and R shape are mostly use for copy operation
- Inserts R shape have a large contact edge
- Negative inserts have a strong cutting edge and these inserts are placed on toolholders with negative rake angle. Positive inserts are mostly used for internal turning and also for finishing.
- Single sided inserts are more stable then double sided, but they have less cutting edges

4.Geometry recommendations

General recommendations

- Inserts without geometries are used for turning of materials with short chips
- Inserts with geometries -61, -CF, -UF are used for finishing
- Inserts with geometries -15, -CM are used for half rough machining
- Inserts with geometries -71, -CR, -UR are used for roughing

Working area			A	B	C	D	E
Machining type			Extreme finishing	Finishing	Medium Machining	Medium	Roughing
feed	f	mm/o mm/r mm/o	0.05÷0.15 0.10÷0.30 (1)	0.10÷0.30 0.20÷0.50 (1)	0.20÷0.50 0.40÷1.00 (1)	0.40÷1.00 0.60÷1.50 (1)	0.50÷1.50 0.70÷1.50 (1)
cutting depth	a_p	mm mm mm	0.25÷2.00	0.50÷2.00	1.50÷4.00	3.00÷10.00	6.00÷15.00

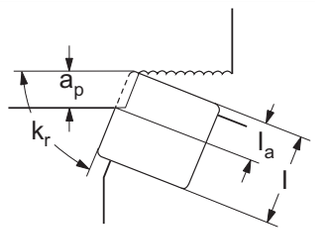
(1) – Feed values for round inserts

ISO	P	M	K	M	K	K			
	Long chipping materials	Stainless steel	Short chipping materials	Heat resistant materials	Soft materials	Hard materials	Intermittent	Vibration tendencies	Limited power
Working area	A B C D E	A B C D E	B C D E	A B C D E	A B C D	A B C			
S-MAX P - 61	25400	14400	2300	22000	0330	000	3	4	4
S-MAX P - 15	02530	01320	0220	02200	0000	022	3	3	3
S-MAX P - 71	02354	02232	1111	00110	0000	000	4	3	4
S-MAX P - NMA	00000	00000	4555	00000	0000	500	5	2	3
S-MAX P - NMG	01330	01330	0222	00400	0000	000	4	3	4
S-MAX P - NMM	01344	02210	1111	00110	0000	420	4	3	3
RCMX	01350	01330	0340	03440	0000	000	5	2	2
RNMG	01243	04420	2342	02310	0000	033	5	2	2
S-MAX P - CF	25400	14400	2300	22000	0330	000	3	4	4
S-MAX P - CM	02530	01320	0220	02200	0000	022	3	3	3
S-MAX P - CR	02345	02232	1111	00110	0000	000	4	3	4
S-MAX U - UF	54000	54000	3000	43000	2100	000	1	3	4
S-MAX U - UR	14510	25410	4410	12310	2342	000	2	4	4
S-MAX S - PMR	14420	24420	3220	13220	2342	000	2	4	4
S-MAX S - PGR	14420	24420	3220	13220	2342	000	2	4	4
S-MAX - NUN	01343	00000	4554	00000	0000	032	4	0	1
S-MAX - NGN	01343	00000	4554	00000	0000	032	4	0	1
S-MAX - PUN	01343	03553	4431	03550	0222	000	3	3	3
S-MAX - PGN	01343	03553	4431	03550	0222	000	3	3	3
S-MAX KNUX - 11	04310	04520	0431	04310	0421	000	2	4	4
S-MAX KNUX - 12	03420	02430	0253	02530	0242	000	3	3	3
S-MAX KNUX - 13	01340	01340	0134	01304	0133	000	3	3	3

5. Selecting the insert size

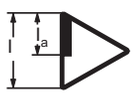
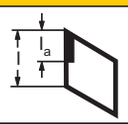
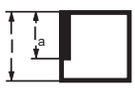
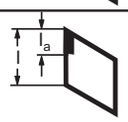
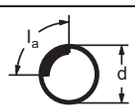
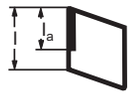
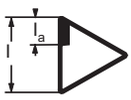
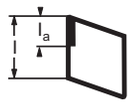
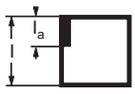
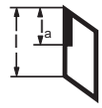
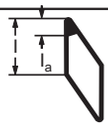
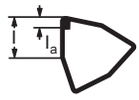
General recommendations:

- Determine the largest cutting depth (a_p)
- Determine the necessary effective cutting edge length (l_a) while also considering the entering angle κ_r and cutting depth a_p
- Determine insert dimensions in regards of necessary effective cutting edge length and insert shape



Entering angle κ_r (°)		Cutting depth (a_p) mm										
		1	2	3	4	5	6	7	8	9	10	15
		Necessary effective cutting edge length (l_a) mm										
90	90	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	15.0
105	75	1.0	2.1	3.1	4.1	5.2	6.2	7.2	8.3	9.3	10.5	15.5
120	60	1.2	2.3	3.5	4.6	5.8	6.9	8.1	9.2	10.4	11.5	17.3
135	45	1.4	2.8	4.2	5.7	7.1	8.5	9.9	11.3	12.7	14.1	21.2
150	30	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	30.0
165	15	3.9	7.7	11.6	15.5	19.3	23.2	27.0	30.9	34.8	38.6	58.0
$l_a = a_p / \cos\kappa_r$												

Working area

A B		C D E	
	L_{amax}=1/2 x l		L_{amax}=1/2 x l
	L_{amax}=1/4 x l		L_{amax}=1/2 x l
	L_{amax}=0.4xd		L_{amax}=2/3 x l
	L_{amax}=1/4 x l		L_{amax}=1/2 x l
	L_{amax}=1/3 x l		L_{amax}=1/2 x l
	L_{amax}=1/4 x l		L_{amax}=1/3 x l

6.Selecting the nose radius

General recommendations:

❖Roughing

- Select the largest possible nose radius to obtain a strong cutting edge
- A large nose radius permits larger feeds. Nose radius and feed are related to each other (it is essential that the maximum feeds are not exceeded)
- Select a smaller radius if there is a tendency towards vibration
- For roughing, the most commonly used radius are 1.2 ÷ 1.6

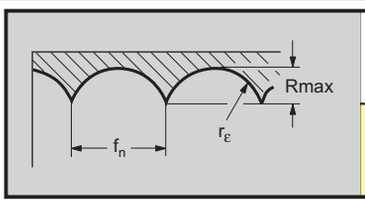
Nose radius	r_ε (mm)	0.4	0.8	1.2	1.6	2.4
Max. recomended feed	f (mm/o) (mm/r) (mm/o)	0.25÷0.35	0.40÷0.70	0.50÷1.00	0.70÷1.30	1.00÷1.80

" f " roughing [mm/r] = 0.5 x nose radius

General recommendations:

❖Finishing

- The roughness and tolerances are affected by the combination of nose radius and feed as well as the workpiece stability, clamping and the overall condition of the machine.
- The roughness can often be improved by using higher cutting speeds and neutral or positive rakes
- Select a smaller radius if there is a tendency towards vibration
- Uncoated grades normally provide a better roughness than coated grades

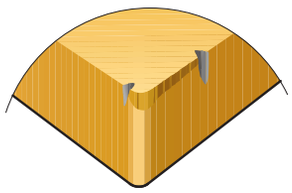
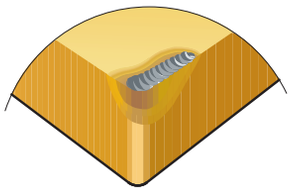
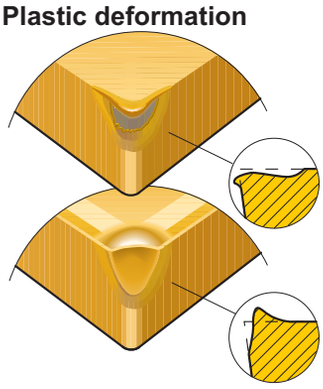
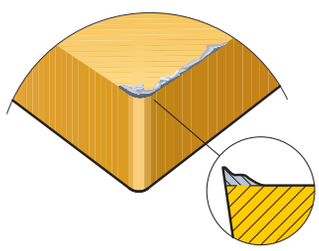


The theoriticsl (Rmax) value of the surface finish can be calculate from the formula.

Rmax (µm) – profile depth
r_ε (mm) – nose radius
f (mm/o, mm/r) – feed

Rmax	Ra=CLA=AA		RMS		N		Rmax	Ra=CLA=AA		RMS		N	
µm	µm	µin	µm	µin			µm	µm	µin	µm	µin		
1.6	0.30	11.8	0.33	13.1			7.0	1.40	55.1	1.50	61.2	N7	
1.8	0.35	13.8	0.39	15.3			8.0	1.60	63.0	1.80	70.0		
2.0	0.40	15.7	0.44	17.4	N5		9.0	1.80	71.0	2.00	78.8	N8	
2.2	0.44	17.5	0.49	19.4			10.0	2.00	79.0	2.20	87.7		▽▽
2.4	0.49	19.2	0.54	21.3			15.0	3.20	126.0	3.10	140.0		
2.6	0.53	20.8	0.59	23.1			20.0	4.40	173.0	4.90	192.0		
2.8	0.58	22.7	0.64	25.2			25.0	5.80	238.0	6.40	264.0		
3.0	0.63	24.6	0.70	27.3			27.0	6.30	247.0	7.00	274.0	N9	
3.5	0.71	27.8	0.79	30.9		▽▽▽	30.0	7.40	292.0	8.20	324.0		△
4.0	0.80	31.4	0.89	34.8	N6		35.0	8.80	346.0	9.80	384.0		
4.5	0.90	35.2	1.00	39.1			40.0	10.70	422.0	11.90	468.0		
5.0	0.99	38.5	1.10	43.1			45.0	12.50	485.0	13.90	538.0	N10	
6.0	1.20	47.2	1.30	52.4			50.0	14.00	552.0	15.50	613.0		

A.k Technical information

Problem	Cause	Remedy
Flank and notch wear a) Rapid flank wear sausing poor surface finish and out of tolerance.  b/c) Notch wear causting poor surface finish and risk of edge breakage.	a) A too high cutting speed of insufficient wear resistance. b/c) Oxidation or excessive attrition wear caused by a hard surface.	Reduce the cutting speed. Select a more wear resistant grade. Select an Al_2O_3 coated grade for steel machining. For work hardening materials select a smaller entering angle or a more wear resistant grade.
Crater wear  Excesive crater wear causing a weakened edge. Cutting edge break through on the trailing edge causes poor surface finish.	Diffusion wear due to too high cutting temperatures on the rake face.	Select an Al_2O_3 coated grade. Select a positive insert geometry. Reduce the feed (and speed) to obtain a lower temperature.
Plastic deformation  Plastic deformation (edge depression (a) or flankimpression (b)) leading to poor chip control and poor surface finish. Risk of excesive flank wear lesding to insert breakage.	A too high temperature in combination with a high pressure.	Select a harder grade with better resistance to plastic deformation. a) reduce cutting speed b) reduce feed
Bilt-up edge  Built-up edge (B.U.E.) causing poor surface finish and cutting edge frittering when the B.U.E. is torn away.	Workpiece material is welded to the insert due to: Low cutting speed. Negative cutting geometry. "Sticky" material, e.g. certain stainless steels and pure aluminium.	Increase cutting speed. Select a positive geometry. Increase cutting speed drastically. If tool life turns out to short, apply coolant in large quantities.

A.k Technical information

Problem		Cause	Remedy
Chip hammering	The part of the cutting edge not in cut is damaged through chip hammering. Both the top side and the support for the insert, can be damaged.	The chips are of an expressive lenght and are deflected against the cutting edge.	Change the feed slightly. Selct an alternative insert geometry. Change the entering angle of the holder.
Frittering	Small cutting edge fractures (frittering) causing poor surface finish and excessive flank wear.	Grade too brittle. Insert geometry too wear. Built-up edge.	Select tougher grade. Select an insert with a stronger geometry. Increase cutting speed or select a positive geometry.
Thermal cracks	Small cracks perpendicular to the cutting edge causing frittering and poor surface finish.	Termal cracks due to temperature variations caused by: -intermittent machining -varying coolant supply	Select a tougher grade with better resistance to thermal shocks. Coolant should be appiled copiously or not at all.
Insert breakage	Inset breakage that damages not only the insert but also the shim and workpiece.	Grade too brittle. Excessive load on the insert. Insert geometry too weak. Insert size is too small.	Select a tougher grade. Reduce the feed and/or the depth of cut. Select a stronger geometry, preferably a singer sided insert. Select a thicker/larger insert.

8. Select cutting data

General recommendations:

- In rough turning operations the power and stability of the machine as well as chip forming ability are often limiting factors. The most economical choice of cutting data is obtained by combination of high feed and low cutting speed
- Roughness, tolerance and chip forming requirements must be taken into consideration in finishing operations. Usually, the feed selection is depend on roughness and nose radius
- Cutting speeds are depend on selected carbide grade, materials and workpiece hardness, and other additional terms. The speed are usually determined by table values multiplied by disarrangement factors. The speed is adapted to insert work steadiness of 15min.

Difference in hardness (HB)									
Material	-80	-60	-40	-20	0	+20	+40	+60	+80
Non - alloy carbon steel				1.07	1.0	0.95	0.90		
Alloy steel	1.26	1.18	1.12	1.05	1.0	0.94	0.91	0.86	0.83
High - alloy steel			1.05	1.10	1.0	0.91	0.84	0.79	
Stainless steel			1.21	1.10	1.0	0.91	0.85	0.79	0.75
Steel castings			1.31	1.13	1.0	0.87	0.80	0.73	
Malleble iron		1.14	1.08	1.03	1.0	0.96	0.92		
Cast iron			1.25	1.10	1.0	0.92	0.86	0.80	
Nodular SG iron			1.07	1.03	1.0	0.97	0.95	0.93	0.91
Heat resistant alloys	1.26		1.11		1.0		0.90		0.82

Tool life	min	10	15	20	25	30	45	60
Correction factor	min	1.10	1.00	0.95	0.90	0.87	0.80	0.70

Rm N/mm²	HV	HB	HRc	"Sh"	Rm N/mm²	HV	HB	HRc	"Sh"	Rm N/mm²	HV	HB	HRc	"Sh"	Rm N/mm²	HV	HB	HRc	"Sh"
700	200		-	28	1370	390	385	39.8	49	2030	580	527	53.3	68	2700	770	644	62.3	85
740	210		-	29	1400	400	393	40.7	50	2070	590	533	53.8	69	2730	780	650	62.7	86
770	220		-	30	1440	410	400	41.5	51	2100	600	533	54.4	70	2770	790	656	63.1	86
810	230		19.2	31	1470	420	407	42.3	52	2140	610	543	54.9	71	2800	800	661	63.5	87
840	240		21.2	33	1510	430	416	43.2	53	2170	620	549	55.4	72	2840	810	666	63.9	87
880	250		23.0	34	1540	440	423	44.0	54	2210	630	555	55.9	73	2870	820	670	64.3	88
910	260		24.7	35	1580	450	429	44.8	55	2240	640	561	56.4	74	2910	830	677	64.6	89
950	270		26.1	36	1610	460	435	45.5	56	2280	650	568	56.9	75	2940	840	682	65.0	89
980	280		27.6	37	1650	470	441	46.3	57	2310	660	574	57.4	75	2980	850	-	65.3	90
1020	290		29.0	39	1680	480	450	47.0	58	2350	670	581	57.9	76	3010	860	-	65.7	90
1050	300		30.3	40	1720	490	457	47.7	59	2380	680	588	58.7	77	3050	870	-	66.0	91
1090	310		31.5	41	1750	500	465	48.3	60	2410	690	595	58.9	78	3080	880	-	66.3	91
1120	320		32.9	42	1790	510	474	49.0	61	2450	700	602	59.3	79	3120	890	-	66.6	92
1150	330		33.8	43	1820	520	482	49.6	62	2480	710	609	59.8	80	3150	900	-	66.9	92
1190	340		34.9	44	1860	530	489	50.3	63	2520	720	616	60.2	81	3190	910	-	67.2	-
1230	350		36.0	45	1890	540	496	50.9	64	2550	730	622	60.7	82	3220	920	-	67.5	-
1260	360	359	37.0	46	1930	550	503	51.5	65	2590	740	627	61.1	83	3260	930	-	67.7	-
1300	370	368	38.0	47	1960	560	511	52.1	66	2630	750	633	61.5	83	3290	940	-	68.0	-
1330	380	373	38.9	48	2000	570	520	52.7	67	2660	760	639	61.9	84					

A.k Technical information - insert grades for turning

ISO

CORUN

A.k Cutting speed recommendations for turning

ISO	Material	Specific cutting force k_c 0.4 N/mm²	Hardness Brinell HB	WEAR RESISTANCE 2C20	2C25	4C15
				h_{ex}, mm ≈ feed f_n, mm/r		
				0.1-0.4-0.8	0.1-0.4-0.8	0.1-0.4-0.8
				Cutting speed (V_c), m/min		
Steel	**Unalloyed steel**					
	C = 0.1 - 0.25%	2000	125	380-260-180	360-250-170	450-310-200
	C = 0.25 - 0.55%	2100	150	340-220-160	320-210-130	400-310-180
	C = 0.55 - 0.80%	2200	170	320-200-150	300-190-120	380-290-160
	Low - alloyed steel					
	(alloying elements < 5%)					
	Non - hardened	2150	180	330-210-160	310-200-130	400-310-180
	Ball bearing steel	2300	210	280-200-140	270-180-120	380-290-160
P	Hardened and tempered	2550	275	200-140-100	180-120-80	240-160-100
	Hardened and tempered	2850	350	160-90-70	150-80-60	200-120-80
	High - alloy steel					
	(alloying elements < 5%)					
	Annealed	2500	200	200-140-100	180-120-80	240-180-120
	Hardened tool steel	3900	325	80-45-30	70-40-25	140-70-50
	Steel casting					
	Unalloyed	200	180	160-90-70	120-80-50	240-160-100
	Low - alloy (alloying elements ⩽ 5%)	2100	200	130-70-50	100-60-30	200-120-80
	High - alloy (alloying elements > 5%)	2650	225	100-60-40	80-55-30	150-80-60

ISO	Material	Specific cutting force k_c 0.4 N/mm²	Hardness Brinell HB	WEAR RESISTANCE 2C15	2C20	2C25
				h_{ex}, mm ≈ feed f_n, mm/r		
				0.2-0.4-0.6	0.2-0.4-0.6	0.2-0.4-0.6
				Cutting speed (V_c), m/min		
Stainless steel	**Ferritic / martensitic**					
	Bars / forged					
	Non - hardened	2300	200	220-180-120	210-170-120	180-140-100
	PH - hardened	3550	330	100-80-60	90-70-50	70-50-40
	Hardened	2850	330	120-90-70	110-80-60	90-60-40
	Austenitic					
	Bars / forged					
	Austenitic	2300	180	230-195-160	220-190-150	200-160-120
	PH - hardened	3550	330	100-80-50	90-70-45	100-70-50
	Super austenitic	2950	200	140-110-80	130-100-70	120-100-75
	Austenitic - ferritic (Duplex)					
	Bars / forged					
	Non - veldable ⩾ 0.05%C	2550	230	200-160-120	150-190-110	180-140-90
M	Weldable < 0.05%C	3050	260	160-130-90	150-120-80	130-100-70
	Ferritic / martensitic					
	Cast					
	Non - hardened	2100	200	200-160-120	190-150-110	180-140-90
	PH - hardened	3150	330	80-60-45	75-55-40	70-45-30
	Hardened	2650	330	90-70-50	85-65-45	80-55-40
	Austenitic					
	Cast					
	Austenitic	2200	180	180-145-120	170-140-120	150-110-70
	PH - hardened	3150	330	75-50-35	70-45-30	60-40-20
	Super austenitic	2700	200	110-90-60	100-80-50	90-60-40
	Austenitic - ferritic (Duplex)					
	Cast					
	Non - veldable ⩾ 0.05%C	2250	230	150-120-90	140-110-80	120-90-60
	Weldable < 0.05%C	2750	260	130-110-80	120-100-70	95-75-50

ISO	Material	Specific cutting force k_c 0.4 N/mm²	Hardness Brinell HB	WEAR RESISTANCE 3C15	4C15	4C25
				h_{ex}, mm ≈ feed f_n, mm/r		
				0.2-0.4-0.6	0.2-0.4-0.6	0.2-0.4-0.6
				Cutting speed (V_c), m/min		
Cast iron	**Malleable cast iron**					
	Ferritic (short chipping)	940	130	260-210-180	260-210-180	250-200-160
	Pearlitic (long chipping)	1100	230	200-160-140	200-160-140	180-130-100
	Grey cast iron					
K	Low tensile strenght	1100	180	290-240-200	290-240-200	270-220-170
	High tensile strenght	1150	220	230-190-160	230-190-160	200-160-130
	Nodular SG iron					
	Ferritic	1050	160	220-170-140	220-170-140	200-150-130
	Pearlitic	1750	250	200-150-130	200-150-130	150-120-100
	Martensitic	2700	380	150-120-100	150-120-100	120-90-70

A.k Cutting speed recommendations for turning

TOUGHNESS

4C25	4C35	4C40	7520						
0.1-0.4-0.8	0.1-0.4-0.8	0.1-0.4-0.8	0.1-0.4-0.8						
420-320-180	320-240-160	300-220-150	250-200-155						
380-300-160	300-220-140	280-200-130	220-170-130						
360-280-140	280-200-120	270-180-110	200-150-110						
380-300-160	300-220-140	280-200-130	-						
360-280-140	200-120-70	190-110-70	-						
230-150-90	140-80-50	120-70-40	-						
190-110-70	100-60-40	90-50-35	-						
230-150-90	140-80-50	130-70-40	-						
110-60-40	70-40-25	60-35-25	-						
190-110-70	140-80-50	130-70-45	-						
140-80-60	120-70-40	110-60-40	-						
100-60-40	100-60-35	90-50-30	-						

TOUGHNESS

2C35	2C40	4C25	4C35	4C40	7520	7535	K10F	P6	
0.2-0.4-0.6	0.2-0.4-0.6	0.2-0.4-0.6	0.2-0.4-0.6	0.2-0.4-0.6	0.1-0.2-0.3	0.1-0.2-0.3	0.2-0.4-0.6	0.2-0.4-0.6	
140-120-90	130-110-80	220-180-120	180-140-100	170-130-90	210-160-120	140-120-90			
55-40-25	50-30-20	100-80-60	60-45-30	55-40-25	100-80-50	70-50-40			
65-50-30	60-40-25	120-90-70	70-50-40	65-45-35	110-90-60	80-60-45			
170-140-110	115-100-85	260-200-170	200-150-120	190-140-110	220-180-130	170-130-90	80-60-50	50-40-30	
80-60-40	70-50-40	110-80-70	90-70-50	80-60-45	100-80-60	80-50-40			
90-80-70	80-70-60	120-130-90	120-90-70	110-80-60	120-100-80	100-70-50	50-40-30	40-30-20	
140-110-90	130-100-80	210-170-110	160-120-90	150-110-80	200-150-110	170-120-90			
110-90-70	100-80-60	170-130-90	110-90-70	100-80-60	170-120-90	140-90-70			
140-110-90	130-100-80	210-170-130	160-140-120	150-130-110	200-150-110	140-120-90			
60-40-30	55-35-25	85-60-45	60-40-30	55-35-25	100-80-50	70-50-40			
65-45-35	60-40-30	90-70-50	70-50-35	60-40-30	110-90-60	80-60-45			
120-90-65	110-80-50	190-150-130	130-100-70	120-90-65	200-150-110	140-120-90	80-60-50	50-40-30	
40-50-20	45-30-15	60-55-40	60-40-25	55-35-25	100-80-50	70-50-40			
80-60-40	90-50-30	120-100-70	90-60-40	80-55-30	110-90-60	80-60-45	50-40-30	40-30-20	
100-80-55	95-75-50	170-130-110	150-110-70	140-100-65	170-120-90	140-90-70			
75-65-45	70-60-40	140-120-90	110-80-60	100-70-55	150-110-80	110-80-50			

TOUGHNESS

715	K1P	K13A	K10F						
0.1-0.2-0.5	0.1-0.3-0.5	0.1-0.3-0.5	0.1-0.3-0.5						
180-130-80	150-120-90	120-100-90	120-100-90						
140-100-70	150-120-90	110-90-70	110-90-70						
200-150-120	200-150-100	160-120-90	160-120-90						
170-130-90	130-80-60	120-90-70	120-90-70						
170-130-90	160-120-90	120-80-50	110-80-50						
150-110-80	120-90-70	110-80-70	100-80-50						
100-70-50	80-50-30	80-50-30	80-60-40						

A.k Cutting speed recommendations for turning

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ISO	Material	Specific cutting force k_c 0.4 N/mm²	Hardness Brinell HB	WEAR RESISTANCE 720	K13A	K10F
				h_{ex}, mm ≈ feed f_n, mm/r		
				0.15-0.8	0.15-0.8	0.15-0.8
				Cutting speed (V_c), m/min		
Non - ferrous metals	**Aluminium alloys**					
	Wrought or wrought and coldworked, non - aging	500	60	1000(1500-250)	1000(1500-250)	1000(1500-250)
	Wrought or wrought and aged	800	100	1000(1500-250)	1000(1500-250)	1000(1500-250)
	Aluminium alloys					
	Cast, non - aging	750	75	1000(1500-250)	1000(1500-250)	1000(1500-250)
	Cast or cast and aged	900	90	1000(1500-250)	1000(1500-250)	1000(1500-250)
N	**Aluminium alloys**					
	Cast, 13 - 15% Si	950	130	350(500-50)	350(500-50)	350(500-50)
	Cast, 16 - 22% Si	950	130	250(350-30)	350(500-50)	350(500-50)
	Copper and copper alloys					
	Free cutting alloys, ⩽ 1% Pb	700	110	350(500-50)	350(500-50)	350(500-50)
	Brass, leaded bronzes, ⩽ 1% Pb	700	90	350(500-50)	350(500-50)	350(500-50)
	Bronze and non - leadad copper, included electrolytic copper	1750	100	350(500-50)	350(500-50)	350(500-50)

ISO	Material	Specific cutting force N/mm²	Hardness Brinell HB	WEAR RESISTANCE 7515	7520	K1P
				h_{ex}, mm ≈ feed f_n, mm/r		
				0.1-0.3-0.5	0.1-0.3-0.5	0.1-0.3-0.5
				Cutting speed (V_c), m/min		
Heat resistant material	**Heat resistant super alloy**					
	Iron base					
	Annealed or solution treated	3000	200	55-40-25	55-40-25	70-50-30
	Aged or solution treated and aged	3050	280	35-25-15	35-25-15	50-40-25
	Nickel base					
	Annealed or solution treated	3300	250	45-35-25	45-35-25	40-30-20
	Aged or solution treated and aged	3600	350	35-25-15	35-25-15	30-20-10
	Cast or cast and aged	3700	320	23-17-12	23-17-12	20-15-10
S	**Cobalt base**					
	Annealed or solution treated	3300	200	45-35-25	45-35-25	40-30-20
	Aged or solution treated and aged	3700	300	35-25-15	35-25-15	30-20-10
	Cast or cast and aged	3800	320	23-17-12	23-17-12	20-15-10
	Titanium alloys		Rm			
	Commercial pure (99.5% Ti)	1550	400	120-90-70	120-90-70	180-150-120
	α, near α and α+β alloys, annealed	1700	950	55-45-35	55-45-35	70-50-35
	α+β alloys in aged conditions, β alloys, annealed or aged	1700	1050	55-40-30	55-40-30	70-45-30

ISO	Material	Specific cutting force k_c 0.4 N/mm²	Hardness Brinell HB	WEAR RESISTANCE 4C15	K1P	K13A
				h_{ex}, mm ≈ feed f_n, mm/r		
				0.1-0.3-0.6	0.1-0.3-0.6	0.1-0.3-0.6
				Cutting speed (V_c), m/min		
Hardened material	**Hard steel**					
	Hardened and tempered	3250	45HRC	50-35-20	40-20-15	35-15-10
		3950	50HRC			
		4700	55HRC			
H	**Extra hard steel**					
	Hardened and tempered	5550	60HRC			
		6450	65HRC			
	Chilled cast iron					
	Cast or cast and aged	2800	400	30-25-15	30-20-10	25-15-10

A.k Cutting speed recommendations for turning

TOUGHNESS

TOUGHNESS

K13A	K10F								
0.1-0.3-0.5	0.1-0.3-0.5								
60-45-30	60-45-30								
40-30-20	40-30-20								
30-20-15	30-20-15								
20-15-10	20-15-10								
15-10-8	15-10-8								
30-20-15	30-20-15								
20-15-10	20-15-10								
15-10-8	15-10-8								
140-110-80	140-110-80								
50-40-30	50-40-30								
50-35-25	50-35-25								

TOUGHNESS

A.k First choice grade recommendations

A

ISO	Material	TYPES OF MACHINING											
		FINISHING				MEDIUM				ROUGHING			
		a_p	f_n	V_c	GRADE	a_p	f_n	V_c	GRADE	a_p	f_n	V_c	GRADE
		mm	mm/r	m/min	-	mm	mm/r	m/min	-	mm	mm/r	m/min	-
Steel	**Unalloyed steel**												
	C = 0.1 - 0.25%	0.40	0.10	310	4C15	0.80	0.20	290	4C25	2.00	0.25	180	4C25
	C = 0.25 - 0.55%	0.40	0.10	280	4C15	0.80	0.20	260	4C25	2.00	0.25	160	4C25
	C = 0.55 - 0.80%	0.40	0.10	250	4C15	0.80	0.20	240	4C25	2.00	0.25	140	4C25
	Low - alloyed steel												
	(alloying elements < 5%)												
	Non - hardened	0.40	0.10	310	4C15	0.80	0.20	270	4C25	2.00	0.25	160	4C25
	Ball bearing steel	0.40	0.10	260	4C15	0.80	0.20	240	4C25	2.00	0.25	140	4C25
P	Hardened and tempered	0.40	0.10	150	4C15	0.80	0.20	110	4C25	2.00	0.25	90	4C25
	Hardened and tempered	0.40	0.10	100	4C15	0.80	0.20	80	4C25	2.00	0.25	70	4C25
	High - alloy steel												
	(alloying elements < 5%)												
	Annealed	0.40	0.10	200	4C15	0.80	0.20	150	4C25	2.00	0.25	90	4C25
	Hardened tool steel	0.40	0.10	100	4C15	0.80	0.20	80	4C25	2.00	0.25	50	4C25
	Steel casting												
	Unalloyed	0.40	0.10	160	4C15	0.80	0.20	110	4C25	2.00	0.25	70	4C25
	Low - alloy (alloying elements ≤ 5%)	0.40	0.10	110	4C15	0.80	0.20	80	4C25	2.00	0.25	60	4C25
	High - alloy (alloying elements > 5%)	0.40	0.10	90	4C15	0.80	0.20	60	4C25	2.00	0.25	40	4C25

ISO	Material	TYPES OF MACHINING											
		FINISHING				MEDIUM				ROUGHING			
		a_p	f_n	V_c	GRADE	a_p	f_n	V_c	GRADE	a_p	f_n	V_c	GRADE
		mm	mm/r	m/min	-	mm	mm/r	m/min	-	mm	mm/r	m/min	-
Stainless steel	**Ferritic / martensitic**												
	Bars / forged												
	Non - hardened	0.40	0.10	170	7520	0.80	0.20	140	2C25	2.00	0.30	100	2C25
	PH - hardened	0.40	0.10	90	7520	0.80	0.20	60	2C25	2.00	0.30	40	2C25
	Hardened	0.40	0.10	100	7520	0.80	0.20	70	2C25	2.00	0.30	40	2C25
	Austenitic												
	Bars / forged												
	Austenitic	0.40	0.10	180	7520	0.80	0.20	160	2C25	2.00	0.30	120	2C25
	PH - hardened	0.40	0.10	80	7520	0.80	0.20	70	2C25	2.00	0.30	50	2C25
	Super austenitic	0.40	0.10	100	7520	0.80	0.20	100	2C25	2.00	0.30	80	2C25
	Austenitic - ferritic (Duplex)												
	Bars / forged												
	Non - veldable ≥ 0.05%C	0.40	0.10	150	7520	0.80	0.20	110	2C35	2.00	0.30	90	2C35
M	Weldable < 0.05%C	0.40	0.10	120	7520	0.80	0.20	90	2C35	2.00	0.30	70	2C35
	Ferritic / martensitic												
	Cast												
	Non - hardened	0.40	0.10	150	7520	0.80	0.20	130	2C25	2.00	0.30	90	2C25
	PH - hardened	0.40	0.10	80	7520	0.80	0.20	60	2C25	2.00	0.30	40	2C25
	Hardened	0.40	0.10	90	7520	0.80	0.20	70	2C25	2.00	0.30	50	2C25
	Austenitic												
	Cast												
	Austenitic	0.40	0.10	150	7520	0.80	0.20	110	2C25	2.00	0.30	80	2C25
	PH - hardened	0.40	0.10	80	7520	0.80	0.20	50	2C25	2.00	0.30	40	2C25
	Super austenitic	0.40	0.10	90	7520	0.80	0.20	70	2C25	2.00	0.30	50	2C25
	Austenitic - ferritic (Duplex)												
	Cast												
	Non - veldable ≥ 0.05%C	0.40	0.10	120	7520	0.80	0.20	90	2C35	2.00	0.30	60	2C35
	Weldable < 0.05%C	0.40	0.10	100	7520	0.80	0.20	70	2C35	2.00	0.30	50	2C35

ISO	Material	TYPES OF MACHINING											
		FINISHING				MEDIUM				ROUGHING			
		a_p	f_n	V_c	GRADE	a_p	f_n	V_c	GRADE	a_p	f_n	V_c	GRADE
		mm	mm/r	m/min	-	mm	mm/r	m/min	-	mm	mm/r	m/min	-
Cast iron	**Malleable cast iron**												
	Ferritic (short chipping)	0.40	0.10	210	3C15	0.80	0.20	180	3C15	2.00	0.30	160	4C25
	Pearlitic (long chipping)	0.40	0.10	160	3C15	0.80	0.20	140	3C15	2.00	0.30	100	4C25
	Grey cast iron												
K	Low tensile strenght	0.40	0.10	240	3C15	0.80	0.20	200	3C15	2.00	0.30	170	4C25
	High tensile strenght	0.40	0.10	190	3C15	0.80	0.20	160	3C15	2.00	0.30	130	4C25
	Nodular SG iron												
	Ferritic	0.40	0.10	170	3C15	0.80	0.20	140	3C15	2.00	0.30	130	4C25
	Pearlitic	0.40	0.10	150	3C15	0.80	0.20	130	3C15	2.00	0.30	100	4C25
	Martensitic	0.40	0.10	120	3C15	0.80	0.20	100	3C15	2.00	0.30	70	4C25

A.k First choice grade recommendations

ISO	Material	TYPES OF MACHINING											
		FINISHING				MEDIUM				ROUGHING			
		a_p	f_n	V_c	GRADE	a_p	f_n	V_c	GRADE	a_p	f_n	V_c	GRADE
		mm	mm/r	m/min	-	mm	mm/r	m/min	-	mm	mm/r	m/min	-
Non - ferrous metals	**Aluminium alloys**												
	Wrought or wrought and coldworked, non - aging	0.50	0.10	1000	K13A	1.50	0.30	1000	K13A	1.50	0.30	1000	K13A
	Wrought or wrought and aged	0.50	0.10	1000	K13A	1.50	0.30	1000	K13A	1.50	0.30	1000	K13A
	Aluminium alloys												
	Cast, non - aging	0.50	0.10	1000	K13A	1.50	0.30	1000	K13A	1.50	0.30	1000	K13A
	Cast or cast and aged	0.50	0.10	1000	K13A	1.50	0.30	1000	K13A	1.50	0.30	1000	K13A
N	**Aluminium alloys**												
	Cast, 13 - 15% Si	0.50	0.10	350	K13A	1.50	0.30	350	K13A	1.50	0.30	350	K13A
	Cast, 16 - 22% Si	0.50	0.10	350	K13A	1.50	0.30	350	K13A	1.50	0.30	350	K13A
	Copper and copper alloys												
	Free cutting alloys, ⩽ 1% Pb	0.50	0.10	350	K13A	1.50	0.30	350	K13A	1.50	0.30	350	K13A
	Brass, leaded bronzes, ⩽ 1% Pb	0.50	0.10	350	K13A	1.50	0.30	350	K13A	1.50	0.30	350	K13A
	Bronze and non - leadad copper, included electrolytic copper	0.50	0.10	350	K13A	1.50	0.30	350	K13A	1.50	0.30	350	K13A

ISO	Material	TYPES OF MACHINING											
		FINISHING				MEDIUM				ROUGHING			
		a_p	f_n	V_c	GRADE	a_p	f_n	V_c	GRADE	a_p	f_n	V_c	GRADE
		mm	mm/r	m/min	-	mm	mm/r	m/min	-	mm	mm/r	m/min	-
Heat resistant material	**Heat resistant super alloy**												
	Iron base												
	Annealed or solution treated	0.50	0.15	40	7520	0.80	0.20	25	7520	2.00	0.30	20	7520
	Aged or solution treated and aged	0.50	0.15	25	7520	0.80	0.20	15	7520	2.00	0.30	10	7520
	Nickel base												
	Annealed or solution treated	0.50	0.15	35	7520	0.80	0.20	25	7520	2.00	0.30	20	7520
	Aged or solution treated and aged	0.50	0.15	25	7520	0.80	0.20	15	7520	2.00	0.30	10	7520
	Cast or cast and aged	0.50	0.15	20	7520	0.80	0.20	15	7520	2.00	0.30	10	7520
S	**Cobalt base**												
	Annealed or solution treated	0.50	0.15	35	7520	0.80	0.20	25	7520	2.00	0.30	20	7520
	Aged or solution treated and aged	0.50	0.15	25	7520	0.80	0.20	15	7520	2.00	0.30	10	7520
	Cast or cast and aged	0.50	0.15	20	7520	0.80	0.20	15	7520	2.00	0.30	10	7520
	Titanium alloys												
	Commercial pure (99.5% Ti)	0.50	0.15	90	7520	0.80	0.20	70	7520	2.00	0.30	50	7520
	α, near α and α+β alloys, annealed	0.50	0.15	45	7520	0.80	0.20	35	7520	2.00	0.30	30	7520
	α+β alloys in aged conditions, β alloys, annealed or aged	0.50	0.15	40	7520	0.80	0.20	30	7520	2.00	0.30	25	7520

ISO	Material	TYPES OF MACHINING											
		FINISHING				MEDIUM				ROUGHING			
		a_p	f_n	V_c	GRADE	a_p	f_n	V_c	GRADE	a_p	f_n	V_c	GRADE
		mm	mm/r	m/min	-	mm	mm/r	m/min	-	mm	mm/r	m/min	-
Hardened material	**Hard steel**												
	Hardened and tempered	0.20	0.10	35	4C15								
H	**Extra hard steel**												
	Hardened and tempered												
	Chilled cast iron												
	Cast or cast and aged												

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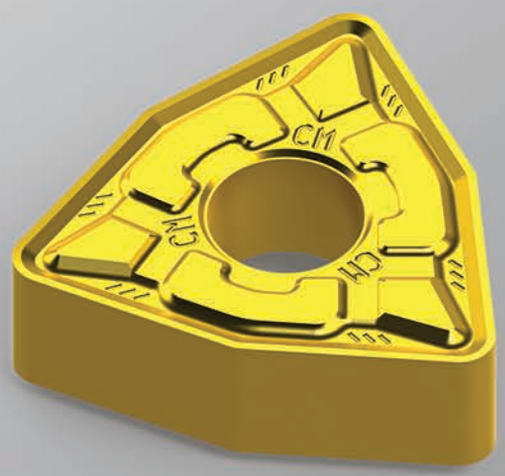


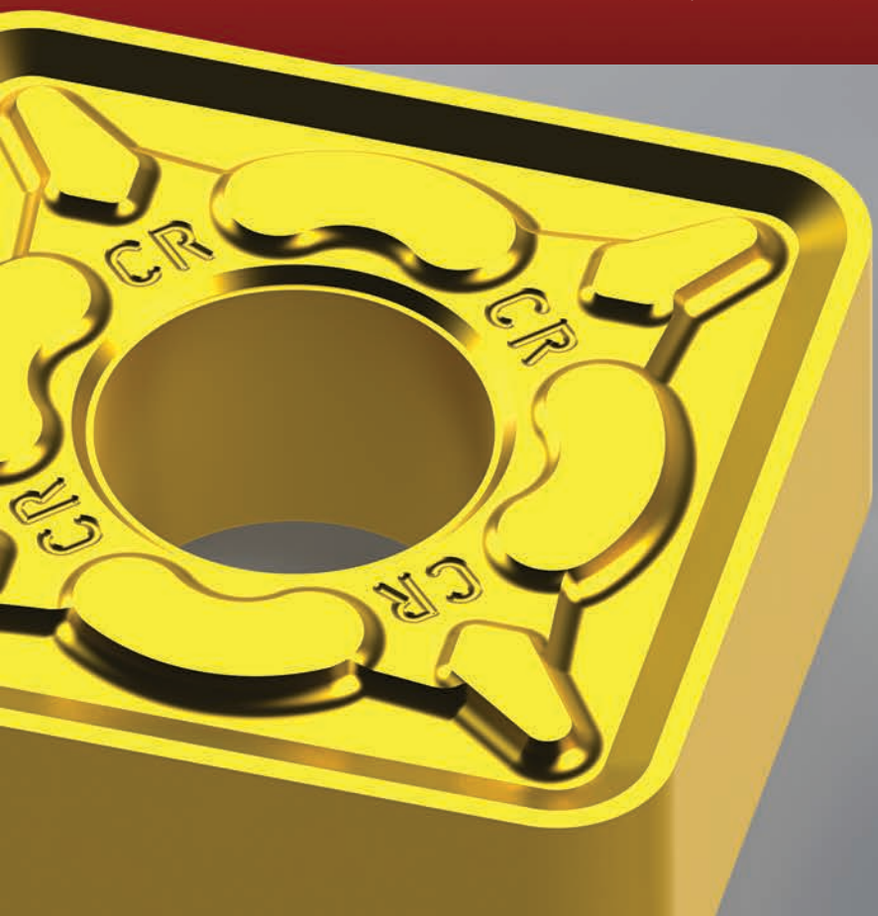
ABOUT COMPANY

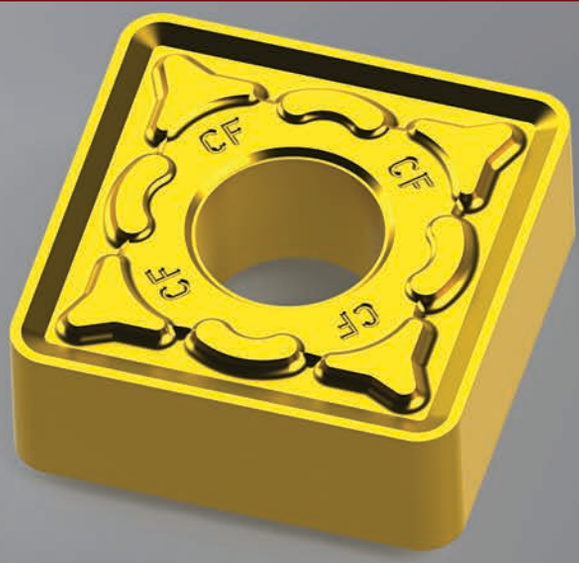
CORUN HOLDING d.o.o. Užice, Serbia is factory for production of cemented carbide indexable inserts, toolholders, milling cutters and other special cutting tools based on cemented carbide.

Also, we produce tools for road and mining industry (picks for asphalt removing, cutters for canal digging, mining drill for deep hole drilling), as well as tools for cold heading and forming (cemented carbide dies for forging, pulling, squeamishing - all with corresponding pins).

CORUN HOLDING d.o.o has their own development and construction bureau, so we have a opportunity to give our customers complete technological answers for all problems in cutting industry.

One of the main target of **CORUN HOLDING** d.o.o. company is to be available all the time for our customers worldwide and to respond on all of Yours requests as soon as possible in order to make the best solutions together.





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