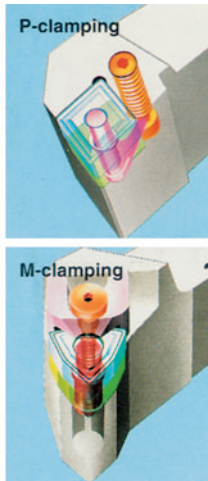




1101 E Turning

ALMASE SAZ Turning Programme



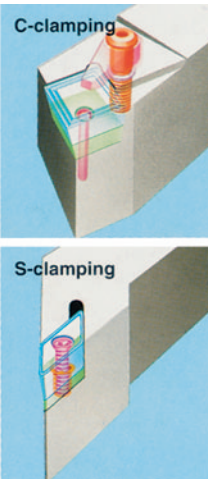
ISO Turning tools

ALMASE SAZ PERFECT

P and M Clamping systems: for negative indexable inserts with hole, in basic forms C,D,R,S,T and W.

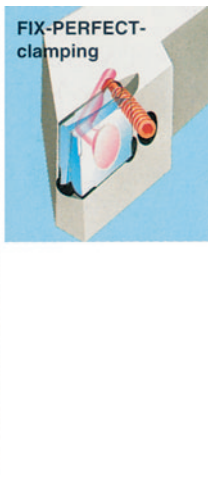
With toggle lever or clamping wedge modes for medium to rough machining.

Through the hole, with additional clamping from top, securely fixing negative inserts with hole and chip breakers on both sides for medium to rough machining.



From top, with clamping finger, for inserts without hole for light to medium cutting.

With screw clamping through the countersunk hole. Compact clamping system for light to medium machining.



System Turning tools

ALMASE SAZ FIX-PERFECT

An ingenious tool system for almost all kinds of cutting operations from finishing to roughing. Inserts ground on all surfaces with positive rake angles of 10° - 28° provide minimum cutting forces and good chip flow with 2,4 and 8-edge inserts.

further advantages of this system :
minimum stock of spare parts, unhampered chip flow and very simple handling.



ALMASE SAZ 2 x 2

The ideal tool for finishing and copy turning. Back rake 0° on major and minor cutting edge, positive rake angles, therefore low cutting forces and low passive forces.

No protruding clamping devices, unhampered chip flow. This is of special importance for internal operations.



Pages	6 - 136	Description of geometries	6 - 7
		ALMASE SAZ PERFECT - selection system for neutral ISO indexable inserts with P and M-clamping	10 - 17
		ISO indexable inserts for P and M-clamping systems	20 - 59

		Positive ISO indexable inserts for C and S-clamping systems	61 - 76
External operations	Tool holders	P-clamping	78 - 90
		M-clamping	92 - 94
		C-clamping	110 - 120
		S-clamping	96 - 109
Internal operations	Boring bars	P-clamping	121 - 124
		S-clamping	125 - 129
		C-clamping	130 - 133
		Cartridges	
		C,P and S-clamping	201-216



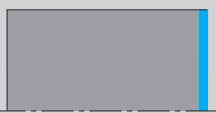
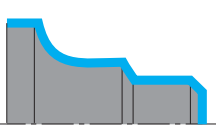
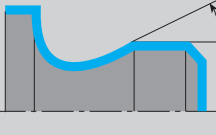
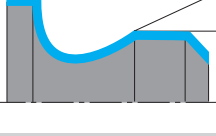
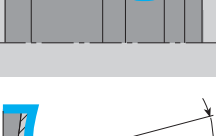
Indexable inserts			Indexable inserts			Toolholders		
Type	Page		Type	Page	Approach Type			
C C G T	61		S N M A	39		CKJN	93°	112
COGT-11	61		S N M G	39		CKNN	63°	112
C C M T	61		SNMG22	39		CSBP	75°	113
COMF11	62		SNMG23	40		CSDN	45°	113
C N M A	21		SNMG33	40		CSDP	45°	114
C N M G	21		SNMG42	40		CSKN	75°	114
ONMG22	21		SNMG43	41		CSKP	75°	115
ONMG23	22		SNMG46	41		CSRN	75°	115
ONMG25	22		SNMG55	41		CSRP	75°	116
ONMG33	22		SNMG66	42		CSSN	45°	116
ONMG42	23		S N M M	42		CSSP	45°	117
ONMG43	23		SNMM63	42		CSTP	60°	117
ONMG46	23		SNMM75	43		CTBP	75°	118
ONMG55	24		SNMM81	43		CTDP	45°	118
ONMG66	24		SNMM85	43		CTFP	90°	119
C N M M	24		SNMM92	44		CTGP	90°	119
ONMM63	25		S N U N	68		CTJN	93°	120
ONMM75	25		S P G N	70		CTTP	60°	120
ONMM81	25		S P G R	69		MTEN	60°	92
ONMM85	25		S P M R	69		MTJN	93°	93
ONMM92	25		S P U N	70		MTNN	63°	93
C P E X	63		T C G R	71		MVJN	93°	94
C P G T	63		T C G T	72		MMLN	95°	94
D C M T	64		TOGT-11	72		PCBN	75°	79
DOMF11	64		T C M T	72		PCFN	90°	79
D N M A	29		TCMT-11	72		PCGN	90°	80
D N M G	29		T N G N	73		PCKN	75°	80
DNMG22	29		T N M A	47		PCLN	95°	81
DNMG23	30		T N M G	47		PCSN	45°	81
DNMG25	30		TNMG22	47		PDJN	93°	82
DNMG33	30		TNMG23	48		PDNN	63°	82
DNMG43	31		TNMG33	48		PRCC		89
DNMG46	31		TNMG41	48		PRGC		89
DNMG55	31		TNMG43	49		PRGN		90
DNMG66	32		TNMG46	49		PSBN	75°	83
D N M M	32		TNMG55	49		PSDN	45°	83
DNMM63	32		TNMG66	50		PSKN	75°	84
DNMM75	33		T N M M	50		PSRN	75°	84
DNMM81	33		TNMM63	50		PSSN	45°	85
DNMM85	33		TNMM75	51				
K N U X	65		TNMM81	51				
R C G T	66		TNMM85	51				
ROGT01	66		T N U N	73				
ROGT22	66		T P G N	74				
R C G X	66		T P G R	75				
ROGX22	66		T P M R	75				
R C M T	66		T P U N	74				
R C M X	66		V B M T	76				
R N M A	36		VBMT-11	76				
R N M G	36		VBMT-22	76				
S C M T	67		V N M G	54				
SCMT-11	67		VNMG04	54				
S N G N	68		VNMM85	55				
			WNMG	58				
			WNMG33	58				
			WNMG43	58				
			WNMG55	59				
			WNMG66	59				



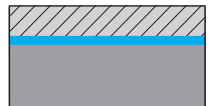
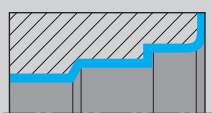
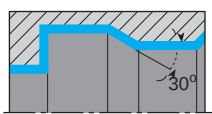
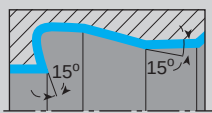
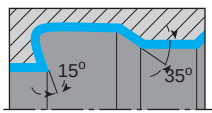
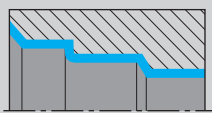
Toolholders			Boring bars			Cartridges		
Type	Approach <1	Page	Type	Approach <1	Page	Type	Approach <1	Page
PTFN	90°	85	-CKUN	93°	131	CSKP	75°	136
PTGN	90°	86	-CSKN	75°	131	CSRP	75°	136
PTJN	93°	86	-CSKP	75°	132	CSSP	45°	137
PTNN	63°	87	-CTFC	90°	132	CTFP	90°	137
PTTN	60°	87	-CTFP	90°	132	CTGP	90°	138
SCAP	90°	98	-CTKC	75°	133	CTSP	45°	138
SCBP	75°	98	-CTKP	75°	133	CTTP	60°	139
SCDP	45°	99	-MVUN	93°	122	CTWP	60°	139
SCEP	60°	99	-MWLN	95°	122	PCLN	95°	140
SCFP	90°	100	-PCLN	95°	123	PSKN	75°	140
SCKP	75°	100	-PDUN	93°	123	PSRN	75°	141
SCLC	95°	101	-PSKN	75°	124	PSSN	45°	141
SCLP	95°	101	-PTFN	90°	124	PTFN	90°	142
SCSP	45°	102	-SCFP	90°	126	PTGN	90°	142
SCTP	60°	102	-SCKP	75°	126	PTSN	45°	143
SDJC	93°	103	-SCLC	95°	127	PTTN	60°	143
SRCC		103	SCLP	95°	127	PTWN	60°	144
SRGC		104	-SDUC	93°	128	SCLC	95°	145
SSBC	75°	104	-SSKC	75°	128	SSKC	75°	145
SSKC	75°	105	-STFC	90°	129	SSRC	75°	146
SSSC	45°	105	-SVQB	107,5°	129	SSSC	45°	146
STBC	75°	106				STFC	90°	147
STDC	45°	106				STGC	90°	147
STFC	90°	107				STSC	45°	148
STGC	90°	107				STTC	60°	148
STSC	45°	108				STWC	60°	149
SVHB	107,5°	108						
SVJB	93°	109						
SVVB	72,5°	109						

Additional information	Page
Alphabetic numeric index	2 - 3
Tool recommendation	4 - 5
Machinability classification	8
ISO-Code	150 - 155
Indexable inserts-Summary	156 - 166
ALMASE SAZ Cutting grade tables	

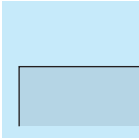
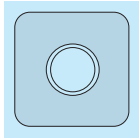


External operations		ISO-clamping systems			
Application		æ Code	Page	æ Code	Page
		75° PSBN R/L PCBN R/L	83 79	75° SSBC R/L	104
		75° PSKN R/L PCKN R/L	84 80	75° SSKC R/L	105
		95° PCLN R/L MWLN R/L	81 94	95° SCLC R/L	101
		93° MTJN R/L PTJN R/L	93 86		
		93° PDJN R/L	82	93° SDJC R/L	103
		93° MVJN R/L	94	93° SVJB R/L	109
		PRGC R/L	89	SRGC R/L	104
		63° PDNN R/L MTNN R/L	82 93		
		60° MTEN N	92	72,7° SVVB N	109
		PRCC N PRGN R/L	89 90	SRCC N	103
					



Internal operations			ISO-clamping systems				
Application	æ	Code	Page	æ	Code	Page	
	75°	-PSKN R/L	124	75°	-SSKC R/L -SCKP R/L	128 126	
	75°	-PCLN R/L -MWLN R/L	123 122	95°	-SCLC R/L -SCLP R/L	127 127	167
				93°	-SDUC R/L	123	
							
				107,5°	-SVQB R/L	129	
							

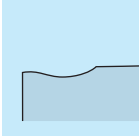
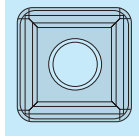
double-sided, without chip breaker



CNMA
DNMA
SNMA
TNMA

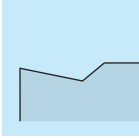
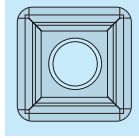
For turning of GG, GGG, chilled iron, and other short-chipping workpiece materials of medium to high strength under good to adverse conditions.

double-sided, with chip breaker



CNMG
DNMG
SNMG
TNMG
VNMG
WNMG

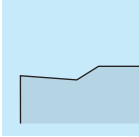
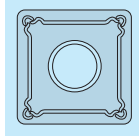
Universal application for medium machining of steel and cast materials under good to less favourable conditions.



CNMG
DNMG
SNMG
TNMG

-22

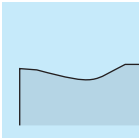
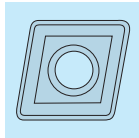
Fine and medium machining of high heat resistant alloys, as e.g. Inconel, Stellite, combined with the carbide grade KMF.



CNMG
DNMG
SNMG
TNMG

-23

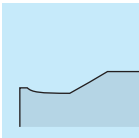
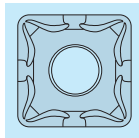
Cermet geometry for fine machining of steel materials and spheroidal graphite cast iron. Reliable chip control for low feeds and cutting depths.



CNMG
DNMG

-25

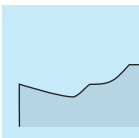
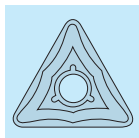
Universal application for cutting stainless steels with carbide grades PVA and CM4.



CNMG
DNMG
SNMG
TNMG
WNMG

-33

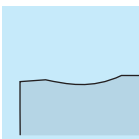
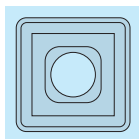
Cement geometry for fine and medium machining of steel, stainless steel and spheroidal graphite cast iron under good to less favourable conditions. Alternative for chip breaker -23 for larger chip cross sections.



TNMG

-41

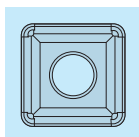
Finish machining with cutting depths down to 5 mm. Especially suited for cutting free machining steels, cold extruded parts and steels with a low content of C, as well as unstable workpieces.



CNMG
SNMG

-42

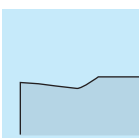
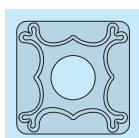
Medium cutting of unalloyed and alloyed steels.



CNMG
DNMG
SNMG
TNMG
WNMG

-43

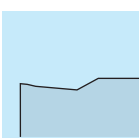
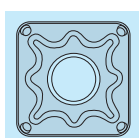
Finishing geometry for the machining of steel materials. Low cutting forces through double-positive cutting edge geometry. For good to less favourable conditions.



CNMG
DNMG
SNMG
TNMG

-46

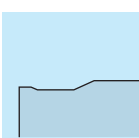
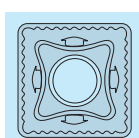
Medium to heavy machining of alloyed and highly alloyed steels with strengths of more than 1000 N/mm², as well as ball bearing steels.



CNMG
DNMG
SNMG
TNMG
WNMG

-55

Especially suitable for roughing and finishing of forgings in long production runs. Preferred for fine machining of tough and high heat resistant alloys.



CNMG
DNMG
SNMG
TNMG
WNMG

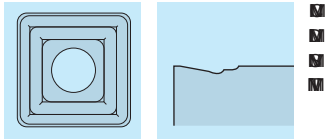
-66

Very stable geometry for roughing of steel and cast material. Sinusoidal cutting edge decreases cutting forces and frictional heat.

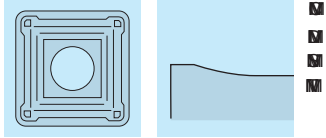


Description of insert geometries

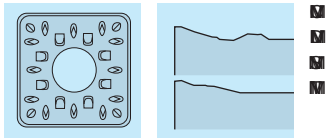
one-sided, with chip breaker



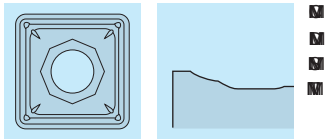
Universal grinding
Suitable for less favourable conditions.



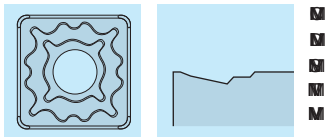
-63 Main grinding by side edge
500 - 1100 N/mm².



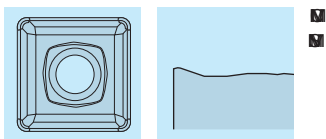
-75 Good chip control in medium
chip control even under adverse conditions.



-81 Main grinding by side edge
Good chip control with different cutting depths.



-85 Forming of side edge
Forming of side edge



-92 Forming of side edge
Stable cutting edge geometry.

ALMASE SAZ Machinability Classification



ISO	ALMASE - SAZ Group	Material	Tensile Strength Hardness Tool structure
P	1	Unalloyed Carbon Steel	$\sigma \leq 500$ N/mm ²
	2		$\sigma \leq 580$ N/mm ²
	3		$\sigma \leq 680$ N/mm ²
	4	Alloy Steel and Cast Steel	$\sigma \leq 700$ N/mm ²
	5		$\sigma \leq 850$ N/mm ²
	6		$\sigma \leq 950$ N/mm ²
	7	High Alloy Steel	$\sigma \leq 1000$ N/mm ²
	8		$\sigma \leq 1200$ N/mm ²
M	9	Stainless, Ferritic/Martensitic	$\sigma \leq 750$ N/mm ²
	10	Heat Resistant and Austenitic	$\sigma \leq 850$ N/mm ²
	11	High Heat Resistant Steel	
	12	High Heat Resistant Alloys	12.1 Ni based 12.2 Co based 12.3 Fe based 12.4 Co, Mo, Nb, Ta, W
K	13	Malleable Cast Iron	13.1 White (GTW) 13.2 Black (GTS)
	14	Grey Cast Iron	14.1 GG10-GG20 HB < 180 14.2 GG25-GG30 180 < HB < 220 14.3 GG35-GG40 HB > 220
	15	SG Cast Iron	15.1 Ferritic GGG35-GGG55 HB < 220 15.2 Pearlitic GGG60-GGG80 HB > 220
	16	Chilled Iron	> 60 Shore C
	17	Titanium and Alloys	
	18	High Strength Steel	18.1 Hardened Steel > 45 HRC 18.2 Manganese Steel 12 %
	19	Non-ferrous Metals	19.1 Lead Alloys 19.2 Copper Alloys 19.3 Magnesium Alloys
	20	Aluminium Alloys	20.1 Wrought Alloys 20.2 Sub-eutectic, <12 % Si 20.3 Super-eutectic, >12 % Si
	21	Sinter Metals	21.1 Fe based 21.2 TiC based
	22	Composites	22.1 Epoxy based 22.2 Polyester based



ISO indexable inserts for P and M-clamping

ALMASE SAZ PERFECT
- the selection system for indexable inserts

Practical example 10 -11

Recommended application for

Application group	P - Steel	12 -13
Application group	M - Stainless steel	14 -15
Application group	K - Cast iron	16 -17



CNMA, CNMG, CNMM
Recommendations for insert size, corner radius 20
Product range 21 - 26



DNMA, DNMG, DNMM
Recommendations for insert size, corner radius 28
Product range 29 - 33



RNMA, RNMG
Recommendations for insert size, 35
Product range 36



SNMA, SNMG, SNMM
Recommendations for insert size, corner radius 38
Product range 39 - 44



TNMA, TNMG, TNMM
Recommendations for insert size, corner radius 46
Product range 47 - 51



VNMG, VNMM
Recommendations for insert size, corner radius 53
Product range 54 - 55



WNMG
Recommendations for insert size, corner radius 57
Product range 58 - 59



P	Steel and cast steel, unalloyed to high alloy case-hardening and heat-treatable steels, carbon steel, structural steels.
M	Stainless and acidproof steel. High heat resistant alloys based on nickel and cobalt.
K	Cast Iron, grey cast iron, malleable cast iron, spheroidal graphite cast iron, chilled iron

Practical example:

Workpiece material: Ck45
 Cutting depth: 4 mm
 Feed: 0,5 mm
 Cutting condition: Varying
 Cutting depth
 Basic insert form: SNM.

1.

Selection of application group:

Given:

Workpiece material: Ck 45=Steel

Recommendation:

Application group: P

2.

Selection of cutting range and geometry:

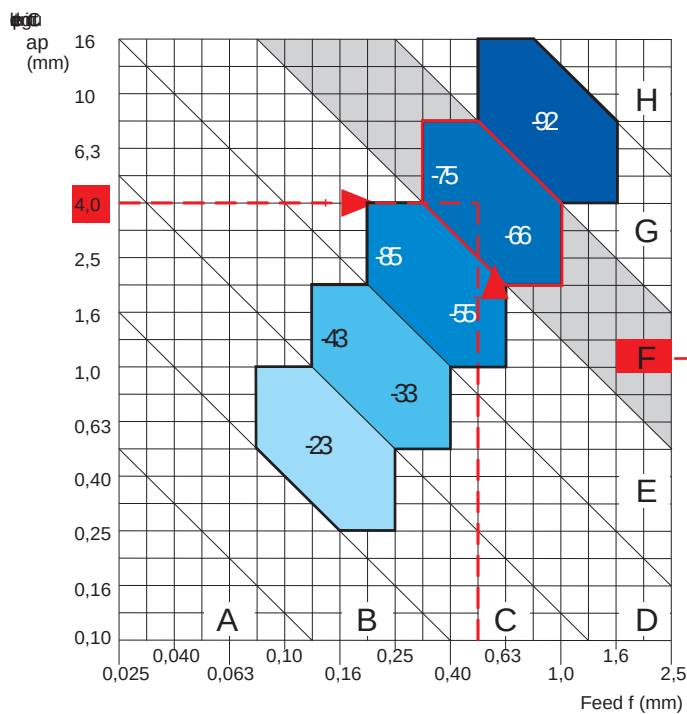
Given:

Cutting depth: $a_p = 4,0\text{mm}$

Feed: $f = 0,5\text{mm}$

Recommendation:

Cutting range: F
 Geometry: -66 or -75



3.

Selection of cutting material:

Given:

Cutting range
 Cutting condition

F
 Varying
 Cutting depth

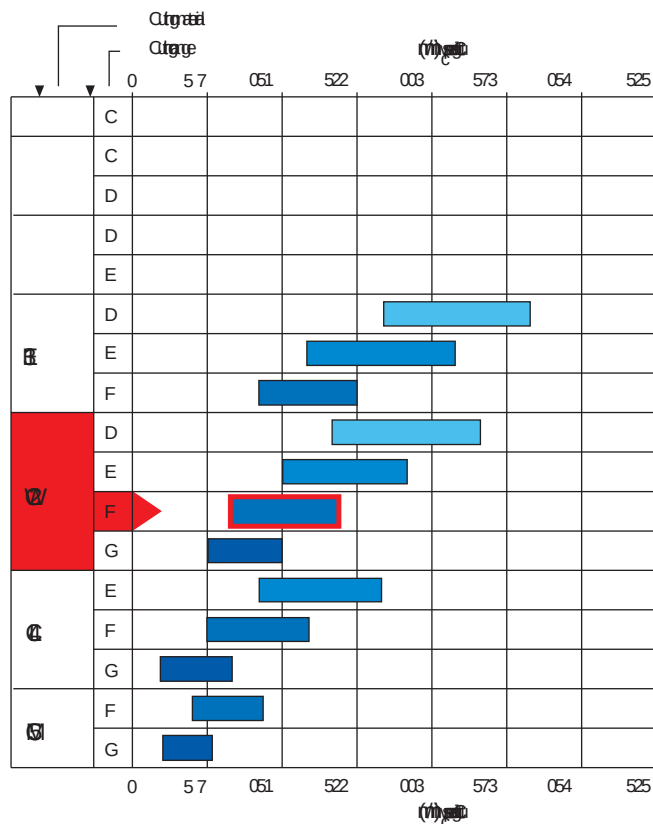
Recommendation:

Cutting material: CW2

		A	B	C	D	E	F	G	H
Yield strength				20C	4C	5C	5C		
Yield strength				20C	20C	4C	5C		
Yield strength				20C	20C	20C	4C		
Yield strength				20C	20C	20C	20C		
Yield strength				20C	20C	20C	20C		



ALMASE SAZ PERFECT - Selection system



4.

Determination of cutting speed

Given:

Cutting material :
Cutting range

CW2
F

Recommendation:

Cutting speed:

100-200
m/min

		Cutting range							
		A	B	C	D	E	F	G	H
Turning	Turning					1506	1906	2507	2509
	Turning					1506	1506	1906	2507
Bore	Bore								2509
	Bore								2507
Groove	Groove								2507
	Groove								2507
Thread	Thread								2507
	Thread								2507

5.

Recommendation of insert size

Given:

Basic form:

Cutting range:

Cutting condition

SNM.

F

○ =

Varying

cutting depth

Recommendation:

Insert size:

1204.. or
1506..

		A	B	C	D	E	F	G	H
Surface finish	Surface finish								
	Surface finish								
Stability	Stability								
	Stability								
Rt 100	Rt 100				21 21	21 21	61 42	42 42	32 32
	Rt 100				80 21	80 21	21 61	61 42	24 32
Rt 25	Rt 25		08 12	08 21	80 21	21 21	21 61	16 24	
	Rt 25		40 80	40 80	40 80	80 21	80 21	12 16	
Rt 6.3	Rt 6.3		80 80	80 80	80 21				
	Rt 6.3		40 80	40 80	40 80				

6.

Recommendation of corner radius

Given:

Basic form:

Cutting range:

Surface finish:

Stability:

SNM.

F

▽ Rt 100

+

Recommendation:

Corner radius:

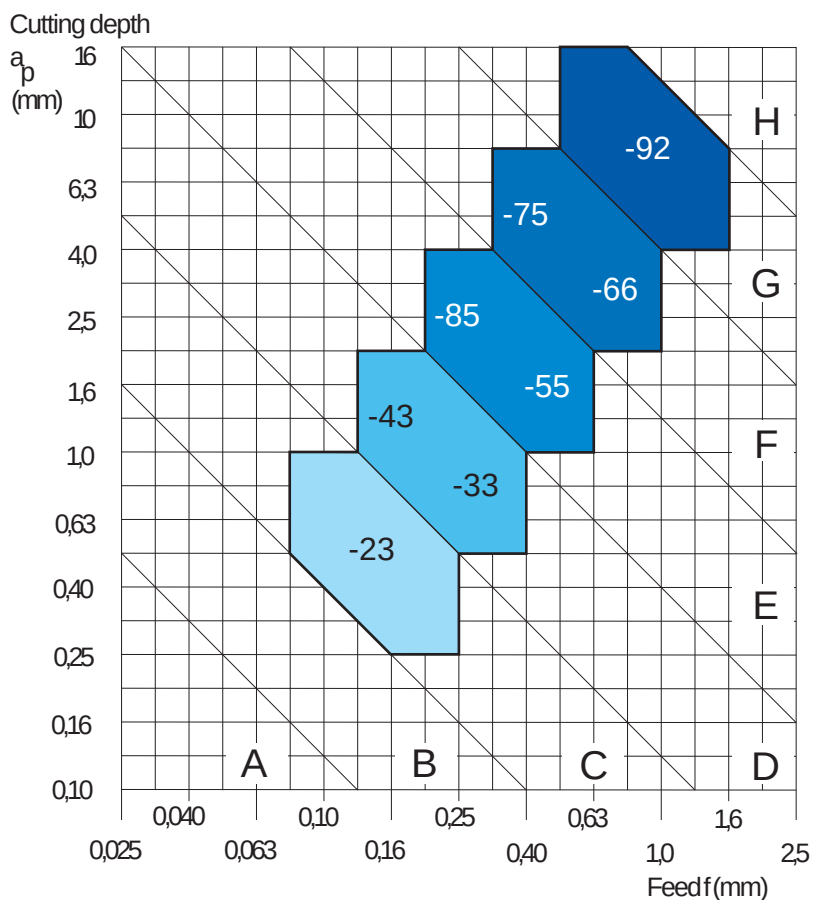
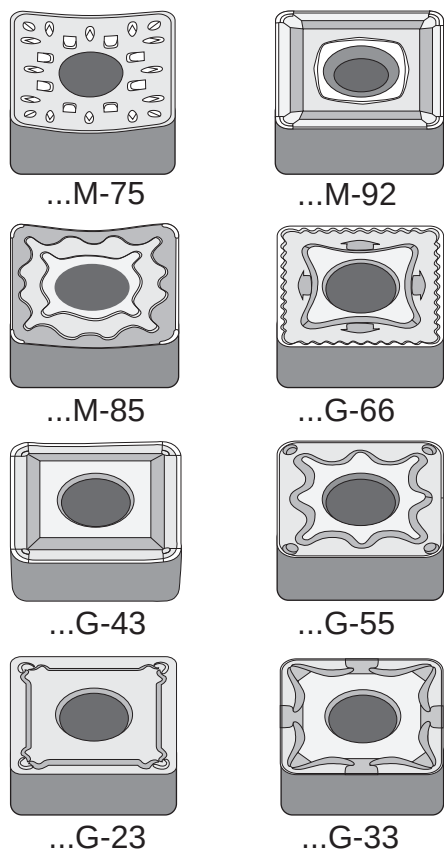
12 or 16

ALMASE SAZ PERFECT — Application group P



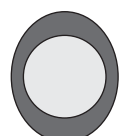
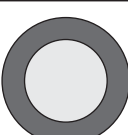
Steel and cast steel

Recommended geometry



G = double-sided, M = single-sided

Recommended cutting material

Cutting condition	Cutting range							
	A	B	C	D	E	F	G	H
Heavily interrupted cut 				CW2	CL4	CM5	CM5	
Lightly interrupted cut 				CW2	CW2	CL4	CM5	
Varying cutting depth, Casting or forging skin 				13E	CW2	CW2	CL4	
Smooth cut, pre-turned surface 				13E	13E	13E	CW2	

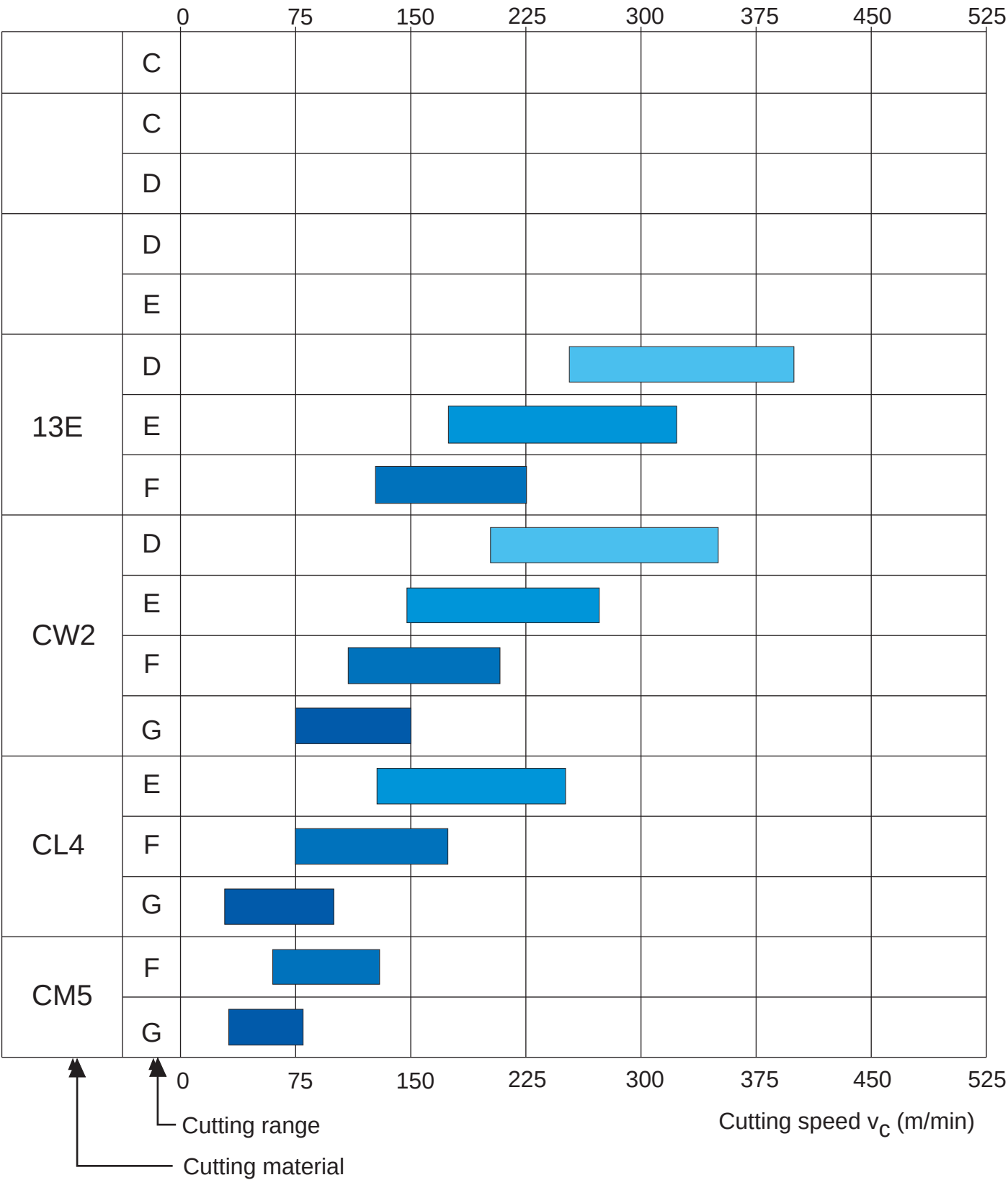


ALMASE SAZ PERFECT — Application group P

Steel and cast steel

Cutting speed v_c (m/min)

Recommended cutting speed

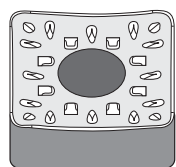


ALMASE SAZ PERFECT — Application group M

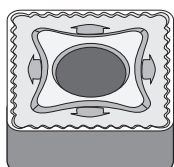


Stainless Steel, high heat resistant alloys

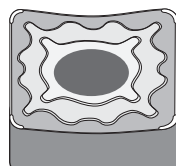
Recommended geometry



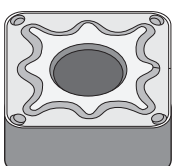
...M-75



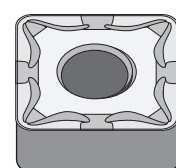
...G-66



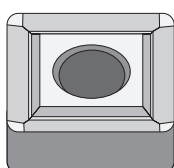
...M-85



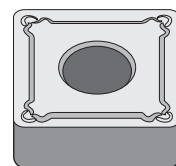
...G-55



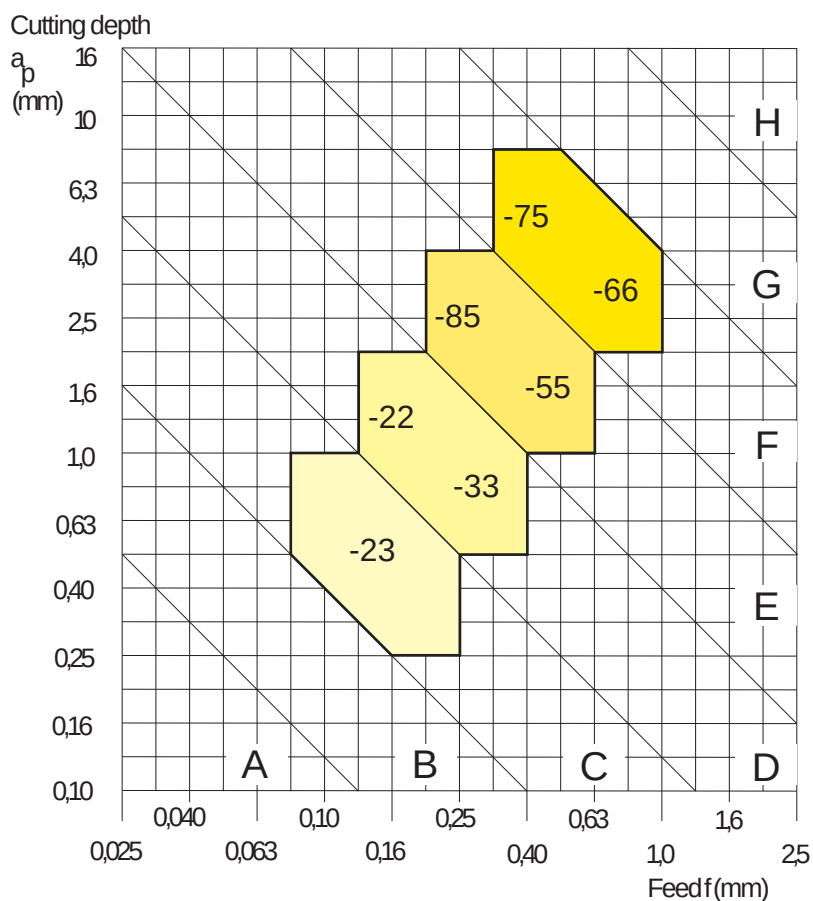
...G-33



...G-22

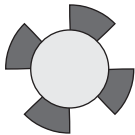
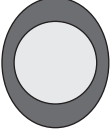
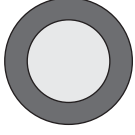


...G-23



G = double-sided, M = single-sided

Recommended cutting material

Cutting condition	Cutting range							
	A	B	C	D	E	F	G	H
Heavily interrupted cut 				KMF	CM5	CM5		
Lightly interrupted cut 				KMF	CL4	CM5		
Varying cutting depth, Casting or forging skin 				KMF	CW2	CL4		
Smooth cut, pre-turned surface 				KMF	13E	CW2		

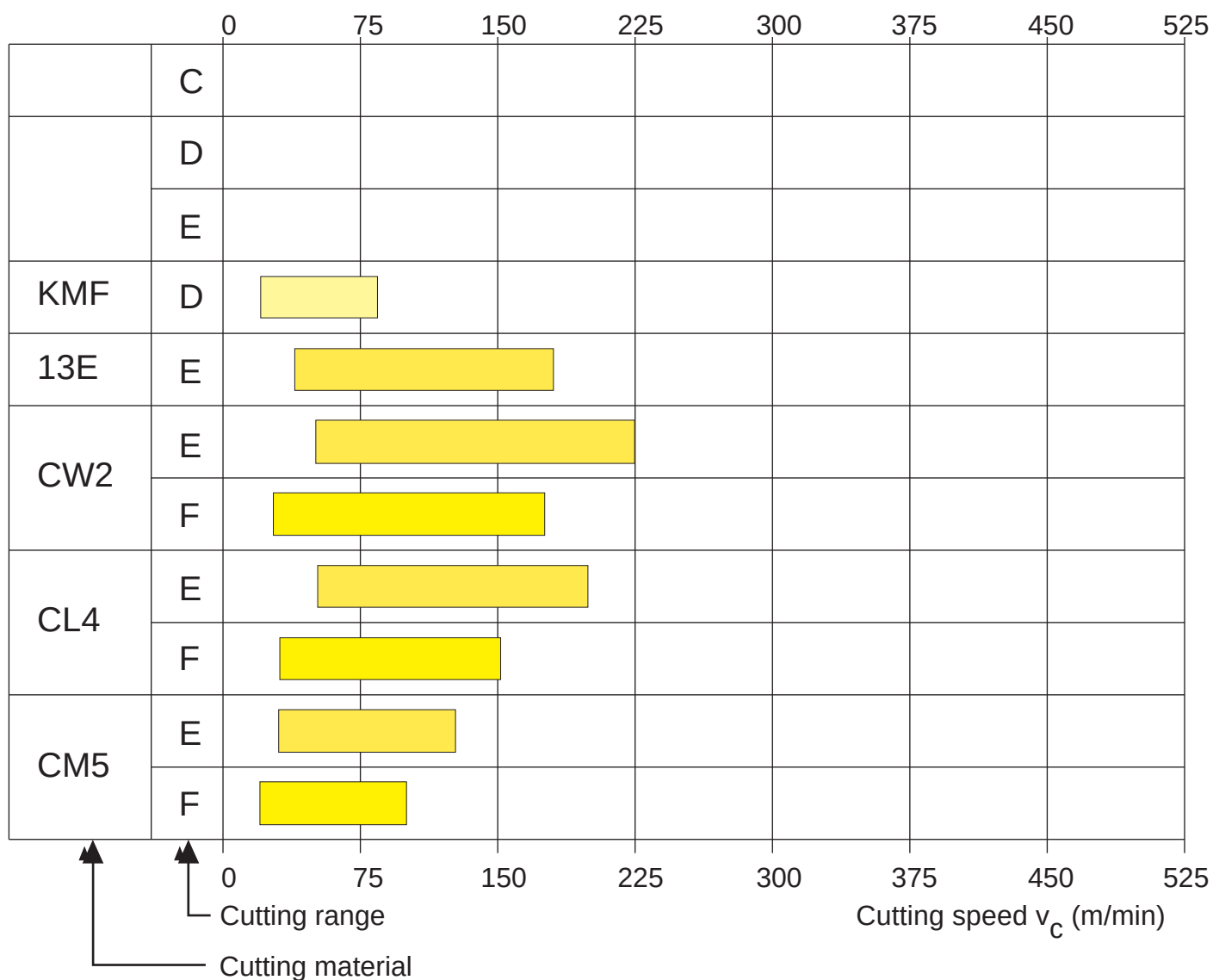


ALMASE SAZ PERFECT — Application group M

Stainless steel, high heat resistant alloys

Recommended cutting speed

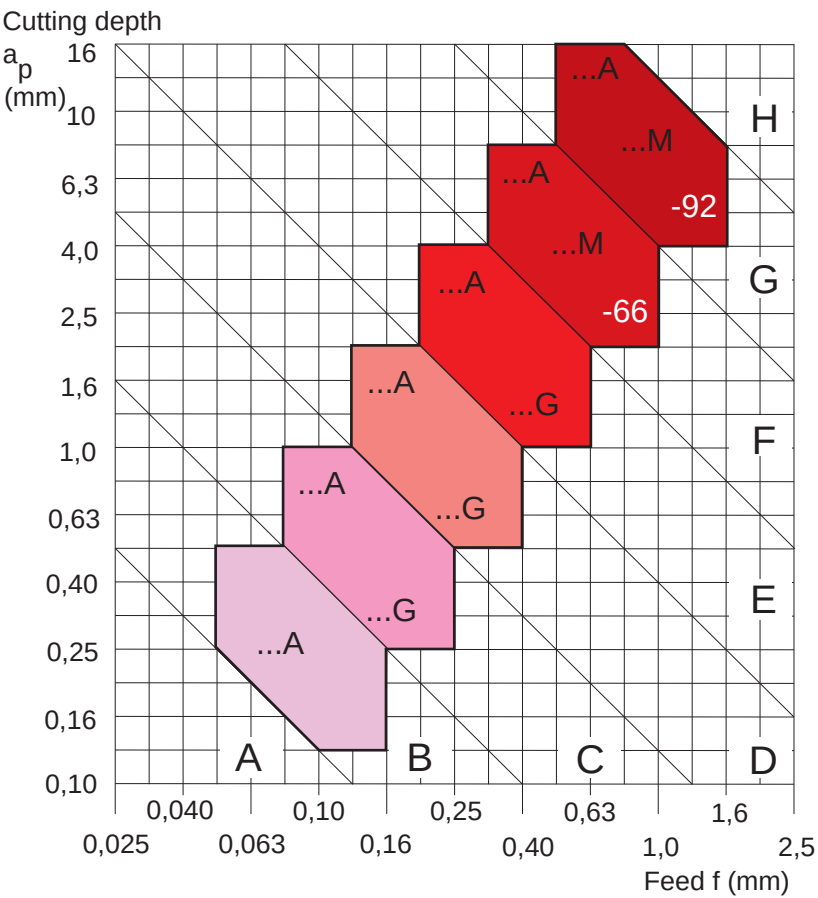
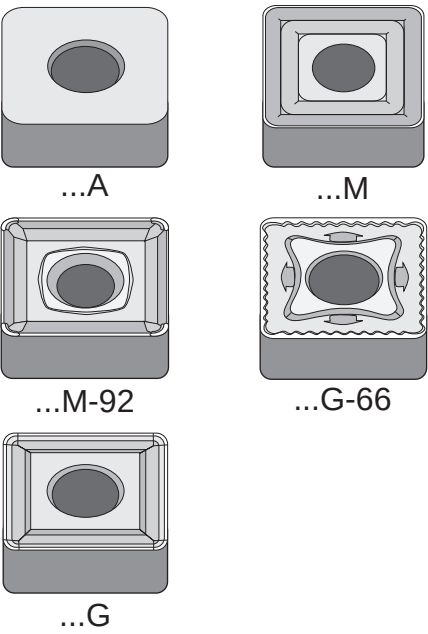
Cutting speed v_c (m/min)





Cast iron

Recommended geometry



G = double-sided, M = single-sided

Recommended cutting material

Cutting condition		Cutting range							
		A	B	C	D	E	F	G	H
Heavily interrupted cut				13E	13E	CW2	CW2	CW2	
Lightly interrupted cut					13E	13E	CW2	CW2	
Varying cutting depth, Casting or forging skin							13E	13E	
Smooth cut, pre-turned surface				HTX				13E	

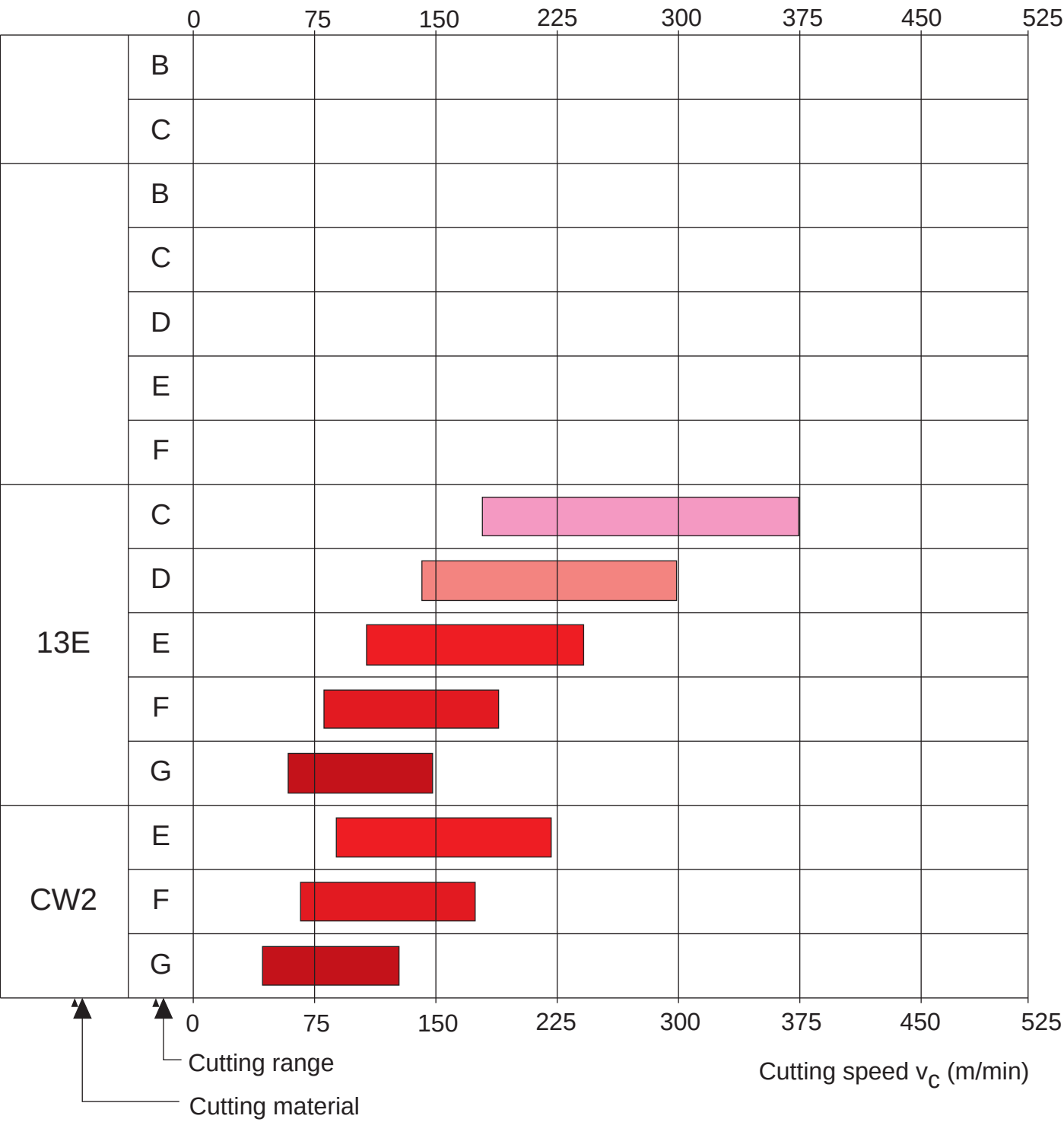


ALMASE SAZ PERFECT —Application group K

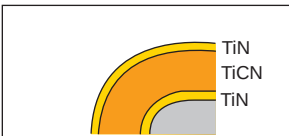
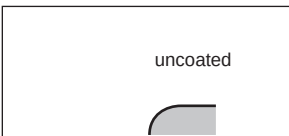
Cast iron

Recommended cutting speed

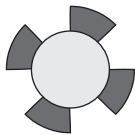
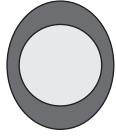
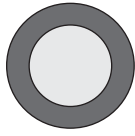
Cutting speed v_c (m/min)





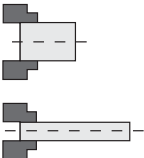
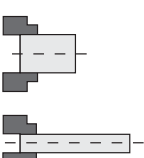
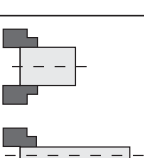
13E		Wear-resistant, multi-range carbide grade for roughing and finishing of steel and cast materials with higher cutting speeds. Good resistance to plastic deformation.
CW2		Wear-resistant universal carbide grade for turning of steel, stainless steel and spheroidal graphite cast iron with medium to high cutting speeds. Good toughness behaviour, even under adverse cutting conditions. Excellent cutting edge stability.
CL4		Tough, universal carbide grade, especially suitable for medium to heavy roughing of steel, stainless steel, and high heat resistant alloys. Excellent toughness and notch resistance. High process security even with interrupted cut.
CM5		Highly tough carbide grade, especially for turning of steel materials which tend to stick and give formation of built-up edges, as e.g. austenitic stainless steel. Suitable for medium cutting speeds. Very suitable for adverse conditions.
KMF		Uncoated, ultrafine-grain carbide grade especially for the machining of high heat resistant alloys (Inconel, Stellite, Hastelloy, etc.), chilled iron and tempered steel at low cutting speeds. Very good toughness behaviour.

Recommended insert sizes for CNM.

Cutting condition		Cutting range							
		A	B	C	D	E	F	G	H
Heavily interrupted cut			1204	1204	1204	1606	2509 1906	2509 1906	
Lightly interrupted cut		0903	1204	1204	1204	1606 1204	1906 1606	2509 1906	
Varying cutting depth, Casting or forging skin		0903	1204	1204	1204	1204	1606 1204	1906 1606	
Smooth cut, pre-turned surface		0903	1204	1204	1204	1204	1606 1204	1906 1606	

Insert thickness (s)
cutting edge length (l)

Recommended corner radius for CNM.

Cutting range		A	B	C	D	E	F	G	H
Surface finish	Cutting cond.								
	Stability								
Rt 100				12 12 08 12	12 12 08 12	12 12 08 12	16 24 12 16	24 24 16 24	
Rt 25		08 12 04 08	08 12 04 08	08 12 04 08	08 12 04 08	12 12 08 12	12 16 08 12		
Rt 6,3		04 04	08 08 04 08	08 08 04 08	08 12 04 08				

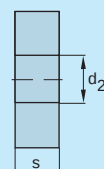
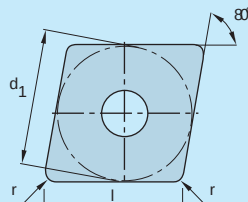
Corner radius (r)



ISO indexable inserts for clamping system P and M

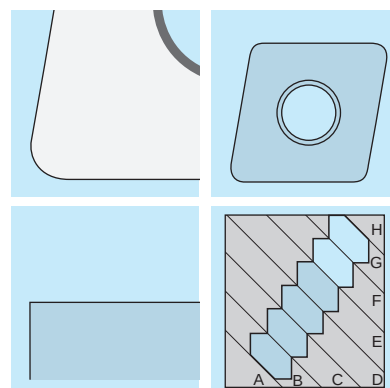
CNMA, CNMG, CNMG-22

CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)	TH	Page	CNM.	
CNM.090304	9,7	3,18	0,4	9,7	3,18	<u>External operations</u>				
CNM.090308	↓	↓	0,8	↓	↓	75°	PCBN	79		
CNM.090312	↓	↓	1,2	↓	↓	90°	PCBN	79		
CNM.120404	12,9	4,76	0,4	12,7	5,16	90°	PCGN	80		
CNM.120408	↓	↓	0,8	↓	↓	75°	PCKN	80		
CNM.120412	↓	↓	1,2	↓	↓	95°	PCLN	81		
CNM.120416	↓	↓	1,6	↓	↓	45°	PCSN	81		
CNM.160608	16,1	6,35	0,8	15,87	6,35	<u>Internal operations</u>				
CNM.160612	↓	↓	1,2	↓	↓	Boring bars				
CNM.160616	↓	↓	1,6	↓	↓	95°	-PCLN	123		
CNM.160624	↓	↓	2,4	↓	↓	Boring heads				
CNM.190604	19,3	6,35	0,4	19,05	7,93	95°	PCLN	134		
CNM.190608	↓	↓	0,8	↓	↓	<u>Cartridges</u>				
CNM.190612	↓	↓	1,2	↓	↓	95°	PCLN	207		
CNM.190616	↓	↓	1,6	↓	↓					
CNM.190624	↓	↓	2,4	↓	↓					
CNM.250924	25,8	9,52	2,4	25,4	9,12					



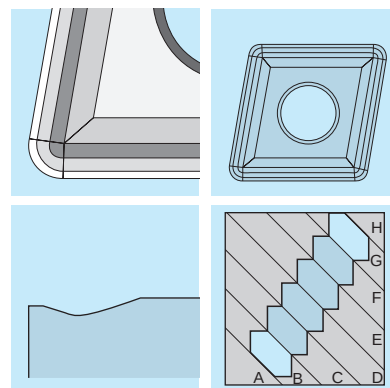
CODE...A

	13E	CW2	CL4	CM5	KMF
CNMA 120404	●				
CNMA 120408	●				
CNMA 120412	●				
CNMA 120416					
CNMA 160612					
CNMA 160616					
CNMA 190608	●				
CNMA 190612					
CNMA 190616				●	
CNMA 190624					



CODE...G

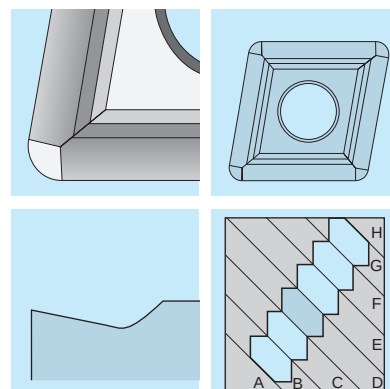
	13E	CW2	CL4	CM5	KMF
CNMG 120404	●	●	●		
CNMG 120408	●	●	●		
CNMG 120412	●	●	●		
CNMG 120416	●	●	●		
CNMG 160604	●	●	●		
CNMG 160608	●	●	●		
CNMG 160612	●	●	●		
CNMG 160616	●	●	●		
CNMG 190604	●	●	●		
CNMG 190608	●	●	●		
CNMG 190612	●	●	●		
CNMG 190616	●	●	●		



CODE...G-22

	13E	CW2	CL4	CM5	KMF
CNMG 120404-22					●
CNMG 120408-22					●
CNMG 120412-22					●
CNMG 160608-22					●
CNMG 160612-22					●
CNMG 190612-22					●

Cermet Uncoated Cermet coated Carbide coated Carbide uncoated



ISO indexable inserts for clamping system P and M

CNMG-23, CNMG-25, CNMG-33



CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)			CNM.
						æ	TH	Page	
CNM. 090304	9,7	3,18	0,4	9,7	3,18	<u>External operations</u>			
CNM. 090308	↓	↓	0,8	↓	3,18	75°	PCBN	79	
CNM. 090312	↓	↓	1,2	↓	3,18	90°	PCFN	79	
						90°	PCGN	80	
CNM. 120404	12,9	4,76	0,4	12,7	5,16	75°	PCKN	80	
CNM. 120408	↓	↓	0,8	↓	↓	95°	PCLN	81	
CNM. 120412	↓	↓	1,2	↓	↓	45°	PCSN	81	
CNM. 120416	↓	↓	1,6	↓	↓	<u>Internal operations</u>			
CNM. 160608	16,1	6,35	0,8	15,87	6,35	Boring bars			
CNM. 160612	↓	↓	1,2	↓	↓	95°	-PCLN	123	
CNM. 160616	↓	↓	1,6	↓	↓	Boring heads			
CNM. 160624	↓	↓	2,4	↓	↓	95°	PCLN	134	
CNM. 190604	19,3	6,35	0,4	19,05	7,93	<u>Cartridges</u>			
CNM. 190608	↓	↓	0,8	↓	↓	95°	PCLN	207	
CNM. 190612	↓	↓	1,2	↓	↓				
CNM. 190616	↓	↓	1,6	↓	↓				
CNM. 190624	↓	↓		↓	↓				
CNM. 250924	25,8	9,52	2,4	25,4	9,12				

CODE...G-23

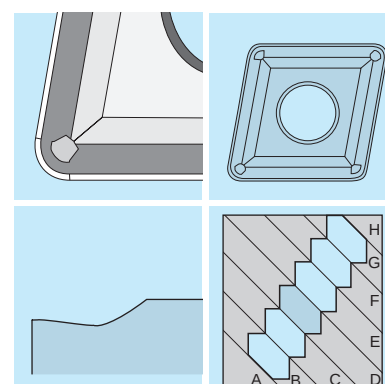
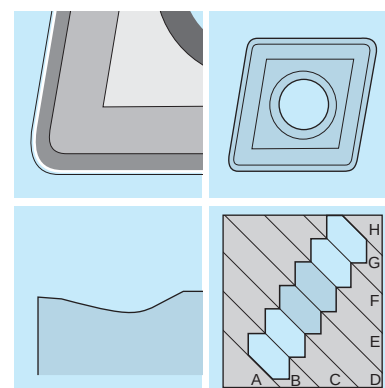
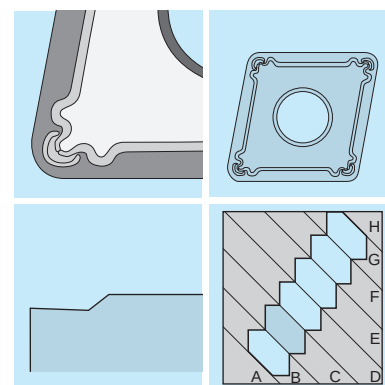
CNMG 120404-23
CNMG 120408-23

CODE...G-25

CNMG 120408-25
CNMG 120412-25
CNMG 160608-25
CNMG 160612-25
CNMG 160616-25

CODE...G-33

CNMG 120404-33
CNMG 120408-33
CNMG 120412-33





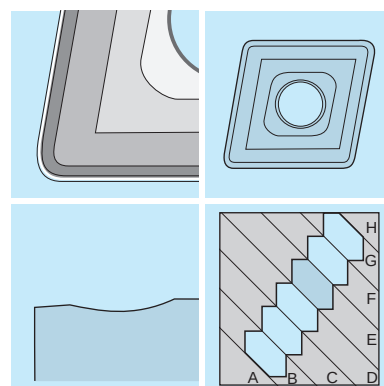
ISO indexable inserts for clamping system P and M

CNMG-42, CNMG-43, CNMG-46

CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)			CNM.
						æ	TH	Page	
CNM. 090304	9,7	3,18	0,4	9,7	3,18	<u>External operations</u>			
CNM. 090308	↓	↓	0,8	↓	↓	75°	PCBN	79	
CNM. 090312	↓	↓	1,2	↓	↓	90°	PCFN	79	
CNM. 120404	12,9	4,76	0,4	12,7	5,16	90°	PCGN	80	
CNM. 120408	↓	↓	0,8	↓	↓	75°	PCKN	80	
CNM. 120412	↓	↓	1,2	↓	↓	95°	PCLN	81	
CNM. 120416	↓	↓	1,6	↓	↓	45°	PCSN	81	
CNM. 160608	16,1	6,35	0,8	15,87	6,35	<u>Internal operations</u>			
CNM. 160612	↓	↓	1,2	↓	↓	Boring bars			
CNM. 160616	↓	↓	1,6	↓	↓	95°	-PCLN	123	
CNM. 160624	↓	↓	2,4	↓	↓	Boring heads			
CNM. 190604	19,3	6,35	0,4	19,05	7,93	95°	PCLN	134	
CNM. 190608	↓	↓	0,8	↓	↓	<u>Cartridges</u>			
CNM. 190612	↓	↓	1,2	↓	↓	95°	PCLN	207	
CNM. 190616	↓	↓	1,6	↓	↓				
CNM. 190624	↓	↓	2,4	↓	↓				
CNM. 250924	25,8	9,52	2,4	25,4	9,12				

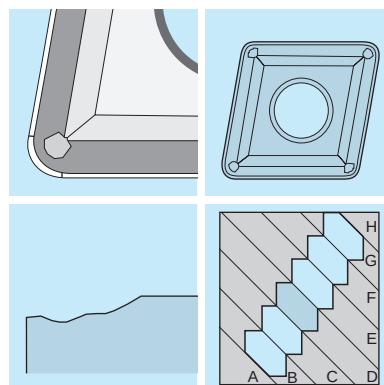
CODE...G-42

	13E	CW2	CL4	CM5	KMF
CNMG 160604-42	•				
CNMG 160608-42					
CNMG 160612-42					
CNMG 160616-42					
CNMG 190608-42	•				
CNMG 190612-42				•	•
CNMG 190616-42					



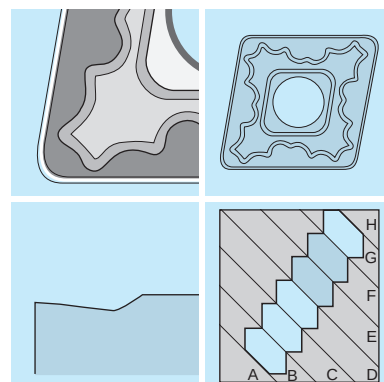
CODE...G-43

	13E	CW2	CL4	CM5	KMF
CNMG 090304-43	•				
CNMG 090308-43	•				
CNMG 090312-43	•				
CNMG 120404-43	•	•			
CNMG 120408-43	•	•			
CNMG 120412-43	•	•			



CODE...G-46

	13E	CW2	CL4	CM5	KMF
CNMG 120408-46	•				
CNMG 120412-46		•			
CNMG 120416-46		•			
CNMG 160608-46					
CNMG 160612-46		•			
CNMG 160616-46					
CNMG 190612-46				•	
CNMG 190616-46				•	
CNMG 190624-46					



The diagrams show the following steps:

- Top-left: A corner of a structure with a sloped surface and a horizontal base.
- Top-right: A square frame with a central circle, representing a plan view of a well or pit.
- Middle-left: A cross-section of a sloped surface with a horizontal base.
- Middle-right: A cross-section of a stepped slope, with labels A, B, C, D, E, F, G, and H indicating different levels or points.
- Bottom-left: A cross-section of a sloped surface with a horizontal base.
- Bottom-right: A cross-section of a stepped slope, with labels A, B, C, D, E, F, G, and H indicating different levels or points.



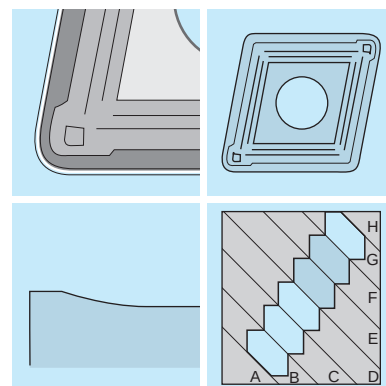
ISO indexable inserts for clamping system P and M

CNMM-63, CNMM-75, CNMM-81

CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)			CNM.
						æ	TH	Page	
CNM. 090304	9,7	3,18	0,4	9,7	3,18	<u>External operations</u>			
CNM. 090308	↓	↓	0,8	↓	↓	75°	PCBN	79	
CNM. 090312	↓	↓	1,2	↓	↓	90°	PCFN	79	
CNM. 120404	12,9	4,76	0,4	12,7	5,16	90°	PCGN	80	
CNM. 120408	↓	↓	0,8	↓	↓	75°	PCKN	80	
CNM. 120412	↓	↓	1,2	↓	↓	95°	PCLN	81	
CNM. 120416	↓	↓	1,6	↓	↓	45°	PCSN	81	
CNM. 160608	16,1	6,35	0,8	15,87	6,35	<u>Internal operations</u>			
CNM. 160612	↓	↓	1,2	↓	↓	Boring bars			
CNM. 160616	↓	↓	1,6	↓	↓	95°	-PCLN	123	
CNM. 160624	↓	↓	2,4	↓	↓	Boring heads			
CNM. 190604	19,3	6,35	0,4	19,05	7,93	95°	PCLN	134	
CNM. 190608	↓	↓	0,8	↓	↓	<u>Cartridges</u>			
CNM. 190612	↓	↓	1,2	↓	↓	95°	PCLN	207	
CNM. 190616	↓	↓	1,6	↓	↓				
CNM. 190624	↓	↓	2,4	↓	↓				
CNM. 250924	25,8	9,52	2,4	25,4	9,12				
CNM. 250932	25,8	9,52	3,2	25,4	9,12				

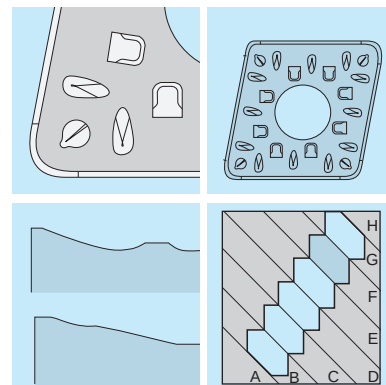
CODE ...M-63

CODE	13E	CW2	CL4	CM5	KMF
CNMM 120412-63	•	•			
CNMM 160604-63	•				
CNMM 160608-63					
CNMM 160612-63				•	
CNMM 160616-63				•	
CNMM 190612-63				•	
CNMM 190616-63		•		•	
CNMM 190624-63				•	



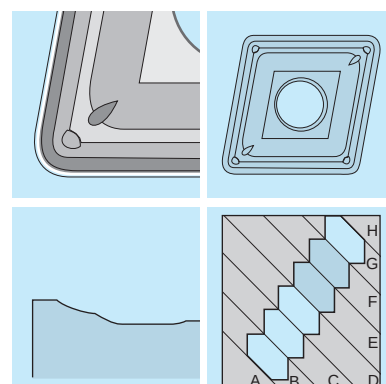
CODE ...M-75

CODE	13E	CW2	CL4	CM5	KMF
CNMM 120408-75	•	•	•	•	
CNMM 120412-75	•	•	•	•	
CNMM 120416-75	•	•	•	•	
CNMM 160612-75	•	•	•	•	
CNMM 160616-75	•	•	•	•	
CNMM 190612-75	•	•	•	•	
CNMM 190616-75	•	•	•	•	
CNMM 190624-75	•	•	•	•	
CNMM 250924-75	•	•	•	•	



CODE ...M-81

CODE	13E	CW2	CL4	CM5	KMF
CNMM 120408-81		•		•	
CNMM 120412-81		•		•	
CNMM 190612-81		•		•	
CNMM 190616-81		•		•	



ISO indexable inserts for clamping system P and M

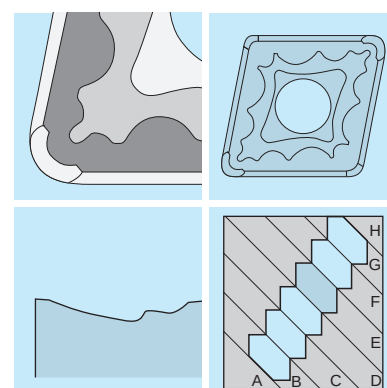
CNMM-85, CNMM-92



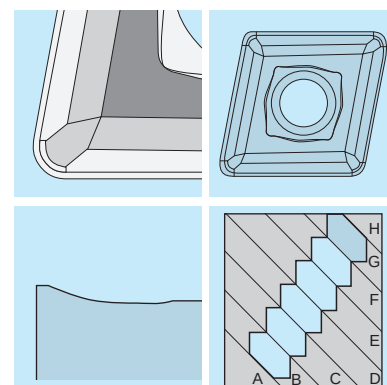
CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)		
						æ	TH	Page
CNM. 090304	9,7	3,18	0,4	9,7	3,18	<u>External operations</u>		
CNM. 090308	↓	↓	0,8	↓	↓	75°	PCBN	79
CNM. 090312	↓	↓	1,2	↓	↓	90°	PCFN	79
CNM. 120404	12,9	4,76	0,4	12,7	5,16	90°	PCGN	80
CNM. 120408	↓	↓	0,8	↓	↓	75°	PCKN	80
CNM. 120412	↓	↓	1,2	↓	↓	95°	PCLN	81
CNM. 120416	↓	↓	1,6	↓	↓	45°	PCSN	81
CNM. 160608	16,1	6,35	0,8	15,87	6,35	<u>Internal operations</u>		
CNM. 160612	↓	↓	1,2	↓	↓	Boring bars		
CNM. 160616	↓	↓	1,6	↓	↓	95°	-PCLN	123
CNM. 160624	↓	↓	2,4	↓	↓	Boring heads		
CNM. 190604	19,3	6,35	0,4	19,05	7,93	95°	PCLN	134
CNM. 190608	↓	↓	0,8	↓	↓	<u>Cartridges</u>		
CNM. 190612	↓	↓	1,2	↓	↓	95°	PCLN	207
CNM. 190616	↓	↓	1,6	↓	↓			
CNM. 190624	↓	↓	2,4	↓	↓			
CNM. 250924	25,8	9,52	2,4	25,4	9,12			
CNM. 250932	25,8	9,52	3,2	25,4	9,12			

CNM.

CODE ...M-85					13E	CW2	CL4	CM5	KMF
CNMM 120408-85					●				
CNMM 120412-85					●				
CNMM 120416-85								●	
CNMM 160608-85					●				
CNMM 160612-85					●				
CNMM 160616-85								●	
CNMM 190612-85							●		
CNMM 190616-85								●	
CNMM 190624-85								●	

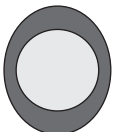
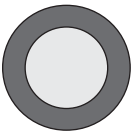


CODE...M-92					13E	CW2	CL4	CM5	KMF
CNMM 160616-92					●	●	●	●	
CNMM 160624-92					●	●	●	●	
CNMM 190616-92					●	●	●	●	
CNMM 190624-92					●	●	●	●	
CNMM 250924-92							●	●	
CNMM 250932-92							●	●	



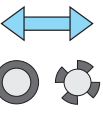
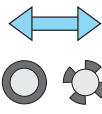
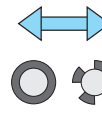
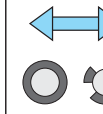
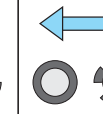
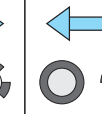
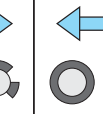
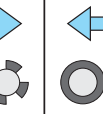
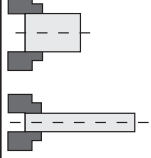
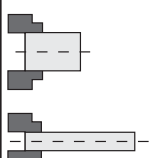
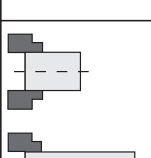


Recommended insert sizes for DNM.

Cutting condition		Cutting range							
		A	B	C	D	E	F	G	H
Heavily interrupted cut			1506	1506	1506	1506	1506		
Lightly interrupted cut			1506	1506	1506 1104	1506 1104	1506		
Varying cutting depth, Casting or forging skin			1504	1506	1506 1104	1506 1104	1506		
Smooth cut, pre-turned surface			1504	1506	1506 1104	1506 <u>1104</u> <u>1104</u>	1506		

Insert thickness (s)
cutting edge length (l)

Recommended corner radius for DNM.

Cutting range		A	B	C	D	E	F	G	H
									
Rt 100					12 12 08 12	12 12 08 12	12 16 08 12		
Rt 25			08 08 04 08	08 08 04 08	08 12 04 08	08 12 08 08	12 16 08 12		
Rt 6,3			08 08 04 08	08 08 04 08	08 08 04 08				

Corner radius (r)

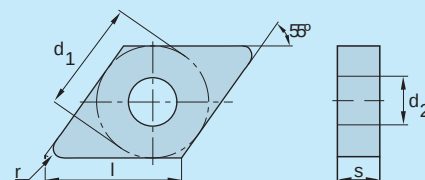


ISO indexable inserts for clamping system P and M

DNMA, DNMG, DNMG-22

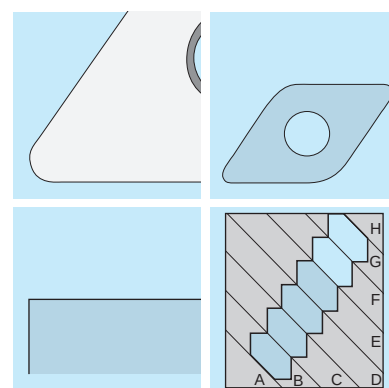
CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)	æ	TH	Page
DNM. 110404	11,6	4,76	0,4	9,52	3,81	External operations			
DNM. 110408	↓	↓	0,8	↓	↓	93° PDJN			82
DNM. 110412	↓	↓	1,2	↓	↓	63° PDNN			82
DNM. 150408	15,5	4,76	0,8	12,7	5,16	Internal operations			
DNM. 150604	↓	6,35	0,4	↓	↓	Boring bars			
DNM. 150608	↓	↓	0,8	↓	↓	93° -PDUN			123
DNM. 150612	↓	↓	1,2	↓	↓	Boring heads			
DNM. 150616	↓	↓	1,6	↓	↓	93° PDUN			135

DNM.



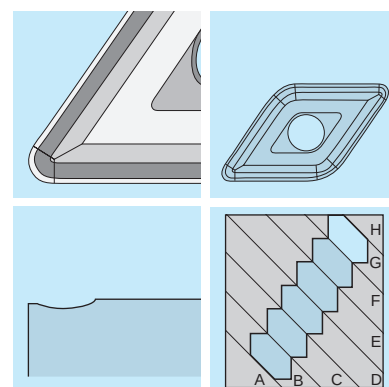
CODE...A

CODE...A	13E	CM2	CL4	CM5	KMF
DNMA150608					
DNMA150612			•		
DNMA150616			•		•



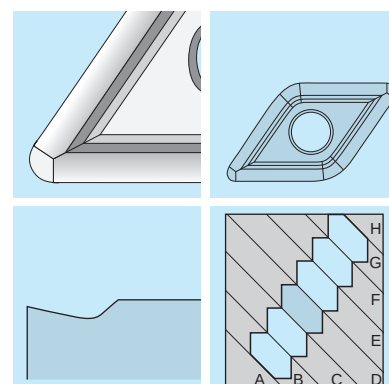
CODE...G

CODE...G	13E	CM2	CL4	CM5	KMF
DNMG150608	•	•	•		
DNMG150604	•	•	•		
DNMG150608	•	•	•		
DNMG150612	•	•	•		
DNMG150616	•	•	•		



CODE...G-22

CODE...G-22	13E	CM2	CL4	CM5	KMF
DNMG150604-22					•
DNMG150608-22					•
DNMG150612-22					•



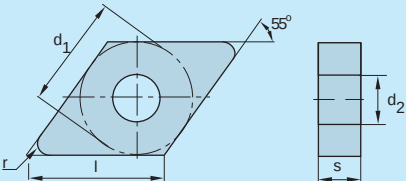
ISO indexable inserts for clamping system P and M

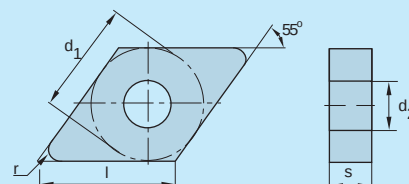
DNMG-23, DNMG-25, DNMG-33



CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)		
						æ	TH	Page
DNM.110404	11,6	4,76	0,4	9,52	3,81	<u>External operations</u>		
DNM.110408	↓	↓	0,8	↓	↓	93°	PDUN	82
DNM.110412			1,2			63°	PDNN	82
DNM.150408	15,5	6,35	0,8	12,7	5,16	<u>Internal operations</u>		
DNM.150604	↓	↓	0,4	↓	↓	Boring bars		
DNM.150608			0,8			93°	-PDUN	123
DNM.150612	↓	↓	1,2	↓	↓	Boring heads		
DNM.150616			1,6			93°	PDUN	135

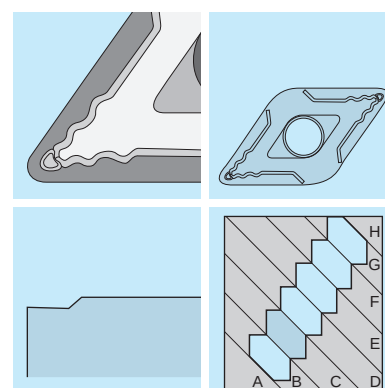
DNM.



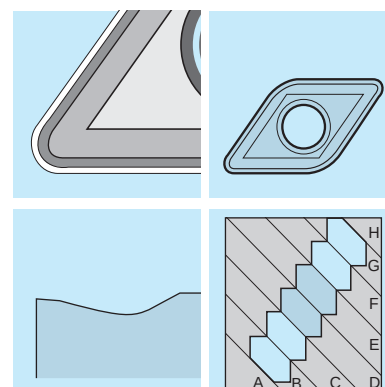


DNM.

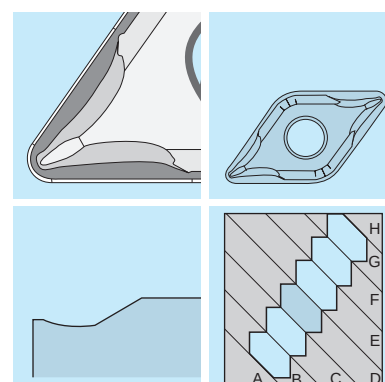
CODE...G-23					13E	CW2	CL4	CV5	KMF
DNMG150604-23									
DNMG 150608-23									



CODE...G-25					13E	CW2	CL4	CV5	KMF
DNMG150608-25							•		
DNMG 150612-25							•		



CODE...G-33					13E	CW2	CL4	CV5	KMF
DNMG110404-33									
DNMG 110408-33									
DNMG 150604-33									
DNMG 150608-33									
DNMG 150612-33									



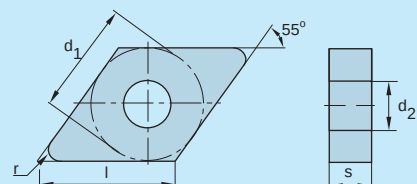


ISO indexable inserts for clamping system P and M

DNMG-43, DNMG-46, DNMG-55

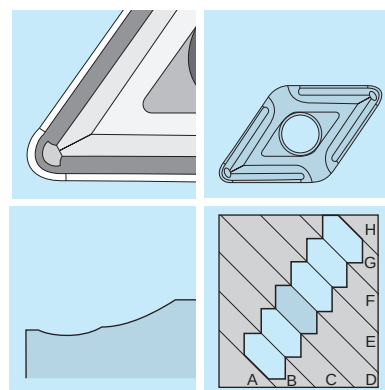
CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)	æ	TH	Page
DNM. 110404	11,6	4,76	0,4	9,52	3,81	External operations			
DNM. 110408			0,8			93°		PDJN	82
DNM. 110412			1,2			63°		PDNN	82
DNM. 150408	15,5	6,35	0,8	12,7	5,16	Internal operations			
DNM. 150604			0,4			Boring bars			
DNM. 150608			0,8			93°		-PDUN	123
DNM. 150612			1,2			Boring heads			
DNM. 150616			1,6			93°		PDUN	135

DNM.



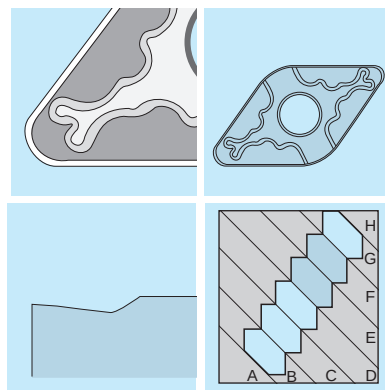
CODE...G-43

	13E	CW2	CL4	CM5	KMF
DNMG 150604-43	•	•			
DNMG 150608-43	•	•			
DNMG 150612-43	•	•			
DNMG 150616-43		•		•	



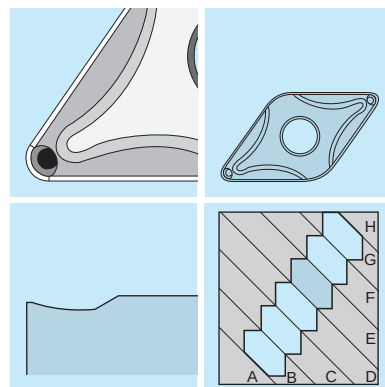
CODE...G-46

	13E	CW2	CL4	CM5	KMF
DNMG 150608-46					
DNMG 150612-46					
DNMG 150616-46			•		



CODE...G-55

	13E	CW2	CL4	CM5	KMF
DNMG 110404-55	•				
DNMG 110408-55	•	•	•	•	
DNMG 110412-55	•	•	•	•	
DNMG 150608-55	•	•	•	•	
DNMG 150612-55	•	•	•	•	



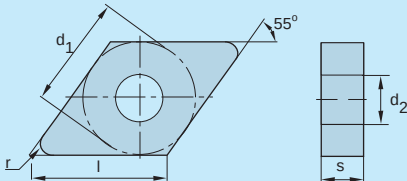
ISO indexable inserts for clamping system P and M

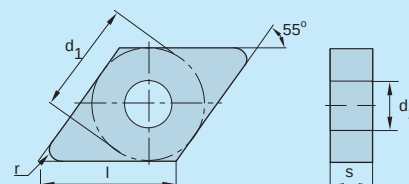
DNMG-66, DNMM, DNMM-63



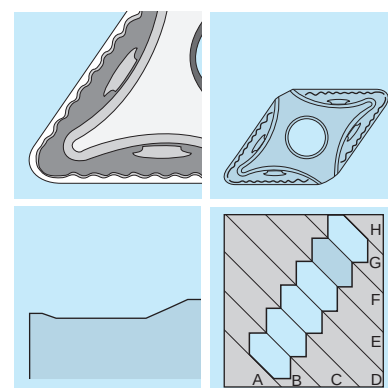
CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)		
						æ	TH	Page
DNM. 110404	11,6	4,76	0,4	9,52	3,81	<u>External operations</u>		
DNM. 110408	↓	↓	0,8	↓	↓	93°	PDJN	82
DNM. 110412			1,2			63°	PDNN	82
DNM. 150408	15,5	6,35	0,8	12,7	5,16	<u>Internal operations</u>		
DNM. 150604	↓	↓	0,4	↓	↓	Boring bars		
DNM. 150608			0,8			93°	-PDUN	123
DNM. 150612	↓	↓	1,2	↓	↓	Boring heads		
DNM. 150616			1,6			93°	PDUN	135

DNM.

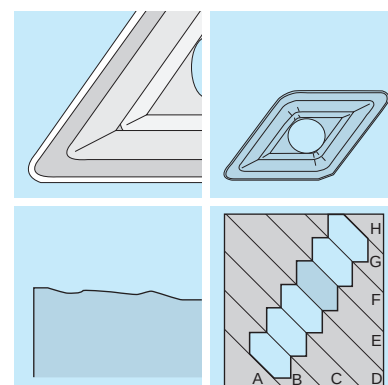




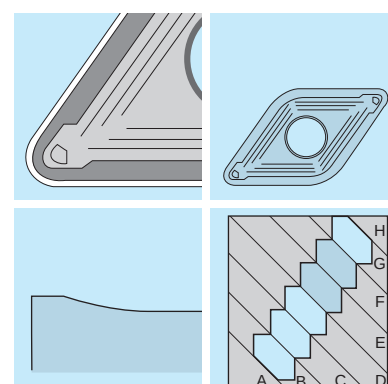
CODE...G-66					13E	QV2	Q4	QV5	KMF
DNMG150608-66					•	•	•	•	
DNMG150612-66					•	•	•	•	
DNMG150616-66					•	•	•	•	



CODE...M					13E	QV2	Q4	QV5	KMF
DNMM150604					•	•	•		
DNMM 150608					•	•	•		
DNMM 150612						•	•	•	
DNMM 150616						•	•	•	



CODE...M-63					13E	QV2	Q4	QV5	KMF
DNMM150608-63						•			
DNMM 150612-63						•			
DNMM 150616-63								•	



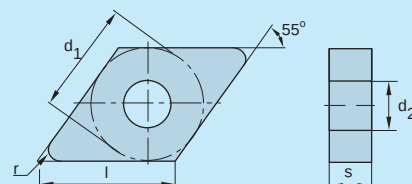


ISO indexable inserts for clamping system P and M

DNMM-75, DNMM-81 DNMM-85

CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)	æ	TH	Page
DNM. 110404	11,6	4,76	0,4	9,52	3,81	External operations			
DNM. 110408	↓	↓	0,8	↓	↓	93° PDJN			82
DNM. 110412	↓	↓	1,2	↓	↓	63° PDNN			82
DNM. 150408	15,5	6,35	0,8	12,7	5,16	Internal operations			
DNM. 150604	↓	↓	0,4	↓	↓	Boring bars			
DNM. 150608	↓	↓	0,8	↓	↓	93° -PDUN			123
DNM. 150612	↓	↓	1,2	↓	↓	Boring heads			
DNM. 150616	↓	↓	1,6	↓	↓	93° PDUN			135

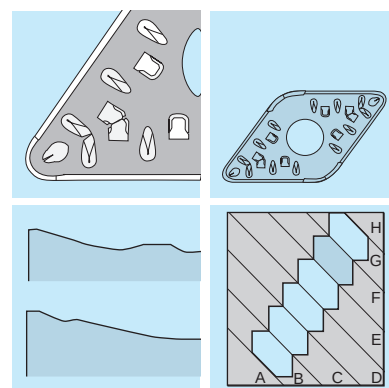
DNM.



CODE ...M-75

~~DNMM~~

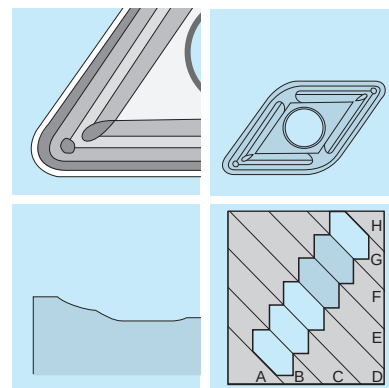
DNMM 150612-75
DNMM 150616-75



CODE ...M-81

~~DNMM~~

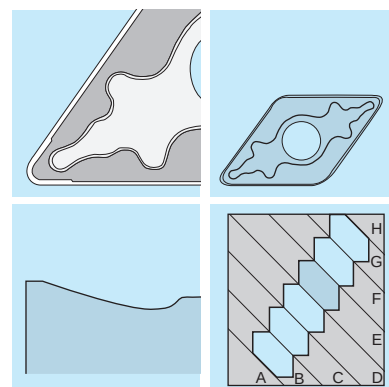
DNMM 150612-81
DNMM 150616-81



CODE ...M-85

~~DNMM~~

DNMM 150612-85
DNMM 150616-85





Recommended insert sizes for RNM.

Cutting condition		Cutting range							
		A	B	C	D	E	F	G	H
Heavily interrupted cut				1204	1506	1906	2509 1906	3109 2509	
Lightly interrupted cut			1204	1204	1506	1906 1506	2509 1906	3109 2509	
Varying cutting depth, Casting or forging skin			0903	1204	1506 1204	1506	1906 1506	2509	
Smooth cut, pre-turned surface			0903	0903	1506 1204	1506	1906 1506	2509	

Insert thickness (s)
 cutting edge length (l)

ISO indexable inserts for clamping system P

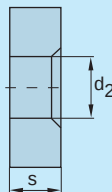
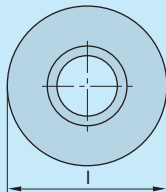
RNMA , RNMG



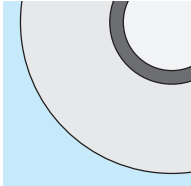
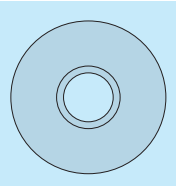
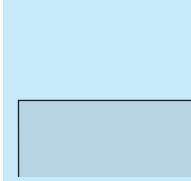
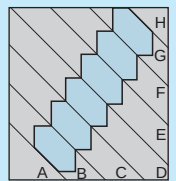
CODE	l=d ₁	s	d ₂
RNM. 09 03 00	9,52	3,18	3,81
RNM. 12 04 00	12,7	4,76	5,16
RNM. 15 06 00	15,88	6,35	6,35
RNM. 19 06 00	19,05	6,35	7,93
RNM. 25 09 00	25,4	9,52	9,12
RNM. 31 09 00	31,75	9,52	12,7

Note: Toolholders (TH)
æ TH Page

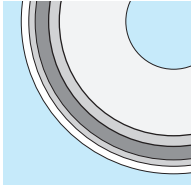
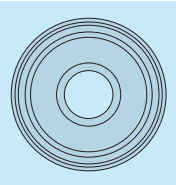
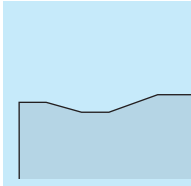
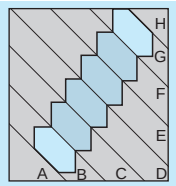
External operations:
90° PRGN 90



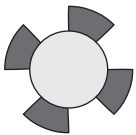
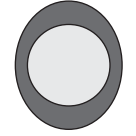
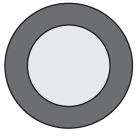
⌘ ...A					⌘	⌘	⌘	⌘	⌘
RNM						•			
RNMA12 04 00						•			
RNMA19 06 00							•		
RNMA25 09 00							•		
RNMA31 09 00							•		

⌘ ...G					⌘	⌘	⌘	⌘	⌘
RNMG09 03 00					•	•			
RNMG12 04 00					•	•			
RNMG15 06 00							•		
RNMG19 06 00							•		
RNMG25 09 00							•		
RNMG31 09 00							•		

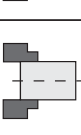
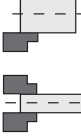
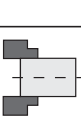
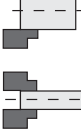





Recommended insert sizes for SNM.

Cutting condition		Cutting range							
		A	B	C	D	E	F	G	H
Heavily interrupted cut 			1204	1204	1204	1506	1906	2507	2509
							1506	1906	2507
Lightly interrupted cut 			1204	1204	1204	1506	1906	2507	2509
						1204	1506	1906	2507
Varying cutting depth, Casting or forging skin 			1204	1204	1204	1204	1506	1906	2507
					0903		1204		
Smooth cut, pre-turned surface 			1204	1204	1204	1204	1506	1906	2507
					0903		1204		

Insert thickness (s)
cutting edge length (l)

Recommended corner radius for SNM.

Cutting range		A	B	C	D	E	F	G	H
		↔	↔	↔	↔	↔	↔	↔	↔
Surface finish	Stability								
Rt 100 					12 12	12 12	16 24	24 24	32 32
					08 12	08 12	12 16	16 24	24 32
Rt 25 			08 12	08 12	08 12	12 12	12 16	16 24	
			04 08	04 08	04 08	08 12	08 12	12 16	
Rt 6,3 			08 08	08 08	08 12				
			04 08	04 08	04 08				

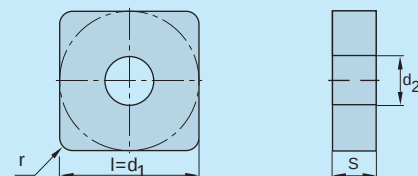
Corner radius (r)



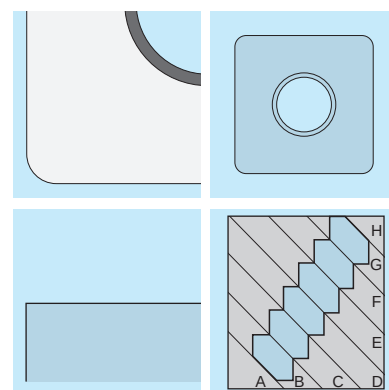
ISO indexable inserts for clamping system P and M

SNMA, SNMG, SNMG-22

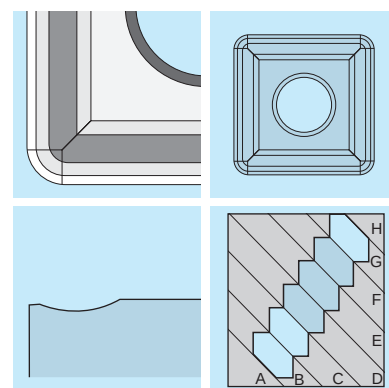
CODE	$l=d_1$	s	r	d_2	Material	HT	θ	SNM.
SNM.090304	9,52	3,18	0,4	3,81	Examples			
SNM.090308	9,52	3,18	0,8	3,81	5	8	3	
SNM.120404	12,7	4,76	0,4	5,16	5	8	3	
SNM.120408			0,8		5	8	4	
SNM.120412			1,2		5	8	4	
SNM.120416			1,6		5	8	4	
SNM.120424			2,4		5	8	4	
SNM.150604	15,87	6,35	0,4	6,35	Examples			
SNM.150608			0,8		5	8	2	
SNM.150612			1,2		5	8	2	
SNM.150616			1,6		5	8	2	
SNM.150624			2,4		5	8	2	
SNM.190608	19,05	6,35	0,8	7,93	Cartridges			
SNM.190612			1,2		75° PSKN	207		
SNM.190616			1,6		75° PSRN	208		
SNM.190624			2,4		45° PSSN	208		
SNM.250716	25,4	7,94	1,6	9,15				
SNM.250724			2,4					
SNM.250924			2,4					
SNM.250932			3,2					



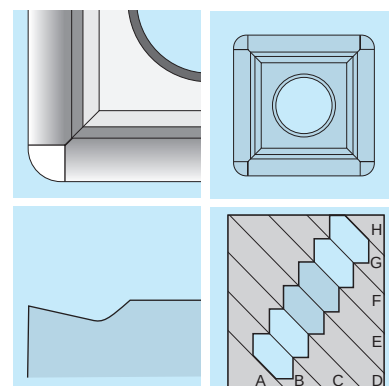
CODE...A					E31	2/C	4/LC	5/C	FWK
SNMA090304					•				
SNMA090308					•				
SNMA120404					•				
SNMA120408					•				
SNMA120412					•				
SNMA120416									
SNMA120424							•	•	
SNMA150608									
SNMA150612							•		
SNMA190608						•	•		
SNMA190612									
SNMA190616									
SNMA190624							•	•	
SNMA250724							•	•	



CODE...G					E31	2/C	4/LC	5/C	FWK
SNMG120404					•				
SNMG120408					•	•	•		
SNMG120412					•	•	•		
SNMG120416							•	•	
SNMG150608									
SNMG150612						•			
SNMG150616							•	•	
SNMG190612					•	•	•		
SNMG190616								•	
SNMG250716							•	•	
SNMG250724							•	•	
SNMG250924							•	•	



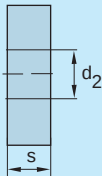
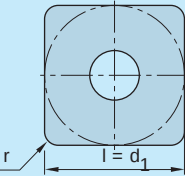
CODE...G-22					E31	2/C	4/LC	5/C	FWK
SNMG120408-22									•
SNMG120412-22									•
SNMG190612-22									•
SNMG190616-22									•



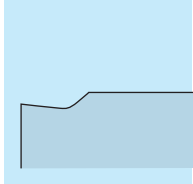
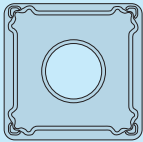
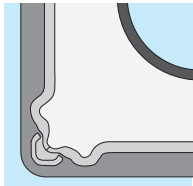
ISO indexable inserts for clamping system P and M
SNMG-23, SNMG-33, SNMG-42



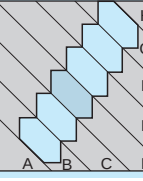
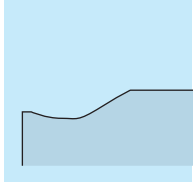
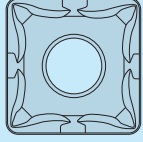
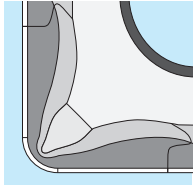
CODE	$l=d_1$	s	r	d_2	Note: Toolholders (TH)		
					æ	TH	Page
SNM.090304	9,52	3,18	0,4	3,81	<u>External operations</u>		
SNM.090308	9,52	3,18	0,8	3,81	75°	PSBN	83
SNM.120404	12,7	4,76	0,4	5,16	45°	PSDN	83
SNM.120408	↓	↓	0,8	↓	75°	PSKN	84
SNM.120412			1,2		75°	PSRN	84
SNM.120416			1,6		45°	PSSN	85
SNM.150604	15,87	6,35	0,4	6,35	<u>Internal operations</u>		
SNM.150608	↓	↓	0,8	↓	Boring bars		
SNM.150612			1,2		75°	-PSKN	124
SNM.150616			1,6		Boring heads		
SNM.150624			2,4		75°	PSKN	136
SNM.190608	19,05	6,35	0,8	7,93	<u>Cartridges</u>		
SNM.190612	↓	↓	1,2	↓	75°	PSKN	207
SNM.190616			1,6		75°	PSRN	208
SNM.190624			2,4		45°	PSSN	208
SNM.250716	25,4	7,94	1,6	9,15			
SNM.250724	↓	7,94	2,4	↓			
SNM.250924		9,52	2,4				
SNM.250932		9,52	1,6-3,2				



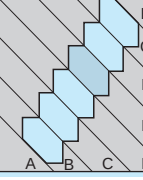
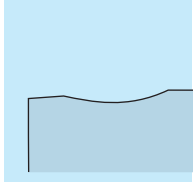
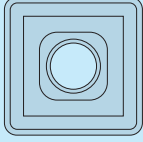
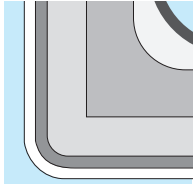
CODE ...G-23					æ	W	C	M	N
SNMG23									
SNMG23									



CODE ...G-33					æ	W	C	M	N
SNMG33									
SNMG33									
SNMG33									
SNMG33									



CODE ...G-42					æ	W	C	M	N
SNMG42					•				
SNMG42					•				
SNMG42							•		
SNMG42								•	
SNMG42									•

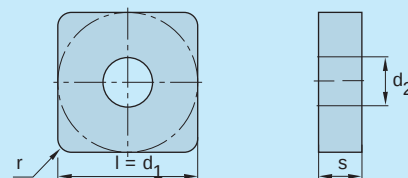




ISO indexable inserts for clamping system P and M

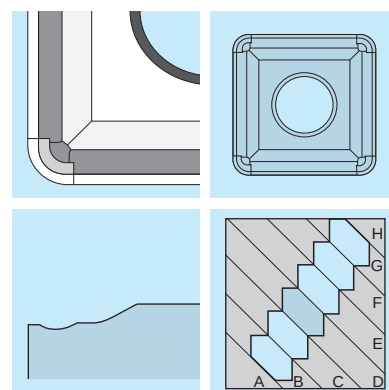
SNMG-43, SNMG-46, SNMG-55

CODE	$l=d_1$	s	r	d_2	HT	SNM.
SNM. 090304	9,52	3,18	0,4	3,81	57 NBP	38
SNM. 090308	9,52	3,18	0,8	3,81	54 NBP	38
SNM. 120404	12,7	4,76	0,4	5,16	57 NBP	48
SNM. 120408	↓	↓	0,8	↓	57 NBP	48
SNM. 120412	↓	↓	1,2	↓	54 NBP	58
SNM. 120416	↓	↓	1,6	↓	57 NBP	58
SNM. 150604	15,87	6,35	0,4	6,35	57 NBP	421
SNM. 150608	↓	↓	0,8	↓	57 NBP	631
SNM. 150612	↓	↓	1,2	↓	57 NBP	631
SNM. 150616	↓	↓	1,6	↓	57 NBP	631
SNM. 150624	↓	↓	2,4	↓	57 NBP	631
SNM. 190608	19,05	6,35	0,8	7,93	75° PSKN	207
SNM. 190612	↓	↓	1,2	↓	75° PSRN	208
SNM. 190616	↓	↓	1,6	↓	45° PSSN	208
SNM. 190624	↓	↓	2,4	↓	45° PSSN	208
SNM. 250716	25,4	7,94	1,6	9,15	75° PSKN	207
SNM. 250724	↓	↓	2,4	↓	75° PSRN	208
SNM. 250924	↓	↓	2,4	↓	45° PSSN	208
SNM. 250932	↓	↓	3,2	↓	45° PSSN	208



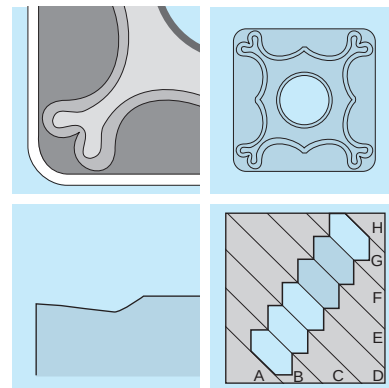
CODE...G-43

CODE...G-43	13E	CW2	CL4	CM5	KMF
SNMG090304-43	•	•			
SNMG090308-43	•	•			
SNMG120404-43	•	•			
SNMG120408-43	•	•			
SNMG120412-43	•	•			



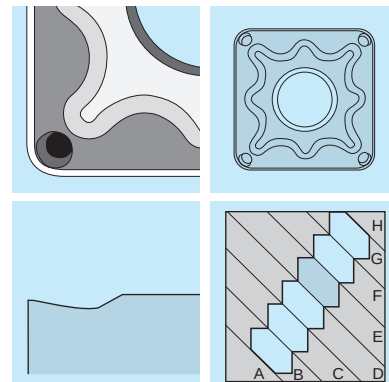
CODE...G-46

CODE...G-46	13E	CW2	CL4	CM5	KMF
SNMG120408-46			•		
SNMG120412-46			•		
SNMG120416-46				•	
SNMG150608-46		•			
SNMG150612-46			•		
SNMG190612-46		•		•	
SNMG190616-46				•	



CODE...G-55

CODE...G-55	13E	CW2	CL4	CM5	KMF
SNMG120408-55	•	•	•	•	
SNMG120412-55	•	•	•	•	
SNMG150612-55	•	•	•	•	



The four diagrams illustrate different types of boundaries:

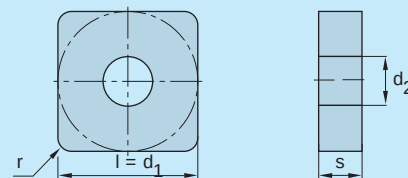
- Top Left:** A corner boundary where a light blue region meets a dark blue region at a 90-degree angle. The boundary is a quarter-circle arc.
- Top Right:** A square boundary where a light blue region meets a dark blue region. The boundary is a square with rounded corners.
- Bottom Left:** A wavy boundary where a light blue region meets a dark blue region. The boundary is an irregular, wavy line.
- Bottom Right:** A stepped boundary where a light blue region meets a dark blue region. The boundary is a series of horizontal and vertical steps, labeled A, B, C, D, E, F, G, and H.



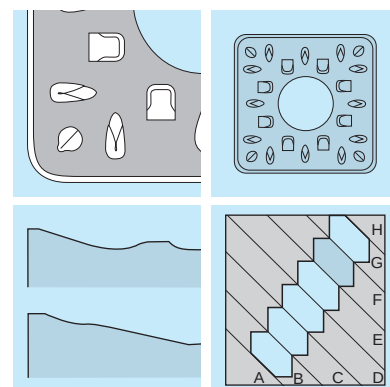
ISO indexable inserts for clamping system P and M

SNMM-75, SNMM-81, SNMM-85

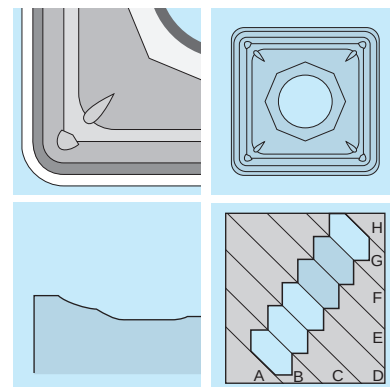
CODE	$l=d_1$	s	r	d_2	HT	HT	HT	SNM.
SNM. 090304	9,52	3,18	0,4	3,81	631	NBP	38	
SNM. 090308	9,52	3,18	0,8	3,81	54	NBP	38	
SNM. 120404	12,7	4,76	0,4	5,16	57	NBP	48	
SNM. 120408			0,8		57	NBP	48	
SNM. 120412			1,2		54	NBP	58	
SNM. 120416			1,6					
SNM. 150604	15,87	6,35	0,4	6,35	57	NBP	421	
SNM. 150608			0,8		57	NBP	631	
SNM. 150612			1,2					
SNM. 150616			1,6					
SNM. 150624			2,4					
SNM. 190608	19,05	6,35	0,8	7,93	75°	PSKN	207	
SNM. 190612			1,2		75°	PSRN	208	
SNM. 190616			1,6		45°	PSSN	208	
SNM. 190624			2,4					
SNM. 250716	25,4	7,94	1,6	9,15				
SNM. 250724			2,4					
SNM. 250924			2,4					
SNM. 250932			3,2					



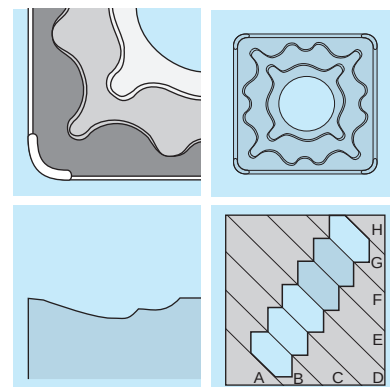
CODE ...M-75									
SNM. 090304									
SNM. 090308									
SNM. 120404									
SNM. 120408									
SNM. 120412									
SNM. 120416									
SNM. 150604									
SNM. 150608									
SNM. 150612									
SNM. 150616									
SNM. 150624									



CODE ...M-81									
SNM. 090304									
SNM. 090308									
SNM. 120404									
SNM. 120408									
SNM. 120412									
SNM. 120416									
SNM. 150604									
SNM. 150608									
SNM. 150612									
SNM. 150616									
SNM. 150624									



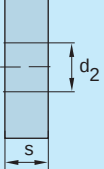
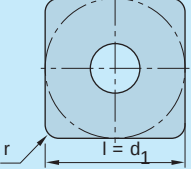
CODE ...M-85									
SNM. 090304									
SNM. 090308									
SNM. 120404									
SNM. 120408									
SNM. 120412									
SNM. 120416									
SNM. 150604									
SNM. 150608									
SNM. 150612									
SNM. 150616									
SNM. 150624									



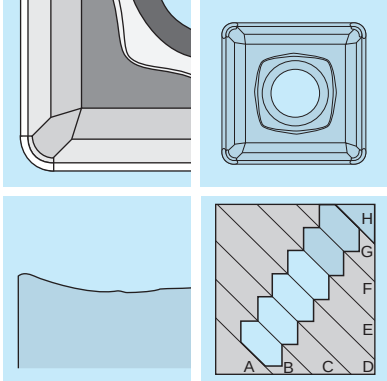
ISO indexable inserts for clamping system P and M
SNMM-92



CODE	$l=d_1$	s	r	d_2		e a	HT	eqP	SNM.
SNM.090304	9,52	3,18	0,4	3,81		157	NBP	38	
SNM.090308	9,52	3,18	0,8	3,81		154	NBP	38	
SNM.120404	12,7	4,76	0,4	5,16		157	NBP	48	
SNM.120408	↓	↓	1,2	↓		157	NBP	48	
SNM.120412	↓	↓	1,6	↓		154	NBP	58	
SNM.150604	15,87	6,35	0,4	6,35		157	NBP	421	
SNM.150608	↓	↓	0,8	↓		157	NBP	631	
SNM.150612	↓	↓	1,2	↓		157	NBP	207	
SNM.150616	↓	↓	1,6	↓		157	NBP	208	
SNM.150624	↓	↓	2,4	↓		157	NBP	208	
SNM.190608	19,05	6,35	0,8	7,93		157	NBP	207	
SNM.190612	↓	↓	1,2	↓		157	NBP	208	
SNM.190616	↓	↓	1,6	↓		157	NBP	208	
SNM.190624	↓	↓	2,4	↓		157	NBP	208	
SNM.250716	25,4	7,94	1,6	9,15		157	NBP	207	
SNM.250724	↓	7,94	2,4	↓		157	NBP	208	
SNM.250924	↓	9,52	2,4	↓		157	NBP	208	
SNM.250932	↓	9,52	3,2	↓		157	NBP	208	

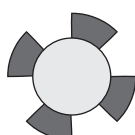
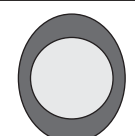
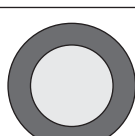


CODE...M-92					13E	CV2	CV4	CV5	KVF
SNMM190616-92					●	●	●	●	
SNMM190624-92					●	●	●	●	
SNMM250724-92					●	●	●	●	
SNMM250732-92					●	●	●	●	
SNMM250924-92					●	●	●	●	
SNMM250932-92						●	●	●	



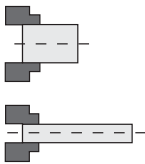
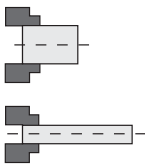
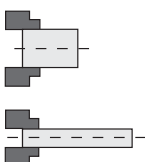


Recommended insert sizes for TNM.

Cutting condition		Cutting range							
		A	B	C	D	E	F	G	H
Heavily interrupted cut 			1604	1604	1604	2204	2204	3307	3309
						1604	1604	2706	3307
Lightly interrupted cut 		1603	1604	1604	1604	2204	2204	2706	3307
						1604	1604	2204	2706
Varying cutting depth, Casting or forging skin 		1603	1604	1604	1604	2204	2204	2204	2706
					1103	1604	1604	1604	2204
Smooth cut, pre-turned surface 		1603	1604	1604	1604	2204	2204		
					1103	1604	1604		

Insert thickness (s)
cutting edge length (l)

Recommended corner radius for TNM.

Cutting range		A	B	C	D	E	F	G	H
									
Surface finish	Stability								
 Rt 100				08 08	12 12	12 12	12 16	16 24	24 32
				04 08	08 12	08 12	08 12	12 16	16 24
 Rt 25			08 08	08 08	08 12	08 12	12 16	16 24	
			04 08	04 08	04 08	08 08	08 12	12 16	
 Rt 6,3			08 08	08 08	08 08				
			04 08	04 08	04 08				
 Corner radius (r)									

Corner radius (r)



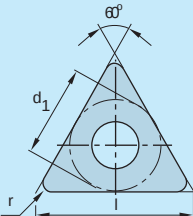
ISO indexable inserts for clamping system P and M

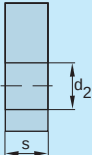
TNMA, TNMG, TNMG...22

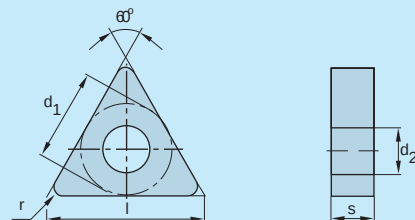
CODE	l	s	r	d ₁	d ₂				
TNM. 110304	11,0	3,18	0,4	6,35	2,3				
TNM. 110308	11,0	3,18	0,8	6,35	2,3				
TNM. 160304	16,5	3,18	0,4	9,52	3,81				
TNM. 160308	↓	↓	0,8	↓	↓				
TNM. 160312			1,2						
TNM. 160316			1,6						
TNM. 160404			4,76			0,4	9,52	3,81	
TNM. 160408			0,8			↓	↓		
TNM. 160412	1,2								
TNM. 160416	1,6								
TNM. 220408	22,0	0,8	12,7	5,16					
TNM. 220412	↓	↓	1,2	↓	↓				
TNM. 220416			1,6						
TNM. 270608			27,5			6,35	0,8	15,87	6,35
TNM. 270612			↓			↓	1,2	↓	↓
TNM. 270616							1,6		
TNM. 270624	2,4								
TNM. 270632	3,2								
TNM. 330716	33,0	7,94		1,6	19,05		7,92		
TNM. 330724	33,0	7,94	2,4	19,05	↓				
TNM. 330924	33,0	9,52	2,4	19,05					

Note: Toolholders (TH)

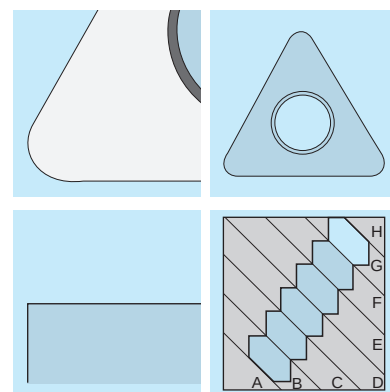
æ	TH	Page
External operations		
60°	MTEN	92
93°	MTJN	93
63°	MTNN	93
90°	PTFN	85
90°	PTGN	86
93°	PTJN	86
63°	PTNN	87
60°	PTTN	87
Internal operations		
Boring bars		
90°	-PTFN	124
Boring heads		
90°	PTFN	136
Cartridges		
90°	PTFN	209
90°	PTGN	209
45°	PTSN	210
60°	PTTN	210
60°	PTWN	211



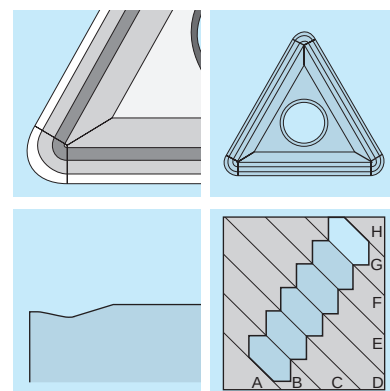




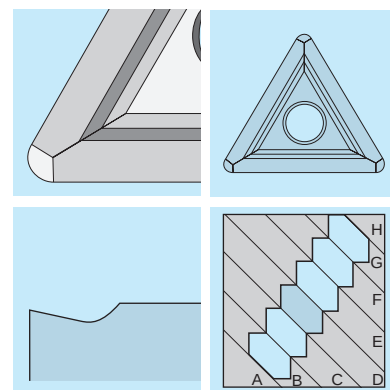
CODE...A					13E	CW2	CL4	CM5	KMF
TNMA 160304					•				
TNMA 160308					•				
TNMA 160312					•				
TNMA 160316					•				
TNMA 160404					•				
TNMA 160408					•				
TNMA 160412									
TNMA 160416							•		
TNMA 220404					•				
TNMA 220408					•				
TNMA 220412					•				
TNMA 220416							•		
TNMA 270612						•		•	
TNMA 270616							•	•	
TNMA 330724							•	•	



CODE...G					13E	CW2	CL4	CM5	KMF
TNMG 110304					•	•			
TNMG 110308					•	•			
TNMG 160304					•	•			
TNMG 160308					•	•			
TNMG 160312					•	•			
TNMG 160404					•	•			
TNMG 160408					•	•	•		
TNMG 160412					•	•	•		
TNMG 160416					•	•	•		
TNMG 220404					•	•			
TNMG 220408					•	•	•		
TNMG 220412					•	•	•		
TNMG 220416						•	•		
TNMG 270612						•	•	•	
TNMG 270616							•	•	
TNMG 330716							•	•	
TNMG 330924							•	•	



CODE ...G-22					13E	CW2	CL4	CM5	KMF
TNMG 160412-22									•
TNMG 220408-22									•
TNMG 220412-22									•

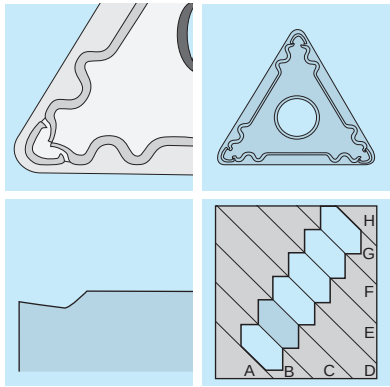


ISO indexable inserts for clamping system P and M
TNMG-23, TNMG-33, TNMG-41

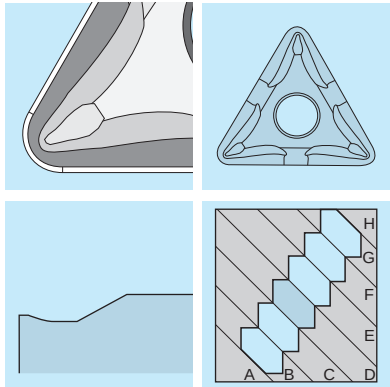


						Note: Toolholders (TH)			TNM.	
CODE	l	s	r	d ₁	d ₂	æ	TH	Page		
TNM. 110304	11,0	3,18	0,4	6,35	2,3	External operations				
TNM. 110308	11,0	3,18	0,8	6,35	2,3	60°	MTEN	92		
TNM. 160304	16,5	3,18	0,4	9,52	3,81	93°	MTJN	93		
TNM. 160308	↓	↓	0,8	↓	↓	63°	MTNN	93		
TNM. 160312			1,2			90°	PTFN	85		
TNM. 160316			1,6			90°	PTGN	86		
TNM. 160404		4,76	0,4	9,52	3,81	93°	PTJN	86		
TNM. 160408		↓	0,8	63°	PTNN	87				
TNM. 160412			1,2	60°	PTTN	87				
TNM. 160416			1,6	Internal operations						
TNM. 220408	22,0	↓	0,8	12,7	5,16	Boring bars				
TNM. 220412	↓		1,2	↓	↓	90°	-PTFN	124		
TNM. 220416			1,6			Boring heads				
TNM. 270608	27,5	6,35	0,8	15,87	6,35	90°	PTFN	136		
TNM. 270612	↓	↓	1,2	↓	↓	Cartridges				
TNM. 270616			1,6			90°	PTFN	209		
TNM. 270624			2,4			90°	PTGN	209		
TNM. 270632	↓	↓	3,2	↓	↓	45°	PTSN	210		
TNM. 330716			1,6			60°	PTTN	210		
TNM. 330724			2,4			60°	PTWN	211		
TNM. 330924			2,4							

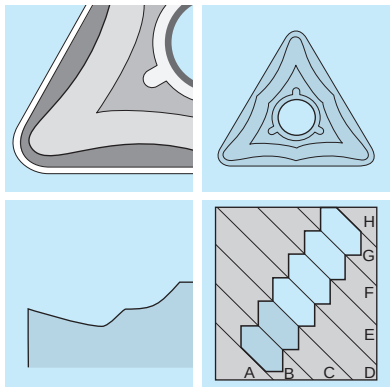
CODE	...G-23								
TNM									
TNM									



CODE	...G-33								
TNM									
TNM									
TNM									
TNM									



CODE	...G-41								
TNM									
TNM									
TNM									
TNM									
TNM									



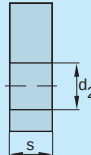
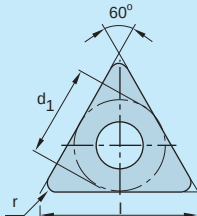


ISO indexable inserts for clamping system P and M

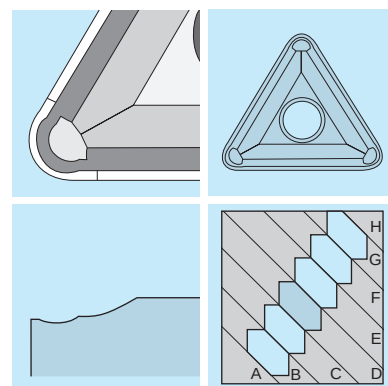
TNMG-43, TNMG-46, TNMG-55

CODE	l	s	r	d ₁	d ₂
TNM. 110304	11,0	3,18	0,4	6,35	2,3
TNM. 110308	11,0	3,18	0,8	6,35	2,3
TNM. 160304	16,5	3,18	0,4	9,52	3,81
TNM. 160308			0,8		
TNM. 160312			1,2		
TNM. 160316			1,6		
TNM. 160404		4,76	0,4	9,52	3,81
TNM. 160408			0,8		
TNM. 160412			1,2		
TNM. 160416			1,6		
TNM. 220408	22,0		0,8	12,7	5,16
TNM. 220412			1,2		
TNM. 220416			1,6		
TNM. 270608	27,5	6,35	0,8	15,87	6,35
TNM. 270612			1,2		
TNM. 270616			1,6		
TNM. 270624			2,4		
TNM. 270632			3,2		
TNM. 330716	33,0	7,94	1,6	19,05	7,92
TNM. 330724	33,0	7,94	2,4	19,05	
TNM. 330924	33,0	9,52	2,4	19,05	

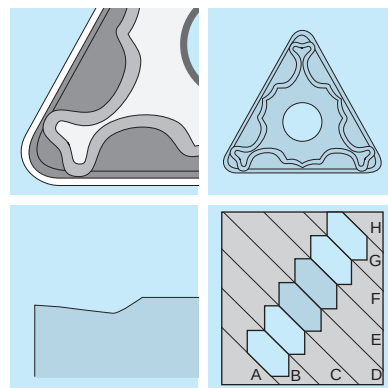
Note: Toolholders (TH)		
æ	TH	Page
External operations		
60°	MTEN	92
93°	MTJN	93
63°	MTNN	93
90°	PTFN	85
90°	PTGN	86
93°	PTJN	86
63°	PTNN	87
60°	PTTN	87
Internal operations		
Boring bars		
90°	-PTFN	124
Boring heads		
90°	PTFN	136
Cartridges		
90°	PTFN	209
90°	PTGN	209
45°	PTSN	210
60°	PTTN	210
60°	PTWN	211



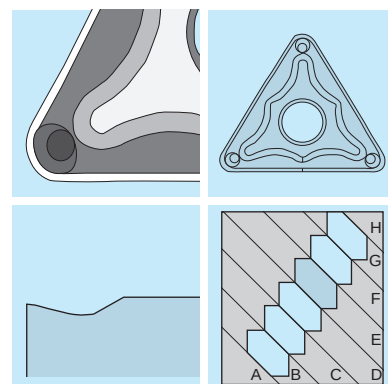
CODE ...G-43					13E	CW2	CL4	CM5	KMF
TNMG 110308-43					•	•			
TNMG 160404-43					•	•			
TNMG 160408-43					•	•			
TNMG 160412-43					•	•			
TNMG 220408-43							•	•	
TNMG 220412-43							•	•	



CODE...G-46					13E	CW2	CL4	CM5	KMF
TNMG 160408-46					•		•		
TNMG 160412-46					•		•		
TNMG 220408-46					•	•			
TNMG 220412-46					•	•	•		
TNMG 220416-46							•	•	



CODE...G-55					13E	CW2	CL4	CM5	KMF
TNMG 160408-55					•	•	•	•	
TNMG 160412-55					•	•	•	•	
TNMG 220408-55					•	•	•	•	
TNMG 220412-55					•	•	•	•	





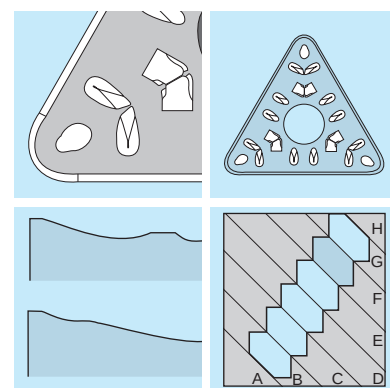
ISO indexable inserts for clamping system P and M

TNMM-75, TNMM-81, TNMM-85

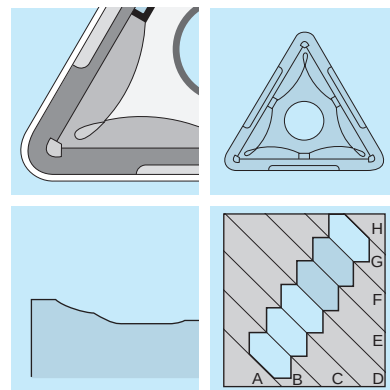
CODE	l	s	r	d ₁	d ₂	
TNM. 110304	11,0	3,18	0,4	6,35	2,3	
TNM. 110308	11,0	3,18	0,8	6,35	2,3	
TNM. 160304	16,5	3,18	0,4	9,52	3,81	
TNM. 160308	↓	↓	0,8	9,52	3,81	
TNM. 160312			1,2			
TNM. 160316			1,6			
TNM. 160404			4,76			
TNM. 160408			0,8			
TNM. 160412			1,2			
TNM. 160416			1,6			
TNM. 220408	22,0	↓	0,8	12,7	5,16	
TNM. 220412	1,2		↓	↓		
TNM. 220416	1,6					
TNM. 270608	27,5	6,35	0,8	15,87	6,35	
TNM. 270612	↓	↓	1,2	↓	↓	
TNM. 270616			1,6			
TNM. 270624			2,4			
TNM. 270632			3,2			
TNM. 330716	33,0	7,94	1,6	19,05	7,92	
TNM. 330724	33,0	7,94	2,4	19,05	↓	
TNM. 330924	33,0	9,52	2,4	19,05		

Note: Toolholders (TH)		
æ	TH	Page
<u>External operations</u>		
60°	MTEN	92
93°	MTJN	93
63°	MTNN	93
90°	PTFN	85
90°	PTGN	86
93°	PTJN	86
63°	PTNN	87
60°	PTTN	87
<u>Internal operations</u>		
Boring bars		
90°	-PTFN	124
Boring heads		
90°	PTFN	136
Cartridges		
90°	PTFN	209
90°	PTGN	209
45°	PTSN	210
60°	PTTN	210
60°	PTWN	211

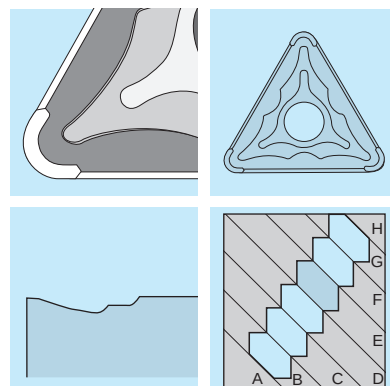
CODE ...M-75					E	W	C	M	R
TNMM					•	•	•	•	
TNMM					•	•	•	•	
TNMM					•	•	•	•	
TNMM					•	•	•	•	
TNMM					•	•	•	•	



CODE ...M-81					E	W	C	M	R
TNMM						•	•		
TNMM						•	•		
TNMM					•		•		
TNMM						•	•		
TNMM						•	•	•	
TNMM							•	•	



CODE ...M-85					E	W	C	M	R
TNMM					•				
TNMM					•				
TNMM							•		
TNMM					•				
TNMM							•		







Recommended insert sizes for VNM.

Cutting condition		Cutting range							
		A	B	C	D	E	F	G	H
Heavily interrupted cut		1604	1604	1604	2204 1604	2204 1604			
Lightly interrupted cut		1604	1604	1604	2204 1604	2204 1604			
Varying cutting depth, Casting or forging skin		1604	1604	1604	2204 1604	2204 1604			
Smooth cut, pre-turned surface		1604	1604	1604	2204 1604	2204 1604			

Insert thickness (s)
cutting edge length (l)

Recommended corner radius for VNM.

Cutting range		A	B	C	D	E	F	G	H
Surface finish	Cutting cond.								
	Stability								
 Rt 100				12 12 08 12	12 12 08 12	12 08 12			
 Rt 25		08 08 04 08	08 08 04 08	08 12 04 08	08 12 08 08	12 08 12			
 Rt 6,3		08 08 04 08	08 08 04 08	08 08 04 08					

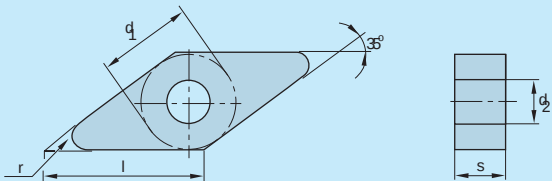
Corner radius (r)

ISO indexable inserts for clamping system M

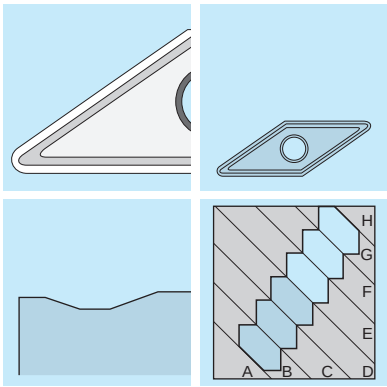
VNMG, VNMG-04



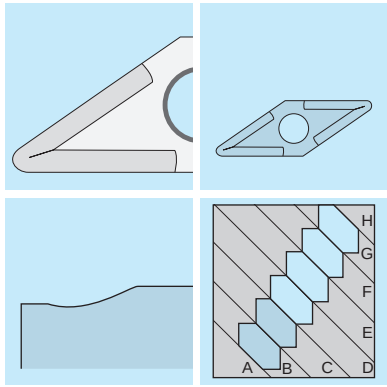
CODE	l	s	r	d ₁	Note: Toolholders (TH)		
					æ	TH	Page
VNM. 16 04 04	16,5	4,76	0,4	9,52	4,4	<u>External operations</u> 93° MVJN	94
VNM. 16 04 08	↓	↓	0,8	↓	↓		
VNM. 16 04 12			1,2				
VNM. 22 04 08	22,0	↓	0,8	12,7	5,16	<u>Internal operations</u> 93° -MVJN	122
VNM. 22 04 12	22,0		1,2	12,7	5,16		



CODE ...G									
VNM									
VNM									
VNM									
VNM									



CODE ...G-04									
VNM									
VNM									

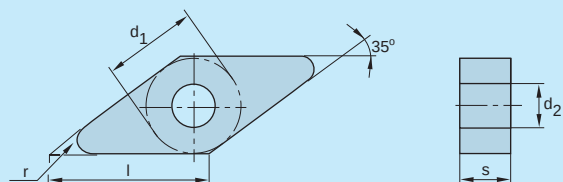




ISO indexable inserts for clamping system M

VNMM-85

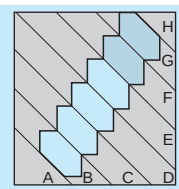
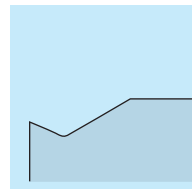
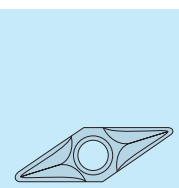
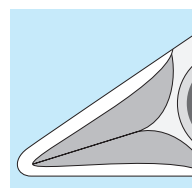
CODE	l	s	r	d ₁	Note: Toolholders (TH)
VNM. 16 04 04	16,5	4,76	0,4	9,52	æ TH Page
VNM. 16 04 08			0,8		
VNM. 16 04 12	↓	↓	1,2	↓	
VNM. 22 04 08	22,0		0,8	12,7	Internal operations
VNM. 22 04 12	22,0	↓	1,2	12,7	93° -MVUN 122



CODE ...M-85

VNMM
VNMM
VNMM
VNMM

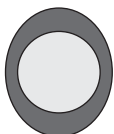
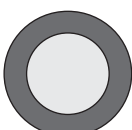
VNMM							•		
VNMM							•		
VNMM							•		
VNMM							•		







Recommended insert sizes for WNM.

Cutting condition		Cutting range							
		A	B	C	D	E	F	G	H
Heavily interrupted cut					0804	0804	0804		
Lightly interrupted cut					0804	0804	0804		
Varying cutting depth, Casting or forging skin					0804 0604	0804 0604	0804		
Smooth cut, pre-turned surface					0804 0604	0804 0604	0804		

Insert thickness (s)
cutting edge length (l)

Recommended corner radius for WNM.

Cutting range		A	B	C	D	E	F	G	H
Surface finish	Cutting cond.								
	Stability								
	Rt 100				12 12 08 12	12 12 08 12	16 16 12 16		
	Rt 25				08 12 04 08	12 12 08 12	12 16 08 12		
	Rt 6,3				08 12 04 08				

Corner radius (r)

ISO indexable inserts for clamping system P and M

WNMG, WNMG-33, WNMG-43



CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)		Page	WNMG
						æ	TH		
WNMG060404	6,52	3,97	0,4	9,52	3,8	External operations		94	
WNMG060408	6,52	3,97	0,8	9,52	3,8	95° MMLN			
WNMG080404	8,7	4,76	0,4	12,7	5,16	Internal operations		122	
WNMG080408	↓	↓	0,8	↓	↓	95° -MMLN			
WNMG080412			1,2						
WNMG080416			1,6						

CODE...G					13E	QW2	Q4	QV5	KMF		
WNMG 080412					•	•	•				
WNMG 080416					•	•	•				

CODE...G-33					13E	QW2	Q4	QV5	KMF		
WNMG 060408-33											
WNMG 080404-33											
WNMG 080408-33											
WNMG 080412-33											

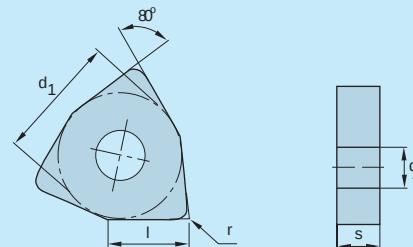
CODE...G-43					13E	QW2	Q4	QV5	KMF		
WNMG 060408-43					•	•					
WNMG 080404-43					•	•					
WNMG 080408-43					•	•					
WNMG 080412-43					•	•					



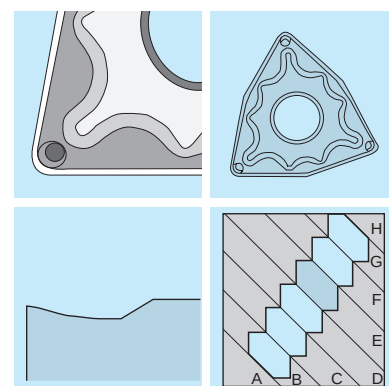
ISO indexable inserts for clamping system P and M

WNMG-55, WNMG-66

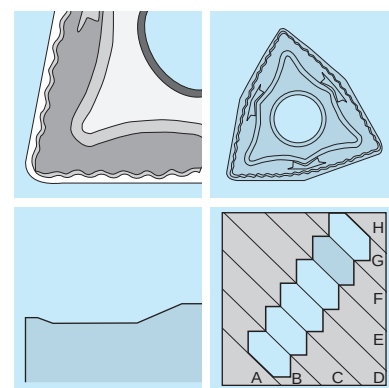
CODE	l	s	r	d ₁		Note: Toolholders (TH)			Page	WNMG
						æ	TH			
WNMG060404	6,52	3,97	0,4	9,52	3,8	<u>External operations</u>			94	
WNMG060408	6,52	3,97	0,8	9,52	3,8	95°	MMLN			
WNMG080404	8,7	4,76	0,4	12,7	5,16	<u>Internal operations</u>			122	
WNMG080408	↓	↓	0,8	↓	↓	Boring bars				
WNMG080412	↓	↓	1,2	↓	↓	95° -MMLN				
WNMG080416	↓	↓	1,6	↓	↓					

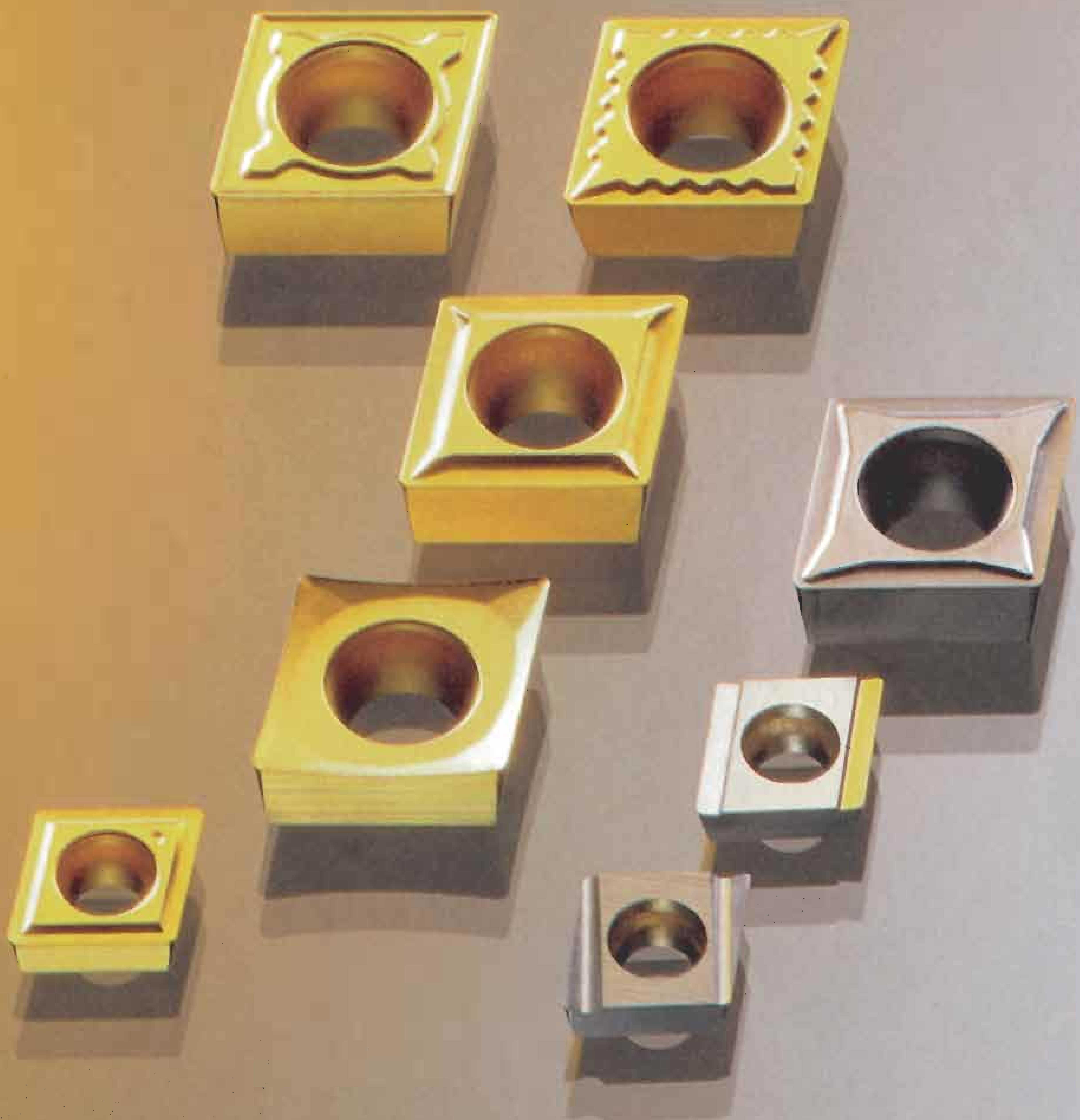


CODE...G-55					13E	CW2	CL4	CM5	KMF
WNMG 060408-55					•				
WNMG 080408-55					•	•	•	•	
WNMG 080412-55					•	•	•	•	



CODE...G-66					13E	CW2	CL4	CM5	KMF
WNMG 080408-66					•	•	•	•	
WNMG 080412-66					•	•	•	•	
WNMG 080416-66					•	•	•	•	





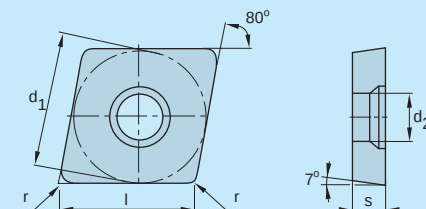


ISO indexable inserts for clamping system S

CC.T, CC.T-11

CC.T

CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)	æ	TH	Page
CC.T060202	6,4	2,38	0,2	6,35	2,8	External operations			
CC.T060204			0,4			90°	SCAP	98	
CC.T060208			0,8			75°	SCBP	98	
CC.T09T302	9,7	3,97	0,2	9,52	4,4	45°	SCDP	99	
CC.T09T304			0,4			60°	SCEP	99	
CC.T09T308			0,8			90°	SCFP	100	
						75°	SCKP	100	
CC.T120404	12,9	4,76	0,4	12,7	5,5	95°	SCLC	101	
CC.T120408			0,8			95°	SCLP	101	
CC.T120412			1,2			45°	SCSP	102	
						60°	SCTP	102	
						Internal operations			
						95°	-SCLC	127	
						90°	-SCFP	126	
						75°	-SCKP	126	
						95°	6,95	189	
						Cartridges			
						95°	SCLC	212	



CC.T

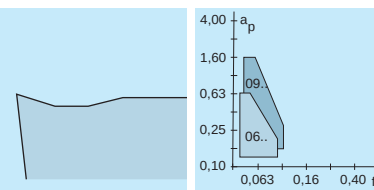
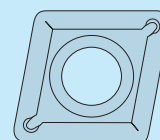
CCGT

060204

CCGT 09T302

CCGT 09T304

Recommended Application:
Finishing and fine finishing of:
Steel, cast steel and non-ferrous metals



CC.T-11

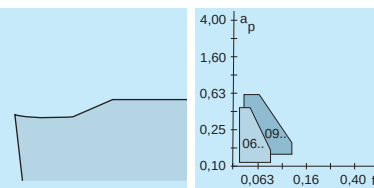
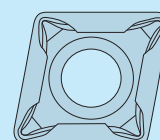
CCGT

060204-11

CCGT 09T302-11

CCGT 09T304-11

Recommended Application:
Finishing and fine finishing of:
Steel, cast steel and non-ferrous metals



CC.T

CCMT

060208

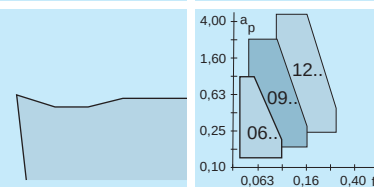
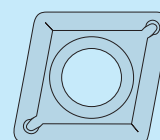
CCMT 09T304

CCMT 09T308

CCMT 120408

CCMT 120412

Recommended Application:
Finishing and fine finishing of:
Steel, cast steel and non-ferrous metals



ISO indexable inserts for clamping system S

CC.T-11



CC.T

CODE	L	S	T	T ₂	Max. Speeds (T/min)		
					W	T1	Tmax
CC.T 060202	6.3	2.54	0.2	6.35	3.4	100	100
CC.T 060204	↓	↓	0.4	↓	↓	↓	↓
CC.T 060208	↓	↓	0.8	↓	↓	↓	↓
CC.T 09T202	9.7	3.81	0.2	9.53	4.4	100	100
CC.T 09T204	↓	↓	0.4	↓	↓	↓	↓
CC.T 09T208	↓	↓	0.8	↓	↓	↓	↓
CC.T 120404	12.5	4.75	0.4	12.7	4.4	100	100
CC.T 120408	↓	↓	0.8	↓	↓	↓	↓
CC.T 120412	↓	↓	1.2	↓	↓	↓	↓

Internal speeds (T/min)

W	T1	Tmax
90°	SCAP	98
75°	SCBP	98
45°	SCDP	97
60°	SCFP	99
90°	SCFP	100
75°	SCHP	100
90°	SCLD	101
55°	SCLP	101
45°	SCMP	102
90°	SCTP	100

Internal speeds (T/min)

W	T1	Tmax
90°	SCLD	127
90°	SCFP	128
75°	SCFP	128
50°	SCLP	130
90°	SCLD	212



CODE...T-11

	HTX	HTZ	ISE	CME	CMS	KMX	P10	PVA
CCMT 060204-11	•	•						
CCMT 09T204-11	•	•						
CCMT 09T308-11	•	•						
CCMT 120404-11	•	•						

Recommended Application:
Facing and fine finishing of
steel, cast steel
and non-ferrous
metals.

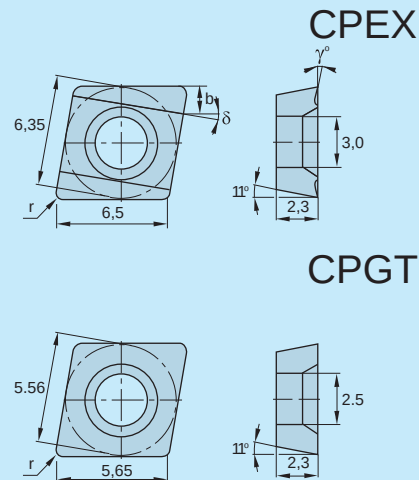




ISO indexable inserts for clamping system S

CPEX, CPGT

CODE	r	b	γ	Note: Toolholders (TH)		
				α	TH	Page
CPEX 060201 L1	0,1	1,0	10°	External operations 90° SCAP 98 75° SCBP 98 45° SCDP 99 60° SCEP 99 95° SCFP 100 75° SCKP 100 95° SCLP 101 45° SCSP 102 60° SCTP 102		
CPEX 060201 R1	0,1	1,0	10°			
CPEX 060203 L1	0,3	1,0	10°			
CPEX 060203 R1	0,3	1,0	10°			
CPEX 060203 L2	0,3	1,6	10°			
CPEX 060203 L3	↓	↓	20°			
CPEX 060203 R2	↓	↓	10°			
CPEX 060203 R3	↓	↓	20°			
CPGT 050204	0,4	—	—			
CPGT 050208	0,8	—	—			
				Internal operations 95° -SCLP 127 90° -SCFP 126 75° -SCKP 126 95° 6,95.. 189		
				Cartridges 95° -SCLC 212		



CODE..L1/..R1

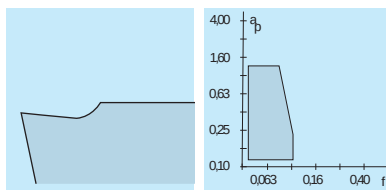
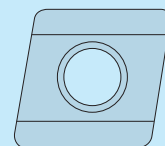
CPEX 060201 L1
CPEX 060201 R1
CPEX 060203 L1
CPEX 060203 R1

KM1

P10

GX

Recommended Application:
Fine finishing of:
Steel, cast steel
and non-ferrous metals



..L2/..R2

CODE..L3/..R3

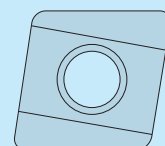
CPEX 060203 L2
CPEX 060203 L3
CPEX 060203 R2
CPEX 060203 R3

KM1

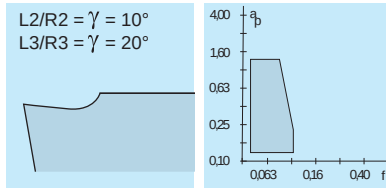
P10

GX

Recommended Application:
Fine finishing of:
Steel, cast steel,
non-ferrous metals
and Aluminium



L2/R2 = $\gamma = 10^\circ$
L3/R3 = $\gamma = 20^\circ$



CODE...T

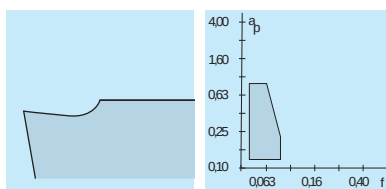
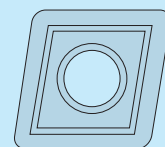
CPGT 050204
CPGT 050208

KM1

P10

GX

Recommended Application:
Fine finishing of:
Steel, cast steel,
and non-ferrous metals



ISO indexable inserts for clamping system S

DCMT, DCMT-11

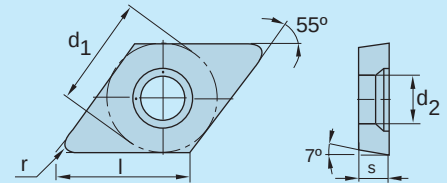


CODE	l	s	r	d ₁		Note: Toolholders (TH)		
				æ	TH	Page		
DCMT 070202	7,75	2,38	0,2	6,35	2,8	<u>External operations</u>	93° SDJC	103
DCMT 070204	↓	↓	0,4	↓				
DCMT 070208			0,8					
DCMT 11T304	11,6	3,97	0,4	9,52	4,4	<u>Internal operations</u>	93° -SDUC	128
DCMT 11T308	11,6	3,97	0,8	9,52	4,4			

DCMT

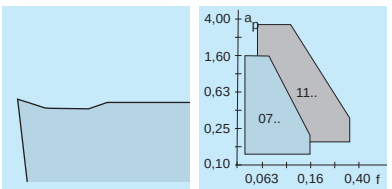
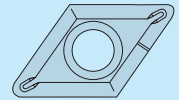
The diagram illustrates the geometry of a DCMT toolholder. The main view shows a toolholder with a central circular hole. Key dimensions are labeled: 'l' for the length of the toolholder body, 's' for the width of the toolholder body, 'r' for the radius of the toolholder body, 'd₁' for the diameter of the toolholder body, and 'd₂' for the diameter of the central hole. The angle between the toolholder body and the tool holder is 55°. A secondary view shows the toolholder body with dimensions 's' and 'd₂', and an angle of 7°.

DCMT



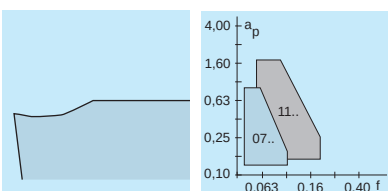
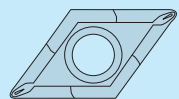
CODE...T			13E	CM2	CM5	KM1	P10	PVA	
DCMT 070202				•					
DCMT 070204			•	•	•	•		•	
DCMT 070208				•					
DCMT 11T304			•	•	•	•		•	
DCMT 11T308			•	•	•	•		•	

Recommended Application :
Finishing of :
Steel, cast steel
and
non-ferrous metals



CODE...T-11			13E	CM2	CM5	KM1	P10	PVA	
DCMT 070202-11									
DCMT 070204-11									
DCMT 11T304-11									

Recommended Application :
Fine finishing of :
Steel, cast steel
and
non-ferrous metals



ISO indexable inserts for clamping system S and FIX-PERFECT

RC.., RCGT-01 RCGT-22

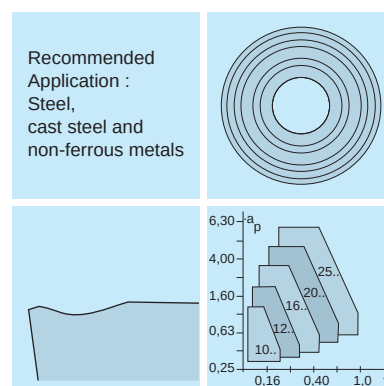


CODE	d	s	d ₂	Note: Toolholders (TH)	
				TH	Page
RC..0602M0	6,0	2,38	2,8	External operations	
RC..0803M0	8,0	3,18	3,3		
RC..1003M0	10,0	3,18	3,7		
RC..1204M0	12,0	4,76	4,2		
RC..1606M0	16,0	6,35	5,2		
RC..2006M0	20,0	6,35	6,5	SRGC...H06	104
RC..2507M0	25,0	7,94	7,94	SRCC...H06	103
RC..3209M0*	32,0	9,52	10,2	PRGC	89
RC..4009M0*	40	9,52	10,2	PRCC	89

*upon request

RC..

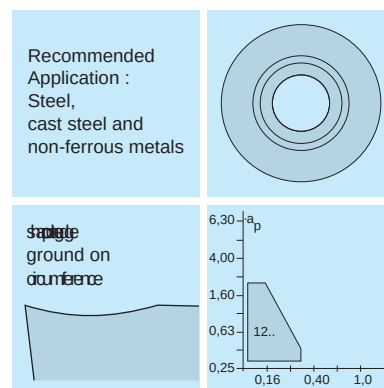
CODE..GT/..GX	13E	CM2	CM3	CM5	KM1	KMF	P25	PVA	GX
RCGT01	●		●		●				●
RCGT02			●		●		●		●
RCGT03			●		●		●		●
RCGT04	●	●	●		●				
RCGT05	●	●	●	●					
RCGT06	●		●	●					
RCGT07			●	●	●				
RCGT08			●						●
RCGT09				●					
RCGT10				●					



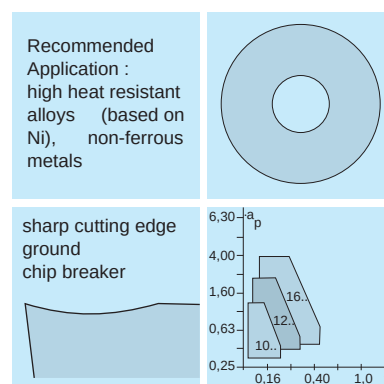
Damping stud with FIX-PERFECT clamping

...XClamping only with FIX-PERFECT clamping stud

CODE..GT-01	13E	CM2	CM3	CM5	KM1	KMF	P25	PVA	GX
RCGT1204M001					●			●	



CODE..GT-22	13E	CM2	CM3	CM5	KM1	KMF	P25	PVA	GX
RCGT22						●			
RCGT23						●			
RCGT24						●			
RCGT25						●			



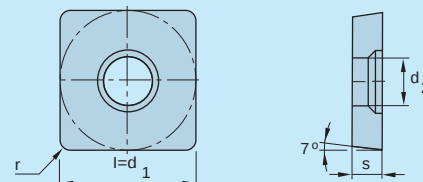


ISO indexable inserts for clamping system S

SCMT, SCMT-11

CODE	$l=d_1$	s	r	d_2	Note: Toolholders (TH)	æ	TH	Page
SCMT09T304	9,52	3,97	0,4	4,4	External operations			
SCMT09T308	9,52	3,97	0,8	4,4	75° SSBC			104
SCMT120404	12,7	4,76	0,4	5,5	75° SSKC			105
SCMT120408	↓	↓	0,8	↓	45° SSSC			105
SCMT120412	↓	↓	1,2	↓	Internal operations			
SCMT150512	15,87	5,56	1,2	5,5	75° -SSKC			128
					Cartridges			
					75° SSKC			212
					75° SSRC			213
					45° SSSC			213

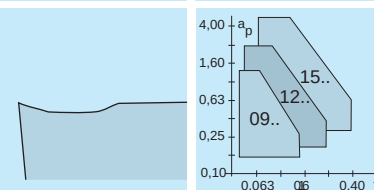
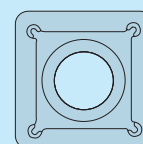
SCMT



CODE ...T

CODE	...	T	æ	TH	æ	TH	æ	TH	æ	TH
SCMT09T308			•	•	•	•	•	•	•	•
SCMT120404			•	•	•	•	•	•	•	•
SCMT120408			•	•	•	•	•	•	•	•
SCMT120412			•	•	•	•	•	•	•	•
SCMT150512			•	•	•	•	•	•	•	•

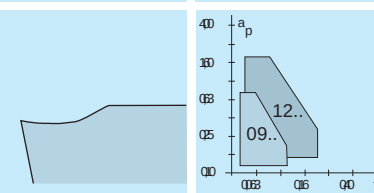
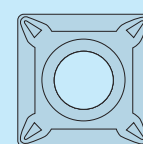
Recommended Application :
Roughing/finishing of :
cast steel,
non-ferrous metals



CODE ...T-11

CODE	...	T-11	æ	TH	æ	TH	æ	TH	æ	TH
SCMT09T308-11										
SCMT120404-11										

Recommended Application :
Finishing of :
Steel,
cast steel,
non-ferrous metals



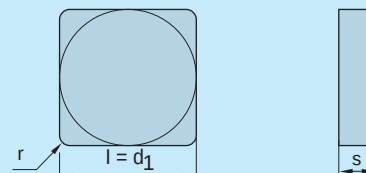
ISO indexable inserts for clamping system C

SNGN, SNUN



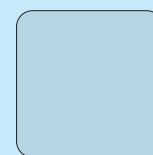
CODE	$l=d_1$	s	r	Note: Toolholders (TH)			Page
				æ	TH		
S.N.N 090308	9,52	3,18	0,8	External operations			
S.N.N 120404	12,7	4,76	0,4	45°	CSDN		113
S.N.N 120408	↓	↓	0,8	75°	CSKN		114
S.N.N 120412			1,2	75°	CSRN		115
S.N.N 120416			1,6	45°	CSSN		116
S.N.N 150412	15,87		1,2	Internal operations			
S.N.N 190400	19,05		—	75°	-CSKN		131
S.N.N 190408	↓	↓	0,8				
S.N.N 190412			1,2				
S.N.N 190416			1,6				
S.N.N 250616	25,4	6,35	1,6				
S.N.N 250620	↓	↓	2,0				
S.N.N 250624			2,4				

SN.N



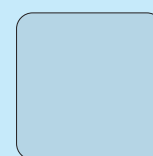
CODE...GN	13E	CM3	CM5	KM1	KMF	P20	P25	GX	
SNGN 090308		●							
SNGN 120404		●		●			●		
SNGN 120408	●	●	●	●		●	●	●	
SNGN 120412			●	●					
SNGN 190400		●	●				●		

Recommended Application :
Universal application for medium machining. Also for combination tools and int. operations



CODE...UN	13E	CM3	CM5	KM1	KMF	P20	P25	GX	
SNUN 090308	●								
SNUN 120408		●	●	●			●	●	
SNUN 120412			●						
SNUN 120416			●						
SNUN 150412		●							
SNUN 190408									
SNUN 190412									
SNUN 190416									
SNUN 250616			●						
SNUN 250620			●						
SNUN 250624			●						

Recommended Application :
Universal application for medium machining. Also for combination tools and int. operations



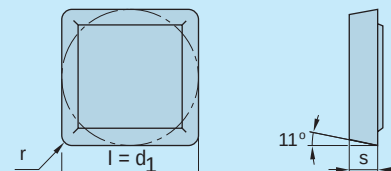


ISO indexable inserts for clamping system C

SPGR, SPMR

CODE	$l=d_1$	s	r	Note: Toolholders (TH)	æ	TH	Page
SP.R 090302	9,52	3,18	0,2	External operations			
SP.R 090304			0,4	75° CSBP			113
SP.R 090308			0,8	45° CSDP			114
SP.R 120302	12,7		0,2	75° CSKP			115
SP.R 120304			0,4	45° CSSP			117
SP.R 120308			0,8	Internal operations			
SP.R 120312			1,2	75° -CSKP			132
				Cartridges			
				75° CSKP			203
				75° CSRP			203
				45° CSSP			204

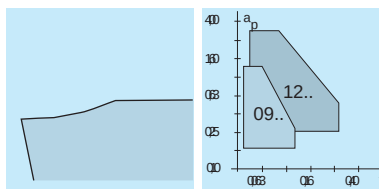
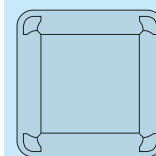
SP.R



CODE...GR

	13E	CM2	CM3	CM5	GX				
SPGR 090302		●							
SPGR 090304			●						
SPGR 090308									
SPGR 120302		●							
SPGR 120304			●						
SPGR 120308			●						
SPGR 120312									

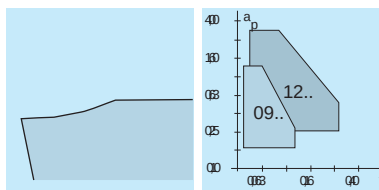
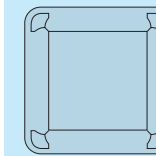
For light cuts and low feeds, good chip control and excellent surface finish on steel and cast steel.



CODE...MR

	13E	CM2	CM3	CM5	GX				
SPMR 090302			●						
SPMR 090304		●	●						
SPMR 090308									
SPMR 120302			●						
SPMR 120304			●						
SPMR 120308	●	●	●	●	●				
SPMR 120312									

For light cuts and low feeds, good chip control and excellent surface finish on steel and cast steel.



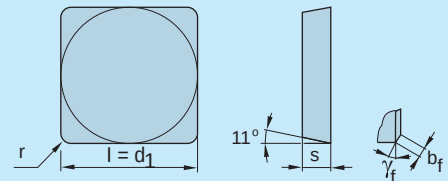
ISO indexable inserts for clamping system C

SPGN, SPUN



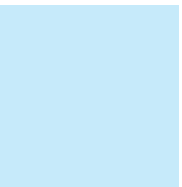
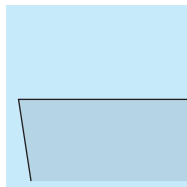
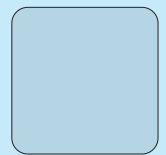
CODE	$l=d_1$	s	r	$b_f \times \gamma_f^\circ$	Note: Toolholders (TH)		
					α	TH	Page
SP.N 090304	9,52	3,18	0,4	0,05x20°	External operations		
SP.N 090308	9,52		0,8	0,05x20°			
SP.N 120300	12,7		0,0	0,05x20°			
SP.N 120304			0,4				
SP.N 120308			0,8				
SP.N 120312			1,2		Internal operations		
SP.N 120408		4,76	0,8				
SP.N 150412	15,87		1,2	—	Cartridges		
SP.N 190400	19,05		0,0	—			
SP.N 190408			0,8	—			
SP.N 190412			1,2	—			
SP.N 190416			1,6	—			
SP.N 250616S	25,4	6,35	1,6	—			
SP.N 250620S	25,4	6,35	2,0	—			

SP.N



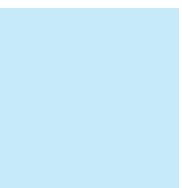
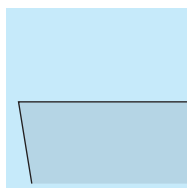
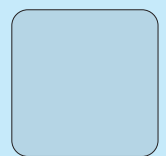
CODE...GN	13E	CM3	CM5	KM1	KMF	P20	P25	GX	
SPGN 090304	●								
SPGN 090308		●			●				
SPGN 120300	●			●					
SPGN 120308		●			●				
SPGN 120312		●			●				
SPGN 120408		●			●				
SPGN 190400							●		
SPGN 190408							●		
SPGN 190412							●		

Recommended Application :
Universal application for medium machining. Also for combination tools and int. operations



CODE...UN	13E	CM3	CM5	KM1	KMF	P20	P25	GX	
SPUN 090304	●				●				
SPUN 090308		●							
SPUN 120304		●		●			●		
SPUN 120308	●	●	●	●		●	●	●	
SPUN 120312			●	●					
SPUN 150412		●					●		
SPUN 190408			●				●		
SPUN 190412		●	●				●		
SPUN 250616S			●						
SPUN 250620S			●						

Recommended Application :
Universal application for medium machining. Also for combination tools and int. operations



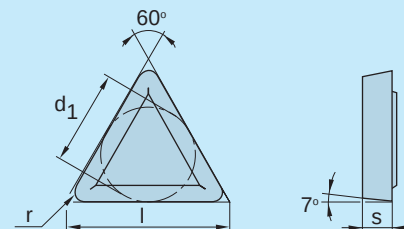


ISO indexable inserts for clamping system C

TCGR

TCGR

CODE	l	s	r	b ₁	Note: Toolholders (TH)	æ	TH	Page
TCGR 060102	6,9	1,59	0,2	3,96	Internal operations			
TCGR 060104	↓	↓	0,4	↓	90°		-CTFC	132
TCGR 060108	↓	↓	0,8	↓	75°		-CTKC	133

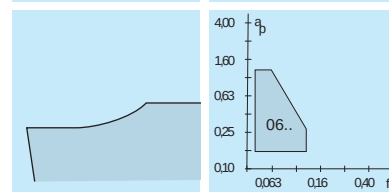
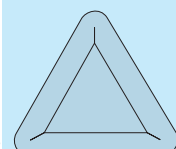


CODE...N

TCGR 060102
TCGR 060104
TCGR 060108

13E	CM3	KM1	P10						
•	•	•	•						
•	•	•	•						
•	•	•	•						

Recommended Application :
Fine finishing of :
Steel,
cast steel and
non-ferrous metals



ISO indexable inserts for clamping system S
TC.T,TC.T-11

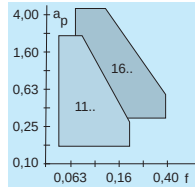
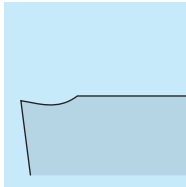
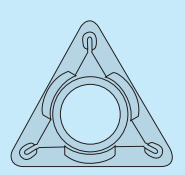


CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)		Page
						æ	TH	
TC.T06T102- TC.T06T104- TC.T06T108	6,9 ↓	1,98 ↓	0,2 0,4 0,8	3,97 ↓	2,2 ↓	External operations		
						75°	STBC	106
						45°	STDC	106
						90°	STGC	107
TC.T090202 TC.T090204 TC.T090208	9,63 ↓	2,38 ↓	0,2 0,4 0,8	5,56 ↓	↓	90°	STFC	107
						45°	STSC	108
						Internal operations		
TC.T110202 TC.T110204 TC.T110208	11,0 ↓	2,38 ↓	0,2 0,4 0,8	6,35 ↓	2,8 ↓	90°	-STFC	129
						Cartridges		
TC.T16T304 TC.T16T308 TC.T16T312	16,5 ↓	3,97 ↓	0,4 0,8 1,2	9,52 ↓	4,4 ↓	90°	STFC	214
						90°	STGC	214
						45°	STSC	215
						60°	STTC	215

TC.T

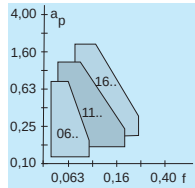
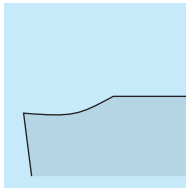
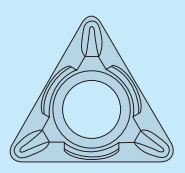
CODE...T			13E	CM2	CM3	CM5	KM1	PVA	
TCGT06T102			●				●		
TCGT06T104			●				●		
TCGT06T108			●	●			●		
TCMT090202			●	●			●		
TCMT090204			●	●			●		
TCMT090208				●			●	●	
TCMT110202			●	●			●		
TCMT110204			●	●		●	●	●	
TCMT110208			●	●		●			
TCMT16T304			●	●			●		
TCMT16T308			●	●		●	●	●	
TCMT16T312				●					

Recommended Application :
Finishing and fine finishing of Steel, cast steel, non-ferrous metals



CODE...T-11			13E	CM2	CM3	CM5	KM1	PVA	
TCGT06T102-11 TCGT06T104-11									
TCMT110204-11 TCMT16T304-11									

Recommended Application :
Finishing and fine finishing of Steel, cast steel, non-ferrous metals

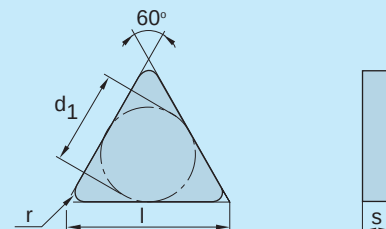




ISO indexable inserts for clamping system C

TNGN, TNUN

CODE	l	s	r	d ₁	Note: Toolholders (TH)	æ	TH	Page
TN.N 110304	11,0	3,18	0,4	6,35	External operations	93°	CTJN	120
TN.N 110308	11,0	↓	0,8	6,35				
TN.N 160304	16,5	↓	0,4	9,52				
TN.N 160308	↓	↓	0,8	↓				
TN.N 160312	↓	4,76	1,2	↓				
TN.N 160404	↓	↓	0,4	↓				
TN.N 160408	↓	↓	0,8	↓				
TN.N 160412	↓	↓	1,2	↓				
TN.N 160416	↓	↓	1,6	↓				
TN.N 220408	22,0	↓	0,8	12,7				
TN.N 220412	↓	↓	1,2	↓				
TN.N 220416	↓	↓	1,6	↓				

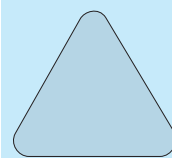


TN.N

CODE...GN

	13E	CM3	CM5	KM1	KMF	P20	P25	GX
TNGN 160404		●		●				
TNGN 160408		●		●				
TNGN 160412	●	●			●		●	
TNGN 220408		●	●	●			●	●
TNGN 220412		●		●			●	●

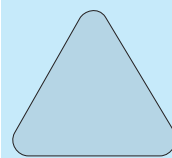
Recommended Application :
For medium machining, also suitable for combination tools.



CODE...UN

	13E	CM3	CM5	KM1	KMF	P20	P25	GX
TNUN 110304	●							
TNUN 110308	●							
TNUN 160304		●						
TNUN 160308		●						
TNUN 160312		●						
TNUN 160404		●		●				
TNUN 160408				●				
TNUN 160412				●				
TNUN 160416			●					
TNUN 220408		●						
TNUN 220412		●						
TNUN 220416			●					

Recommended Application :
For medium machining, also suitable for combination tools.



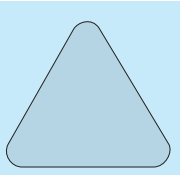
ISO indexable inserts for clamping system C
TPGN, TPUN



CODE	l	s	r	d ₁	Note: Toolholders (TH)			TP.N	
					æ	TH	Page		
TP.N 110204	11,0	2,38	0,4	6,35	External operations				
TP.N 110208	↓	2,38	0,8	↓	75°	CTBP	118		
TP.N 110300		3,18	0,0		45°	CTDP	118		
TP.N 110304		↓	0,4		90°	CTFP	119		
TP.N 110308			0,8		90°	CTGP	119		
TP.N 160300	16,5	↓	0,0	9,52	60°	CTTP	120		
TP.N 160304	↓		0,4	↓	Internal operations				
TP.N 160308			0,8		90°	-CTFP	132		
TP.N 160312			1,2		75°	-CTKP	133		
TP.N 220400	22,0	4,76	0,0	12,7	Cartridges				
TP.N 220404	↓	↓	0,4	↓	90°	CTFP	204		
TP.N 220408			0,8		90°	CTGP	205		
TP.N 220412			1,2		45°	CTSP	205		
TP.N 220416			1,6		60°	CTTP	206		
TP.N 270616	27,5	6,35	1,6	15,87	60°	CTWP	206		

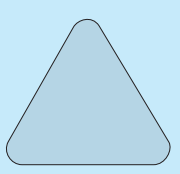
CODE...GN	13E	CM3	CM5	KM1	KMF	P10	P25	GX	
TPGN 110204		●		●					
TPGN 110208		●		●					
TPGN 110304		●		●					
TPGN 110308		●		●					
TPGN 160300		●		●					
TPGN 160304	●	●	●	●		●	●	●	
TPGN 160308	●	●	●	●		●	●	●	
TPGN 160312			●	●			●		
TPGN 220400		●					●		
TPGN 220408		●	●	●			●	●	
TPGN 220412		●	●	●			●	●	
TPGN 220416		●	●						
TPGN 270616			●					●	

Recommended Application :
For medium machining, also suitable for combination tools.



CODE...UN	13E	CM3	CM5	KM1	KMF	P10	P25	GX	
TPUN 110304	●	●	●	●			●		
TPUN 110308	●	●	●	●			●		
TPUN 160304	●	●	●	●		●	●	●	
TPUN 160308	●	●	●	●		●	●	●	
TPUN 160312			●	●			●		
TPUN 220404		●		●			●	●	
TPUN 220408		●	●	●			●	●	
TPUN 220412		●	●	●			●	●	
TPUN 220416			●					●	
TPUN 270616			●					●	

Recommended Application :
For medium machining, also suitable for combination tools.

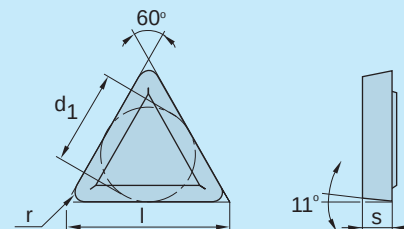




ISO indexable inserts for clamping system C

TPGR, TPMR

CODE	l	s	r	d ₁	Note: Toolholders (TH)	æ	TH	Page
TP.R 090202	9,6	2,38	0,2	5,55	External operations			
TP.R 090204	↓	↓	0,4	↓	75°	CTBP	118	
TP.R 090208	↓	↓	0,8	↓	45°	CTDP	118	
TP.R 110302	11,0	3,18	0,2	6,35	90°	CTFP	119	
TP.R 110304	↓	↓	0,4	↓	90°	CTGP	119	
TP.R 110308	↓	↓	0,8	↓	60°	CTTP	120	
TP.R 160302	16,5	3,18	0,2	9,52	Internal operations			
TP.R 160304	↓	↓	0,4	↓	90°	-CTFP	132	
TP.R 160308	↓	↓	0,8	↓	75°	-CTKP	133	
TP.R 160312	↓	↓	1,2	↓	Cartridges			
TP.R 220404	22,0	4,76	0,4	12,7	90°	CTFP	204	
TP.R 220408	↓	↓	0,8	↓	90°	CTGP	205	
TP.R 220412	↓	↓	1,2	↓	45°	CTSP	205	
TP.N 220416	↓	↓	1,6	↓	60°	CTTP	206	
					60°	CTWP	206	

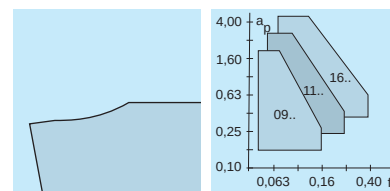
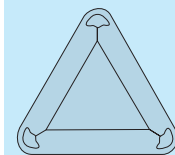


TP.R

CODE...R

	13E	CM2	CM3	KM1	P10	GX			
TPGR 090202		●	●						
TPGR 090204			●						
TPGR 090208			●						
TPGR 110302			●						
TPGR 110304			●						
TPGR 110308			●						
TPGR 160302			●	●					
TPGR 160304			●						
TPGR 160308			●						
TPGR 160312			●						

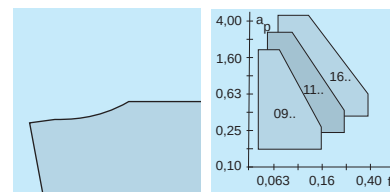
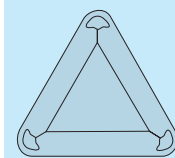
Recommended Application :
Finishing of steel,
cast steel, non-ferrous metals,
for excellent surfaces



CODE...R

	13E	CM2	CM3	KM1	P10	GX			
TPMR 090202			●						
TPMR 090204			●						
TPMR 090208			●						
TPMR 110302			●						
TPMR 110304	●	●	●	●	●				
TPMR 110308	●		●						
TPMR 160302			●						
TPMR 160304	●	●	●	●	●				
TPMR 160308	●	●	●	●	●				
TPMR 160312			●						
TPMR 220404			●						
TPMR 220408			●						
TPMR 220412			●						
TPMR 220416			●						

Recommended Application :
Finishing of steel,
cast steel, non-ferrous metals,
for excellent surfaces

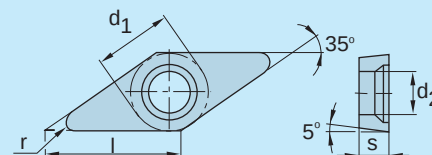


ISO indexable inserts for clamping system S

VBMT, VBMT-11, VBMT-22

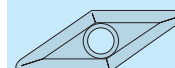


CODE	l	s	r	d ₁	d ₂	Note: Toolholders (TH)		Page	VBMT
						⌀	TH		
VBMT 110302	11,0	3,18	0,2	6,35	2,9	<u>External operations</u>			
VBMT 110304	↓	↓	0,4	↓	↓	107,5°	SVHB	108	
VBMT 110308	↓	↓	0,8	↓	↓	93°	SVJB	109	
VBMT 160404	16,6	4,76	0,4	9,52	4,4	72,5°	SVVB	109	
VBMT 160408	↓	↓	0,8	↓	↓	<u>Internal operations</u>			
VBMT 160412	↓	↓	1,2	↓	↓	107,5°	SVQB	129	

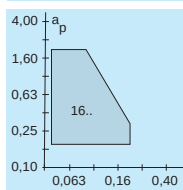
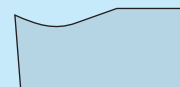


CODE...T			13E	CM2	CM5	KMF			
VBMT 160404			●	●	●				
VBMT 160408			●	●	●				
VBMT 160412			●	●	●				

Recommended Application :
Finishing/copy turning of :
Steel,
cast steel



ground on circumference

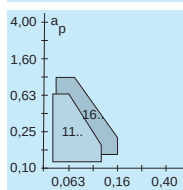


CODE...T-11			13E	CM2	CM5	KMF			
VBMT 110302-11									
VBMT 110304-11									
VBMT 160404-11									
VBMT 160408-11									

Recommended Application :
Finishing/copy turning of :
Steel,
cast steel,
non ferrous metals

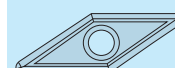


ground on circumference

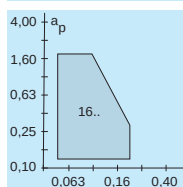


CODE...T-22			13E	CM2	CM5	KMF			
VBMT 110302-22						●			
VBMT 110304-22						●			
VBMT 110308-22						●			
VBMT 160404-22						●			
VBMT 160408-22						●			
VBMT 160412-22						●			

Recommended Application :
Finishing/copy turning of :
Steel,
cast steel,
non ferrous metals



ground on circumference





Toolholders P-clamping system

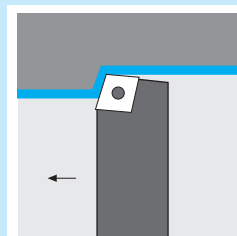
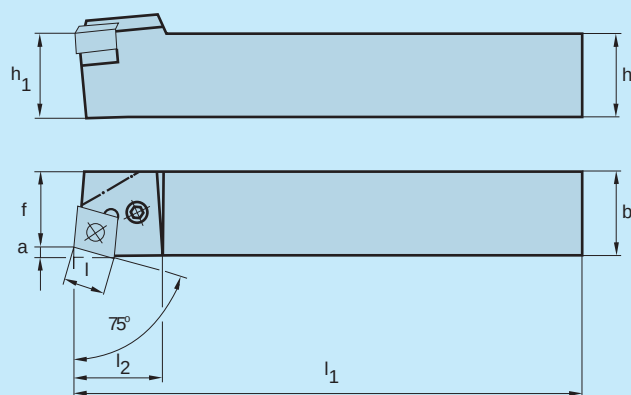


Toolholders P-clamping system			C					D			S				T					
			90	21	61	91	52	11	51	90	21	51	91	52	11	61	22	72	33	
75 °	↓		PCBN	0202 5252 5223	5252 5223 2323	2323 0404	0404 0505													79
90 °	↓		PCFN			5223 2323 0404														79
90 °	↓		PCGN			5223 2323 0404														80
75 °	←		PCKN	0202 5252 5223	5252 5223	2323 0404														80
95 °	↙		PCLN	6161 0202 5252	6161 0202 5252 5223	5252 5223 2323	5252 5223 2323 0404 0505													81
45 °	↖		PCSN	0202 5252 5223		2323														81
98 °	↗		PDJN				6161 0202 5252	0202 5252 5223 2323 5204 2305												82
68 °	↗		PDNN				6161 0202 5252	0202 5252 5223 5204 2305												82
75 °	↓		PSBN					6161 0202	0202 5252 5223	5252 5223 2323	2323 0404	0404 0505								83
45 °	↕		PSDN					0101 2121 6161	0202 5252 5223		5223 2323	0404								83
75 °	←		PSKN					6161 0202	0202 5252 5223	5252 5223 2323	2323 0404	0505								84
75 °	↓		PSRN					2121												84
45 °	↙		PSSN					6161 0202	0202 5252 5223	5252 5223 2323	2323 0404	0404								85
90 °	←		PTFN											0101 2121	6161 0202 5252 5223	5252 5223 2323	2323 0404	0505		85
90 °	↓		PTGN											0101 2121	6161 0202 5252 5223	5252 5223 2323	2323 0404	0505		86
98 °	↓		PTJN												0202 5252 5223	5252 5223 5204				86
68 °	↓		PTNN												5204	5204				87
60 °	↓		PTTN											0101 2121	6161 0202	5252 5223				87



Toolholders P - clamping system

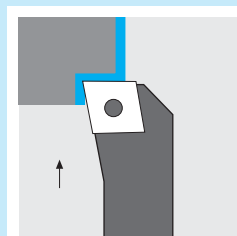
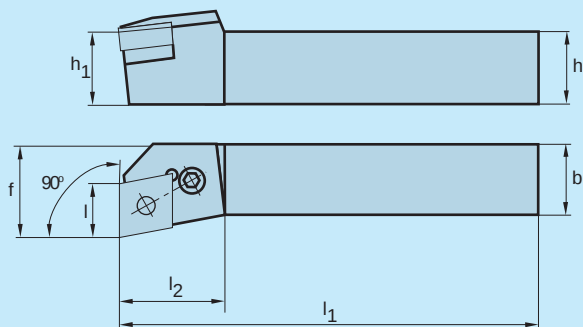
PCBN 75°



Inserts –
page 20 – 26

CODE	h= h ₁	b	l ₁	l ₂	f	a						
RIGHT/LEFT							INSERT	SPARE PARTS				
PCBN R/L 2020 K 12	20	20	125	26	17	3,1	12,9 CNM. 1204..	512-112	513-023	511-023	514-023	515-018
PCBN R/L 2525 M 12	25	25	150	26	22	↓	↓	↓	↓	↓	↓	↓
PCBN R/L 3225 P 12	32	↓	170	28	↓	↓	↓	↓	↓	↓	↓	↓
PCBN R/L 2525 M 16	25	↓	150	26	↓	3,8	16,1 CNM. 1606..	512-117	513-025	511-025	514-025	515-022
PCBN R/L 3225 P 16	32	↓	170	28	↓	↓	↓	↓	↓	↓	↓	↓
PCBN R/L 3232 P 16	↓	32	↓	38	27	↓	↓	↓	↓	↓	↓	↓
PCBN R/L 3232 P 19	↓	32	↓	40	27	4,6	19,3 CNM. 1906..	512-123	513-033	511-033	514-033	↓
PCBN R/L 4040 S 19	40	40	250	38	35	4,6	19,3 CNM. 1906..	512-123	513-033	511-033	514-033	↓
PCBN R/L 4040 S 25	40	40	250	47	35	6,25	25,8 CNM. 2509..		513-038	511-038	514-038	515-028
PCBN R/L 5050 T 25	50	50	300	47	43	6,25	25,8 CNM. 2509..		513-038	511-038	514-038	515-028

PCFN 90°



Inserts –
page 20 – 26

CODE	h= h ₁	b	l ₁	l ₂	f						
RIGHT/LEFT						INSERT	SPARE PARTS				
PCFN R/L 3225 P 19	32	25	170	38	32	19,3 CNM. 1906..	512-123	513-033	511-033	514-033	515-022
PCFN R/L 3232 P 19	32	32	170	36	40	↓	↓	↓	↓	↓	↓
PCFN R/L 4040 S 19	40	40	250	36	50	↓	↓	↓	↓	↓	↓

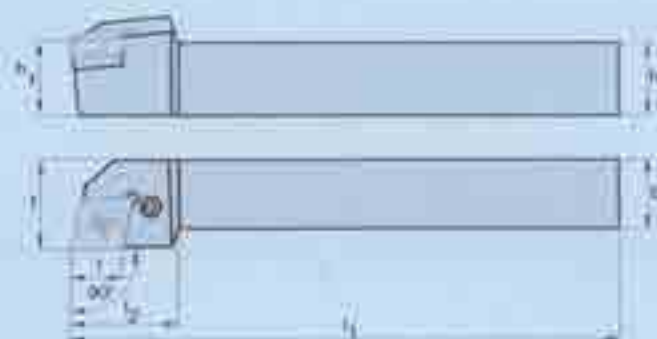




PCGN 90°



Inserts -
page 50 - 55

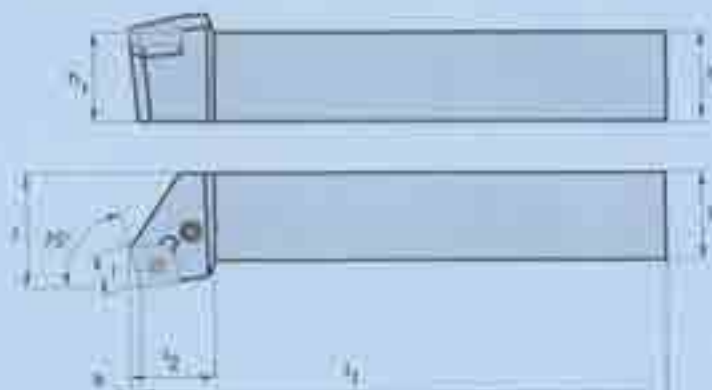


						    						
CODE	R1 R2	H	L1	L2	L	Shift	Pin	Toggle lever	Clamping screw	Punch		
RIGHT/LEFT						INSERT						
PCGN R/L 3225 P 19	32	25	170	38	32	10.3	CNM 1906	S12-123	S13-033	S11-033	S14-033	S15-022
PCGN R/L 3232 P 18	32	38	170	40	40							
PCGN R/L 4040 S 18	40	40	200		50							

PCKN 75°



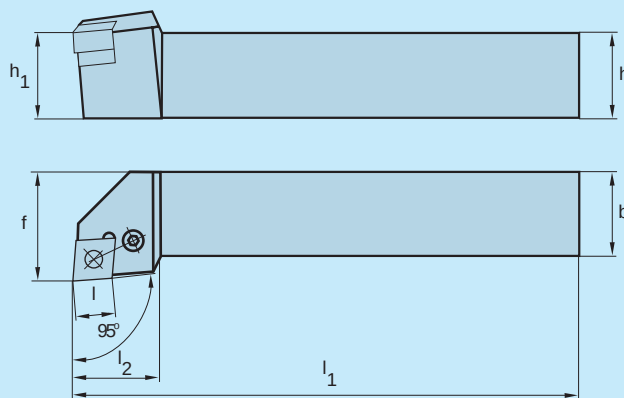
Inserts -
page 50 - 55



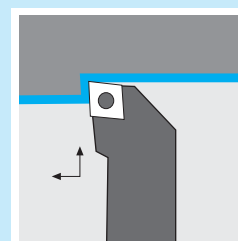
													
CODE	R1 R2	H	L1	L2	L	H		Pin	Toggle lever	Clamping screw	Punch		
RIGHT/LEFT							INSERT		SPARE PARTS				
PCKN R/L 2020 K 12	20	20	105	23	25	3.1	12.8	CNM 1204	S12-112	S13-023	S11-023	S14-023	S15-018
PCKN R/L 2525 M 12	25	25	150	23	32		↓	↓	↓	↓	↓	↓	↓
PCKN R/L 3225 H 12	32		170	28									
PCKN R/L 2525 M 16	25		150	30			18.1	CNM 1606	S12-117	S13-025	S11-025	S14-025	S15-022
PCKN R/L 3225 H 16	32	↓	170	30	↓	↓	18.1	CNM 1606	S12-117	S13-025	S11-025	S14-025	
PCKN R/L 3232 V 19	32	32	170	32.8	40	4.8	10.3	CNM 1906	S12-123	S13-033	S11-033	S14-033	
PCKN R/L 4040 S 19	40	40	250	36	50	4.8	10.3	CNM 1906	S12-123	S13-033	S11-033	S14-033	↓



Toolholders P - clamping system

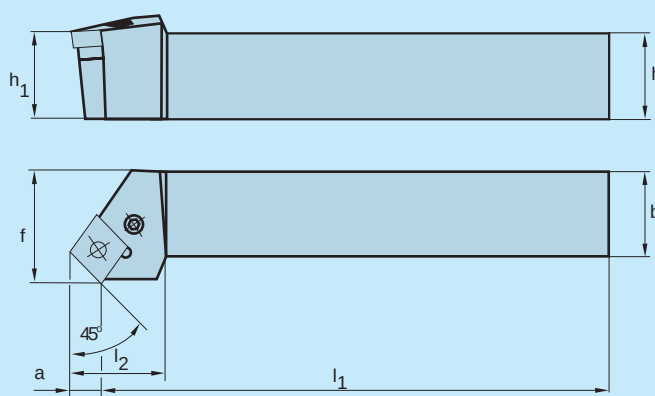


PCLN 95°

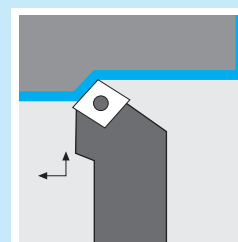


Inserts –
page 20 – 26

CODE	h= h ₁	b	l ₁	l ₂	f						
RIGHT/LEFT						INSERT	SPARE PARTS				
PCLN R/L 1616 H 09	16	16	100	25	20	9,52 CNM. 0903..	—	513-019	511-018	514-018	515-018
PCLN R/L 2020 K 09	20	20	125	27	25	9,52	—	—	—	—	—
PCLN R/L 2525 M 09	25	25	150	27	32	9,52	—	—	—	—	—
PCLN R/L 1616 H 12	16	16	100	26	20	12,9 CNM. 1204..	512-112	513-023	511-023	514-023	—
PCLN R/L 2020 K 12	20	20	125	—	25	—	—	—	—	—	—
PCLN R/L 2525 M 12	25	25	150	—	32	—	—	—	—	—	—
PCLN R/L 3225 P 12	32	—	170	—	—	—	—	—	—	—	—
PCLN R/L 2525 M 16	25	—	150	28	—	16,1 CNM. 1606..	512-117	513-025	511-025	514-025	515-022
PCLN R/L 3225 P 16	32	—	170	38	—	—	—	—	—	—	—
PCLN R/L 3232 P 16	32	32	170	36	40	—	—	—	—	—	—
PCLN R/L 2525 M 19	25	25	150	36	32	19,3 CNM. 1906..	512-123	513-033	511-033	514-033	—
PCLN R/L 3225 P 19	32	25	170	38	32	—	—	—	—	—	—
PCLN R/L 3232 P 19	32	32	170	36	40	—	—	—	—	—	—
PCLN R/L 4040 S 19	40	40	250	36	50	—	—	—	—	—	—
PCLN R/L 4040 S 25	40	40	250	47	50	25,8 CNM. 2509..	—	513-038	511-038	514-038	515-028
PCLN R/L 5050 T 25	50	50	300	47	43	25,8 CNM. 2509..	—	513-038	511-038	514-038	515-028



PCSN 45°

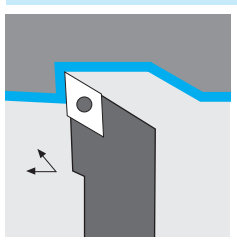


Inserts –
page 20 – 26

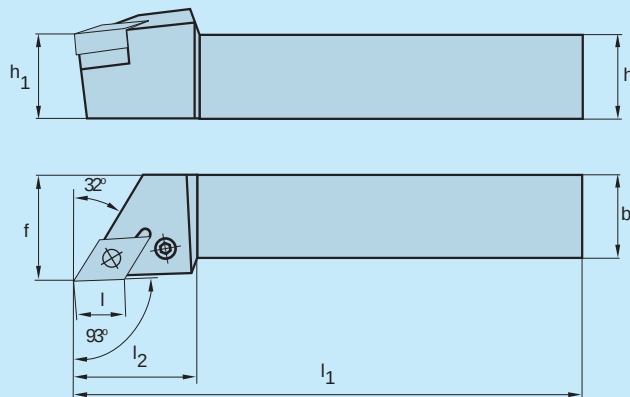
CODE	h= h ₁	b	l ₁	l ₂	f	a						
RIGHT/LEFT							INSERT	SPARE PARTS				
PCSN R/L 2020 K 12	20	20	125	28	25	8,3	12,9 CNM. 1204..	512-112	513-023	511-023	514-023	515-018
PCSN R/L 2525 K 12	25	25	150	28	32	—	—	—	—	—	—	—
PCSN R/L 3225 P 12	32	25	170	30	32	—	—	—	—	—	—	—
PCSN R/L 3232 P 16	32	32	170	37,5	40	12,5	19,3 CNM. 1906..	512-123	513-033	511-033	514-033	515-022



PDJN 93°

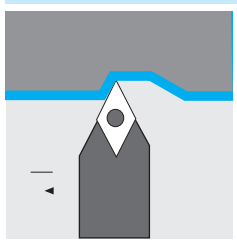


Inserts –
page 28 – 33

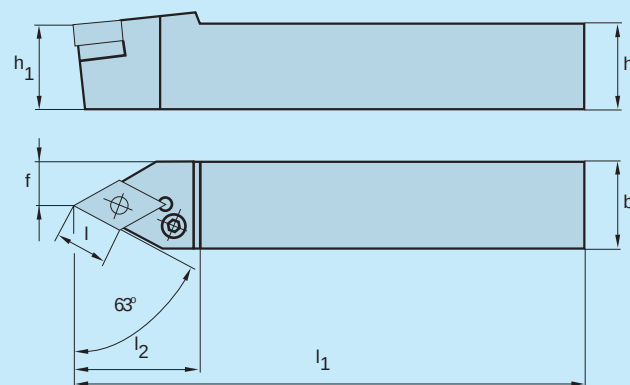


CODE	h= h ₁	b	l ₁	l ₂	f	INSERT	Shim	Pin	Toggle lever	Clamping screw	Punch
RIGHT/LEFT						INSERT	SPARE PARTS				
PDJN R/L 1616 H 11	16	16	100	22	20	11,6 DNM. 110408/12	512-060	513-060	511-060	514-018	515-018
PDJN R/L 2020 K 11	20	20	125	30	25	↓	↓	↓	↓	↓	↓
PDJN R/L 2525 M 11	25	25	150	30	32	↓	↓	↓	↓	↓	↓
PDJN R/L 2020 K 15	20	20	125	36	25	15,5 DNM. 150612/16	512-153	513-023	511-024	514-028	↓
PDJN R/L 2525 M 15	25	25	150	36	32	DNM. 150604/08	512-156	↓	↓	↓	↓
PDJN R/L 3225 P 15	32	25	170	38	40	DNM. 150612/16	512-153	↓	↓	↓	↓
PDJN R/L 3232 P 15	32	32	170	↓	40	DNM. 150604/08	512-156	↓	↓	↓	↓
PDJN R/L 4025 R 15	40	25	200	↓	32	DNM. 150612/16	512-153	↓	↓	↓	↓
PDJN R/L 5032 S 15	50	32	250	↓	40	DNM. 150604/08	512-156	↓	↓	↓	↓

PDNN 63°



Inserts –
page 28 – 33



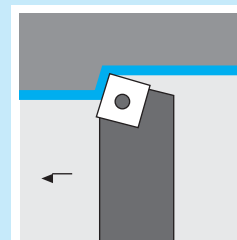
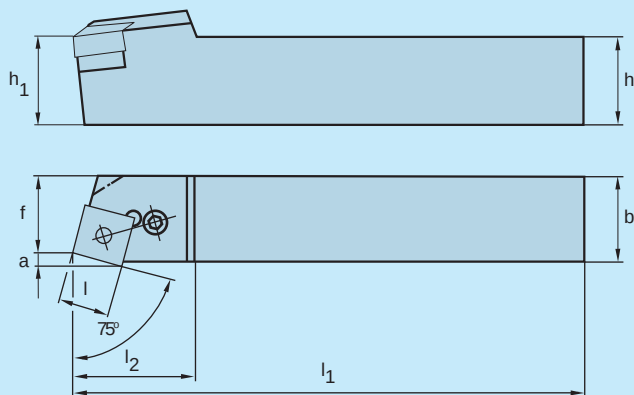
CODE	h= h ₁	b	l ₁	l ₂	f	INSERT	Shim	Pin	Toggle lever	Clamping screw	Punch
RIGHT/LEFT						INSERT	SPARE PARTS				
PDNN R/L 1616 K 11	16	16	125	24	8,0	11,6 DNM. 110408/12	512-060	513-060	511-060	514-018	515-018
PDNN R/L 2020 M 11	20	20	125	24	10	↓	↓	↓	↓	↓	↓
PDNN R/L 2525 M 11	25	25	150	30	12,5	↓	↓	↓	↓	↓	↓
PDNN R/L 2020 K 15	20	20	125	36	10	15,5 DNM. 150612/16	512-153	513-023	511-024	514-028	↓
PDNN R/L 2525 M 15	25	25	150	↓	12,5	DNM. 150604/08	512-156	↓	↓	↓	↓
PDNN R/L 4025 R 15	40	25	150	↓	12,5	DNM. 150612/16	512-153	↓	↓	↓	↓
PDNN R/L 5032 S 15	50	32	250	38	40	DNM. 150604/08	512-156	↓	↓	↓	↓





Toolholders P - clamping system

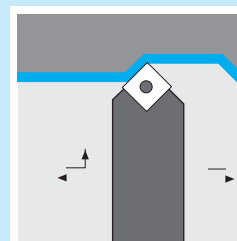
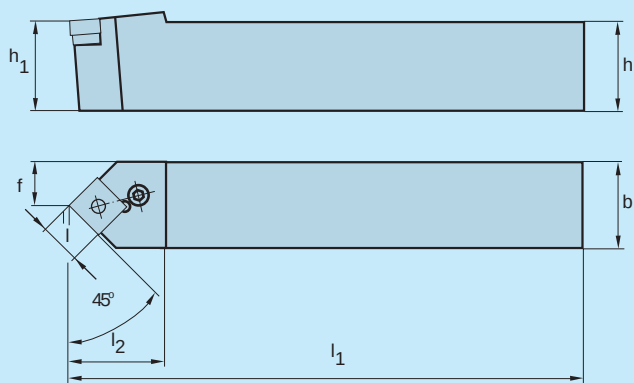
PSBN 75°



Inserts –
page 38 – 44

CODE	h= h ₁	b	l ₁	l ₂	f	a						
RIGHT/LEFT							INSERT	SPARE PARTS				
PSBN R/L 1616 H 09	16	16	100	20	13	2,2	9,5 SNM. 0903..	512-053	513-019	511-018	514-018	515-018
PSBN R/L 2020 K 09	20	20	125	20	17	2,2	9,5 SNM. 0903..	512-053	513-019	511-018	514-018	515-018
PSBN R/L 2020 K 12	20	20	125	26	17	3,1	12,7 SNM. 1204..	512-063	513-023	511-023	514-023	515-018
PSBN R/L 2525 M 12	25	25	150	26	22							
PSBN R/L 3225 P 12	32		170	28								
PSBN R/L 2525 M 15	25		150	36		3,8	15,8 SNM. 1506..	512-025	513-025	511-025	514-025	515-022
PSBN R/L 3225 P 15	32		170	33								
PSBN R/L 3232 P 15	32	32		33	27							
PSBN R/L 3232 P 19	32	32		40	27	4,6	19,0 SNM. 1906..	512-083	513-033	511-033	514-033	515-022
PSBN R/L 4040 S 19	40	40	250	38	35	4,6	19,0 SNM. 1906..	512-083	513-033	511-033	514-033	515-022
PSBN R/L 4040 S 25	40	40	250	47	35	5,9	25,4 SNM. 2507..	512-092	513-038	511-038	514-038	515-028
PSBN R/L 5050 T 25	50	50	300	47	43	5,9	25,4 SNM. 2507..	512-092	513-038	511-038	514-038	515-028

PSDN 45°



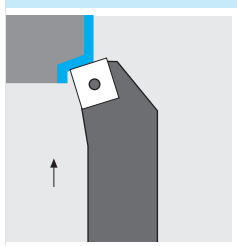
Inserts –
page 38 – 44

CODE	h= h ₁	b	l ₁	l ₂	f						
NEUTRAL						INSERT	SPARE PARTS				
PSDN N 1010 E 09	10	10	70	20	5	9,5 SNM. 0903..	—	—	511-013	514-011	—
PSDN N 1212 F 09	12	12	80		6				511-013	514-011	—
PSDN N 1616 H 09	16	16	100		8				511-018	514-018	515-018
PSDN N 2020 K 12	20	20	125	26	10	12,7 SNM. 1204..	512-063	513-023	511-023	514-023	515-018
PSDN N 2525 M 12	25	25	150	26	12,5						
PSDN N 3225 P 12	32		170	28							
PSDN N 3225 P 19				40		19 SNM. 1906..	512-083	513-033	511-033	514-033	515-022
PSDN N 3232 P 19		32		40	16	19 SNM. 1906..	512-083	513-033	511-033	514-033	515-022
PSDN N 4040 S 25	40	40	250	47	20	25,4 SNM. 2507..	512-092	513-038	511-038	514-038	515-028

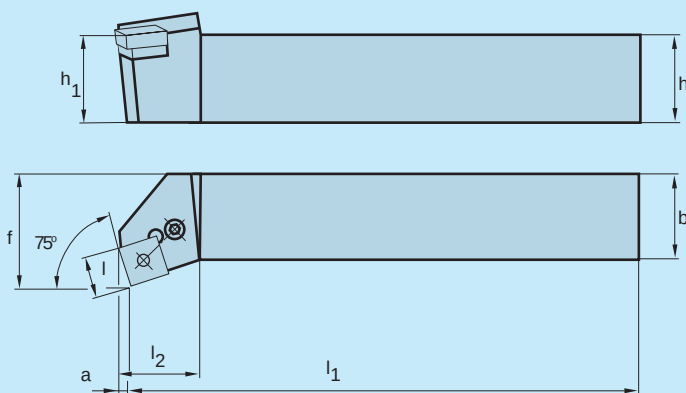




PSKN 75°

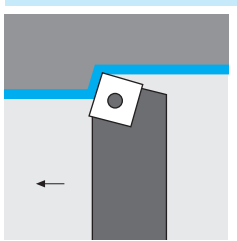


Inserts –
page 38 – 44

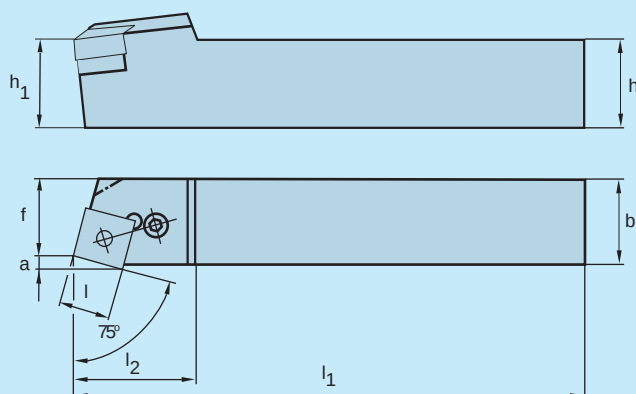


CODE	h= h ₁	b	l ₁	l ₂	f	a						
RIGHT/LEFT							INSERT	SPARE PARTS				
PSKN R/L 1616 H 09	16	16	100	20	20	2,2	9,5 SNM. 0903..	512-053	513-019	511-018	514-018	515-018
PSKN R/L 2020 K 09	20	20	125	22	25	2,2	9,5 SNM. 0903..	512-053	513-019	511-018	514-018	515-018
PSKN R/L 2020 K 12	20	20	125	23	25	3,1	12,7 SNM. 1204..	512-063	513-023	511-023	514-023	515-018
PSKN R/L 2525 M 12	25	25	150	23	32							
PSKN R/L 3225 P 12	32		170	26								
PSKN R/L 2525 M 15	25		150	32		3,8	15,8 SNM. 1506..	512-025	513-025	511-025	514-025	515-022
PSKN R/L 3225 P 15	32		170	32								
PSKN R/L 3232 P 15		32		33	40							
PSKN R/L 3232 P 19		32		37,5	40	4,6	19 SNM. 1906..	512-083	513-033	511-033	514-033	515-022
PSKN R/L 4040 S 19	40	40	250	37,5	50	4,6	19 SNM. 1906..	512-083	513-033	511-033	514-033	515-022
PSKN R/L 5050 T 25	50	50	300	46	60	5,9	25,4 SNM. 2507..	512-092	513-038	511-038	514-038	515-028

PSRN 75°



Inserts –
page 38 – 44



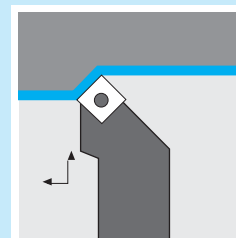
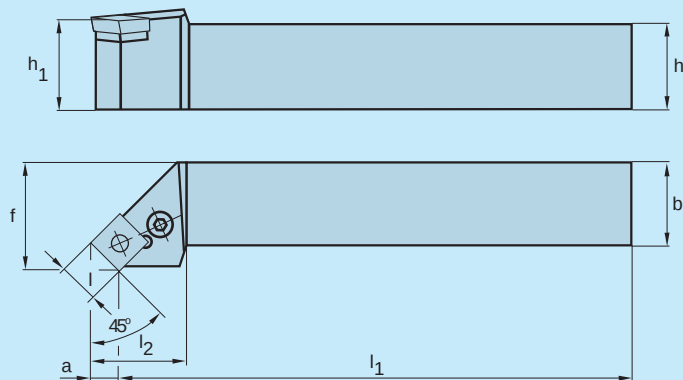
CODE	h= h ₁	b	l ₁	l ₂	f	a						
RIGHT/LEFT							INSERT	SPARE PARTS				
PSRN R/L 1212 F 09	12	12	80	20	13	2,2	9,5 SNM. 0903..	—	—	511-013	514-011	—



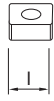


Toolholders P - clamping system

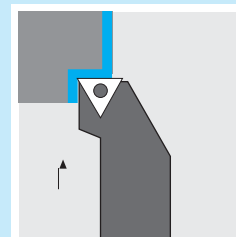
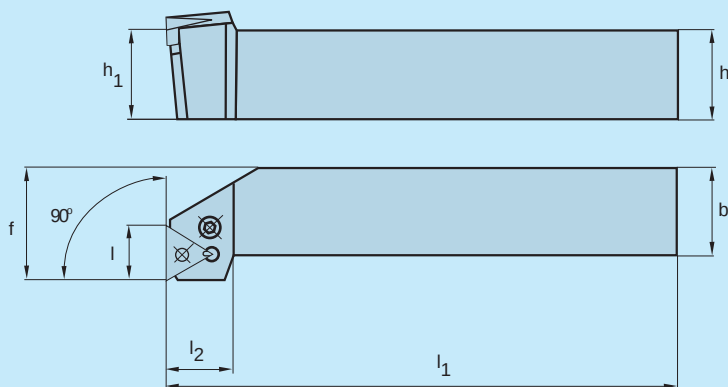
PSSN 45°



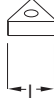
Inserts –
page 38 – 44

CODE	h= h ₁	b	l ₁	l ₂	f	a						
RIGHT/LEFT							INSERT	SPARE PARTS				
PSSN R/L 1616 H 09	16	16	100	23	20	6,1	9,5 SNM. 0903..	512-053	513-019	511-018	514-018	515-018
PSSN R/L 2020 K 09	20	20	125	26	25	6,1	9,5 SNM. 0903..	512-053	513-019	511-018	514-018	↓
PSSN R/L 2020 K 12	20	20	125	28	25	8,3	12,7 SNM. 1204..	512-063	513-023	511-023	514-023	↓
PSSN R/L 2525 M12	25	25	150	28	32	↓	↓	↓	↓	↓	↓	↓
PSSN R/L 3225 P 12	32	↓	170	29	↓	↓	↓	↓	↓	↓	↓	↓
PSSN R/L 2525 M 15	25	↓	150	32	↓	10,2	15,8 SNM. 1506..	512-025	513-025	511-025	514-025	515-022
PSSN R/L 3225 P 15	32	↓	170	↓	↓	↓	↓	↓	↓	↓	↓	↓
PSSN R/L 3232 P 15	↓	32	↓	↓	40	↓	↓	↓	↓	↓	↓	↓
PSSN R/L 3232 P 19	↓	32	↓	37,5	40	12,5	19 SNM. 1906..	512-083	513-033	511-033	514-033	↓
PSSN R/L 4040 S 19	40	40	250	37,5	50	12,5	19 SNM. 1906..	512-083	513-033	511-033	514-033	↓
PSSN R/L 4040 S 25	40	40	250	50	50	16	25,4 SNM. 2507..	512-092	513-038	511-038	514-038	515-028

PTFN 90°



Inserts –
page 46 – 51

CODE	h= h ₁	b	l ₁	l ₂	f						
RIGHT/LEFT						INSERT	SPARE PARTS				
PTFN R/L 1010 E 11	10	10	70	15	15	11 TNM. 1103..	—	—	511-011	514-011	—
PTFN R/L 1212 F 11	12	12	80	15	16	11 TNM. 1103..	—	—	511-011	514-011	—
PTFN R/L 1616 H 16	16	16	100	20	20	16,5 TNM. 1604..	512-013	513-018	511-018	514-018	515-018
PTFN R/L 2020 K 16	20	20	125	↓	25	TNM. 1603..	512-018	513-019	↓	↓	↓
PTFN R/L 2525 M 16	25	25	150	↓	32	TNM. 1604..	512-013	513-018	↓	↓	↓
PTFN R/L 3225 P 16	32	25	170	↓	32	TNM. 1603..	512-018	513-019	↓	↓	↓
PTFN R/L 2525 M 22	25	25	150	26	32	TNM. 1604..	512-013	513-018	↓	↓	↓
PTFN R/L 3225 P 22	32	25	170	↓	32	TNM. 1603..	512-018	513-019	↓	↓	↓
PTFN R/L 3232 P 22	32	32	↓	↓	40	TNM. 1604..	512-013	513-018	↓	↓	↓
PTFN R/L 3232 P 27	32	32	↓	36	40	TNM. 1603..	512-018	513-019	↓	↓	↓
PTFN R/L 4040 S 27	40	40	250	↓	50	TNM. 1604..	512-013	513-018	↓	↓	↓
PTFN R/L 5050 T 33	50	50	300	↓	60	TNM. 1603..	512-018	513-019	↓	↓	↓
						TNM. 220412/16	512-023	513-023	511-023	514-023	↓
						TNM. 220404/08	512-021	↓	↓	↓	↓
						TNM. 220412/16	512-023	↓	↓	↓	↓
						TNM. 220404/08	512-021	↓	↓	↓	↓
						TNM. 220412/16	512-023	↓	↓	↓	↓
						TNM. 220404/08	512-021	↓	↓	↓	↓
						TNM. 2706..	512-031	513-025	511-028	514-028	515-022
						TNM. 2706..	512-031	513-025	511-028	514-028	515-022
						TNM. 330716/24		513-033	511-033	514-033	515-022

Availability see current price list

Ordering example :PSSN R 1616 H09

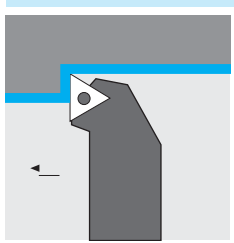


PSSN L 1616 H09

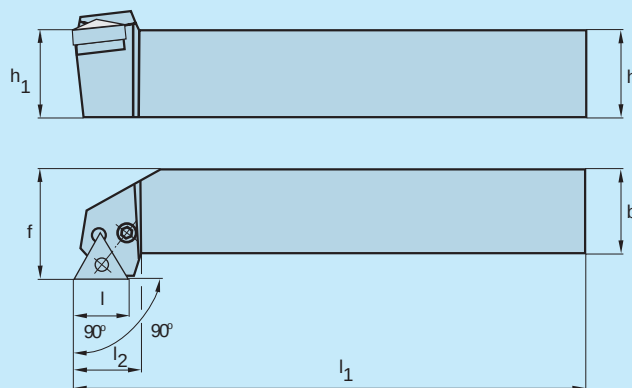




PTGN 90°

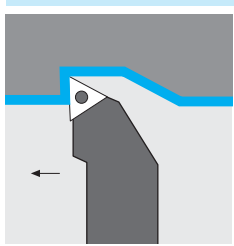


Inserts –
page 46 – 51

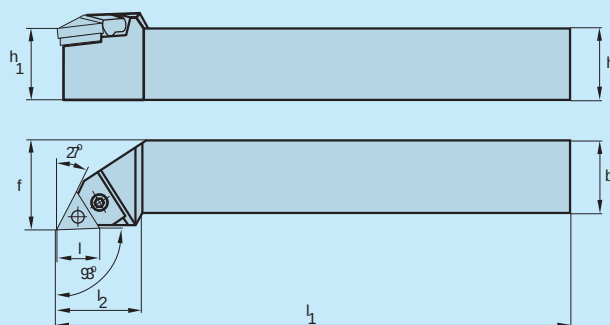


CODE	h= h ₁	b	l ₁	l ₂	f	INSERT	Shim	Pin	Toggle lever	Clamping screw	Punch
RIGHT/LEFT											
PTGN R/L 1010 E 11	10	10	70	15	15	11 TNM. 1103..	—	—	511-011	514-011	—
PTGN R/L 1212 F 11	12	12	80	15	16	11 TNM. 1103..	—	—	511-011	514-011	—
PTGN R/L 1616 H 16	16	16	100	20	20	16,5 TNM. 1604..	512-013	513-018	511-018	514-018	515-018
PTGN R/L 2020 K 16	20	20	125	↓	25	TNM. 1603..	512-018	513-019	↓	514-023	↓
PTGN R/L 2525 M 16	25	25	150	↓	32	TNM. 1604..	512-013	513-018	↓	514-018	↓
PTGN R/L 3225 P 16	32	25	170	↓	32	TNM. 1603..	512-018	513-019	↓	514-023	↓
PTGN R/L 3225 M 22	25	25	150	26	32	TNM. 1604..	512-013	513-018	↓	514-018	↓
PTGN R/L 3225 P 22	32	25	170	↓	32	TNM. 1603..	512-018	513-019	↓	514-023	↓
PTGN R/L 3232 P 22	32	32	↓	↓	40	TNM. 1604..	512-013	513-018	↓	514-018	↓
PTGN R/L 3232 P 27	32	32	↓	36	40	TNM. 1603..	512-018	513-019	↓	514-023	↓
PTGN R/L 4040 S 27	40	40	250	↓	50	TNM. 220412/16	512-023	513-023	511-023	514-025	↓
PTGN R/L 5050 T 33	50	50	300	↓	60	TNM. 220404/08	512-021	↓	↓	↓	↓
						TNM. 220412/16	512-023	↓	↓	↓	↓
						TNM. 220404/08	512-021	↓	↓	↓	↓
						TNM. 220412/16	512-023	↓	↓	↓	↓
						TNM. 220404/08	512-021	↓	↓	↓	↓
						TNM. 270616/24	512-031	513-025	511-028	514-028	515-022
						TNM. 270616/24	512-031	513-025	511-028	514-028	515-022
						TNM. 330716/24	513-033	511-033	514-033	515-028	

PTJN 93°



Inserts –
page 46 – 51



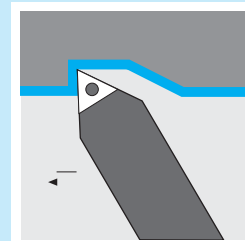
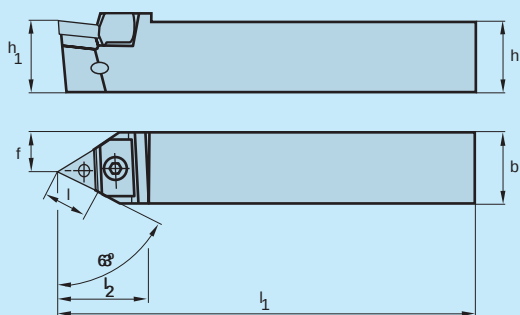
CODE	h= h ₁	b	l ₁	l ₂	f	INSERT	Shim	Clamping wedge- set	Pin	Set Screw
RIGHT/LEFT										
PTJN R/L 2020 K 16 H4	20	20	125	32	25	16,5 TNM. 1604..	512-125	551-127	513-125	192-159
PTJN R/L 2525 M 16 H4	25	25	150	32	32	16,5 TNM. 1604..	512-125	↓	↓	↓
PTJN R/L 3225 P 16 H4	32	↓	170	32	↓	16,5 TNM. 1604..	512-125	↓	↓	↓
PTJN R/L 2525 M 22 H4	25	↓	150	36	↓	22 TNM. 220412/16	512-126	551-128	513-126	↓
PTJN R/L 3225 P 22 H4	32	↓	170	36	↓	TNM. 220404/08	512-128	↓	↓	↓
PTJN R/L 4025 M 22 H4	40	↓	150	36	↓	22 TNM. 220412/16	512-126	↓	↓	↓
						TNM. 220404/08	512-128	↓	↓	↓
						TNM. 220412/16	512-126	↓	↓	↓
						TNM. 220404/08	512-128	↓	↓	↓





Toolholders P - clamping system

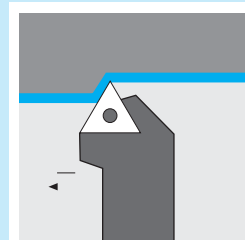
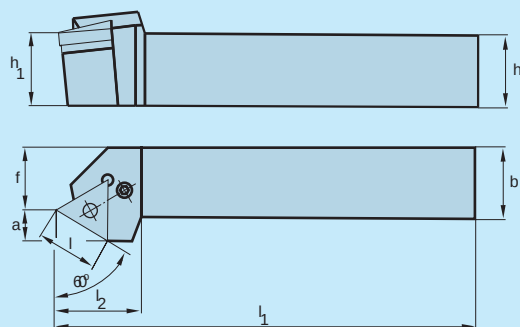
PTNN 63°



Inserts –
page 46 – 51

CODE	h=	b	l ₁	l ₂	f						
	h ₁					Shim	Clamping wedge-set	Pin	Set screw		
RIGHT/LEFT						INSERT	SPARE PARTS				
PTNN R/L 4025 M 16 H4	40	25	150	32	12,5	16,5 TNM. 1604..	512-125	551-127	513-125	197-159	
PTNN R/L 4025 M 22 H4	40	25	150	32	12,5	22 TNM. 220412/16 TNM. 220404/08	512-126 512-128	551-128	513-126	197-159	

PTTN 60°



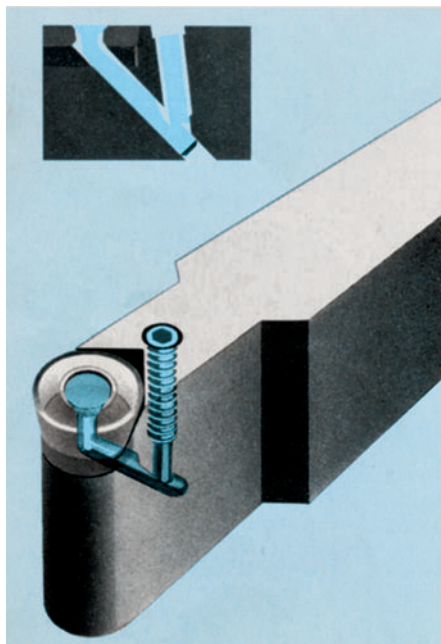
Inserts –
page 46 – 51

														
	CODE	h= h ₁	b	l ₁	l ₂	f	a		Shim	Pin	Punch	Toggle lever	Clamping screw	
	RIGHT/LEFT							INSERT	SPARE PARTS					
	PTTN R/L 1010 E 11	10	10	70	20	4	5	11 TNM. 1103..	—	—	—	511-011	514-011	
	PTTN R/L 1212 F 11	12	12	80	20	6	5	11 TNM. 1103..	—	—	—	511-011	514-011	
	PTTN R/L 1616 H 16	16	16	100	23	5,8	7,2	16,5 TNM. 1604.. TNM. 1603..	512-013 512-018	513-018 513-019	515-018 ↓	511-018	514-018	
	PTTN R/L 2020 K 16	20	20	125	26	9,8	7,2	16,5 TNM. 1604.. TNM. 1603..	512-013 512-018	513-018 513-019		511-018	514-018	
	PTTN R/L 2525 M 22	25	25	150	31	12	10	22 TNM. 220412/16 TNM. 220404/08	512-023 512-021	513-023		511-023	514-023	
	PTTN R/L 3225 P 22	32	25	170	31	12	10	22 TNM. 220412/16 TNM. 220404/08	512-023 512-021	513-023	↓	511-023	514-023	





Apparat			R												R
			R												
			0	1	2	3	4	5	6	7	8	9	10	11	
	PRCC	0	1	2	3	4	5	6	7	8	9	10	11	89	
	PRGC	0	1	2	3	4	5	6	7	8	9	10	11	89	
	PRGN	0	1	2	3	4	5	6	7	8	9	10	11	90	



Advantages :

The indexable inserts are firmly fixed with the FIX- PERFECT clamping stud in the direction of the main cutting force. Therefore, no rising of the insert under cutting load.

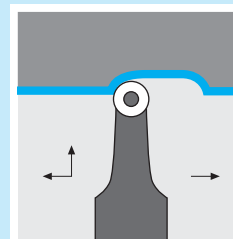
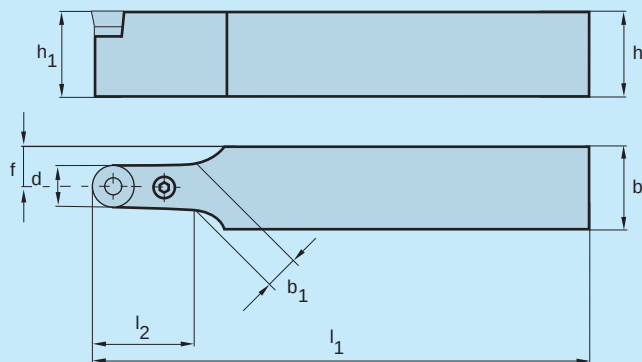
For round indexable inserts wide copy angle.

Free minor cutting edge, no interference from clamping elements, free chip evacuation, few spare parts, turning and changing of inserts within a few seconds. Easy handling.



Toolholders P and stud clamping system for R inserts

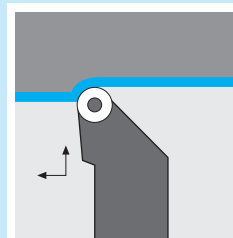
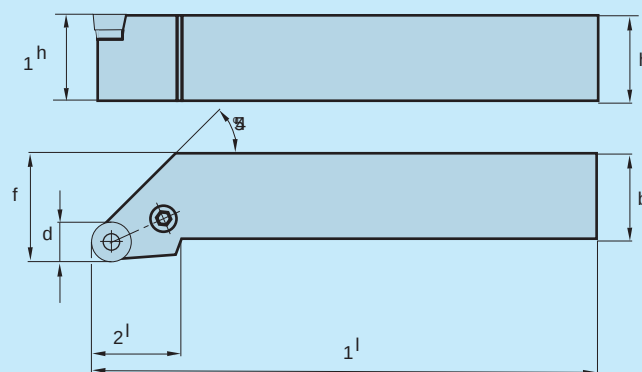
PRCC



stud
Clamp

CODE	h1	b	b1	l1	l2	f	d	Shim	Clamping stud	Clamping screw
NEUTRAL										
100 NC	H1 02	02	27	521	6	0	8 100 NC	169-325	169-325	169-325
102 NC	H1 02	02	27	521	4	0	0 100 NC	169-325	169-325	169-325
102 NC	H1 52	52	27	051	6	5,2	8 100 NC	169-325	169-325	169-325
102 NC	H1 52	52	27	051	4	5,2	0 100 NC	169-325	169-325	169-325
102 NC	H1 52	52	5,11	051	4	5,2	2 100 NC	169-325	169-325	169-325
102 NC	H1 23	52	5,9	071	3	5,2	6 100 NC	169-325	169-325	169-325
102 NC	H1 23	23	5,9	071	3	6	0 200 NC	169-325	169-325	169-325
102 NC	H1 04	04	5,4	052	8	0	2 300 NC	169-325	169-325	169-325
102 NC	H1 06	05	5,8	053	8	2	0 400 NC	169-325	169-325	169-325
102 NC	H1 06	05	5,8	004	001	2	10 00 NC	169-295	169-295	169-295

PRGC

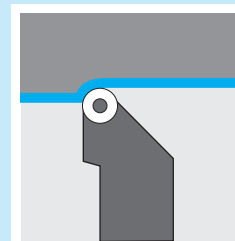


Inserts
66 page

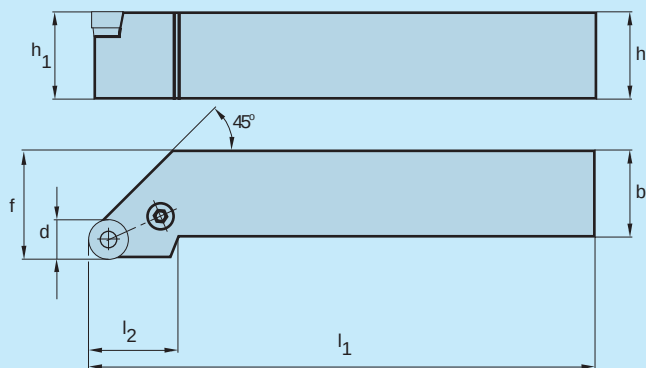
CODE	h1	b	l1	l2	f	d	Shim	Clamping stud	Clamping screw
RIGHT/LEFT									
100 NC	H102	02	521	2	52	8 100 NC	169-325	169-325	169-325
100 NC	H102	02	521	2	52	01 100 NC	169-325	169-325	169-325
102 NC	H152	52	051	2	92	8 100 NC	169-325	169-325	169-325
102 NC	H1				03	01 100 NC	169-325	169-325	169-325
102 NC	H1				23	21 100 NC	169-325	169-325	169-325
102 NC	H123		071	3	23	61 100 NC	169-325	169-325	169-325
102 NC	H123	23	071	4	04	02 100 NC	169-325	169-325	169-325
102 NC	H104	04	052	7	05	52 100 NC	169-325	169-325	169-325
102 NC	H106	05	053	7	06	23 100 NC	169-325	169-325	169-325
102 NC	H106	05	004	001	06	04 100 NC	169-295	169-295	169-295



PRGN

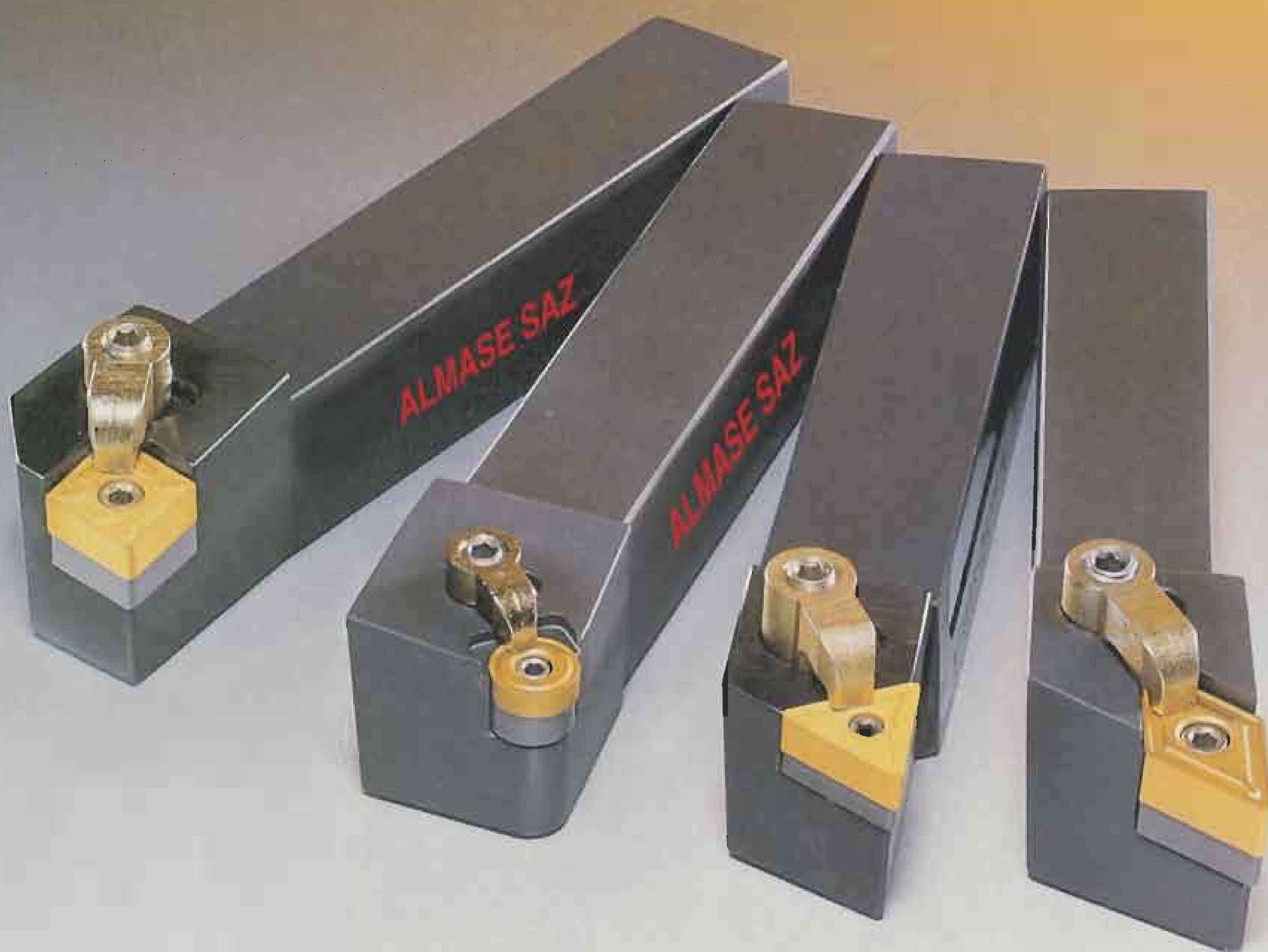


Inserts –
page 36



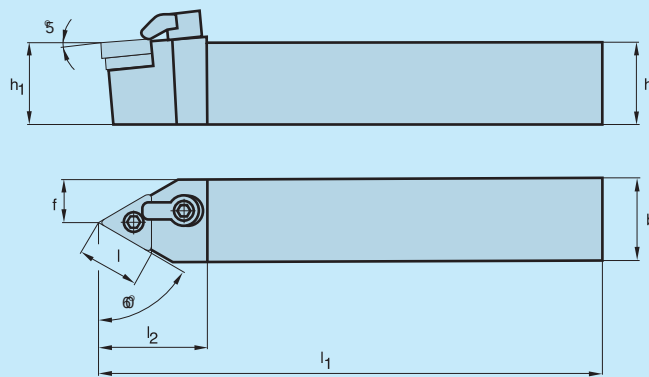
CODE	h= h ₁ b l ₁ l ₂ f						INSERT
RIGHT/LEFT							
PRGN R/L 2020 K09 H1 20	20	125	20,8	25			9 RNM. 0903 M0
PRGN R/L 2525 M12 H1 25	25	150	27,2	32			12 RNM. 1204 M0
PRGN R/L 3225 P15 H1 32	32	170	36	32			15 RNM. 1506 M0
PRGN R/L 3232 P19 H1 32	32	170	40	40			19 RNM. 1906 M0
PRGN R/L 4040 S25 H1 40	40	250	47	50			25 RNM. 2509 M0
PRGN R/L 5050 T32 H1 50	50	300	57	63			31 RNM. 3109 M0



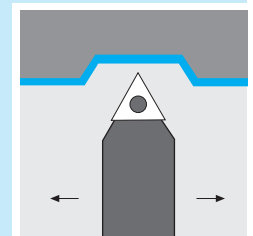




Toolholders M-clamping system		▲ T		▢ W		◀ V		
		Lenght of cutting edge l						
		16	22	06	08	16	22	
Approach angle	Type	Shank Section h x b						Page
60° 	MTEN	2020 2525	2525 3225 3232					92
93° 	MTJN	2020 2525 3225	2525 3225 4025					93
63° 	MTNN	4025	4025					93
93° 	MVJN					2020 2525 3225	3225	94
95° 	MWLN			1616 2020	2020 2525 3225			94



MTEN 60°



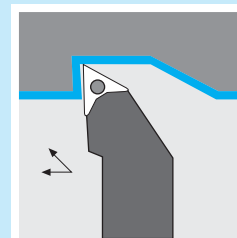
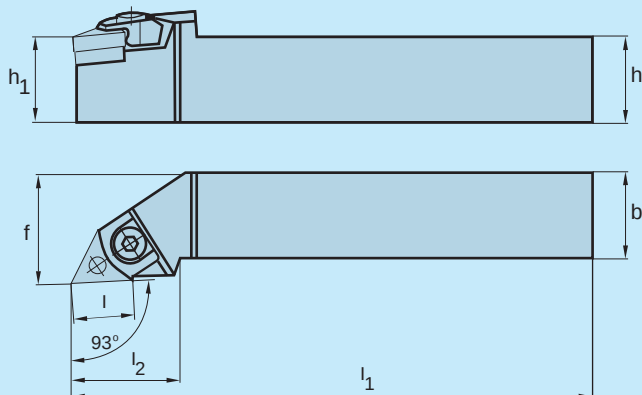
Inserts –
page 46 – 51

CODE	h= h ₁	b	l ₁	l ₂	f	INSERT	Shim	Clamping finger set	Clamping stud	Set screw
NEUTRAL										
MTEN N 2020K 16	20	20	125	32	10,46	16,5 TN..1604..	512-125	551-125	513-125	192-159
MTEN N 2525M 16	25	25	150	32	12,95	16,5 TN..1604..	512-125	551-125	513-125	
MTEN N 2525M 22	25	↓	150	35	↓	22,0 TN..2204..	512-126	551-126	513-126	
MTEN N 3225P 22	32		170	↓						
MTEN N 3232P 22	32	32	170		16,5					

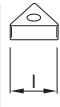


Toolholders M - clamping system

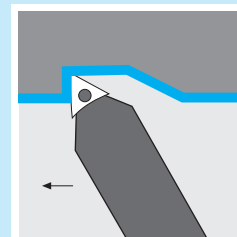
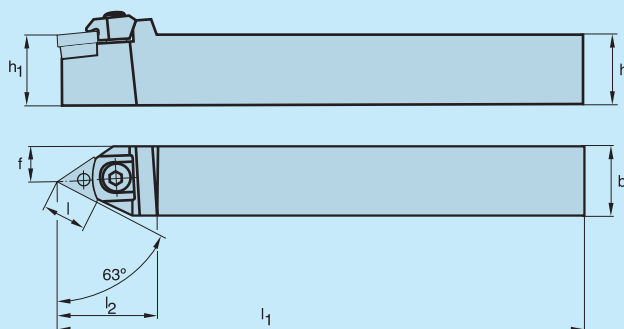
MTJN 93°



Inserts –
page 46 – 51

CODE	h= h ₁	b	l ₁	l ₂	f		 Shim	 Clamping finger set	 Clamping stud	 Set screw
RIGHT/LEFT						INSERT	SPARE PARTS			
MTJN R/L 2020 K 16	20	20	125	32	25	16,5 TNM. 1604..	512-125	551-125	513-125	192-159
MTJN R/L 2525 M 16	25	25	150	↓	32	↓	↓	↓	↓	↓
MTJN R/L 3225 P 16	32	↓	170	↓	↓	↓	↓	↓	↓	↓
MTJN R/L 2525 M 22	25	↓	150	36	↓	22 TNM.220412/16 TNM.220404/08 TNM.220412/16 TNM.220404/08	512-126 512-128 512-126 512-128	551-126	513-126	↓
MTJN R/L 3225 P 22	32	↓	170	↓	↓	↓	512-128 512-126 512-128	↓	↓	↓
MTJN R/L 4025 M 22	40	↓	150	↓	↓	↓ TNM.220412/16 TNM.220404/08	512-126 512-128	↓	↓	↓

MTNN 63°



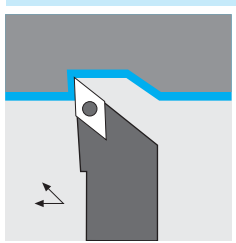
Inserts –
page 46 – 51

CODE	h= h ₁	b	l ₁	l ₂	f		 Shim	 Clamping finger set	 Clamping stud	 Set screw
NEUTRAL						INSERT	SPARE PARTS			
MTNN R/L 4025 M16	40	25	150	32	12,5	16,5 TNM. 1604..	512-125	551-125	513-125	192-159
MTNN R/L 4025 M22	40	25	150	36	12,5	22 TNM. 220412/16 TNM. 220404/08	512-126 512-128	551-126	513-126	↓

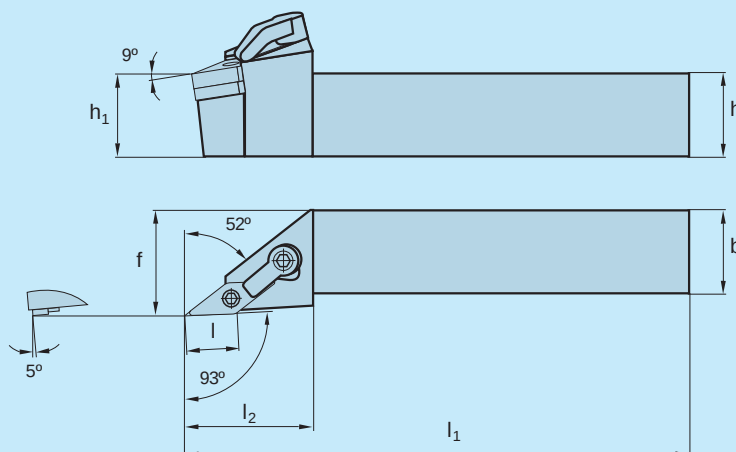




MVJN 93°

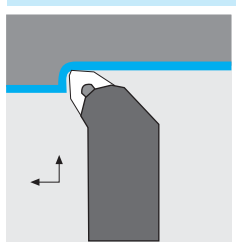


Inserts –
page 53 – 55

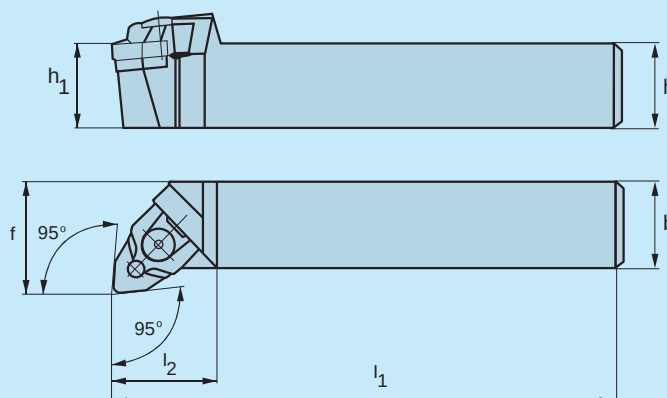


CODE	h= h ₁	b	l ₁	l ₂	f	INSERT	SPARE PARTS
RIGHT/LEFT							
MVJN R/L 2020K 16	20	20	125	37	25	16,6 VN.. 160404 / 08 VN.. 160412	512-205 551-125 513-125 192-159 512-206
MVJN R/L 2525M 16	25	25	150	↓	32	VN.. 160404 / 08 VN.. 160412	512-205 512-206 ↓ ↓
MVJN R/L 3225P 16	32	↓	170	↓	↓	VN.. 160404 / 08 VN.. 160412	512-205 512-206 ↓ ↓
MVJN R/L 3225P 22	32	↓	170	50	↓	22,0 VN.. 2204..	551-126 513-126 ↓

MWLN 95°



Inserts –
page 56 – 59



CODE	h= h ₁	b	l ₁	l ₂	f	INSERT	SPARE PARTS
RIGHT/LEFT							
MWLN R/L 1616 H 06	16	16	100	30	20	6 WNMG 0604..	512-132 551-132 513-134 192-635 170-003
MWLN R/L 2020 K 06	20	20	125	30	25	6 WNMG 0604..	512-132 551-132 513-134 192-635 ↓
MWLN R/L 2020 K 08	20	20	125	30	25	8 WNMG 0804..	512-131 551-125 513-132 192-636 ↓
MWLN R/L 2525 M 08	25	25	150	↓	32	↓	↓ ↓ ↓ ↓ ↓
MWLN R/L 3225 P 08	32	25	170	↓	32	↓	↓ ↓ ↓ ↓ ↓





Toolholders S-clamping system



Toolholders S-clamping system			Length [mm]												Part no.	
			Series													
			6	9	2	0	1	6	9	2	9	1	6	1		6
Angle	Diagram	Type	Series													
90°		SCAP	60 10 22													98
75°		SCBP	60 60 10													98
45°		SCDP	60 60 10 22													99
60°		SCEP	10 22													99
90°		SCFP	60 60 10 22													100
75°		SCKP	60 60 10 22													100
95°		SCLC	60 10	22 16 20	20 25											101
95°		SCLP	60 60 10 22													101
45°		SCSP	60 60 10													102
60°		SCTP	60													102
93°		SDJC				10 22 16 20	16 20 25									103
		SRCC					22 16									103
		SRGC					22 16									104
75°		SSBC						16 20 25								104
75°		SSKC						16 25								105
45°		SSSC						16 20 25								105

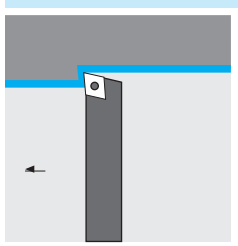


Toolholders S-clamping system

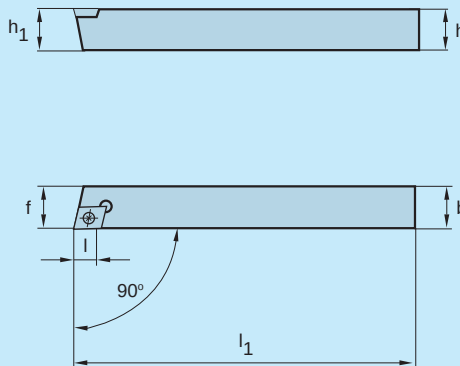
Toolholders S-clamping system			C		D		R		S		T			V		Page
			Lenght of cutting edge l													
			06	09	12	07	11	06	09	12	09	11	16	11	16	
Approach angle	Type		Shank section h x b													
75°		STBC										1616				106
45°		STDC									1010	1212 1616	1616 2020 2525			106
90°		STFC									0808 1010	1212 1616	1616 2020 2525			107
90°		STGC									0808 1010	1212 1616	1616 2020 2525			107
45°		STSC										1616	2020		2020	108
107,5°		SVHB												1616 2020	2020 2525	108
93°		SVJB												1616 2020	1616 2020 2525 3225	109
72,5°		SVVB												1616 2020	1616 2020 2525 3225	109



SCAP 90°

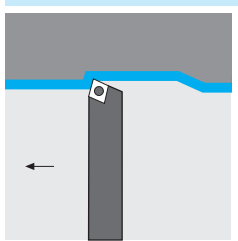


Inserts –
page 61 – 63

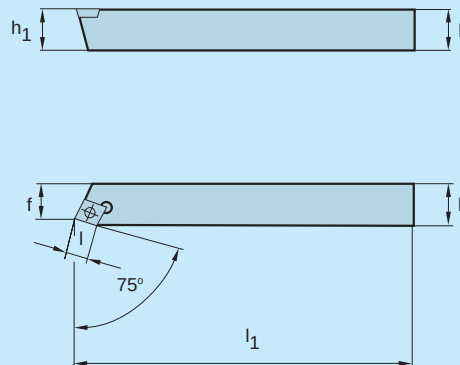


CODE	h= h ₁	b	l ₁	f	INSERT	SPARE PARTS
RIGHT/LEFT						
SCAP R/L 0808 H0 6	8	8	100	8,2	6,5 CPEX0602.. R/L.	191-131 170-022
SCAP R/L 0808 M0 6	8	8	150	8,2	6,4 CC.T 0602..	
SCAP R/L 1010 H0 6	10	10	100	10,2	6,5 CPEX0602.. R/L.	
SCAP R/L 1010 M0 6	10	10	150	10,2	6,4 CC.T 0602..	
SCAP R/L 1212 H0 6	12	12	100	12,2	6,5 CPEX0602.. R/L.	
SCAP R/L 1212 M0 6	12	12	150	12,2	6,4 CC.T 0602..	

SCBP 75°



Inserts –
page 61 – 63

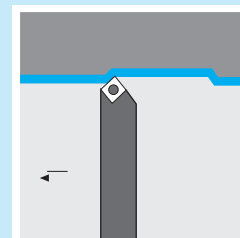
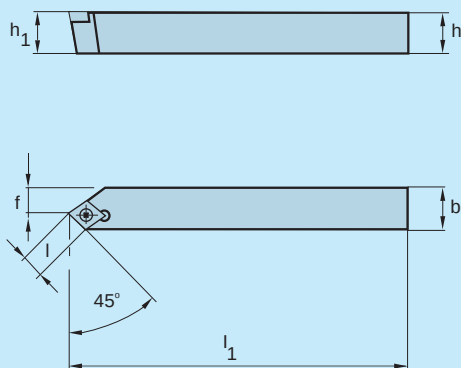


CODE	h= h ₁	b	b ₁	l ₁	l ₂	f	INSERT	SPARE PARTS
RIGHT/LEFT								
SCBP R/L 0606 H0	6	6	2,15	100	10	6,5	6,5 CPEX 0602 R/L	191-131 170-022
SCBP R/L 0606 M0 6	6	6	2,15	150	10		6,4 CC.T 0602..	
SCBP R/L 0808 H0 6	8	8	0,15	100	—		6,5 CPEX 0602 R/L	
SCBP R/L 0808 M0 6	8	8		150	—		6,4 CC.T 0602..	
SCBP R/L 1010 H0 6	10	10		100	—	8,5	6,5 CPEX 0602 R/L	
SCBP R/L 1010 M0 6	10	10		150	—	8,5	6,4 CC.T 0602..	
SCBP R/L 1212 H0 6	12	12		100	—	10,5	6,5 CPEX 0602 R/L	
SCBP R/L 1212 M0 6	12	12		150	—	10,5	6,4 CC.T 0602..	



Toolholders S - clamping system

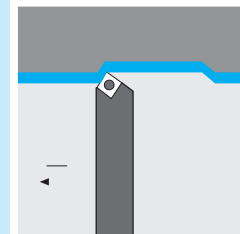
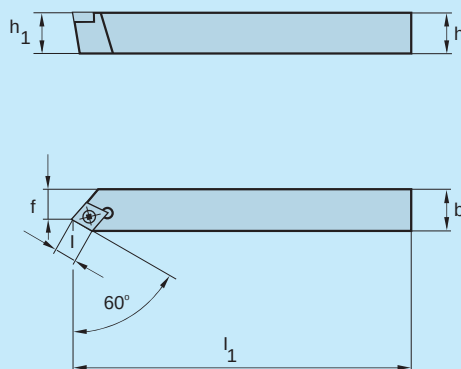
SCDP 45°



Inserts –
page 61 – 63

CODE	h= h ₁	b	l ₁	f		  Clamping screw driver
RIGHT/LEFT					INSERT	SPARE PARTS
SCDP R/L 0606 H06	6	6	100	4	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	191-131 170-022
SCDP R/L 0606 M06	6	6	150	4	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCDP R/L 0808 H06	8	8	100	5	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCDP R/L 1010 M06	10	10	150	6	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCDP R/L 1212 H06	12	12	100	7	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCDP R/L 1212 M06	12	12	150	7	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	

SCEP 60°

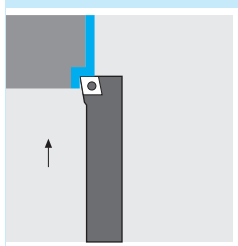


Inserts –
page 61 – 63

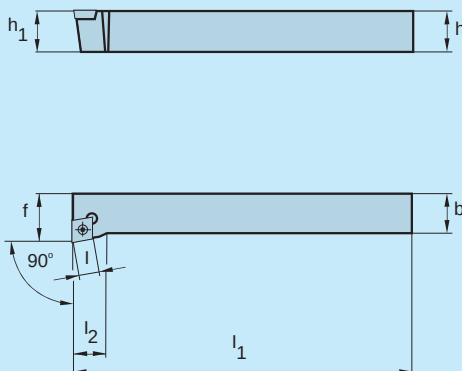
CODE	h= h ₁	b	l ₁	f		  Clamping screw driver
RIGHT/LEFT					INSERT	SPARE PARTS
SCEP R/L 1010 H06	10	10	100	6,5	6,5 CPEX 0602 R/L 6,4 CC.T 0602..	191-131 170-022
SCEP R/L 1010 M06	10	10	150	6,5	6,5 CPEX 0602 R/L 6,4 CC.T 0602..	
SCEP R/L 1212 H06	12	12	100	8,5	6,5 CPEX 0602 R/L 6,4 CC.T 0602..	
SCEP R/L 1212 M06	12	12	150	8,5	6,5 CPEX 0602 R/L 6,4 CC.T 0602..	



SCFP 90°

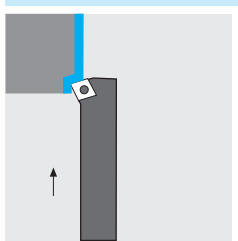


Inserts –
page 61 – 63

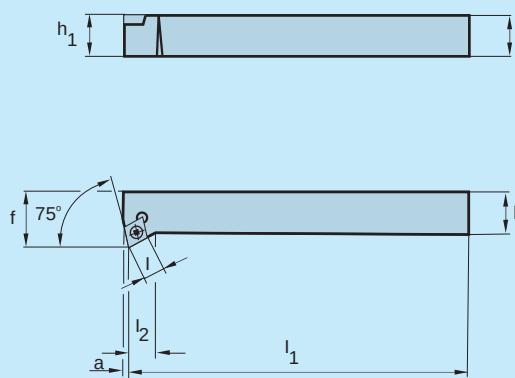


CODE	h= h ₁	b	l ₁	f	l ₂		  Clamping screw driver
RIGHT/LEFT						INSERT	SPARE PARTS
SCFP R/L 0606 H06	6	6	100	9	10	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	191:131 170:022
SCFP R/L 0606 M06	6	6	150	9	10	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCFP R/L 0808 H06	8	8	100	9	—	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCFP R/L 0808 M06	8	8	150	9	—	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCFP R/L 1010 H06	10	10	100	11	—	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCFP R/L 1010 M06	10	10	150	11	—	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCFP R/L 1212 H06	12	12	100	13	—	6,5 CPEX0602.. R/L. 6,4 CC.T0602..	
SCFP R/L 1212 M06	12	12	150	13	—	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	

SCKP 75°



Inserts –
page 61 – 63

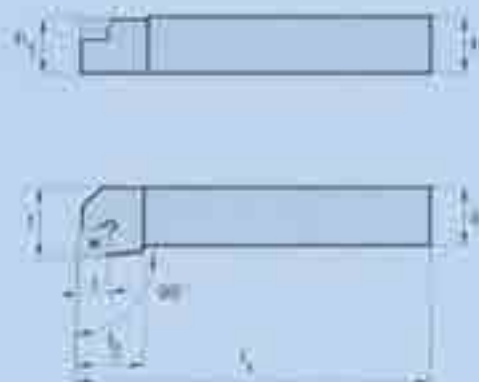


CODE	h= h ₁	b	l ₁	l ₂	f	a		  Clamping screw driver
RIGHT/LEFT							INSERT	SPARE PARTS
SCKP R/L 0606 H06	6	6	100	9	10	1,7	6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	191:131 170:052
SCKP R/L 0606 M06	6	6	150		10		6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCKP R/L 0808 H06	8	8	100		12		6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCKP R/L 0808 M06	8	8	150		12		6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCKP R/L 1010 H06	10	10	100		14		6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCKP R/L 1010 M06	10	10	150		14		6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCKP R/L 1212 H06	12	12	100		16		6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	
SCKP R/L 1212 M06	12	12	150		16		6,5 CPEX0602.. R/L. 6,4 CC.T 0602..	





SCLC 95°



Inserts:
page 61 - 62

CODE

h₁ h₂ b l₁ l₂ l

RIGHT/LEFT

SCLC RL 0606 D06	6	6	60	11	11	
SCLC RL 1010 E06	10	10	70	11	12	
SCLC RL 1212 F09	12	12	80	16.5	16	
SCLC RL 1616 H09	16	16	100	20.5	20	
SCLC RL 2020 K09	20	20	125	18	25	
SCLC RL 2020 K12	20	20	125	23	25	
SCLC RL 2525 M12	25	25	150	26	30	

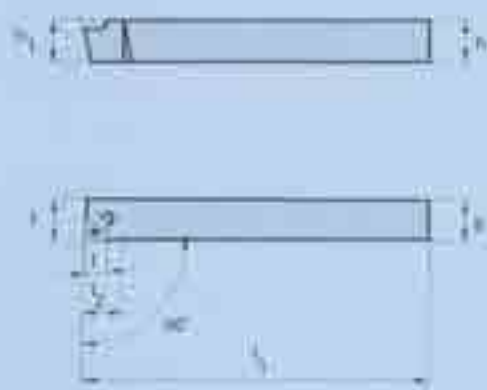
INSERT

8.4 CC.T 0602	
11.4 CC.T 0602	
9.0 CC.T 09T1	
9.0 CC.T 09T1	
9.0 CC.T 09T1	
12.9 CC.T 1204	
12.9 CC.T 1204	

SPARE PARTS

—	—	191-131	170-022
—	—	191-131	170-022
—	191-042	191-098	170-054
512-212	↓	↓	↓
512-212	↓	↓	↓
512-212	192-443	192-446	170-058
512-212	192-445	192-446	170-058

SCLP 60°



Inserts:
page 61 - 62

CODE

h₁ h₂ b l₁ l₂ l

RIGHT/LEFT

SCLP RL 0606 M06	6	6	150	11.4	0	
SCLP RL 0808 M06	8	8	↓	↓	0	
SCLP RL 1010 M06	10	10	↓	↓	11	
SCLP RL 1212 M06	12	12	↓	↓	18	

INSERT

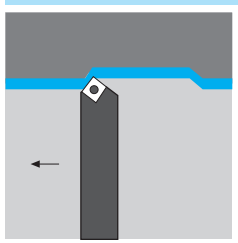
9.5 CPEX 0602 RL	
9.4 CC.T 0602	
9.5 CPEX 0602 RL	
9.4 CC.T 0602	
9.5 CPEX 0602 RL	
9.4 CC.T 0602	
9.5 CPEX 0602 RL	
9.4 CC.T 0602	

SPARE PARTS

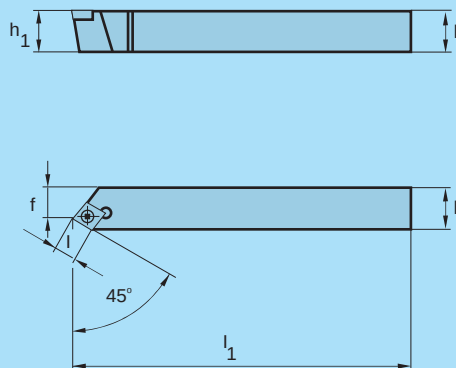
191-131	170-022
↓	↓
↓	↓
↓	↓
↓	↓
↓	↓
↓	↓
↓	↓



SCSP 45°

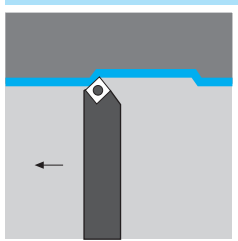


Inserts –
page 61 – 63

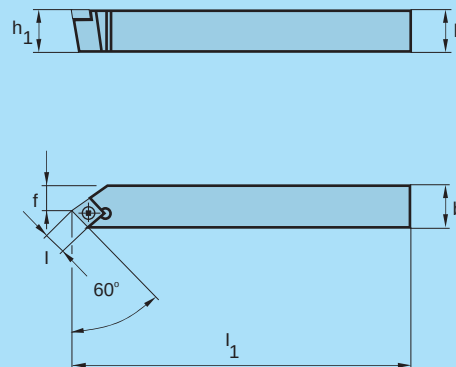


CODE	h= h ₁	b	l ₁	f		 Clamping screw	 Screw driver
RIGHT/LEFT					INSERT	SPARE PARTS	
SCSP R/L 0606 H06	6	6	100	4	6,5 CPEX 0602.. R/L. 6,4 CC.T 0602..	191-131	170-022
SCSP R/L 0606 M06	6	6	150	4	6,5 CPEX 0602.. R/L. 6,4 CC.T 0602..	↓	↓
SCSP R/L 0808 H06	8	8	100	5	6,5 CPEX 0602.. R/L. 6,4 CC.T 0602..	↓	↓
SCSP R/L 0808 M06	8	8	150	5	6,5 CPEX 0602.. R/L. 6,4 CC.T 0602..	↓	↓
SCSP R/L 1010 H06	10	10	100	6	6,5 CPEX 0602.. R/L. 6,4 CC.T 0602..	↓	↓
SCSP R/L 1010 M06	10	10	150	6	6,5 CPEX 0602.. R/L. 6,4 CC.T 0602..	↓	↓

SCTP 60°



Inserts –
page 61 – 63

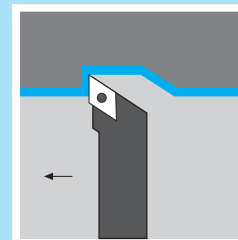
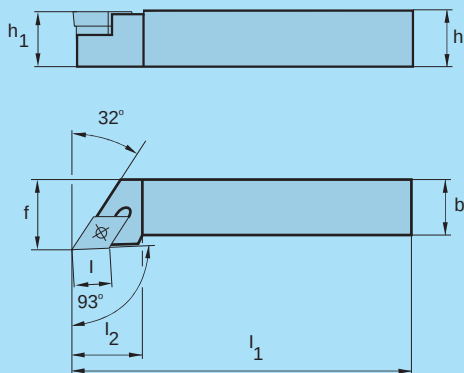


CODE	h= h ₁	b	l ₁	f		 Clamping screw	 Screw driver
RIGHT/LEFT					INSERT	SPARE PARTS	
SCTP R/L 0606 H06	6	6	100	5,5	6,5 CPEX 0602 R/L 6,4 CC.T 0602..	191-131	170-022
SCTP R/L 0606 M06	6	6	150	↓	6,5 CPEX 0602 R/L 6,4 CC.T 0602..	↓	↓
SCTP R/L 0808 H06	8	8	100	↓	6,5 CPEX 0602 R/L 6,4 CC.T 0602..	↓	↓
SCTP R/L 0808 M06	8	8	150	↓	6,5 CPEX 0602 R/L 6,4 CC.T 0602..	↓	↓

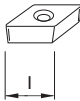


Toolholders S - clamping system

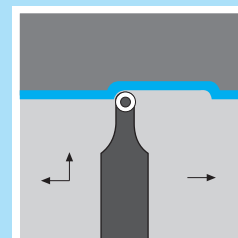
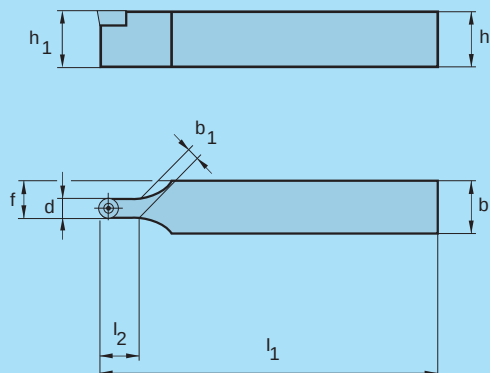
SDJC 93°



Inserts –
page 64

CODE	h= h ₁	b	l ₁	l ₂	f		 Shim	 Screw for shim	 Clamping screw	 Screw driver
RIGHT/LEFT						INSERT	SPARE PARTS			
SDJC R/L 1010 E07	10	10	70	16	14	7,7 DC.T 0702..	—	—	191.371	170.051
SDJC R/L 1212 F07	12	12	80	18	16	↓ ↓	—	—	↓	↓
SDJC R/L 1616 H07	16	16	100	20,5	20	↓ ↓	—	—	↓	↓
SDJC R/L 2020 K07	20	20	125		25	↓ ↓	—	—	↓	↓
SDJC R/L 1616 H11	16	16	100		20	11,6 DC.T 11T3..	512.204	191.942	191.698	170.084
SDJC R/L 2020 K11	20	20	125		25	↓ ↓	↓	↓	↓	↓
SDJC R/L 2525 M11	25	25	150	26,5	32	↓ ↓	↓	↓	↓	↓

SRCC



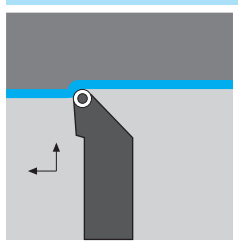
Inserts –
page 66

CODE	h= h ₁	b	b ₁	l ₁	l ₂	f		 Clamping screw	 Screw driver
NEUTRAL							INSERT	SPARE PARTS	
SRCC N 1212 F06	12	12	5,4	80	12	9	6 RCGT 0602M0..	191.371	170.051
SRCC N 1616 H06	16	16	5,4	100	12	11	6 RCGT 0602M0..	191.371	170.051

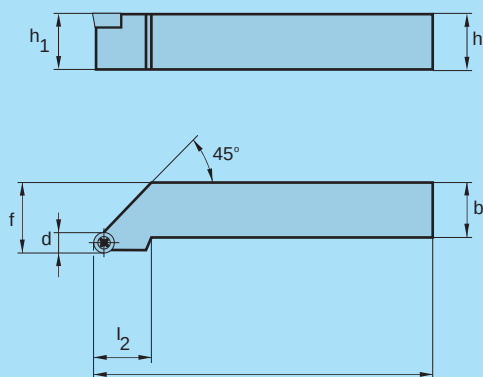




SRGC

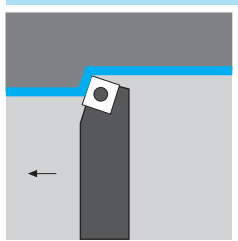


Inserts –
page 66

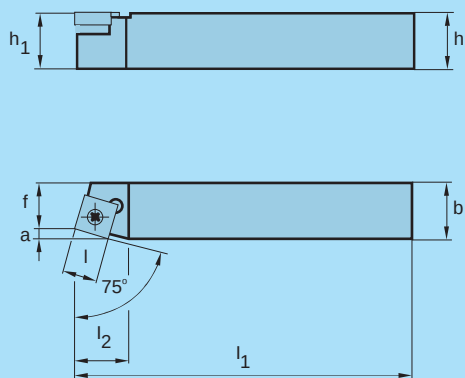


CODE	h= h ₁	b	l ₁	l ₂	f		
RIGHT/LEFT						INSERT	SPARE PARTS
SRGC R/L 1212 F06	12	12	80	18	16	6 RCGT 0602M0	191-371 170-051
SRGC R/L 1616 H06	16	16	100	16	20	6 RCGT 0602M0	191-371 170-051

SSBC 75°



Inserts –
page 67



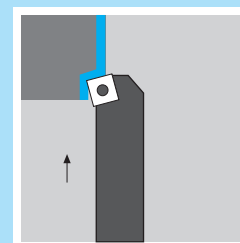
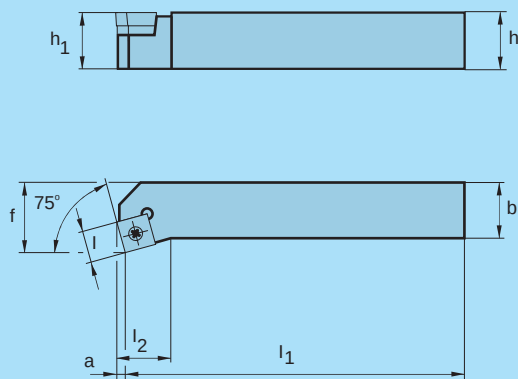
CODE	h= h ₁	b	l ₁	l ₂	f	a				
RIGHT/LEFT							INSERT	SPARE PARTS		
SSBC R/L 1616 H09	16	16	100	14	13	2,2	9,5 SC.T 09T3..	512-201	191-942	191-698 170-084
SSBC R/L 2020 K12	20	20	125	20	17	3,0	12,7 SC.T 1204..	512-211	192-445	192-446 170-058
SSBC R/L 2525 M12	25	25	150	20	22	3,0	12,7 SC.T 1204..	512-211	192-445	192-446 170-058





Toolholders S - clamping system

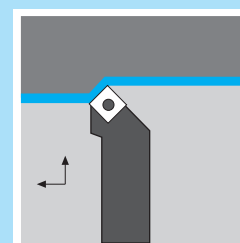
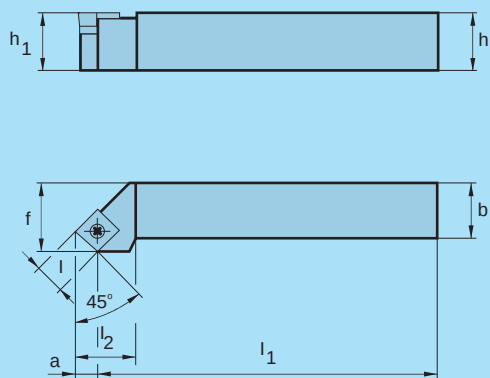
SSKC 75°



Inserts –
page 67

CODE	h= h ₁	b	l ₁	l ₂	f	a		 Shim	 Screw for shim	 Clamping screw	 Screw driver
RIGHT/LEFT							INSERT	SPARE PARTS			
SSKC R/L 1616 H09	16	16	100	14,0	20	2,2	9,5 SC.T 09T3..	512.201	191.942	191.698	170.084
SSKC R/L 2525 M12	25	25	150	20,5	22	3,0	12,7 SC.T 1204..	512.211	191.445	192.446	170.058

SSSC 45°



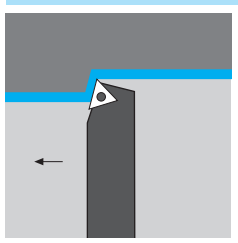
Inserts –
page 67

CODE	h= h ₁	b	l ₁	l ₂	f	a		 Shim	 Screw for shim	 Clamping screw	 Screw driver
RIGHT/LEFT							INSERT	SPARE PARTS			
SSSC R/L 1616 H 09	16	16	100	15,5	20	6,1	9,5 SC.T 09T3..	512.201	191.942	191.698	170.084
SSSC R/L 2020 K 12	20	20	125	23	25	8,3	12,7 SC.T 1204..	512.211	192.445	192.446	170.058
SSSC R/L 2525 M12	25	25	150	26	32	8,3	12,7 SC.T 1204..	512.211	192.445	192.446	170.058

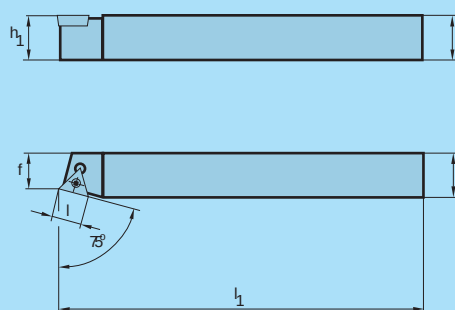




STBC 75°

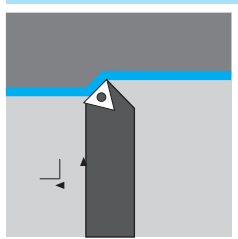
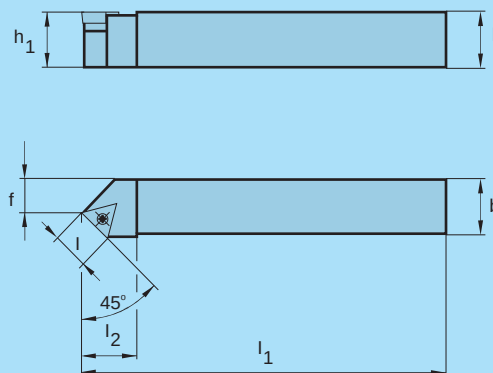


Inserts – page 72



CODE	h= h ₁	b	l ₁	f		 Clamping screw	 Screw driver
RIGHT/LEFT					INSERT	SPARE PARTS	
STBC R/L 1616 H11	16	16	100	13	11 TC.T 1102..	191-371	170-051

STDC 45°


Inserts —
page 72


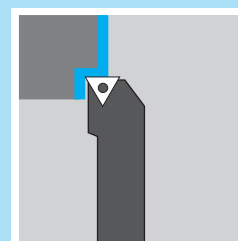
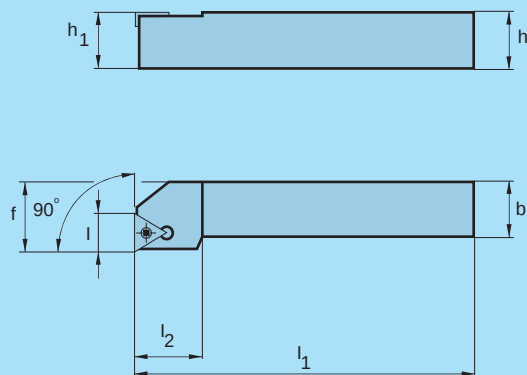
CODE	h= h ₁	b	l ₁	l ₂	f		 Shim	 Screw for shim	 Clamping screw	 Screw driver
RIGHT/LEFT						INSERT	SPARE PARTS			
STDC R/L 1010 E09	10	10	70	14,4	11	9,6 TC.T 0902..	—	—	191.371	170.051
STDC R/L 1212 F11	12	12	80	14,0	6	11 TC.T 1102..	—	—	↓	↓
STDC R/L 1616 H11	16	16	100	17,4	17	11 TC.T 1102..	—	—	↓	↓
STDC R/L 1616 H16	16	16	100	21,2	17	16 TC.T 16T3..	512.203	191.942	191.698	170.084
STDC R/L 2020 K16	20	20	125	21,7	22	↓	↓	↓	↓	↓
STDC R/L 2525 H16	25	25	150	21,2	27	↓	↓	↓	↓	↓





Toolholders S - clamping system

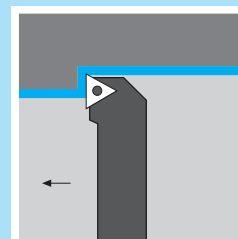
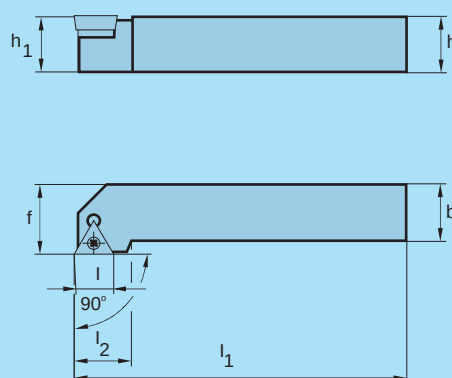
STFC 90°



STFC 90°

	h1	b	l1	l2	f	INSERT	SPARE PARTS
RIGHT/LEFT							
0808	8	8	6	41	01	0808	—
0808	01	01	07	41	21	0808	—
1F21	21	21	8	41	61	1F21	—
1F21	61	61	001	02	02	1F21	—
6161	61	61	001	22	02	6161	512.203
6161	02	02	521	02	52	6161	201
6161	52	52	051	42	23	6161	512.203

STGC 90°

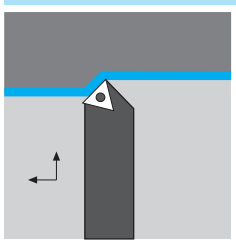


STGC 90°

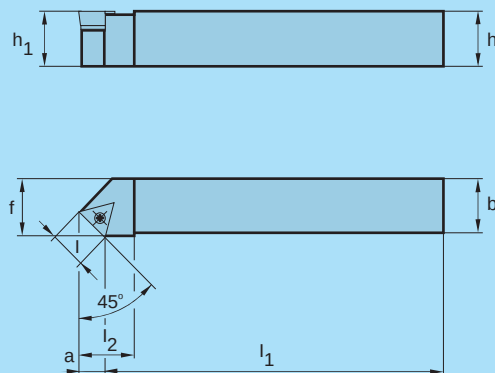
	h1	b	l1	l2	f	INSERT	SPARE PARTS
CODE							
RIGHT/LEFT							
0808	8	8	6	8,3	01	0808	—
0808	01	01	07	8,11	21	0808	—
0221	21	21	8	0,4	31	0221	—
0661	61	61	001	5,02	71	0661	—
0661	61	61	001	0,52	02	0661	—
0202	02	02	521	5,02	22	0202	—
0661	52	52	051	0,2	23	0661	—



STSC 45°

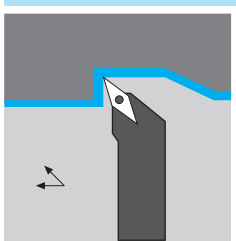


Inserts –
page 72

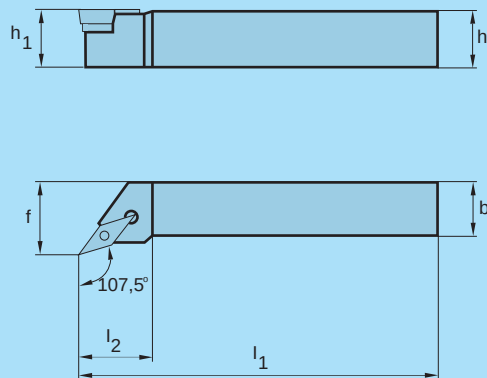


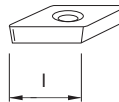
CODE	h= h ₁	b	l ₁	l ₂	f	a		 Shim	 Screw for shim	 Clamping screw	 Screw driver
RIGHT/LEFT							INSERT	SPARE PARTS			
STSC R/L 1616 H11	16	16	100	14	17	7	11,0 TC.T 1102..	—	—	191-371	170-051
STSC R/L 2020 K16	20	20	125	19	22	10,2	16,5 TC.T 16T3..	512-203	191-942	191-698	170-084

SVHB 107.5°



Inserts –
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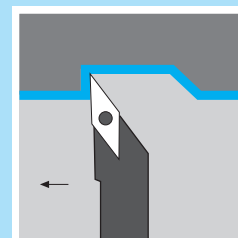
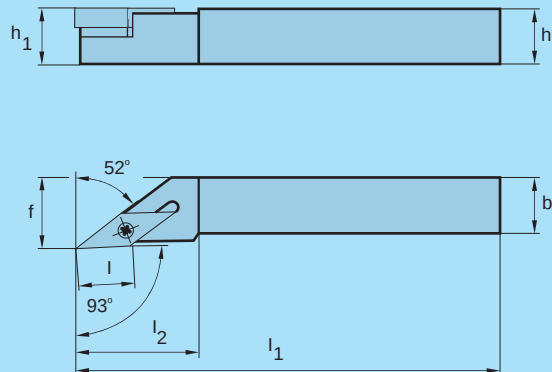
CODE	h= h ₁	b	l ₁	l ₂	f		 Shim	 Screw for shim	 Clamping screw	 Screw driver
RIGHT/LEFT						INSERT	SPARE PARTS			
SVHB R/L 1616 H 11	16	16	100	22	20	11,0 VB.T 1103..	—	—	192-432	170.028
SVHB R/L 2020 K 11	20	20	125	26	25	11,0 VB.T 1103..	—	—	192-432	170.028
SVHB R/L 2020 K 16	20	20	125	26	25	16,6 VB.T 1604..	512-205	191-942	191-698	170.084
SVHB R/L 2525 M 16	25	25	150	26	32	16,6 VB.T 1604..	512-205	191-942	191-698	170.084





Toolholders S - clamping system

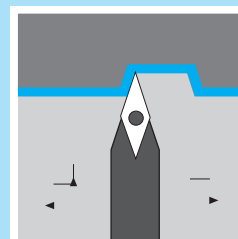
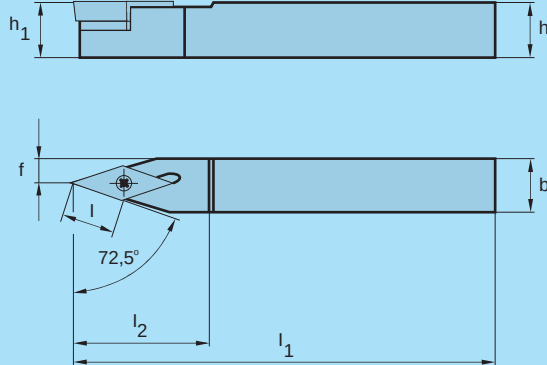
SVJB 93°



steel
60pp

	h1	b	l1	l2	f	a	l	mis	Screw for shim	gripC sav	vers aid
RIGHT/LEFT							INSERT	SPAREPARTS			
1H-SVB	61	61	001	22	02		11 .0VB	-	-	2.2	2.0
1K-SVB	02	02	521	62	52		11 .0VB	-	-	2.2	2.0
6H-SVB	61	61	001	63	02		6.1 .0VB	5.25	2.1	5.1	4.0
6K-SVB	02	02	521		52		.0VB	5.25			
6H-SVB	02	02	521		52		.0VB	5.25			
6H-SVB	52	52	051		23		.0VB	5.25			
6H-SVB	23	52	071		23		.0VB	5.25			

SVVB 72.5°



— Inserts
76 page

	h1	b	l1	l2	f	l	mis	vers for rts	gripC sav	vers aid
CODE						INSERT	SPARE PARTS			
NEUTRAL										
1H-SVB	61	61	001	22	8	11 .0VB	-	-	2.2	2.0
1K-SVB	02	02	521	62	01	11 .0VB	-	-	2.2	2.0
6H-SVB	61	61	001	5.3	8	6.1 .0VB	5.25	2.1	5.1	4.0
6K-SVB	02	02	521	5.3	10	.0VB	5.25			
6H-SVB	02	02	521	5.3	10	.0VB	5.25			
6H-SVB	52	52	051	5.3	5.2	.0VB	5.25			
6H-SVB	23	52	071	5.3	5.2	.0VB	5.25			





Toolholder C-clamping system			K		S				T				
			mm										
			61	90	21	51	91	52	90	11	61	22	
deg		°T	mm										°P
98 °		CKJN	52 52										112
68 °		CKNN	54 26										112
75 °		CSBP		61 02	52								113
45 °		CSDN			52 52 05	05	05	05					113
45 °		CSDP			02 52								114
75 °		CSKN			52 52	52							114
75 °		CSKP		21 61 02	52	05	05	05					115
75 °		CSRN		52	52 52	52	22						115
75 °		CSRP		21	52								116
45 °		CSSN		52	52 52	52	22						116
45 °		CSSP			02 52								117
60 °		CSTP		02	02 52								117
75 °		CTBP							21 61				118
45 °		CTDP							21 61	02 52			118
90 °		CTFP						80 11	21 61 02	02 52	52	22	119
90 °		CTGP						80 11 21	21 61 02	02 52			119

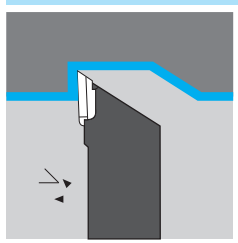


Toolholders C-clamping system

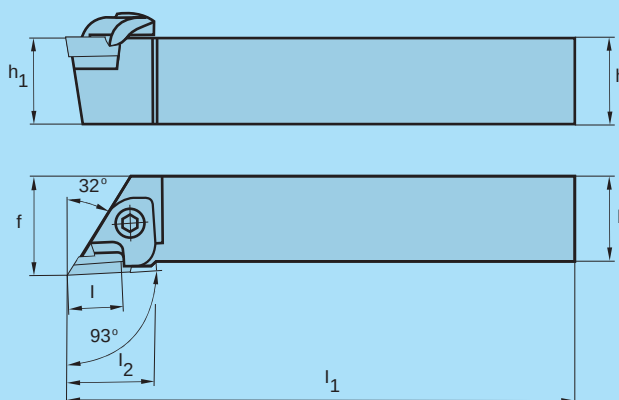
Toolholders C-clamping system				K	S						T				
				ØD											
				61	90	21	51	91	52	90	11	61	22		
ØD	ØT	ØD										ØP			
93 ° ↓ 	CTJN								52	52	52	120			
60 ° ↓ 	CTP							88 01	02	02 52		120			



CKJN 93°

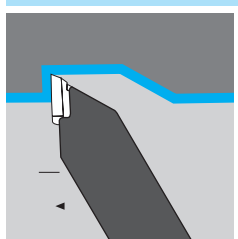


Inserts —
page 65

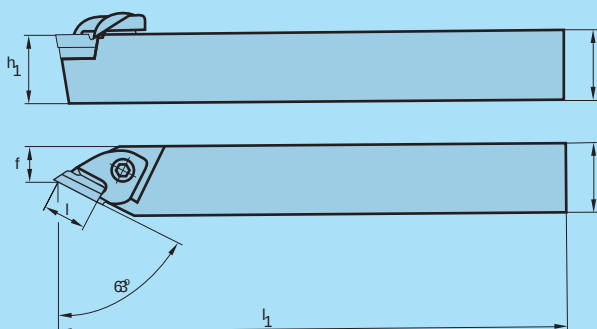


CODE	h= h ₁	b	l ₁	l ₂	f	INSERT	Shim	Pin	Clamping element	Pin with spring
RIGHT										
CKJN R 2525 M16	25	25	150	33	32	16 KNUX 1604..R.	512-100	513-020	551-129	513-123
CKJN R 3225 P16	32	↓	170	↓	↓	16 KNUX 1604..R.	512-100	↓	551-129	↓
LEFT										
CKJN L 2525 M16	25	↓	150	↓	↓	16 KNUX 1604..L.	512-101	↓	551-130	↓
CKJN L 3225 P16	32	↓	170	↓	↓	16 KNUX 1604..L.	512-101	↓	551-130	↓

CKNN 63°



Inserts —
page 65



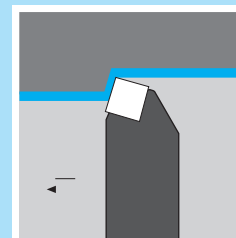
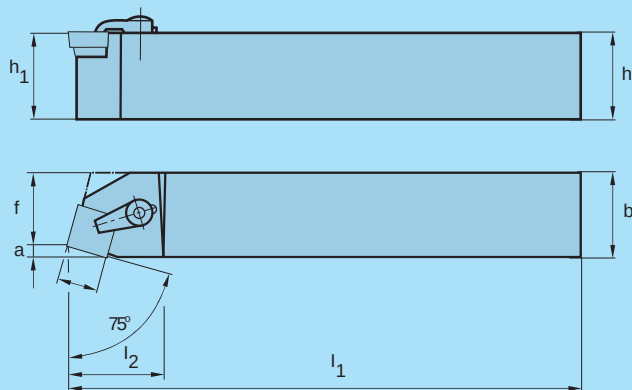
CODE	h= h ₁	b	l ₁	f	INSERT	Shim	Pin	Clamping element	Pin with spring
RIGHT									
CKNN R 4025 M16	40	25	150	12,5	16 KNUX 1604.. R.	512-100	513-020	551-129	513-123
CKNN R 5032 M16	50	32	↓	16	16 KNUX 1604.. R.	512-100	513-020	551-129	↓
LEFT									
CKNN L 4025 M16	40	25	↓	12,5	16 KNUX 1604.. L.	512-101	↓	551-130	↓
CKNN L 5032 M16	50	32	↓	16	16 KNUX 1604.. L.	512-101	↓	551-130	↓





Toolholders C - clamping system

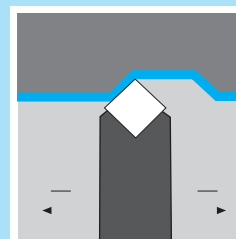
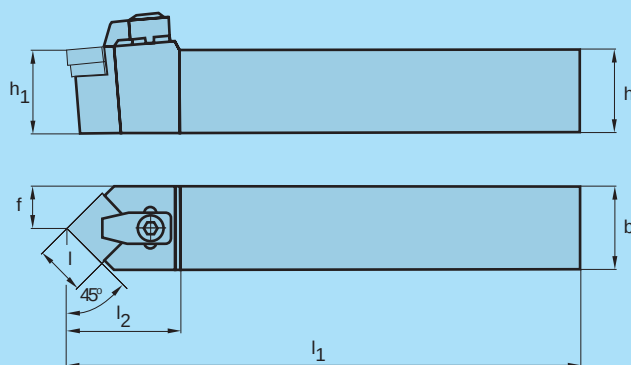
CSBP 75°



Inserts –
page 69 - 70

CODE	h= h ₁	b	l ₁	l ₂	f	a				
RIGHT/LEFT							INSERT	Shim	Pin	Clamping element
CSBP R/L 1616 H09	16	16	100	22,7	13	2,2	9,5 SP..0903..	552.001	553.001	551.114
CSBP R/L 2020 K09	20	20	125	23	17	2,2	9,5 SP..0903..	552.001	553.001	551.114
CSBP R/L 2525 M12	25	25	150	26	22	3,1	12,7 SP..1203..	552.002	553.001	551.116

CSDN 45°



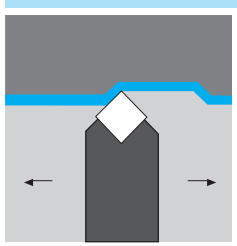
Inserts –
page 68

CODE	h= h ₁	b	l ₁	l ₂	f				
NEUTRAL						INSERT	Shim	Pin	Clamping element
CSDN N 2525 M12	25	25	150	35	12,8	12,7 SN.. 1204..	552.002	553.001	551.116
CSDN N 3225 P12	32	25	170	35	12,8	↓ SN.. 1204..	↓	↓	↓
CSDN N 5040 T12	50	40	300	38	20,3	↓ SN.. 1204..	↓	↓	↓
CSDN N 5040 T15	50	40	300	38	20,5	15,8 SN.. 1504..			
CSDN N 5040 T19	50	40	300	42	20,5	19,0 SN.. 1904..			
CSDN N 5040 T25	50	40	300	50	21	25,4 SN.. 2506..			

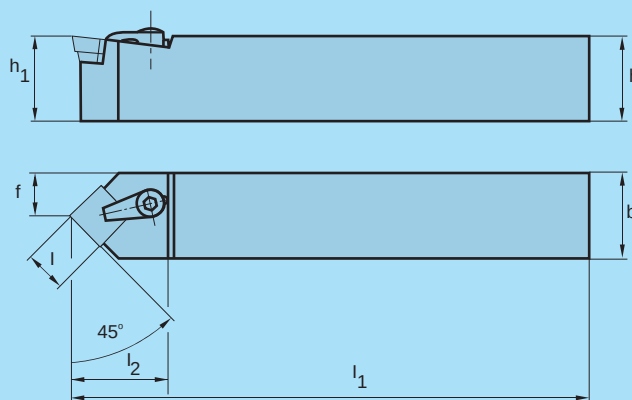




CSDP 45°

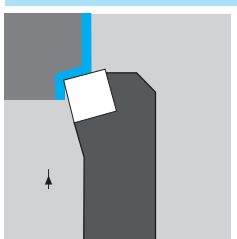


Inserts –
page 69 – 70

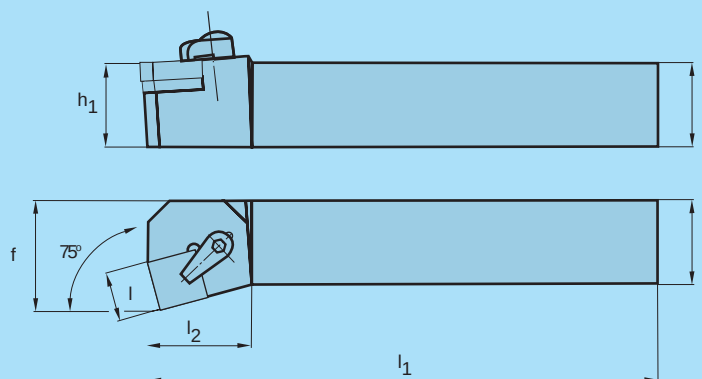


CODE	h= h ₁	b	l ₁	l ₂	f	INSERT	Shim	Pin	Clamping element
NEUTRAL									
CSDP N 2020 K 12	20	20	125	30	10	12,7 SP.. 1203..	552-002	553-001	551-116
CSDP N 2525 M 12	25	25	150	30	12,5	12,7 SP.. 1203..	552-002	553-001	551-116

CSKN 75°



Inserts –
page 68

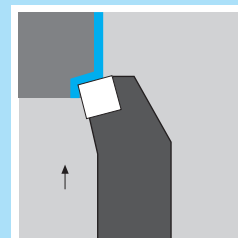
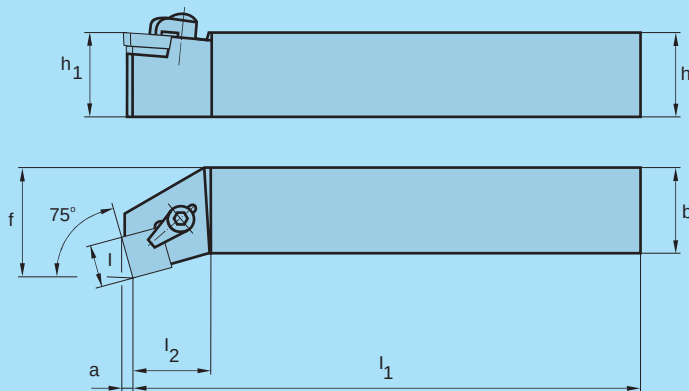


CODE	h= h ₁	b	l ₁	l ₂	l ₃	f	INSERT	Shim	Pin	Clamping element
RIGHT/LEFT										
CSKN R/L 2525 M12	25	25	150	27	3,1	32	12,7 SN. 1204..	552-002	553-001	551-116
CSKN R/L 2525 P12	↓	↓	170	27	3,1	↓	12,7 SN. 1204..	552-002	553-001	551-116
CSKN R/L 3225 P15	↓	↓	170	29	3,8	↓	15,87 SN. 1504..			



Toolholders C - clamping system

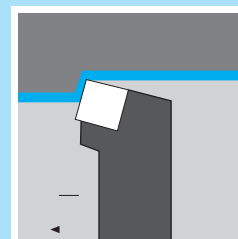
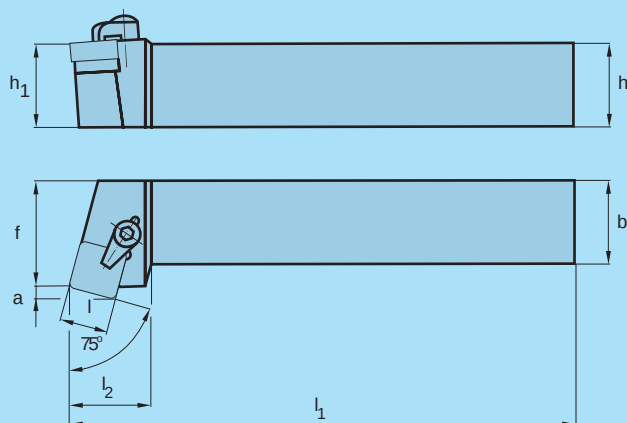
CSKP 75°



Inserts –
page 69 – 70

											
CODE	h= h ₁	b	l ₁	l ₂	f	a		Shim	Pin	Clamping element	
RIGHT/LEFT							INSERT	SPARE PARTS			
CSKP R/L 1212 F09	12	12	80	18	16	2,2	9,5	SP.. 0903..	552.001	553.001	551.114
CSKP R/L 1616 H09	16	16	100	21,5	25		↓	↓	↓		
CSKP R/L 2020 K09	20	20	125	21,5	20						
CSKP R/L 2525 M12	25	25	150	23	32	3,1	12,7	SP.. 1203..	552.002	↓	551.116
CSKP R/L 5040 T15	50	40	300	38	20,5		15,87	SP.. 1504..			
CSKP R/L 5040 T19	↓	↓	↓	↓	↓		19,05	SP.. 1904..			
CSKP R/L 5040 T25	↓	↓	↓	↓	↓		25,4	SP.. 2506..			

CSRN 75°



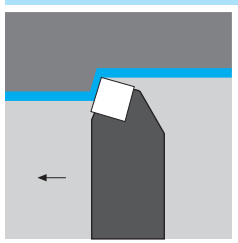
Inserts –
page 68

											
	CODE	h= h ₁	b	l ₁	l ₂	f			Shim	Pin	Clamping element
	RIGHT/LEFT						INSERT		SPARE PARTS		
	CSRN R/L 2525 M09	25	25	150	32	27	9,5 SN.. 0903..		552.001	553.001	551.114
	CSRN R/L 2525 M12	25	↓	150	32	↓	12,7 SN.. 1204..		552.002	↓	551.116
	CSRN R/L 3225 P12	32		170	32		12,7 SN.. 1204..	552.002	551.116		
	CSRN R/L 3225 P15	↓	↓	↓	34	↓	15,87 SN.. 1504..				
	CSRN R/L 3225 P19	↓	32	↓	40	35	19,05 SN.. 1904..				

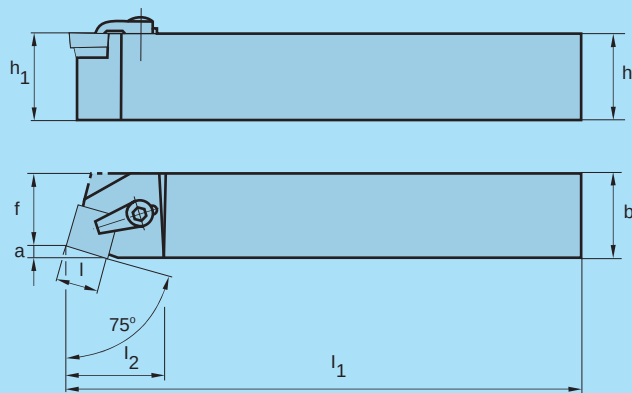




CSRP 75°

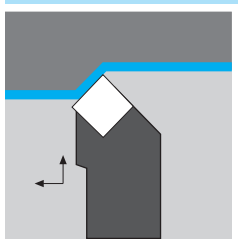


Inserts –
page 69 – 70

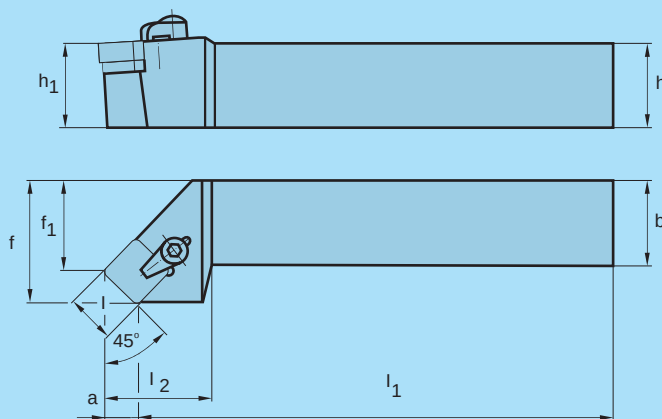


CODE	h= h ₁	b	l ₁	l ₂	f	a	INSERT	Shim	Pin	Clamping element
RIGHT/LEFT										
CSRP R/L 1212 F09	12	12	80	22	13	2,2	9,5 SP.. 0903..	552-001	553-001	551-114
CSRP R/L 3225 P12	32	25	170	34	27		12,7 SP.. 1203..	552-002	553-001	551-116

CSSN 45°



Inserts –
page 68



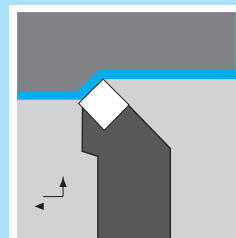
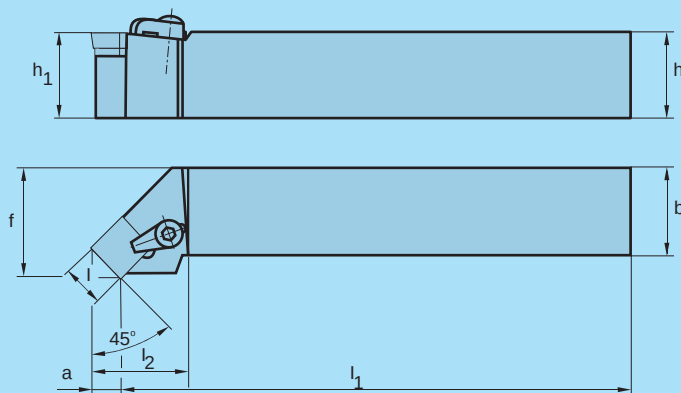
CODE	h= h ₁	b	l ₁	l ₂	f	INSERT	Shim	Pin	Clamping element
RIGHT/LEFT									
CSSN R/L 2525 M09	25	25	150	32	32	9,5 SP.. 0903..	552-001	553-001	551-114
CSSN R/L 2525 M12	25	25	150	37	32	12,7 SP.. 1203..	552-002	553-001	551-116
CSSN R/L 3225 P12	32	25	170	35	32	12,7 SP.. 1204..	552-002	553-001	551-116
CSSN R/L 3225 P15	32	25	170	37	32	15,87 SP.. 1504..			
CSSN R/L 3232 P19	32	32	170	42	40	19,05 SP.. 1904..			





Toolholders C - clamping system

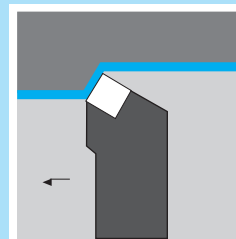
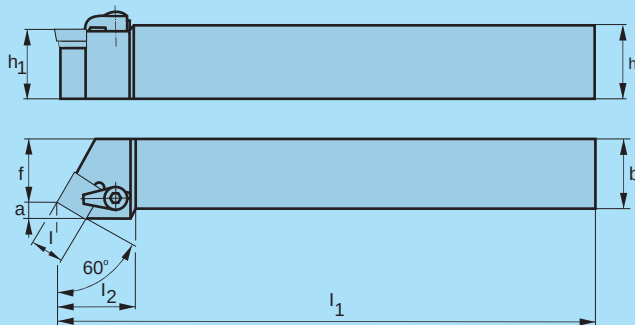
CSSP 45°



Inserts –
page 69 – 70

CODE	h= h ₁	b	l ₁	l ₂	f	a				
RIGHT/LEFT							INSERT			
CSSP R/L 2020 K 12	20	20	125	28	25	8,3	12,7 SP.. 1203..	552-002	553-001	551-116
CSSP R/L 2525 M 12	25	25	150	28	32	8,3	12,7 SP.. 1203..	552-002	553-001	551-116

CSTP 60°



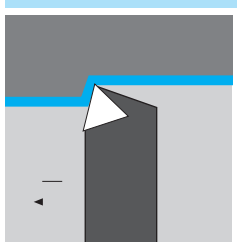
Inserts –
page 69 – 70

CODE	h= h ₁	b	l ₁	l ₂	l ₃	f				
RIGHT/LEFT							INSERT			
CSTP R/L 2020 K09	20	20	125	23	17	3,7	9,5 SP.. 0903..	552-001	553-001	551-114
CSTP R/L 2020 K12	20	20	125	28	17	5,3	12,7 SP.. 1203..	552-002	553-001	551-116
CSTP R/L 2525 M12	25	25	150	28	22	5,3	12,7 SP.. 1203..	552-002	553-001	551-116

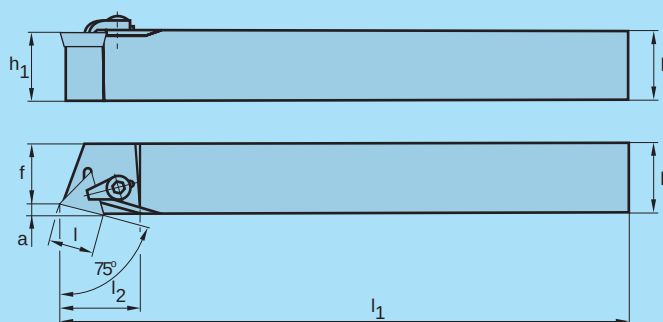




CTBP 75°

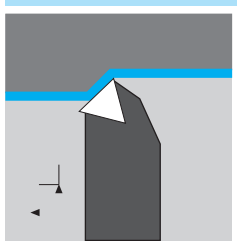


Inserts –
page 74 – 75

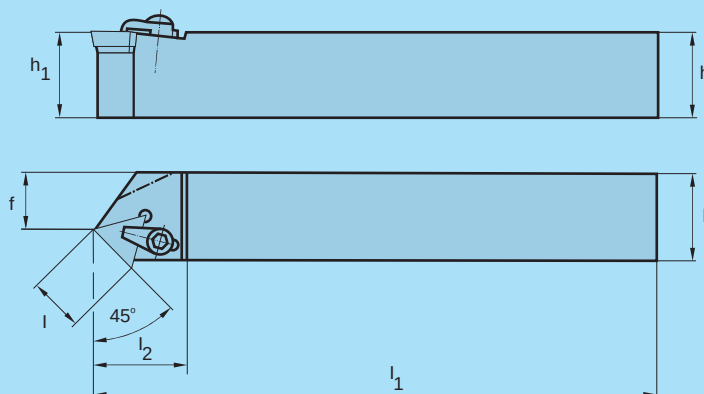


CODE	h= h ₁	b	l ₁	l ₂	f	a	INSERT	Clamping element
RIGHT/LEFT								SPARE PARTS
CTBP R/L 1212 F 11	12	12	80	22	11	2,6	11 TP.. 1103..	551-114
CTBP R/L 1616 H 11	16	16	100	20	13	2,6	11 TP.. 1103..	551-114

CTDP 45°



Inserts –
page 74 – 75



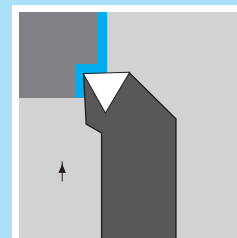
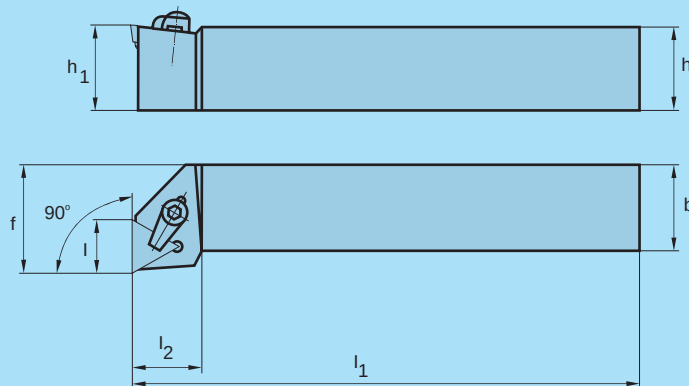
CODE	h= h ₁	b	l ₁	l ₂	f	INSERT	Shim	Pin	Clamping element
RIGHT/LEFT									SPARE PARTS
CTDP R/L 1212 F 11	12	12	80	18	6	11 TP.. 1103..	—	—	551-114
CTDP R/L 1616 H 11	16	16	100	20	10	11 TP.. 1103..	—	—	551-114
CTDP R/L 2020 K16	20	20	125	26	12	16,5 TP.. 1603..	552-013	553-001	551-116
CTDP R/L 2525 M16	25	25	150	26	17	16,5 TP.. 1603..	552-013	553-001	551-116





Toolholders C - clamping system

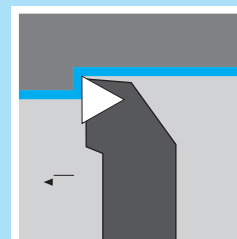
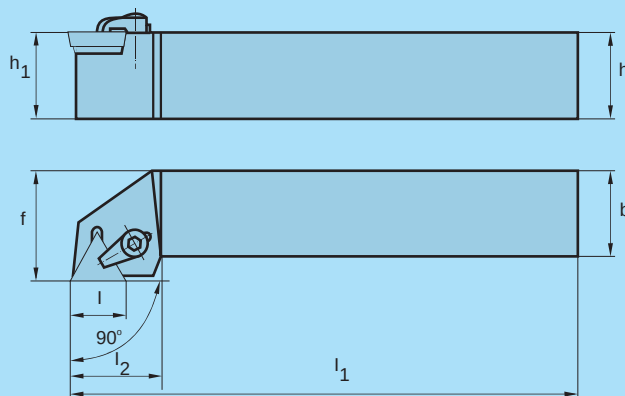
CTFP 90°



Inserts –
page 74 – 75

CODE	h= h ₁	b	l ₁	l ₂	f					Shim	Pin	Clamping element
RIGHT/LEFT						INSERT				SPARE PARTS		
CTFP R/L 0808 D09	8	8	60	15	10	9,6 TP.. 0902..	—	—	—	—	—	551-111
CTFP R/L 1010 E09	10	10	70	12,5	12	9,6 TP.. 0902..	—	—	—	—	—	551-111
CTFP R/L 1212 F11	12	12	80	17	16	11 TP.. 1103..	—	—	—	—	—	551-114
CTFP R/L 1616 H11	16	16	100	17	20	↓ ↓	—	—	—	—	—	↓
CTFP R/L 2020 K11	20	20	125	20	25	↓ ↓	—	—	—	—	—	↓
CTFP R/L 2020 K16	20	20	125	26	25	16,5 TP.. 1603..	552-013	553-001	—	552-013	553-001	551-116
CTFP R/L 2525 M16	25	25	150	26	32	16,5 TP.. 1603..	552-013	553-001	—	552-013	553-001	551-116
CTFP R/L 2525 M22	25	25	150	32	32	22 TP.. 2204..	512-023	—	—	512-023	—	—
CTFP R/L 3232 P27	32	32	170	41	40	27 TP.. 2706..	512-031	—	—	512-031	—	—

CTGP 90°



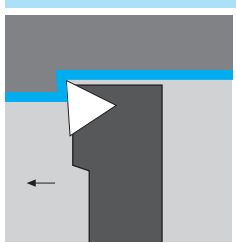
Inserts –
page 74 – 75

CODE	h= h ₁	b	l ₁	l ₂	f					Shim	Pin	Clamping element
RIGHT/LEFT						INSERT				SPARE PARTS		
CTGP R/L 0808 D09	8	8	60	15	10	9,6 TP.. 0902..	—	—	—	—	—	551-111
CTGP R/L 1010 E09	10	10	70	13	12	↓ ↓	—	—	—	—	—	↓
CTGP R/L 1212 E09	12	12	70	13	12	↓ ↓	—	—	—	—	—	↓
CTGP R/L 1212 F09	12	12	80	17	16	11 TP.. 1103..	—	—	—	—	—	551-114
CTGP R/L 1212 F11	12	12	80	17	16	↓ ↓	—	—	—	—	—	↓
CTGP R/L 1616 H11	16	16	100	17	20	↓ ↓	—	—	—	—	—	↓
CTGP R/L 2020 K11	20	20	125	20	25	↓ ↓	—	—	—	—	—	↓
CTGP R/L 2020 K16	20	20	125	20	25	16,5 TP.. 1603..	552-013	553-001	—	552-013	553-001	551-116
CTGP R/L 2525 M16	25	25	150	26	32	16,5 TP.. 1603..	552-013	553-001	—	552-013	553-001	551-116

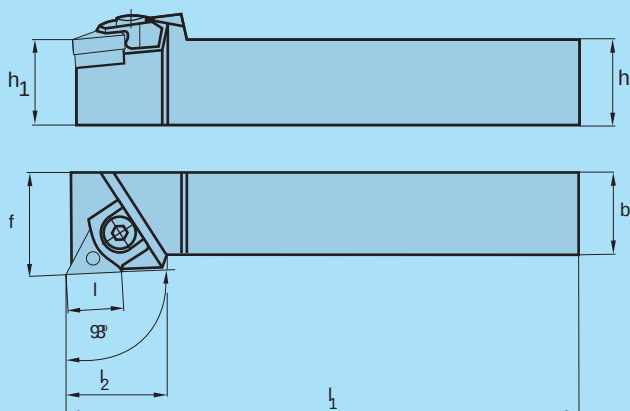




CTJN 93°

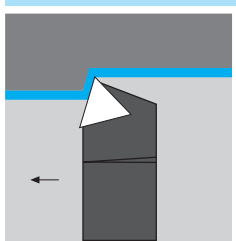


Inserts –
page 73

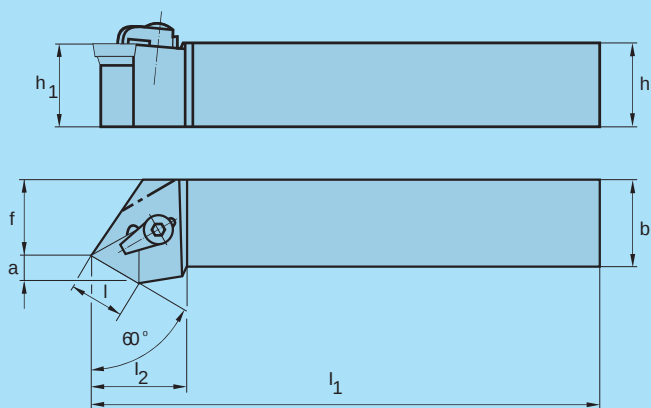


CODE	h h ₁	b	l ₁	l ₂	f	INSERT	Shim	Pin	Clamping element
RIGHT/LEFT									
CTJN R/L 2525M11 H3	25	25	150	22	32	11,0 TN.N 1103..	—	—	551-114
CTJN R/L 2525M16 H3	25	25	150	20	32	16,5 TN.N 1603..	552-013	553-001	551-116
CTJN R/L 2525M16 H3	25	25	150	20	32	16,5 TN.N 1604..	552-013	553-001	551-116
CTJN R/L 3232P22 H3	32	32	170	30	40	22,0 TN.N 2204..			

CTTP 60°



Inserts –
page 74–75



CODE	h h ₁	b	l ₁	l ₂	f	a	INSERT	Shim	Pin	Clamping element
RIGHT										
CTTP R/L 0808 D09	8	8	60	16,5	7	4,2	9,6 TP..0902..	—	—	551-111
CTTP R/L 1010 E09	10	10	70	16,5	9	4,2	9,6 TP..0903..	—	—	551-111
CTTP R/L 2020 K11	20	20	125	20	17	5	11 TP..1103..	—	—	551-114
CTTP R/L 2020 K16	20	20	125	26	17	7,2	16,5 TP..1603..	552-013	553-001	551-116
CTTP R/L 2525 M16	25	25	150	28	22	7,2	16,5 TP..1603..	552-013	553-001	551-116

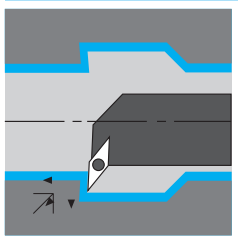


Boring bars M- and P-clamping systems

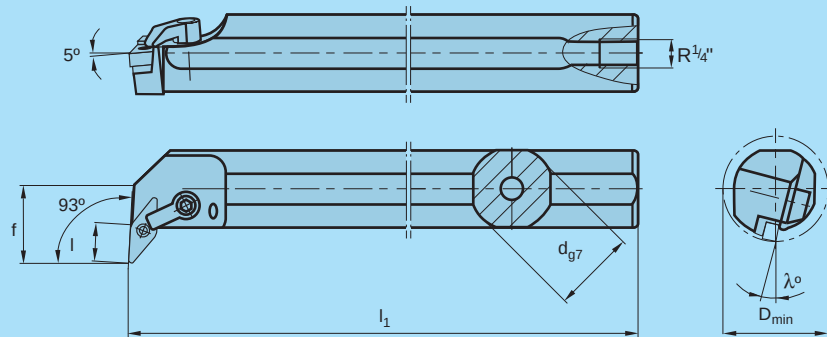
Boring bars M-and P-clamping systems		C				S				T			W		D		V	Page
		Lenght of cutting edge l																
		09	12	16	19	09	12	15	19	11	16	22	06	08	11	15	16	
Approach angle	Type	Shank section h x b																
93° 	-MVUN																25 32 40	122
95° 	-MWLN											16 20	25 32 40					122
95° 	-PCLN	16 20 25	25 32 40	32 40														123
93° 	-PDUN														25 32	40 50		123
75° 	-PSKN					25	25 32 40	40										124
90° 	-PTFN									16 20	25 32	40						124



-MVUN 93°

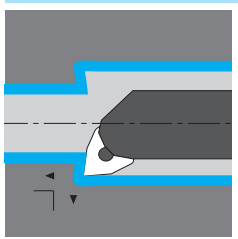


Inserts –
page 54–55

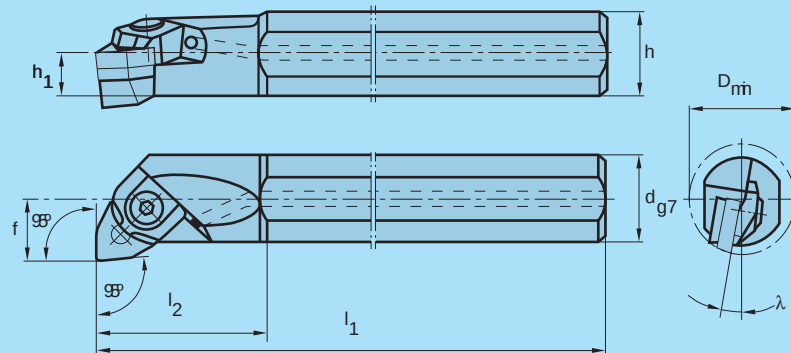


CODE	d_{g7}	h	l_1	l_2	f	$D_{\min}$		
RIGHT/LEFT							INSERT	
S25R- MVUN R/L 16	25	28	200	50	22	37	166	VNM1604
S32S- MVUN R/L 16	32	30	250	50	22	40		
S40UNR16	40	20	400	55	27	50		

-MWLN 95°



Inserts –
page 58–59



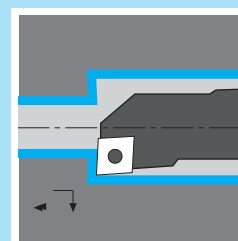
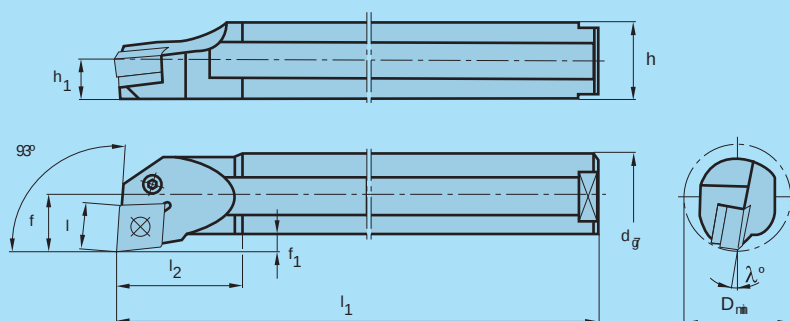
															
CODE	d _{g7}	h	h ₁	l ₁	l ₂	f	D _h	λ°	Shin	Clamping finger set	Clamping stud	Saw	Saw driver		
RIGHT/LEFT									INSERT		SPAREPARTS				
A16R -MWLN R/L 06	16	145	7,5	200	28	11	20	12	6	WNMG0804	—	551.132	513.134	192.635	170003
A20S -MWLN R/L 06	20	20	9	250	30	13	25	12	6	WNMG0804	—	551.132	513.134	192.635	
A25R -MWLN R/L 08	25	23	11,5	200	40	17	32	12	8	WNMG0804..	—	551.131	513.133	192.636	
A32S -MWLN R/L 08	32	30	15	250	50	22	40	12			512.131				
A40T -MWLN R/L 08	40	37	18,5	300	55	27	50	10			512.131				





Boring bars P - clamping system

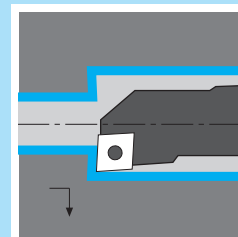
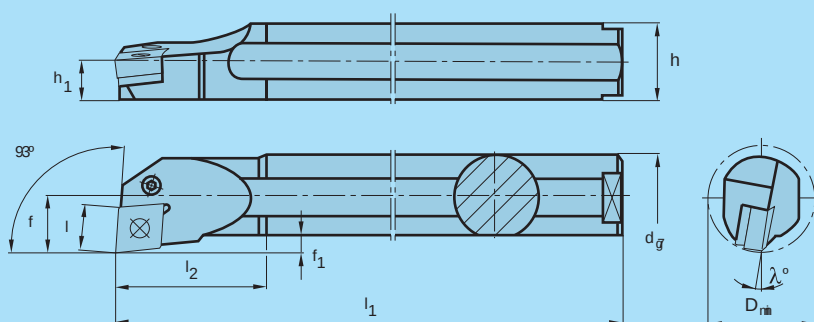
-PCLN 95°



33-280

																		
	ED	d _{g7}	h	h ₁	l ₁	l ₂	f	f ₁	n	i	D	λ°	mIS	nIP	elgT de	gipC sev	lupP	
1	BAR												INSERT	SPARE PARTS				
9	100	61	51	--	002	62	11	--	02		01		7,9	0,001				
9	100	02	81	--	052	92	31	--	52				↓					
9	100	52	32	--	003	33	71	--	23				↓					
2	100	52	32	5,1	003	05	71	7	23				9,2	0,001	--	--	--	
2	100	23	03	5	053		22	5,8	04				↓	↓	2,5	0,35	055	
2	100	04	73	5,8	004		72	5,9	05				↓	↓	2,5	0,35	055	
6	100	23	03	5	053		22	5,8	55				1,6	0,001	2,5	0,35	055	
6	100	04	73	5,8	004		72	5,9	85				↓	↓	↓	↓	↓	

-PDUN 93°



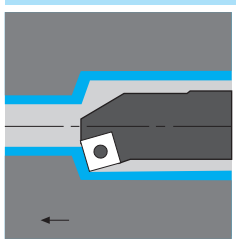
Inserts
33-280

																
	CODE	d_g	h	l_1	l_2	f	n	i	D	mIS	nIP	$elgT$	$gipC$	$lupP$		
1	LR									INSERT	SPARE PARTS					
1	100	52	32	003	53	71	23			6,1	0,001	0,25	0,35	015	045	055
1	100	23	03	053	04	22	04			6,1	0,001	512-060	513-060	511-060	514-018	
51	LR	04	73	004	65	72	05			5,51	0,001	3,25	0,35	015	045	

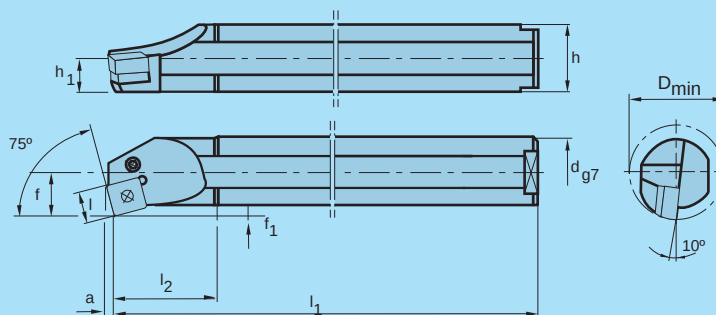




-PSKN 75°

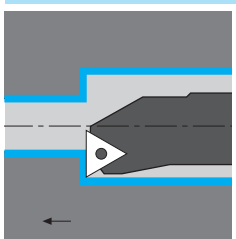


Inserts —
page 38–44

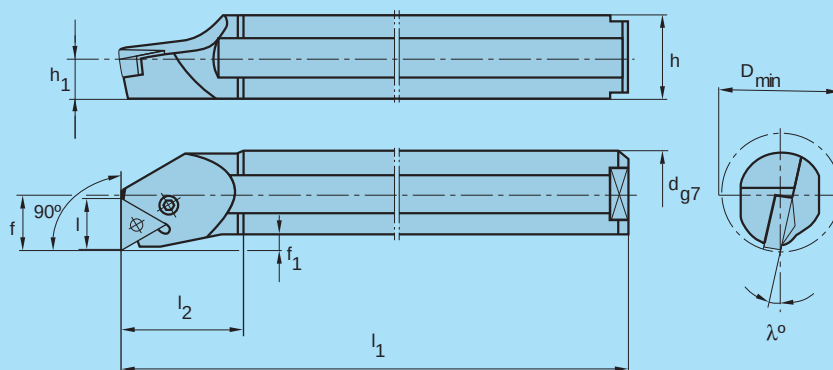


CODE	d _g	h	h ₁	l ₁	l ₂	f	f ₁	a	D _h	INSERT	SPAREPARTS	Sim	Pin	Toggle lever	Clamping screw	Punch
RIGHT/LEFT																
S25T-PSKN R/L 09	25	28	—	300	35	17	—	—	32	95 SNM0903.	—	—	—	511018	514-018	—
S25R-PSKN R/L 12	25	28	115	200	531	17	7	31	32	127 SNM. 1204..	—	—	—	511022	514022	—
S32S-PSKN R/L 12	32	30	15	250	531	22	85	31	40	127 SNM. 1204..	512063	513023	511023	514024	515-018	—
S40T-PSKN R/L 12	40	37	185	300	531	27	95	31	50	127 SNM. 1204..	512063	513023	511023	514024	515-018	—
S40T-PSKN R/L 15	40	37	18,5	300	53,8	27	9,5	3,8	50	15,8 SNM. 1506..	512-025	513-025	511-025	514-025	515-022	—

-PTFN 90°



Inserts —
page 46–51



CODE	d _g	h	h ₁	l ₁	l ₂	f	f ₁	D _h	λ°	INSERT	SPAREPARTS	Sim	Pin	Toggle lever	Clamping screw	Punch
RIGHT/LEFT																
S16R-PTFN R/L 11	16	15	75	200	29	11	3,5	20	14	11 TNM1103.	—	—	—	511011	514011	—
S20S-PTFN R/L 11	20	18	9	250	30	13	4,5	25	12	11 TNM1103.	—	—	—	511011	514011	—
S25T-PTFN R/L 16	25	28	115	300	40	17	7	32	12	165 TNM1604. TNM1603.	512-013	513-018	511-018	514-018	515-018	—
S32UPTFN R/L 16	32	30	15	350	46	22	8,5	40	10	165 TNM1604. TNM1603.	512-018	513-019	511-022	514-022	—	—
S40V-PTFN R/L 22	40	37	18,5	400	50	27	9,5	50	10	22 TNM. 220412/16 TNM. 220404/08	512-023	513-023	—	—	—	—



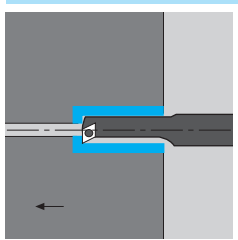


Boring bars S-clamping system

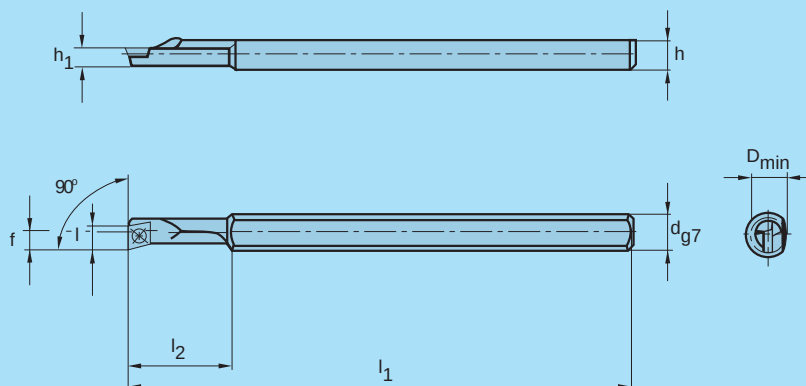
Boring bars S-clamping system			C				D		S		T		V		
			g6												
			50	60	90	21	70	11	90	21	11	61	11	61	
α	ET	g7												EP	
90 °	← 	-SCLP		21 61 02											126
75 °	← 	-SCKP		21 61 02											126
95 °	↖ 	-SCLC	80 01	80 01 21 61	61 02 52	52 23 04									127
95 °	↖ 	-SCLP	21 61	21 61 02											127
98 °	↗ 	-SDUC				01 21 61	61 02 52								128
75 °	← 	-SSKC					61 02	52 23							128
90 °	← 	-STFC							21 61 02	52 23 04					129
107,5 °	↗ 	-SVQB									61 02	52 23 04			129



SCFP 90°

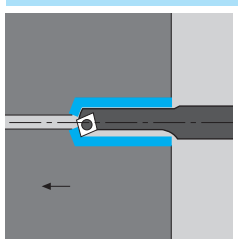


Inserts —
page 61 – 63

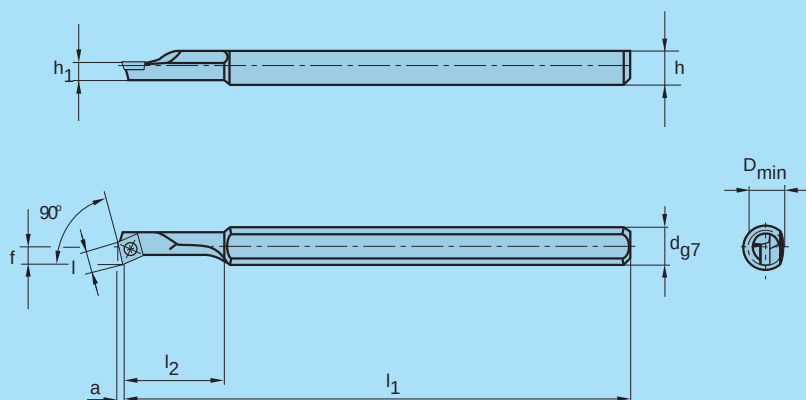


CODE	dg7	h	h1	l1	l2	f	Dmin	INSERT	Clamping screw	Screw driver
RIGHT/LEFT										
SCFP R/L 0012G 06	12	10,5	7	90	30	5	10	6,5 CPEX 0602...L/R 6,4 CC.T 0602...	191-131	170-022
SCFP R/L 0012M 06	12	10,5	7	150	30	5	10	6,5 CPEX 0602...L/R 6,4 CC.T 0602...		
SCFP R/L 0016H 06	16	14,5	8,7	100	35	6	12	6,5 CPEX 0602...L/R 6,4 CC.T 0602...		
SCFP R/L 0016R 06	16	14,5	8,7	200	35	6	12	6,5 CPEX 0602...L/R 6,4 CC.T 0602...		
SCFP R/L 0020K 06	20	18,5	10,7	125	45	7,5	15	6,5 CPEX 0602...L/R 6,4 CC.T 0602...		
SCFP R/L 0020S 06	20	18,5	10,7	250	45	7,5	15	6,5 CPEX 0602...L/R 6,4 CC.T 0602...		

SCKP 75°



Inserts —
page 61 – 63



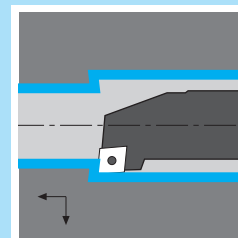
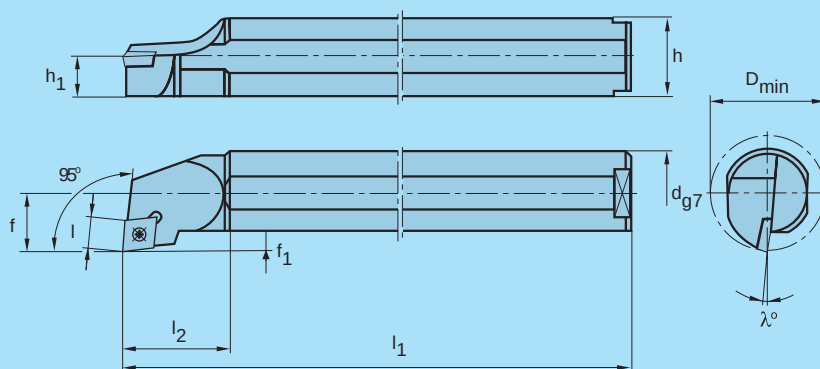
CODE	dg7	h	h1	l1	l2	a	f	Dmin	INSERT	Clamping screw	Screw driver
RIGHT/LEFT											
SCKP R/L 0012 G06	12	10,5	7	90	30	1,7	5	10	6,5 CPEX 0602...L/R 6,4 CC.T 0602...	191-131	170-051
SCKP R/L 0012 M06	12	10,5	7	150	30		5	10	6,5 CPEX 0602...L/R 6,4 CC.T 0602...		
SCKP R/L 0016 H06	16	14,5	8,7	200	35		6	12	6,5 CPEX 0602...L/R 6,4 CC.T 0602...		
SCKP R/L 0016 R06	16	14,5	8,7	200	35		6	12	6,5 CPEX 0602...L/R 6,4 CC.T 0602...		
SCKP R/L 0020 K06	20	18,5	10,7	125	45	1,9	7,5	15	6,5 CPEX 0602...L/R 6,4 CC.T 0602...		
SCKP R/L 0020 S06	20	18,5	10,7	250	45	1,9	7,5	15	6,5 CPEX 0602...L/R 6,4 CC.T 0602...		





Boring bars S - clamping system

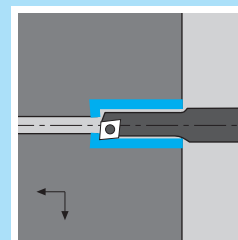
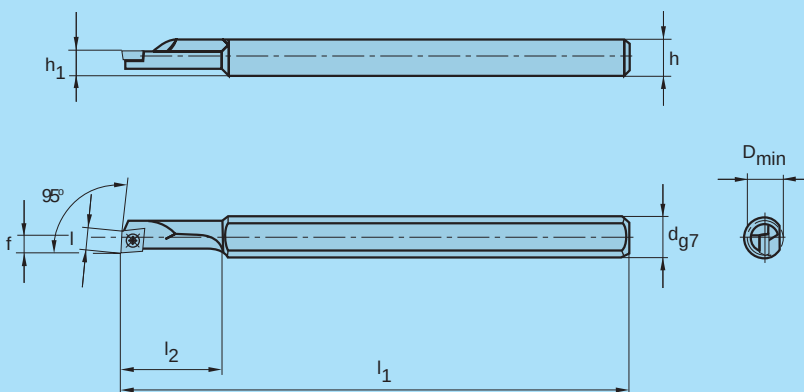
-SCLC 95°



Inserts –
page 61 – 63

CODE	d_g	h	h_1	l_1	l_2	f	f_1	$D_{\min}$	λ°					
RIGHT/LEFT										INSERT	SPARE PARTS			
S08J-SCLC R/L 05	8			110		6		11	9	5,6 CPGT. 0502..		—	191-131	170-051
S10K-SCLC R/L 05	10			125		7		13	7	5,6 CPGT. 0502..		—	191.131	
S08J-SCLC R/L 06	8			110		6		11	9	6,4 CC.T 0602..	—	—		
S10K-SCLC R/L 06	10			125		7		13	7	6,4 CC.T 0602..	—	—		
S12M-SCLC R/L 06	12	11	5,5	150	25	9	3,5	16	10	6,4 CC.T 0602..	—	—		
S16R-SCLC R/L 06	16	14,5	7,25	200	28	11	4	20	10	6,5 CPEX 0602..L/R	—	—		
										6,4 CC.T 0602..	—	—		
										6,5 CPEX 0602..L/R	—	—		
S16R-SCLC R/L 09	16	14,5	7,25	200	28	11	4	20	12	9,7 CC.T 09T3..	—	—	191-848	170-084
S20S-SCLC R/L 09	20	18	9	250	30	13	4,5	25	8		—	—	191-848	
S25T-SCLC R/L 09	25	23	11,5	300	40	17	6,5	30	6		—	—	191-698	
S25T-SCLC R/L 12	25	23	11,5	300	40	17	6,5	30	10	12,9 CC.T 1204..	512-212	192-445	192-446	170-051
S32U-SCLC R/L 12	32	30	15	350	50	22	8	40	10					
S40V-SCLC R/L 12	40	38	19	400	55	27	9	48	8					

SCLP 95°



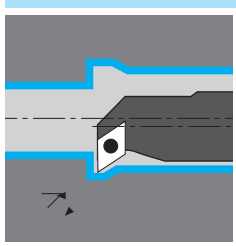
Inserts –
page 61 – 63

CODE	d_g	h	h_1	l_1	l_2	f	$D_{\min}$			
RIGHT/LEFT								INSERT	SPARE PARTS	
SCLP R/L 0012 M05	12	10,5	7	150	30	5	10	5,6 CPGT 0502..	191-131	170-051
SCLP R/L 0016 M05	16	14,5	8,7	150	35	6	12	5,6 CPGT 0502..		
SCLP R/L 0012 M06	12	10,5	7	150	30	5	10	6,5 CPEX 0602..L/R		
SCLP R/L 0016 M06	16	14,5	8,7	150	35	6	12	6,4 CC.T 0602..		
								6,5 CPEX 0602..L/R		
SCLP R/L 0020 M06	20	18,5	10,7	150	45	7,5	15	6,4 CC.T 0602..		
								6,5 CPEX 0602..L/R		
								6,4 CC.T 0602..		

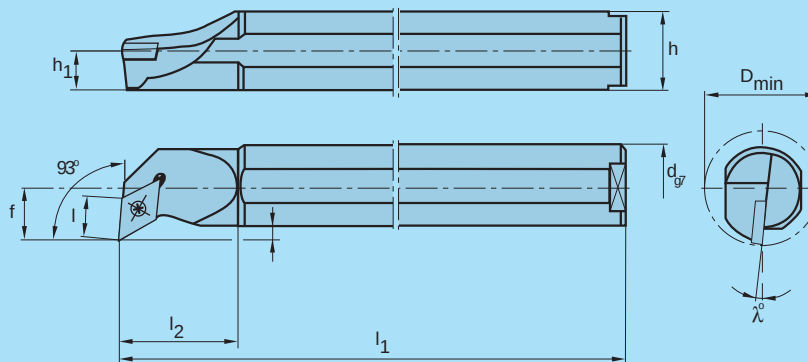




-SDUC 93°

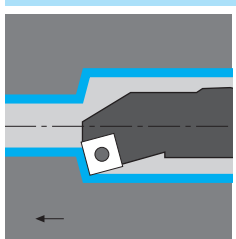


Inserts –
page 64

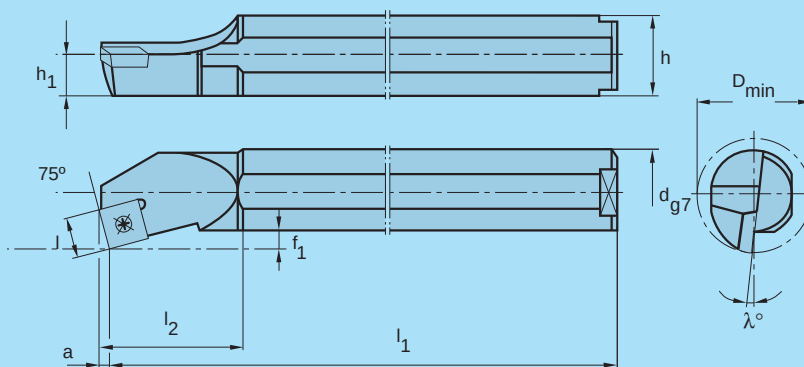


CODE	d_{g7}	h	h_1	l_1	l_2	f	f_1	D_{min}	λ°	INSERT	Clamping screw	Screw driver
RIGHT/LEFT												
S10K-SDUC R/L 07	10	9	4,5	125	22	7	2,5	13	10	7,7 DC.T 0702..	191-432	170-052
S12M-SDUC R/L 07	12	11	5,5	150	25	9	3,5	16	10	↓ ↓	↓	↓
S16R-SDUC R/L 07	16	14,5	7,25	200	28	11	4	20	10	↓ ↓	↓	↓
S16R-SDUC R/L 11	16	14,5	7,25	200	28	11	4	20	10	11,6 DC.T 11T3..	191-848	170-055
S20S-SDUC R/L 11	20	18	9	250	30	13	4,5	25	6	↓ ↓	↓	↓
S25T-SDUC R/L 11	25	23	11,5	300	40	17	6,5	32	6	↓ ↓	↓	↓

-SSKC 75°



Inserts –
page 67



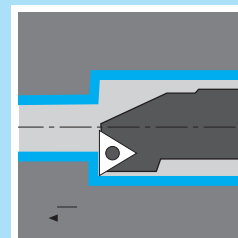
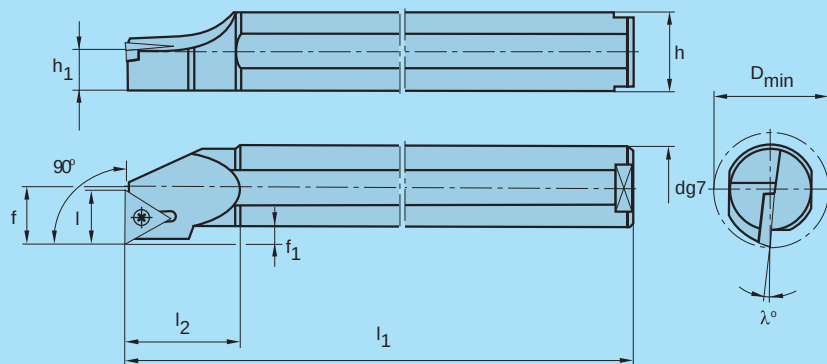
													   			
CODE	d_g	h	h_1	l_1	l_2	f	f_1	a	D_m	λ°			Clamping screw	Screw driver	Shim	Screw for shim
RIGHT/LEFT											INSERT		SPARE PARTS			
S16R-SSKC R/L 09 16	14,5	7,3	200	30	11	4	2,2	20	11		9,5	SC.T 09T3..	191-848	170-055	—	—
S20S-SSKC R/L 09 20	18	9	250	32	13	4,5	2,2	25	6		9,5	SC.T 09T3..	191-848	170-055	—	—
S25T-SSKC R/L 12 25	23	11,5	300	43	17	6,5	3,1	30	8		12,7	SC.T 1204..	192-726	170-056	—	—
S32U-SSKC R/L 12 32	30	15	350	48,1	22	7,9	3,1	40	10		12,7	SC.T 1204..	192-446	170-058	512-211	192-445





Boring bars S - clamping system

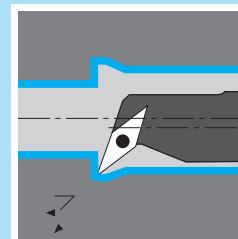
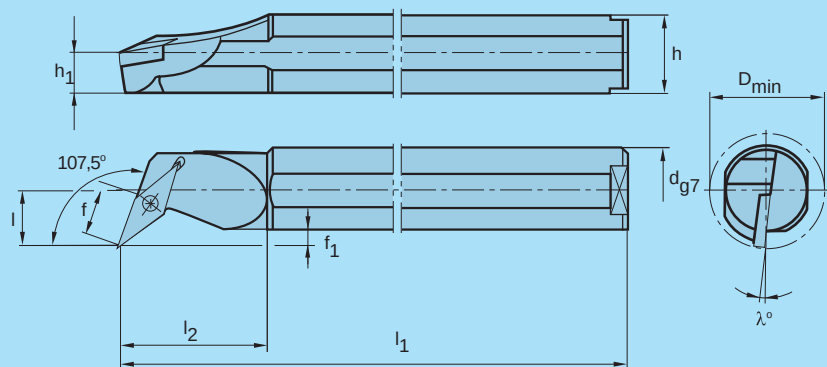
-STFC 90°



Inserts –
page 72

CODE	d_g	h	h_1	l_1	l_2	f	f_1	D_{min}	λ°					
RIGHT/LEFT										INSERT	SPARE PARTS			
S12M-STFC R/L 11	12	11	5,5	150	25	9	3,5	16	10	11 TC.T 1102..	—	—	192-432	170-052
S16R-STFC R/L 11	16	14,5	7,25	200	28	11	4,0	20	6	↓ ↓	—	—	↓	↓
S20S-STFC R/L 11	20	18	9	250	30	13	4,5	25	3	↓ ↓	—	—	↓	↓
S25T-STFC R/L 16	25	23	11,5	300	40	17	6,5	30	6	16,5 TC.T 16T3..	—	—	191-698	170-055
S32U-STFC R/L 16	32	30	15	350	50	22	8	40	10	↓ ↓	512-203	191-942	↓	↓
S40V-STFC R/L 16	40	37	18,5	400	55	27	9,4	50	8	↓ ↓	512-203	191-942	↓	↓

-SVQB 107,5°



Inserts –
page 76

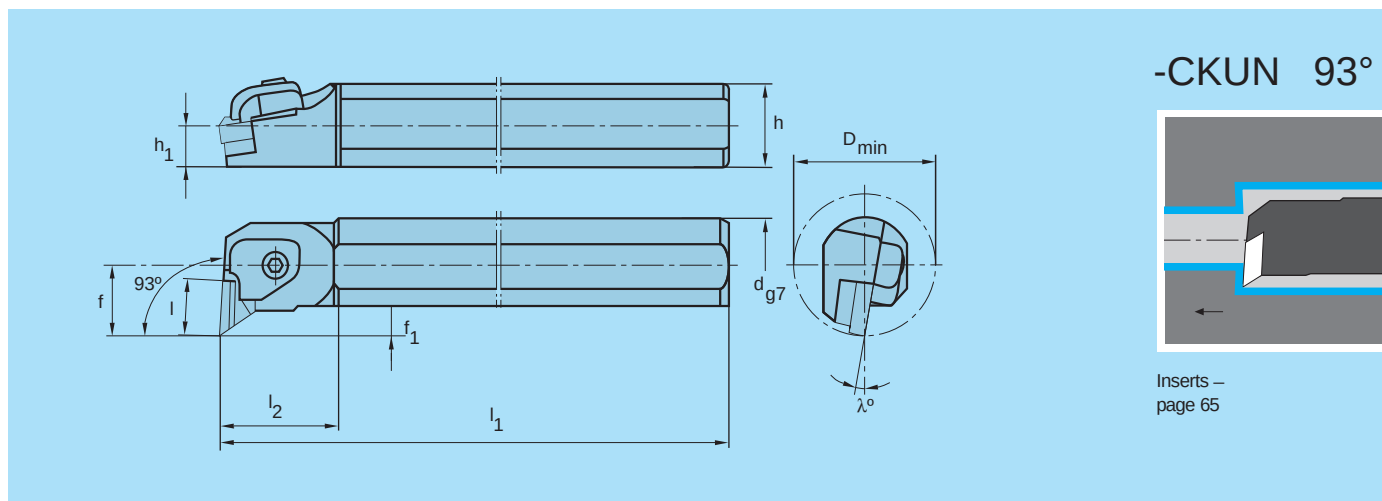
CODE	d_g	h	h_1	l_1	l_2	f	f_1	D_{min}	λ°					
RIGHT/LEFT										INSERT	SPARE PARTS			
S16R-SVQB R/L 11	16	14,5	7,25	200	28	11	4	20	8	11 VBMT 1103..	—	—	192-432	170-022
S20S-SVQB R/L 11	20	18	9	250	30	13	4,5	25	8	11 VBMT 1103..	—	—	192-432	170-022
S25T-SVQB R/L 16	25	23	11,5	300	40	17	6,5	30	8	16,6 VB.T 1604..	—	—	191-848	170-084
S32U-SVQB R/L 16	32	30	15	350	50	22	8	40	8	↓ VB.T 16040/08	512-205	191-942	↓	↓
										↓ VB.T 160412	512-206	↓	↓	↓
S40V-SVQB R/L 16	40	37	18,5	400	55	27	9	50	8	↓ VB.T 16040/08	512-205	↓	↓	↓
										↓ VB.T 160412	512-206	↓	↓	↓



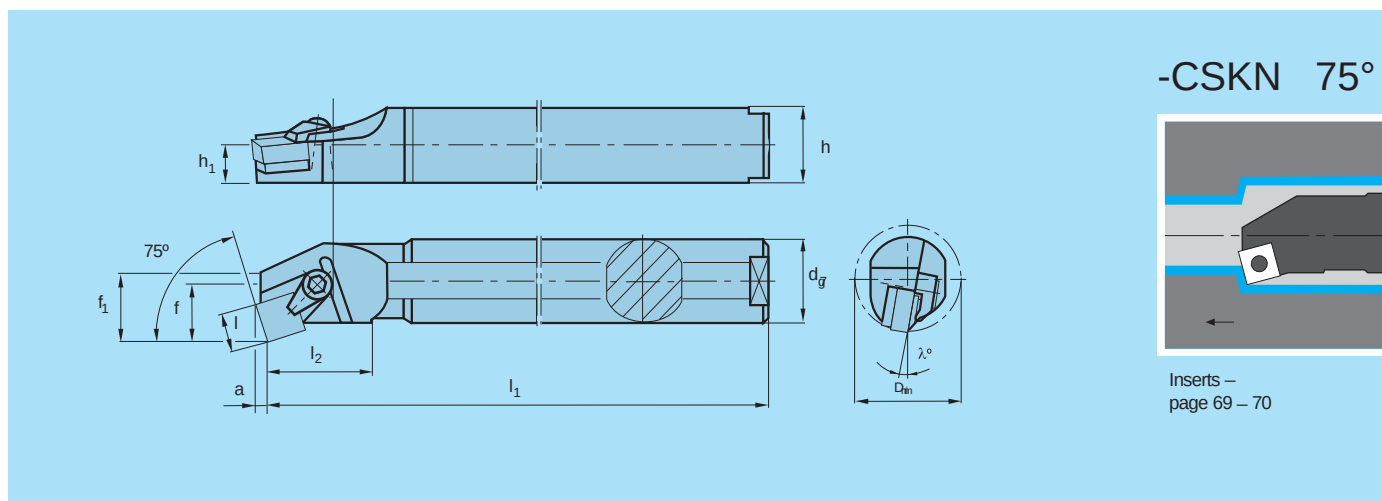
Boring bars C-clamping system		Legend							
		Serrated							
		g7							
Angle	Type	1	9	2	6	9	11	1	Ref
93°	-CKUN	3 4							131
75°	-CSKN			4					131
75°	-CSKP		6 2	2 2 4					132
90°	-CTFC -CTFP				1	2	6 2	6 2 4	132
75°	-CTKC -CTKP				1	2			133



Boring bars C - clamping system



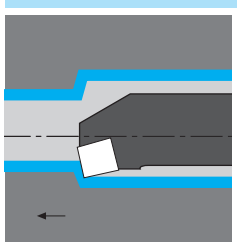
CODE	d_g	h	h_1	l_1	l_2	f	f_1	$D_{\min}$	λ°	INSERT	Shim	Pin	Clamping element complete	Pin with spring
RIGHT														
S32U-CKUN R 16	32	30	15	350	55	22	8	42	10	16 KNUX 1604..L.	512-101	513-020	551-130	513-127
S40W-CKUN R 16	40	38	19	450		27	9	48	8	KNUX 1604..L.	512.101		551-130	
LEFT														
S32U-CKUN L 16	32	30	15	350		22	8	42	10	KNUX 1604..R.	512-100		551-129	
S40W-CKUN L 16	40	38	19	450		27	9	48	8	KNUX 1604..R.	512.100		551-129	



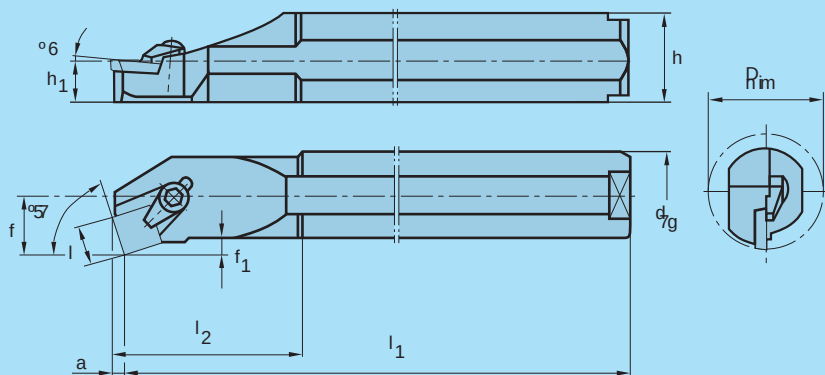
CODE	d_g	h	h_1	l_1	l_2	f	f_1	a	$D_{\min}$	λ°	INSERT	Shim	Pin	Clamping element
RIGHT/LEFT														
S40T-CSKNR/L12H3 40	40	37	18,5	300	26	27	33	3,1	50	-12	12,7 SP.. 1204	552-002	553-001	551-116



-CSKP 75°

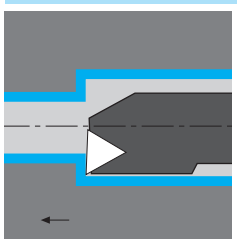


0200pp

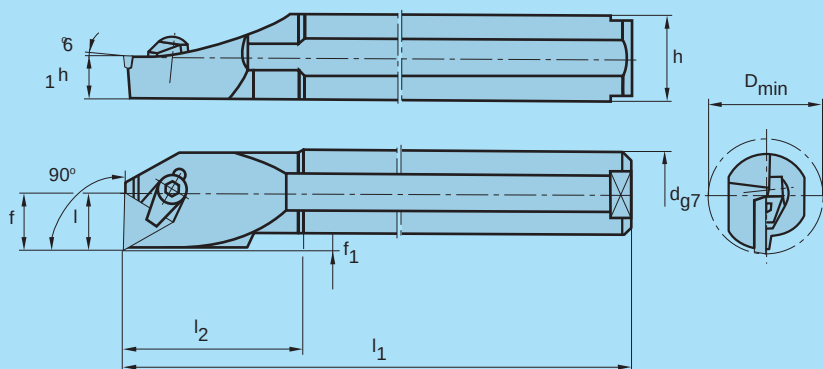


		d_{g7}	h	l_1	l_2	f	f_1	a	n	i	m	D				
	BAR												INSERT		SPARE PARTS	
	S16R-CSKP R/L 09	61	5,4	5,7	002	03	11	4	2,2	02	5,9	0,9	0,9		---	---
	S16R-CSKP R/L 09	02	8	9	002	23	31	5,4	2,2	42	5,9	0,9	0,9		---	---
2	IR	52	3,2	5,1	003	24	71	6	3,1	03	7,2	0,9	0,9		---	---
2	IR	23	03	5	003	25	22	8		04					552-00205	0,5
2	IR	04	83	9	004	75	72	9		84						

-CTF 90°



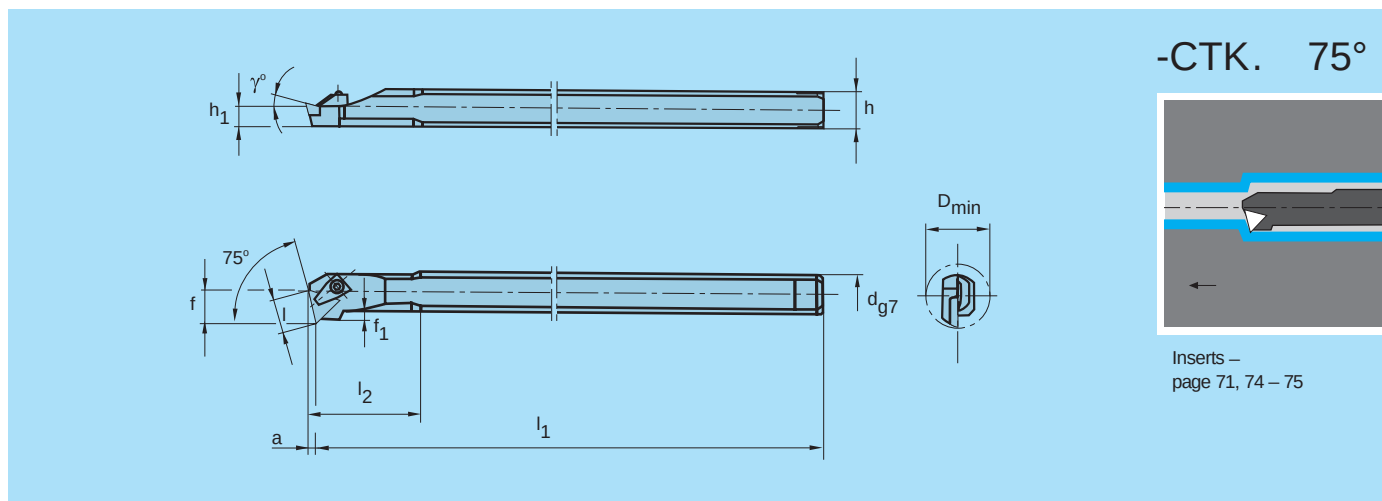
Inserts -
75 page



		d_{g7}	h	l_1	l_2	f	f_1	n	i	m	D	λ°				
	CODE												INSERT		SPARE PARTS	
	S10M-CTFC R/L 0601	9	5,4	001	22	5,6	2	21	0	9,6	0,9	0,9		---	---	11,5
0	IR	21	11	5,5	001	52	9	5,3	61	6,9	0,9	0,9		---	---	11,5
1	IR	61	5,4	5,7	002	82	11	4	02	11	0,9	0,9		---	---	31,5
1	IR	02	8	9	002	03	31	5,4	42	11	0,9	0,9		---	---	41,5
1	IR	52	3,2	5,1	003	04	71	6	13	5,6	0,9	0,9		---	---	51,5
1	IR	23	03	51	003	05	22	8	93					3,5	0,5	61,5
1	IR	04	83	91	004	55	72	9	84							



Boring bars C - clamping system



CODE	d_{g7}	h	h_1	l_1	l_2	f	f_1	a	D_{min}	λ°	INSERT	Clamping element
RIGHT/LEFT												SPARE PARTS
S10M-CTKC R/L 06	10	9	4,5	150	24	6,5	2	1,7	12	0	6,9 TCGR 0601..	551-111
S12Q-CTKP R/L 09	12	11	5,5	180	27	9	3,5	2,2	16	6	9,6 TP.. 0902..	551-111



Cartridges C and P- clamping systems

Cartridges C-clamping system			Legend				
			Setting angle				
			90	21	11	6	
Setting angle	Type	Setting angle				Page	
75°	 CSKP	50	20			203	
75°	 CSRP	50	20			203	
45°	 CSSP	50	20			204	
90°	 CTFP			50	20	204	
90°	 CTGP			50	20	205	
45°	 CTSP			50	20	205	
60°	 CTTP			50	20	206	
60°	 CTWP			50	20	206	

Cartridges P-clamping system			■ C ■ S ▲ T					
			Legend					
			1	9	2	11	6	
Setting angle	Type	Stroke					Page	
95°	 PCLN	8 9					207	
75°	 PSKN		8	8 9			207	
75°	 PSRN		26	26 9			208	
45°	 PSSN		26	8 9			208	
90°	 PTFN				26	26 20	209	

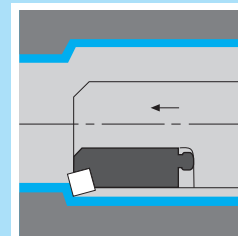
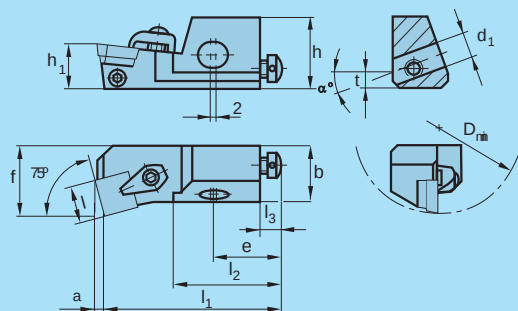


Cartridges P-clamping system			■ S		▲ T		
			Length				
			9	2	11	6	
Setting angle	Type	Stroke				9	
90°		PTGN			206	26 20	209
45°		PTSN			26	8 20	210
60°		PTTN			26	8 20	210
60°		PTWN			26	26 20	211

Cartridges S-clamping system			C		S		T		
			Length						
			9	2	9	2	11	6	
Setting angle	Type	Stroke						Page	
95°		SCLC	11 206	26 250					212
75°		SSKC			11 26	206 20			212
75°		SSRC			11 8	26 20			213
45°		SSSC			11 2016	26 20			213
90°		STFC					11 26	26 250	214
90°		STGC					1511 2016	26 20	214
45°		STSC					11 26	26 20	215
60°		STTC					11 26	26 20	215
60°		STWC					11 26	26 20	216

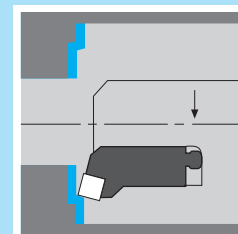
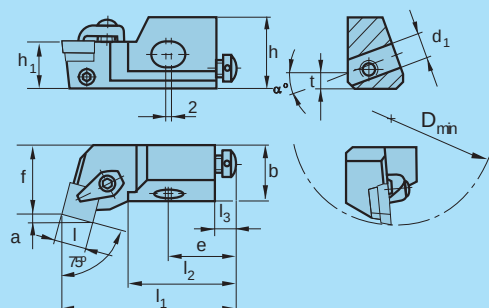


CSKP 75°

Inserts –
page 70

CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}	
RIGHT/LEFT														INSERT
CSKP R/L 10CA-09	15	10	11	50	28	8	20	14	2,2	5	20	7	40	9,5 SP.. 0903...
CSKP R/L 12CA-09	20	12	16	55	28	↓	↓	20	2,2	6	20	7	50	9,5 SP.. 0903...
CSKP R/L 12CA-12	20	12	16	55	28	↓	↓	20	3,1	6	20	7	50	12,7 SP.. 1203...
CSKP R/L 16CA-12	25	16	20	63	37	↓	25	25	3,1	—	45	9	60	12,7 SP.. 1203...
CODE	Shim	Pin		Clamping element	Adjusting screw			Cross adjusting screw	Fixing screw			Washer for fixing screw		
RIGHT/LEFT	SPARE PARTS													
CSKP R/L 10CA-09	—	—		551-120	192-428			192-057	191-405		191-279			
CSKP R/L 12CA-09	—	—		551-121	↓			190-371	191-406		190-260			
CSKP R/L 12CA-12	—	—		551-121	↓			190-371	191-406		190-260			
CSKP R/L 16CA-12	552-002	553-001		551-121	↓			190-191	191-407		190-008			

CSRP 75°

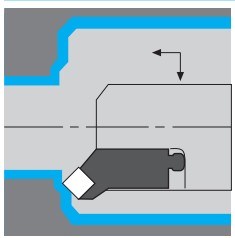
Inserts –
page 70

CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}	
RIGHT/LEFT														INSERT
CSRP R/L 10CA-09	15	10	11	50	28	8	20	14	2,2	5	20	7	40	9,5 SP.. 0903...
CSRP R/L 12CA-09	20	12	16	55	↓	↓	↓	20	2,2	6	↓	↓	50	9,5 SP.. 0903...
CSRP R/L 12CA-12	20	12	16	55	↓	↓	↓	20	3,1	6	↓	↓	50	12,7 SP.. 1203...
CSRP R/L 16CA-12	25	16	20	63	37	↓	25	25	3,1	—	45	9	60	12,7 SP.. 1203...
CODE	Shim	Pin		Clamping element	Adjusting screw			Cross adjusting screw	Fixing screw			Washer for fixing screw		
RIGHT/LEFT	SPARE PARTS													
CSRP R/L 10CA-09	—	—		551-120	192-428			192-057	191-405		191-279			
CSRP R/L 12CA-09	—	—		551-121	192-428			190-371	191-406		190-260			
CSRP R/L 12CA-12	—	—		551-121	192-428			190-371	191-406		190-260			
CSRP R/L 16CA-12	552-002	553-001		551-121	192-428			190-191	191-407		190-008			

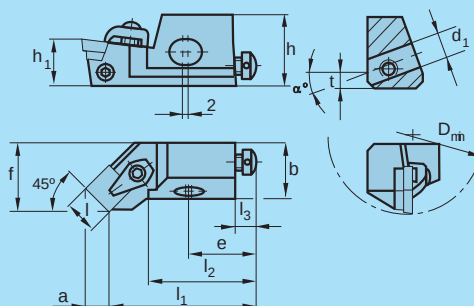




CSSP 45°

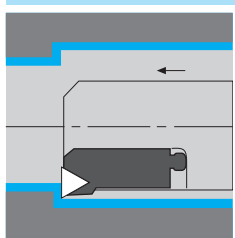


Inserts —
page 70

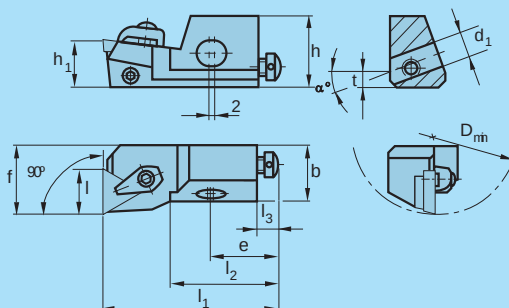


															
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}		
RIGHT/LEFT														INSERT	
CSSP R/L 10CA-09	15	10	11	44	28	8	20	14	6,1	5	20	7	40	9,5	SP.. 0903...
CSSP R/L 12CA-09	20	12	16	47	↓	↓	↓	20	6,1	6	↓	↓	50	9,5	SP.. 0903...
CSSP R/L 12CA-12	20	12	16	47	↓	↓	↓	20	8,3	6	↓	↓	50	12,7	SP.. 1203...
CSSP R/L 16CA-12	25	16	20	53	37	↓	25	25	8,3	—	45	9	60	12,7	SP.. 1203...
															
CODE	Shim	Pin			Clamping element	Adjusting screw		Cross adjusting screw		Fixing screw		Washer for fixing screw			
RIGHT/LEFT		SPARE PARTS													
CSSP R/L 10CA-09	—	—			551-120	192-428		192-057		191-405		191-279			
CSSP R/L 12CA-09	—	—			551-121	↓		190-371		191-406		190-260			
CSSP R/L 12CA-12	—	—			↓	↓		190-371		191-406		190-260			
CSSP R/L 16CA-12	552-002	553-001			↓	↓		190-191		191-407		190-008			

CTFP 90°

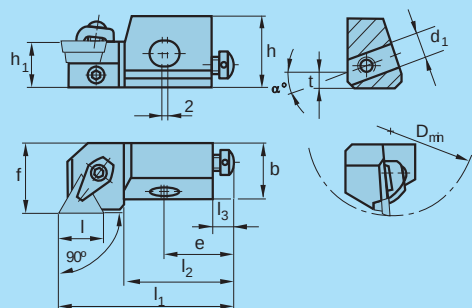


Inserts —
page 74

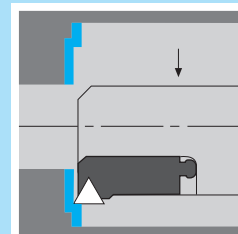


														
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	t	α°	d ₁	D _{min}		
RIGHT/LEFT													INSERT	
CTFP R/L 10CA-11	15	10	11	50	28	8	20	14	5	20	7	40	11	TP.. 1103...
CTFP R/L 12CA-11	20	12	16	55	↓	↓	↓	20	6	↓	↓	50	11	TP.. 1103...
CTFP R/L 12CA-16	20	12	16	55	↓	↓	↓	20	6	↓	↓	50	16,5	TP.. 1603...
CTFP R/L 16CA-16	25	16	20	63	37	↓	25	25	—	45	9	60	16,5	TP.. 1603...
														
CODE	Shim	Pin		Clamping element	Adjusting screw			Cross adjusting screw		Fixing screw		Washer for fixing screw		
RIGHT/LEFT	SPARE PARTS													
CTFP R/L 10CA-11	—	—		551-120	192-428			192-057		191-405		191-279		
CTFP R/L 12CA-11	—	—		551-121	↓			190-371		191-406		190-260		
CTFP R/L 12CA-16	—	—		551-121	↓			190-371		191-406		190-260		
CTFP R/L 16CA-16	552-013	553-001		551-121	↓			190-191		191-407		190-008		

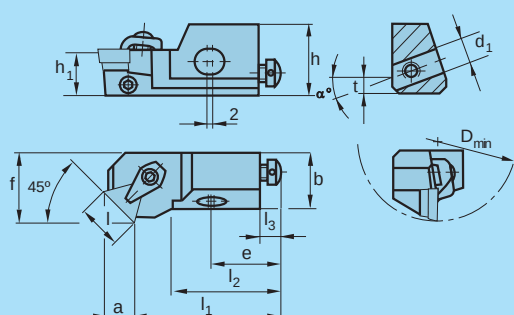




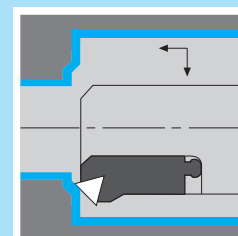
CTGP 90°

Inserts –
page 74

CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	t	α°	d ₁	D _{min}	
RIGHT/LEFT													INSERT
CTGP R/L 10CA-11	15	10	11	50	28	8	20	14	5	20	7	40	11 TP.. 1103...
CTGP R/L 12CA-11	20	12	16	55	↓	↓	↓	20	6	↓	↓	50	11 TP.. 1103...
CTGP R/L 12CA-16	20	12	16	55	↓	↓	↓	20	6	↓	↓	50	16,5 TP.. 1603...
CTGP R/L 16CA-16	25	16	20	63	37	↓	25	25	—	45	9	60	16,5 TP.. 1603...
CODE	Shim	Pin			Clamping element	Adjusting screw		Cross adjusting screw	Fixing screw		Washer for fixing screw		
RIGHT/LEFT	SPARE PARTS												
CTGP R/L 10CA-11	—	—		551-120	192-428		192-057	191-405	191-279				
CTGP R/L 12CA-11	—	—		↓	↓		190-371	191-406	190-260				
CTGP R/L 12CA-16	—	—		↓	↓		190-371	191-406	190-260				
CTGP R/L 16CA-16	552-013	553-001		↓	↓		190-191	191-407	190-008				



CTSP 45°

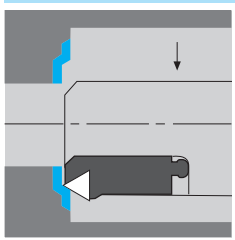
Inserts –
page 74

															
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}		
RIGHT/LEFT														INSERT	
CTSP R/L 10CA-11	15	10	11	44	28	8	20	14	6,1	5	20	7	40	11	TP.. 1103...
CTSP R/L 12CA-11	20	12	16	47	↓	↓	↓	20	6,1	6	↓	↓	50	11	TP.. 1103...
CTSP R/L 12CA-16	20	12	16	47	↓	↓	↓	20	8,3	6	↓	↓	50	16,5	TP.. 1603...
CTSP R/L 16CA-16	25	16	20	53	37	↓	25	25	8,3	—	25	9	60	16,5	TP.. 1603...
															
CODE	Shim	Pin			Clamping element	Adjusting screw		Cross adjusting screw		Fixing screw		Washer for fixing screw			
RIGHT/LEFT															
CTSP R/L 10CA-11	—	—			551-120	192-428		192-057		191-405		191-279			
CTSP R/L 12CA-11	—	—			551-121	↓		190-371		191-406		190-260			
CTSP R/L 12CA-16	—	—			↓	↓		190-371		191-406		190-260			
CTSP R/L 16CA-16	552-013	553-001			↓	↓		190-191		191-407		190-008			

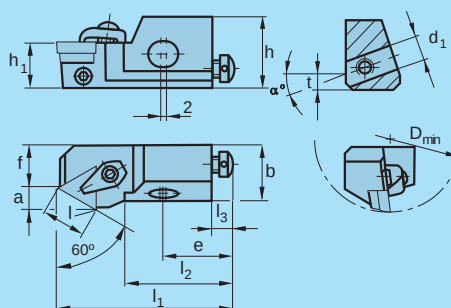




CTTP 60°

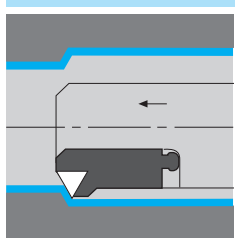


Inserts —
page 74

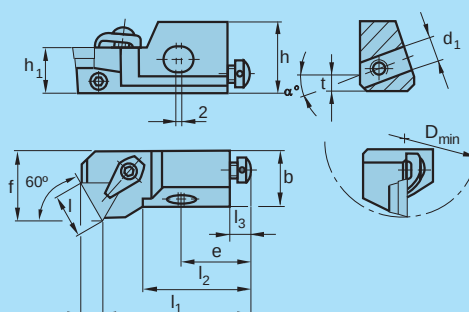


CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}	
RIGHT/LEFT														INSERT
CTTP R/L 10CA-11	15	10	11	50	28	8	20	9	5	5	20	7	40	11 TP.. 1103...
CTTP R/L 12CA-11	20	12	16	55	28	↓	↓	13	5	6	↓	↓	40	11 TP.. 1103...
CTTP R/L 12CA-16	20	12	16	55	28	↓	↓	13	7,2	6	↓	↓	50	16,5 TP.. 1603...
CTTP R/L 16CA-16	25	16	20	63	37	↓	↓	15	7,2	—	45	9	60	16,5 TP.. 1603...
CODE	Shim	Pin			Clamping element	Adjusting screw		Cross adjusting screw		Fixing screw		Washer for fixing screw		
RIGHT/LEFT	SPARE PARTS													
CTTP R/L 10CA-11	—	—		551-120	192-428			192-057	191-405	191-279				
CTTP R/L 12CA-11	—	—		551-121	↓			190-371	191-406	190-260				
CTTP R/L 12CA-16	—	—		↓	↓			190-371	191-406	190-260				
CTTP R/L 16CA-16	552-013	553-001		↓	↓			190-191	191-407	190-008				

CTWP 60°

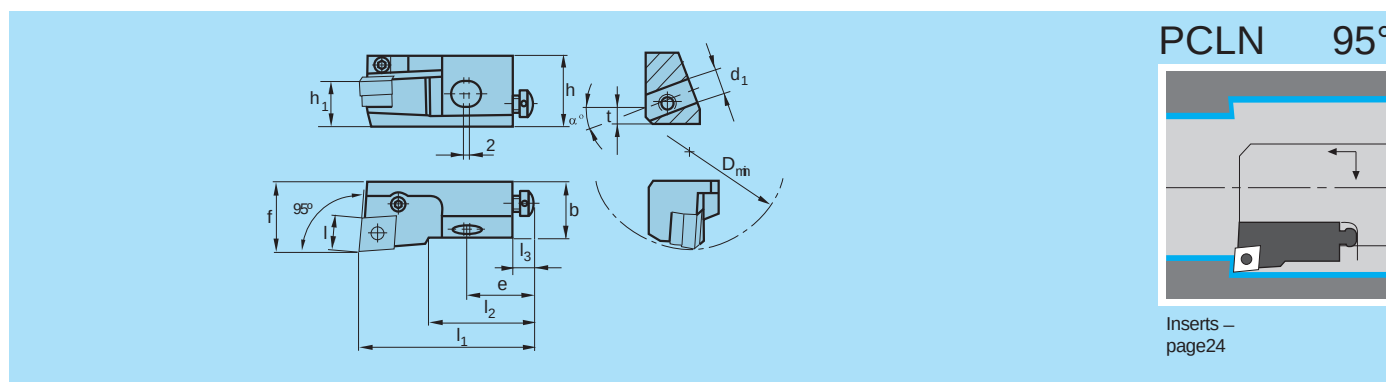


Inserts —
page 74



CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}	
RIGHT/LEFT														INSERT
CTWP R/L 10CA-11	15	10	11	44	28	8	20	14	5	5	20	7	40	11 TP.. 1103...
CTWP R/L 12CA-11	20	12	16	47	↓	↓	↓	20	5	6	↓	↓	50	11 TP.. 1103...
CTWP R/L 12CA-16	20	12	16	47	↓	↓	↓	20	7,2	6	↓	↓	50	16,5 TP.. 1603...
CTWP R/L 16CA-16	25	16	20	53	37	↓	↓	25	7,2	—	45	9	60	16,5 TP.. 1603...
CODE	Shim	Pin			Clamping element	Adjusting screw		Cross adjusting screw		Fixing screw		Washer for fixing screw		
RIGHT/LEFT	SPARE PARTS													
CTWP R/L 10CA-11	—	—		551-120	192-428			192-057	191-405	191-279				
CTWP R/L 12CA-11	—	—		551-121	↓			190-371	191-406	190-260				
CTWP R/L 12CA-16	—	—		↓	↓			190-371	191-406	190-260				
CTWP R/L 16CA-16	552-013	553-001		↓	↓			190-191	191-407	190-008				

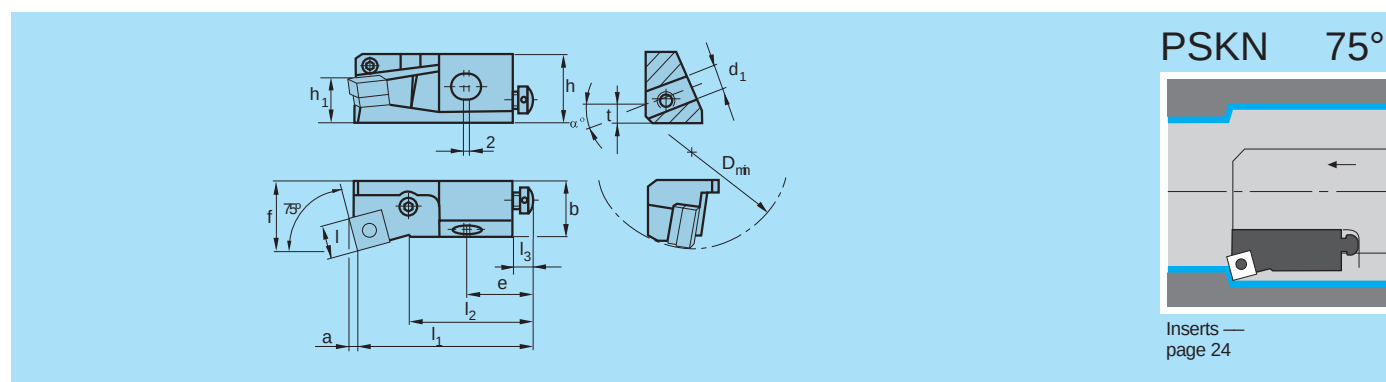




CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	t	α°	d ₁	D _{min}	
RIGHT/LEFT													
PCLN R/L 12CA-12	20	12	16	55	28	8	20	20	6	20	7	50	
PCLN R/L 16CA-12	25	16	20	63	37	8	25	25	—	45	9	60	



CODE	Shim	Pin	Punch	Toggle lever	Clamping screw	Adjusting screw	Cross adjusting screw	Fixing screw	Washer for fixing screw
RIGHT/LEFT	SPARE PARTS								
PCLN R/L 12CA-12	—	—	—	511-022	514-022	192-428	191-010	191-406	190-260
PCLN R/L 16CA-12	512-112	513-023	515-018	511-023	514-023	192-428	190-649	191-407	190-008



CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}	
RIGHT/LEFT														
PSKN R/L 12CA-09	20	12	16	55	28	8	20	20	2,2	6	20	7	50	
PSKN R/L 12CA-12	20	12	16	55	28	↓	20	20	3,1	6	20	7	50	
PSKN R/L 16CA-12	25	16	20	63	37	↓	25	25	3,1	—	45	9	60	

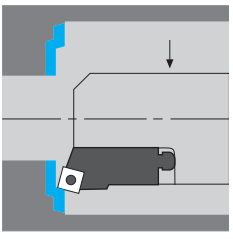


CODE	Shim	Pin	Punch	Toggle lever	Clamping screw	Adjusting screw	Cross adjusting screw	Fixing screw	Washer for fixing screw
RIGHT/LEFT	SPARE PARTS								
PSKN R/L 12CA-09	—	—	—	511-013	514-011	192-428	191-010	191-406	190-260
PSKN R/L 12CA-12	—	—	—	511-022	514-022	↓	191-010	191-406	190-260
PSKN R/L 16CA-12	512-063	513-023	515-018	511-023	514-023	↓	190-649	191-407	190-008

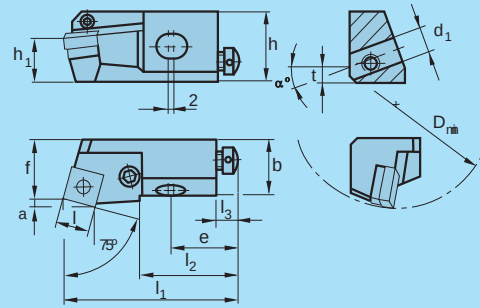




PSRN 75°

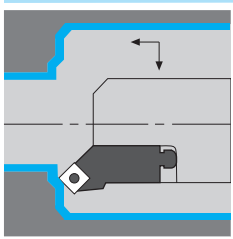


Inserts –
page 40 – 41

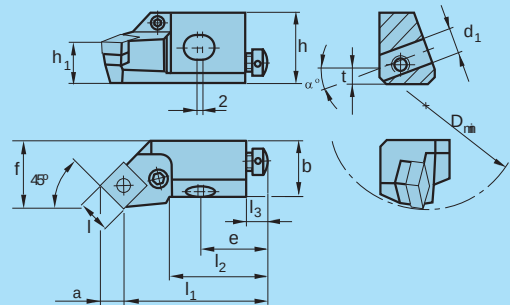


																
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}			
RIGHT/LEFT															INSERT	
PSRN R/L 12CA-09	20	12	16	55	28	8	20	20	2,2	6	20	7	50	9,5	SNM. 0903..	
PSRN R/L 12CA-12	20	12	16	55	28	↓	20	20	3,1	6	20	7	50	12,7	SNM. 1204..	
PSRN R/L 16CA-12	25	16	20	63	37	↓	25	25	3,1	—	45	9	60	12,7	SNM. 1204..	
																
CODE	Shim	Pin	Punch	Toggle lever	Clamping screw	Adjusting screw	Cross adjusting screw	Fixing screw	Washer for fixing screw							
RIGHT/LEFT	SPARE PARTS															
PSRN R/L 12CA-09	—	—	—	511-013	514-011	192-428	191-010	191-406	190-260							
PSRN R/L 12CA-12	—	—	—	511-022	514-022	↓	191-010	191-406	190-260							
PSRN R/L 16CA-12	512-063	513-023	515-018	511-023	514-023	↓	190-649	191-407	190-008							

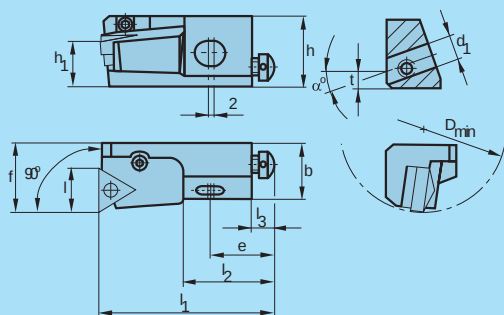
PSSN 45°



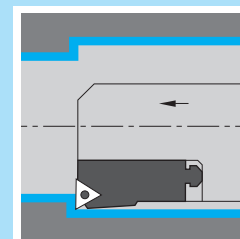
Inserts –
page 40 – 41



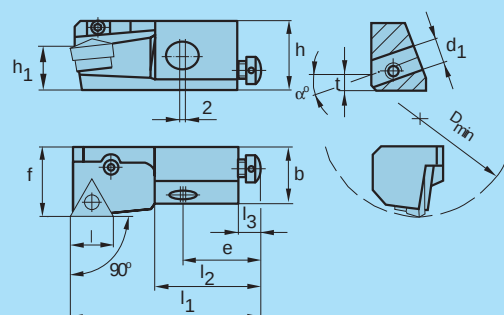
														
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}	
RIGHT/LEFT														INSERT
PSSN R/L 12CA-09	20	12	16	47	28	8	20	20	6,1	6	20	7	50	9,5 SNM.. 0903..
PSSN R/L 12CA-12	20	12	16	47	28	↓	20	20	8,3	6	20	7	50	12,7 SNM.. 1204..
PSSN R/L 16CA-12	25	16	20	53	37	↓	25	25	8,3	—	45	9	60	12,7 SNM.. 1204..
														
CODE	Shim	Pin	Punch	Toggle lever	Clamping screw	Adjusting screw	Cross adjusting screw	Fixing screw	Washer for fixing screw					
RIGHT/LEFT	SPARE PARTS													
PSSN R/L 12CA-09	—	—	—	511-013	514-011	192-428	191-010	191-406	190-260					
PSSN R/L 12CA-12	—	—	—	511-022	514-022	192-428	191-010	191-406	190-260					
PSSN R/L 16CA-12	512-063	513-023	515-018	511-023	514-023	192-428	190-649	191-407	190-008					



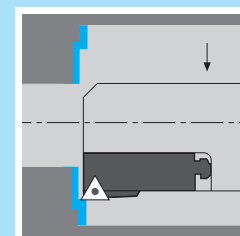
PTFN 90°

Inserts —
page 47 — 48

													
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	t	α°	d ₁	D _{min}	
RIGHT/LEFT													INSERT
PTFN R/L 12CA-11	20	12	16	55	28	8	20	20	6	20	7	50	11 TNM.. 1103...
PTFN R/L 12CA-16	20	12	16	55	28	↓	20	20	6	20	7	50	16,5 TNM.. 1604...
PTFN R/L 16CA-16	25	16	20	63	37	↓	25	25	—	45	9	60	16,5 TNM.. 1604...
													TNM.. 1603...
CODE	Shim	Pin	Punch	Toggle lever	Clamping screw	Adjusting screw	Cross adjusting screw	Fixing screw	Washer for fixing screw				
RIGHT/LEFT	SPARE PARTS												
PTFN R/L 12CA-11	—	—	—	511-011	514-011	192-428	191-010	191-406	190-260				
PTFN R/L 12CA-16	—	—	—	511-030	514-012	↓	190-010	191-406	190-260				
PTFN R/L 16CA-16	512-013	513-018	515-018	511-018	514-018	↓	190-649	191-407	190-008				
	512-018	513-019											



PTGN 90°

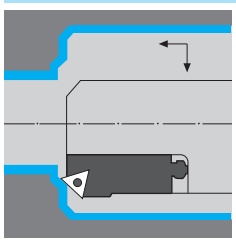
Inserts —
page 47 — 48

CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	t	α°	d ₁	D _{min}	
RIGHT/LEFT													INSERT
PTGN R/L 12CA-11	20	12	16	55	28	8	20	20	6	20	7	50	11 TNM.. 1103..
PTGN R/L 12CA-16	20	12	16	55	28	↓	20	20	6	20	7	50	16,5 TNM.. 1604..
PTGN R/L 16CA-16	25	16	20	63	37	↓	25	25	—	25	9	60	16,5 TNM.. 1604..
													TNM.. 1603..
CODE	Shim	Pin	Punch	Toggle lever	Clamping screw	Adjusting screw	Cross adjusting screw	Fixing screw	Washer for fixing screw				
RIGHT/LEFT	SPARE PARTS												
PTGN R/L 12CA-11	—	—	—	511-011	514-011	192-428	191-010	191-406	190-260				
PTGN R/L 12CA-16	—	—	—	511-030	514-012	↓	191-010	191-406	191-260				
PTGN R/L 16CA-16	512-013	513-018	515-018	511-018	514-018	↓	190-649	191-407	190-008				
	512-018	513-019											

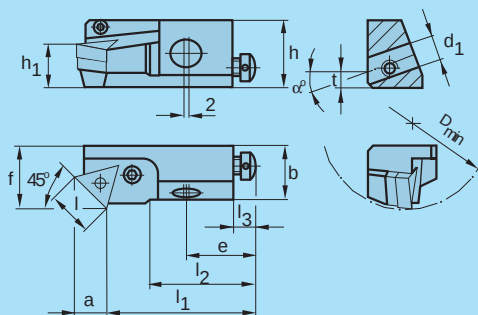




PTSN 45°

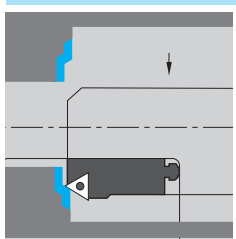


Inserts –
page 47 — 48

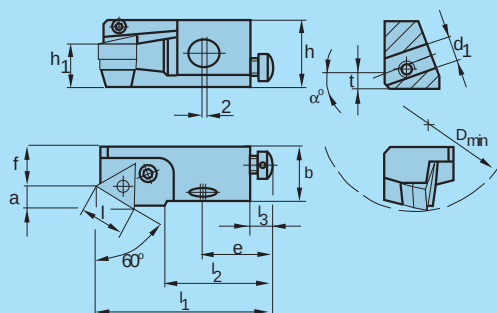


															
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}		
RIGHT/LEFT														INSERT	
PTSN R/L 12CA-11	20	12	16	47	28	8	20	20	6,1	6	20	7	50	11	TNM. 1103..
PTSN R/L 12CA-16	20	12	16	47	28	↓	20	20	8,3	6	20	7	50	16,5	TNM. 1604..
PTSN R/L 16CA-16	25	16	20	53	37	↓	25	25	8,3	—	45	9	60	16,5	TNM. 1604.. TNM. 1603..
															
CODE	Shim	Pin		Punch		Toggle lever		Clamping screw		Adjusting screw		Cross adjusting screw	Fixing screw	Washer for fixing screw	
RIGHT/LEFT	SPARE PARTS														
PTSN R/L 12CA-11	—	—		—		511-011		514-011		192-428		191-010	191-406	190-260	
PTSN R/L 12CA-16	—	—		—		511-030		514-012		↓		191-010	191-406	190-260	
PTSN R/L 16CA-16	512-013 512-018	513-018 513-019		515-018		511-018		514-018		↓		190-649	191-407	190-008	

PTTN 60°



Inserts –
page 47 – 48

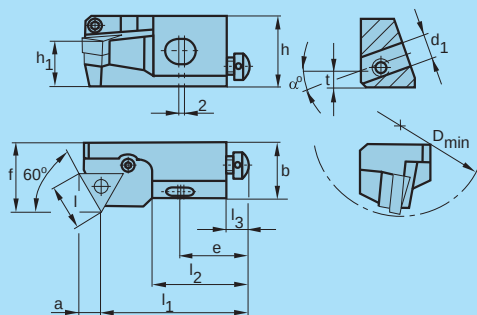


														
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}	
RIGHT/LEFT														INSERT
PTTN R/L 12CA-11	20	12	16	55	28	8	20	13	5	6	20	7	50	11 TNM. 1103...
PTTN R/L 12CA-16	20	12	16	55	28	↓	20	13	7,2	6	20	7	50	16,5 TNM. 1604...
PTTN R/L 16CA-16	25	16	20	63	37	↓	25	15	7,2	—	45	9	60	16,5 TNM. 1604... TNM. 16 03...
														
CODE	Shim	Pin		Punch		Toggle lever		Clamping screw		Adjusting screw		Cross adjusting screw	Fixing screw	Washer for fixing screw
RIGHT/LEFT	SPARE PARTS													
PTTN R/L 12CA-11	—	—		—		511-011		514-011		192-428		191-010	191-406	190-260
PTTN R/L 12CA-16	—	—		—		511-030		514-012		↓		191-010	191-406	190-260
PTTN R/L 16CA-16	512-013 512-018	513-018 513-019		515-018		511-018		514-018		↓		190-649	191-407	190-008

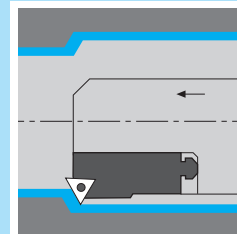




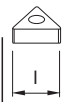
Cartridges P - clamping systems



PTWN 60°

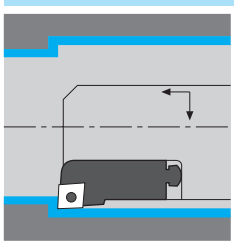


Inserts —
page 47 — 48

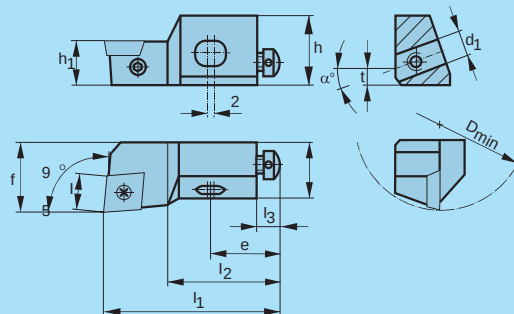
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	a°	d ₁	D _{min}	
RIGHT/LEFT														INSERT
PTWN R/L 12CA-11	20	12	16	47	28	8	20	20	5	6	20	7	50	11 TNM. 1103...
PTWN R/L 12CA-16	20	12	16	47	28	↓	20	20	7,2	6	20	7	50	16,5 TNM. 1604...
PTWN R/L 16CA-16	25	16	20	53	37		25	25	7,2	—	45	9	60	16,5 TNM. 1604...
														TNM. 1603...
														
CODE	Shim	Pin	Punch	Toggle lever	Clamping screw	Adjusting screw	Cross adjusting screw	Fixing screw	Washer for fixing screw					
RIGHT/LEFT														
PTWN R/L 12CA-11	—	—	—	511-011	514-011	192-428	191-010	191-406	190-260					
PTWN R/L 12CA-16	—	—	—	511-030	514-012	↓	190-010	191-406	190-260					
PTWN R/L 16CA-16	512-013	513-018	515-018	511-018	514-018		190-649	191-407	190-008					
	512-018	513-019												



SCLC 95°

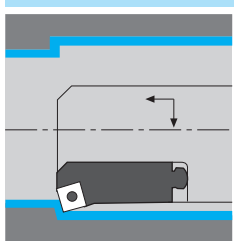


Inserts —
page 61 — 62

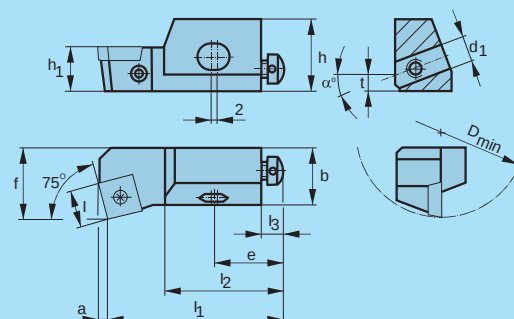


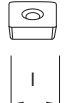
																			
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	t	a°	d ₁	D _{min}							
RIGHT/LEFT																			INSERT
SCLC R/L 10CA-09	15	10	11	50	28	8	20	14	5	20	7	40							9,7 CC.T 09T3..
SCLC R/L 12CA-09	20	12	16	55	↓	↓	↓	20	6	↓	↓	50							9,7 CC.T 09T3..
SCLC R/L 12CA-12	20	12	16	55	↓	↓	↓	20	6	↓	↓	50							12,9 CCMT 1204..
SCLC R/L 16CA-12	25	16	20	63	37	↓	25	25	—	45	9	60							12,9 CCMT 1204..
																			
CODE	Shim		Screw for shim		Clamping screw		Screw driver		Adjusting screw		Cross adjusting screw		Fixing screw		Washer for fixing screw				
RIGHT/LEFT			SPARE PARTS																
SCLC R/L 10CA-09	—		—		191-848		170-055		192-428		192-057		191-405		191-279				
SCLC R/L 12CA-09	—		—		191-848		170-055		192-428		190-371		191-406		190-260				
SCLC R/L 12CA-12	—		—		191-726		170-056		192-428		190-371		191-406		190-260				
SCLC R/L 16CA-12	512-212		192-445		192-446		170-058		192-428		190-191		191-407		190-008				

SSKC 75°



Inserts —
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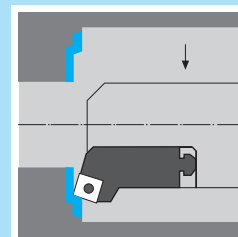
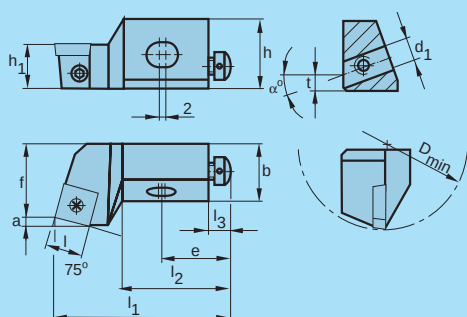


																
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	a°	d ₁	D _{min}			
RIGHT/LEFT																INSERT
SSKC R/L 10CA-09	15	10	11	50	28	8	20	14	2,2	5	20	7	40			9,5 SCMT 09T3..
SSKC R/L 12CA-09	20	12	16	55	↓	↓	↓	20	2,2	6	↓	↓	50			9,5 SCMT 09T3..
SSKC R/L 12CA-12	20	12	16	55	↓	↓	↓	20	3,1	6	↓	↓	50			12,7 SCMT 1204..
SSKC R/L 16CA-12	25	16	20	63	37	↓	25	25	3,1	—	45	9	60			12,7 SCMT 1204..
																
CODE	Shim	Screw for shim	Clamping screw	Screw driver	Adjusting screw	Cross adjusting screw	Fixing screw	Washer for fixing screw								
RIGHT/LEFT	SPARE PARTS															
SSKC R/L 10CA-09	—	—	191-848	170-055	192-428	192-057	191-405	191-279								
SSKC R/L 12CA-09	—	—	191-848	170-055	↓	190-371	191-406	190-260								
SSKC R/L 12CA-12	—	—	191-726	170-056	↓	190-371	191-406	190-260								
SSKC R/L 16CA-12	512-211	192-445	192-446	170-058	↓	190-191	191-407	190-008								



Cartridges S - clamping systems

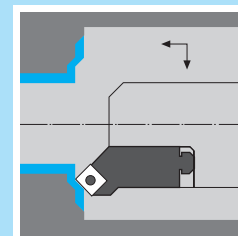
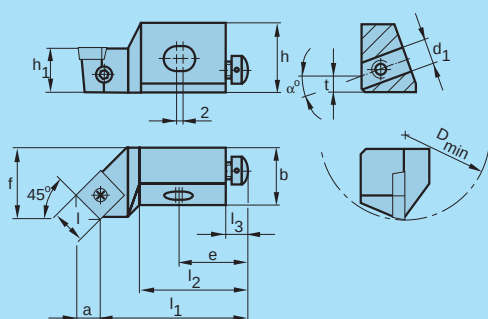
SSRC 75°



Inserts —
page 67

CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}	
RIGHT/LEFT														INSERT
SSRC R/L 10CA-09	15	10	11	50	28	8	20	14	2,2	5	20	7	40	9,5 SCMT 09T3..
SSRC R/L 12CA-09	20	12	16	55	↓	↓	↓	20	2,2	6	↓	↓	50	9,5 SCMT 09T3..
SSRC R/L 12CA-12	20	12	16	55	↓	↓	↓	20	3,1	6	↓	↓	50	12,7 SCMT 1204..
SSRC R/L 16CA-12	25	16	20	63	37	↓	25	25	3,1	—	45	9	60	12,7 SCMT 1204..
CODE	Shim	Screw for shim	Clamping screw	Screw driver	Adjusting screw	Cross adjusting screw	Fixing screw	Washer for fixing screw						
RIGHT/LEFT	SPARE PARTS													
SSRC R/L 10CA-09	—	—		191-848	170-055	192-428	192-057	191-405	191-279					
SSRC R/L 12CA-09	—	—		191-848	170-055	↓	190-371	191-406	190-260					
SSRC R/L 12CA-12	—	—		191-726	170-056	↓	190-371	191-406	190-260					
SSRC R/L 16CA-12	512-211	192-445	192-446	170-058	↓	↓	190-191	191-407	190-008					

SSSC 45°

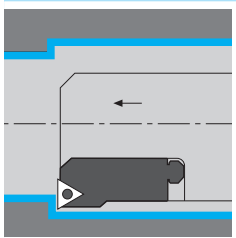


Inserts —
page 67

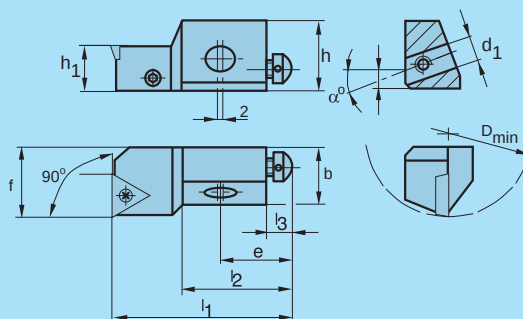
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}	
RIGHT/LEFT														INSERT
SSSC R/L 10CA-09	15	10	11	44	28	8	20	14	6,1	5	20	7	40	9,5 SCMT 09T3..
SSSC R/L 12CA-09	20	12	16	47	↓	↓	↓	20	6,1	6	↓	↓	50	9,5 SCMT 09T3..
SSSC R/L 12CA-12	20	12	16	47	↓	↓	↓	20	8,3	6	↓	↓	50	12,7 SCMT 1204..
SSSC R/L 16CA-12	25	16	20	53	37	↓	25	25	8,3	—	45	9	60	12,7 SCMT 1204..
CODE	Shim	Screw for shim	Clamping screw	Screw driver	Adjusting screw	Cross adjusting screw	Fixing screw	Washer for fixing screw						
RIGHT/LEFT	SPARE PARTS													
SSSC R/L 10CA-09	—	—		191-848	170-055	192-428	192-057	191-405	191-279					
SSSC R/L 12CA-09	—	—		191-848	170-055	↓	190-371	191-406	190-260					
SSSC R/L 12CA-12	—	—		191-726	170-056	↓	190-371	191-406	190-260					
SSSC R/L 16CA-12	512-211	194-445	192-446	170-058	↓	↓	190-191	191-407	190-008					



STFC 90°

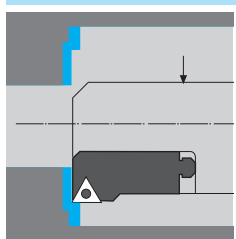


Inserts –
page 72

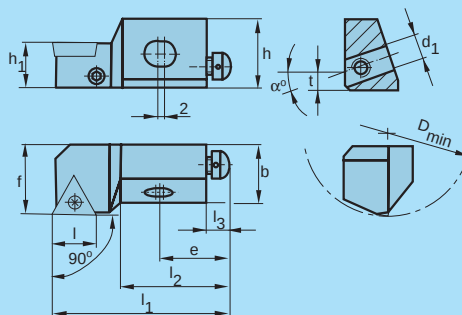


													
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	t	α°	d ₁	D _{min}	
RIGHT/LEFT													INSERT
STFC R/L 10CA-11	15	10	11	50	28	8	20	14	5	20	7	40	11 TCMT 1102..
STFC R/L 12CA-11	20	12	16	55	28	↓	↓	20	6	↓	↓	50	11 TCMT 1102..
STFC R/L 12CA-16	20	12	16	55	28			20	6			50	
STFC R/L 16CA-16	25	16	20	63	37	↓	25	25	—	45	9	60	16,5 TCMT 16T3.. 16,5 TCMT 16T3..
													
CODE	Shim	Screw for shim	Clamping screw	Screw driver	Adjusting screw	Cross adjusting screw	Fixing screw	Washer for fixing screw					
RIGHT/LEFT	SPARE PARTS												
STFC R/L 10CA-11	—	—	191-371	170-051	192-428	192-057	191-405	191-279					
STFC R/L 12CA-11	—	—	191-371	170-051	↓	190-371	191-406	190-260					
STFC R/L 12CA-16	—	—	191-848	170-055		190-371	191-406	190-260					
STFC R/L 16CA-16	512-203	191-942	192-698	170-084		190-191	191-407	190-008					

STGC 90°

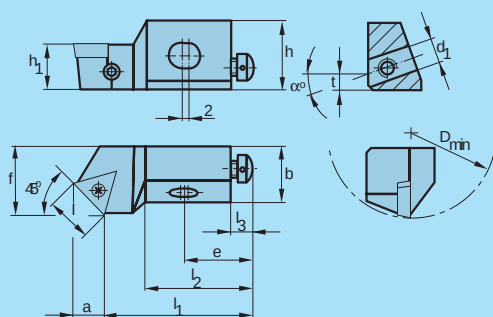


Inserts —
page 72

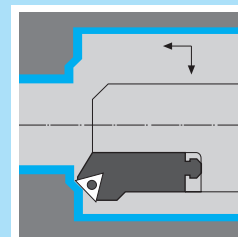


													
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	t	α°	d ₁	D _{min}	
RIGHT/LEFT													INSERT
STGC R/L 10CA-11	15	10	11	50	28	8	20	14	5	20	7	40	11 TCMT 1102..
STGC R/L 12CA-11	20	12	16	55	28	↓	↓	20	6	↓	↓	50	11 TCMT 1102..
STGC R/L 12CA-16	20	12	16	55	28	↓	↓	20	6	↓	↓	50	16,5 TCMT 16T3..
STGC R/L 16CA-16	25	16	20	63	37	↓	25	25	—	45	9	60	16,5 TCMT 16T3..
													
CODE	Shim	Screw for shim	Clamping screw	Screw driver	Adjusting screw	Cross adjusting screw	Fixing screw	Washer for fixing screw					
RIGHT/LEFT	SPARE PARTS												
STGC R/L 10CA-11	—	—	191-371	170-051	192-428	192-057	191-405	191-279					
STGC R/L 12CA-11	—	—	191-371	170-051	↓	190-371	191-406	190-260					
STGC R/L 12CA-16	—	—	191-848	170-055	↓	190-371	191-406	190-260					
STGC R/L 16CA-16	512-203	191-942	192-698	170-084	↓	190-191	191-407	190-008					

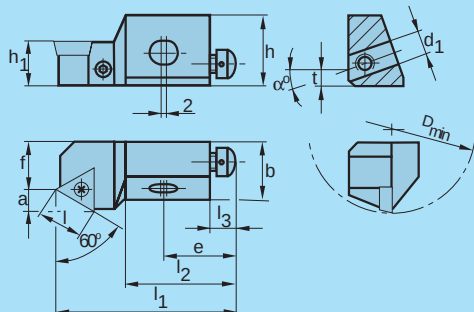




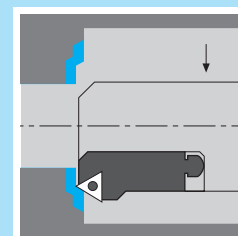
STSC 45°

Inserts —
page 72

CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}	
RIGHT/LEFT														INSERT
STSC R/L 10CA-11	15	10	11	44	28	8	20	14	6,1	5	20	7	40	11 TCMT 1102..
STSC R/L 12CA-11	20	12	16	47	↓	↓	↓	20	6,1	6	↓	↓	50	11 TCMT 1102..
STSC R/L 12CA-16	20	12	16	47	↓	↓	↓	20	8,3	6	↓	↓	50	16,5 TCMT 16T3..
STSC R/L 16CA-16	25	16	20	53	37	↓	25	25	8,3	—	45	9	60	16,5 TCMT 16T3..
CODE	Shim	Screw for shim			Clamping screw		Screw driver		Adjusting screw	Cross adjusting screw		Fixing screw	Washer for fixing screw	
RIGHT/LEFT	SPARE PARTS													
STSC R/L 10CA-11	—	—			191-371	170-051	192-428		192-057	191-405	191-279			
STSC R/L 12CA-11	—	—			191-371	170-051	↓		190-371	191-406	190-260			
STSC R/L 12CA-16	—	—			191-848	170-055	↓		190-371	191-406	190-260			
STSC R/L 16CA-16	512-203	191-942			192-698	170-084	↓		190-191	191-407	190-008			



STTC 60°

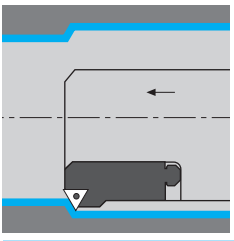
Inserts —
page 72

CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}	
RIGHT/LEFT														INSERT
STTC R/L 10CA-11	15	10	11	50	28	8	20	9	5	5	20	7	40	11 TCMT 1102..
STTC R/L 12CA-11	20	12	16	55	↓	↓	↓	13	5	6	↓	↓	50	11 TCMT 1102..
STTC R/L 12CA-16	20	12	16	55	↓	↓	↓	13	7,2	6	↓	↓	50	16,5 TCMT 16T3..
STTC R/L 16CA-16	25	16	20	63	37	↓	25	15	7,2	—	45	9	60	16,5 TCMT 16T3..
CODE	Shim	Screw for shim			Clamping screw		Screw driver		Adjusting screw	Cross adjusting screw		Fixing screw	Washer for fixing screw	
RIGHT/LEFT	SPARE PARTS													
STTC R/L 10CA-11	—	—			191-371	170-051	192-428		192-057	191-405	191-279			
STTC R/L 12CA-11	—	—			191-371	170-051	↓		190-371	191-406	190-260			
STTC R/L 12CA-16	—	—			191-848	170-055	↓		190-371	191-406	190-260			
STTC R/L 16CA-16	512-203	191-942			192-698	170-084	↓		190-191	191-407	190-008			

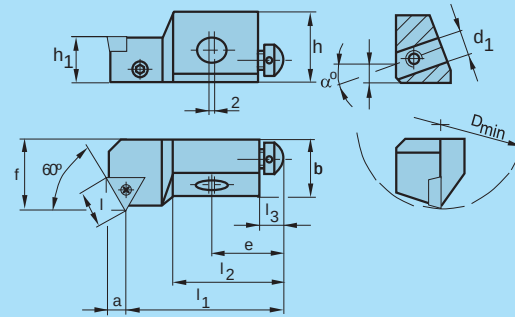




STWC 60°



Inserts –
page 72



															
CODE	h	h ₁	b	l ₁	l ₂	l ₃	e	f	a	t	α°	d ₁	D _{min}		
RIGHT/LEFT														INSERT	
STWC R/L 10CA-11	15	10	11	44	28	8	20	14	5	5	20	7	40	11	TCMT 1102..
STWC R/L 12CA-11	20	12	16	47	↓	↓	↓	20	5	6	↓	↓	50	11	TCMT 1102..
STWC R/L 12CA-16	20	12	16	47	↓	↓	25	20	7,2	6	↓	↓	50	16,5	TCMT 16T3..
STWC R/L 16CA-16	25	16	20	53	37	↓	25	25	7,2	—	45	9	60	16,5	TCMT 16T3..
															
CODE	Shim	Screw for shim	Clamping screw	Screw driver	Adjusting screw	Cross adjusting screw	Fixing screw	Washer for fixing screw							
RIGHT/LEFT	SPARE PARTS														
STWC R/L 10CA-11	—	—	191-371	170-051	192-428	192-057	191-405	191-279							
STWC R/L 12CA-11	—	—	191-371	170-051	↓	190-371	191-406	190-260							
STWC R/L 12CA-16	—	—	191-848	170-055	↓	190-371	191-406	190-260							
STWC R/L 16CA-16	512-203	191-942	191-698	170-084	↓	190-191	191-407	190-008							



Indexable Inserts for Turning



T		N		M		M		22																																																																																
1. Insert shape		2. Clearance angle		3. Tolerance class		4. Insert features		5. Size of indexable inserts																																																																																
H	hexagon 120°	A	3	Indexable inserts with parallel lands Indexable inserts with odd/even no of cutting edges Basic shape: H, O, P, S, T, C, E, M, W, R Tolerance for "m" <table><thead><tr><th>inscrib. circle "d"</th><th>Tolerance class: A, F, J, C, H, K E, G, L</th><th>Tolerance value: @.005 @.013 @.025</th></tr></thead><tbody><tr><td>3910</td><td rowspan="5">MN</td><td>@.08</td></tr><tr><td>1045</td><td>@.13</td></tr><tr><td>1520</td><td>@.15</td></tr><tr><td>2026</td><td>@.18</td></tr><tr><td>2632</td><td>@.20</td></tr><tr><td>3910</td><td rowspan="5">U</td><td>@.13</td></tr><tr><td>1045</td><td>@.20</td></tr><tr><td>1520</td><td>@.27</td></tr><tr><td>2026</td><td>@.38</td></tr><tr><td>2632</td><td>@.38</td></tr></tbody></table> Tolerance for "d" <table><thead><tr><th>ACEG F, H</th><th>@.025 @.013</th></tr></thead><tbody><tr><td>3910</td><td rowspan="5">J, K, L M, N</td><td>@.05</td></tr><tr><td>1045</td><td>@.08</td></tr><tr><td>1520</td><td>@.10</td></tr><tr><td>2026</td><td>@.13</td></tr><tr><td>2632</td><td>@.15</td></tr><tr><td>3910</td><td rowspan="5">U</td><td>@.08</td></tr><tr><td>1045</td><td>@.13</td></tr><tr><td>1520</td><td>@.18</td></tr><tr><td>2026</td><td>@.25</td></tr><tr><td>2632</td><td>@.25</td></tr></tbody></table> Basic shape: L, A, B, K Tolerance for "m" <table><thead><tr><th>A, F, J C, H, K E, G, L</th><th>@.005 @.013 @.025</th></tr></thead><tbody><tr><td>M, N, U</td><td>No Toler. value given by DIN</td></tr></tbody></table> Tolerance for "d" <table><thead><tr><th>ACEG F, H</th><th>@.025 @.013</th></tr></thead><tbody><tr><td>J, K, L M, N, U</td><td>No Toler. value given by DIN</td></tr></tbody></table> Basic shape: D, V Tolerance for "m" <table><thead><tr><th>A, F, J C, H, K E, G, L</th><th>@.005 @.013 @.025</th></tr></thead><tbody><tr><td>M, N</td><td>@.11 @.15 @.18</td></tr></tbody></table> Tolerance for "d" <table><thead><tr><th>ACEG F, H</th><th>@.025 @.013</th></tr></thead><tbody><tr><td>M, N</td><td>@.05 @.08 @.10</td></tr></tbody></table> all Basic shapes Tolerance for "s" <table><thead><tr><th>ACEF H, J, K, L N U</th><th>@.025 @.025 @.025 @.13</th></tr></thead><tbody><tr><td>Thickn. "s" up to 2.38 above 2.38</td><td>GM @.05 @.13</td></tr></tbody></table>		inscrib. circle "d"	Tolerance class: A, F, J, C, H, K E, G, L	Tolerance value: @.005 @.013 @.025	3910	MN	@.08	1045	@.13	1520	@.15	2026	@.18	2632	@.20	3910	U	@.13	1045	@.20	1520	@.27	2026	@.38	2632	@.38	ACEG F, H	@.025 @.013	3910	J, K, L M, N	@.05	1045	@.08	1520	@.10	2026	@.13	2632	@.15	3910	U	@.08	1045	@.13	1520	@.18	2026	@.25	2632	@.25	A, F, J C, H, K E, G, L	@.005 @.013 @.025	M, N, U	No Toler. value given by DIN	ACEG F, H	@.025 @.013	J, K, L M, N, U	No Toler. value given by DIN	A, F, J C, H, K E, G, L	@.005 @.013 @.025	M, N	@.11 @.15 @.18	ACEG F, H	@.025 @.013	M, N	@.05 @.08 @.10	ACEF H, J, K, L N U	@.025 @.025 @.025 @.13	Thickn. "s" up to 2.38 above 2.38	GM @.05 @.13	N	R	F	A	M	G	W	T	Q	U	B	H	C	J
inscrib. circle "d"	Tolerance class: A, F, J, C, H, K E, G, L	Tolerance value: @.005 @.013 @.025																																																																																						
3910	MN	@.08																																																																																						
1045		@.13																																																																																						
1520		@.15																																																																																						
2026		@.18																																																																																						
2632		@.20																																																																																						
3910	U	@.13																																																																																						
1045		@.20																																																																																						
1520		@.27																																																																																						
2026		@.38																																																																																						
2632		@.38																																																																																						
ACEG F, H	@.025 @.013																																																																																							
3910	J, K, L M, N	@.05																																																																																						
1045		@.08																																																																																						
1520		@.10																																																																																						
2026		@.13																																																																																						
2632		@.15																																																																																						
3910	U	@.08																																																																																						
1045		@.13																																																																																						
1520		@.18																																																																																						
2026		@.25																																																																																						
2632		@.25																																																																																						
A, F, J C, H, K E, G, L	@.005 @.013 @.025																																																																																							
M, N, U	No Toler. value given by DIN																																																																																							
ACEG F, H	@.025 @.013																																																																																							
J, K, L M, N, U	No Toler. value given by DIN																																																																																							
A, F, J C, H, K E, G, L	@.005 @.013 @.025																																																																																							
M, N	@.11 @.15 @.18																																																																																							
ACEG F, H	@.025 @.013																																																																																							
M, N	@.05 @.08 @.10																																																																																							
ACEF H, J, K, L N U	@.025 @.025 @.025 @.13																																																																																							
Thickn. "s" up to 2.38 above 2.38	GM @.05 @.13																																																																																							
O	octagon 135°	B	5	Basic shape: H, O, P, S, T, C, E, M, W, R Tolerance for "m" <table><thead><tr><th>inscrib. circle "d"</th><th>Tolerance class: A, F, J, C, H, K E, G, L</th><th>Tolerance value: @.005 @.013 @.025</th></tr></thead><tbody><tr><td>3910</td><td rowspan="5">MN</td><td>@.08</td></tr><tr><td>1045</td><td>@.13</td></tr><tr><td>1520</td><td>@.15</td></tr><tr><td>2026</td><td>@.18</td></tr><tr><td>2632</td><td>@.20</td></tr><tr><td>3910</td><td rowspan="5">U</td><td>@.13</td></tr><tr><td>1045</td><td>@.20</td></tr><tr><td>1520</td><td>@.27</td></tr><tr><td>2026</td><td>@.38</td></tr><tr><td>2632</td><td>@.38</td></tr></tbody></table> Tolerance for "d" <table><thead><tr><th>ACEG F, H</th><th>@.025 @.013</th></tr></thead><tbody><tr><td>3910</td><td rowspan="5">J, K, L M, N</td><td>@.05</td></tr><tr><td>1045</td><td>@.08</td></tr><tr><td>1520</td><td>@.10</td></tr><tr><td>2026</td><td>@.13</td></tr><tr><td>2632</td><td>@.15</td></tr><tr><td>3910</td><td rowspan="5">U</td><td>@.08</td></tr><tr><td>1045</td><td>@.13</td></tr><tr><td>1520</td><td>@.18</td></tr><tr><td>2026</td><td>@.25</td></tr><tr><td>2632</td><td>@.25</td></tr></tbody></table> Basic shape: L, A, B, K Tolerance for "m" <table><thead><tr><th>A, F, J C, H, K E, G, L</th><th>@.005 @.013 @.025</th></tr></thead><tbody><tr><td>M, N, U</td><td>No Toler. value given by DIN</td></tr></tbody></table> Tolerance for "d" <table><thead><tr><th>ACEG F, H</th><th>@.025 @.013</th></tr></thead><tbody><tr><td>J, K, L M, N, U</td><td>No Toler. value given by DIN</td></tr></tbody></table> Basic shape: D, V Tolerance for "m" <table><thead><tr><th>A, F, J C, H, K E, G, L</th><th>@.005 @.013 @.025</th></tr></thead><tbody><tr><td>M, N</td><td>@.11 @.15 @.18</td></tr></tbody></table> Tolerance for "d" <table><thead><tr><th>ACEG F, H</th><th>@.025 @.013</th></tr></thead><tbody><tr><td>M, N</td><td>@.05 @.08 @.10</td></tr></tbody></table> all Basic shapes Tolerance for "s" <table><thead><tr><th>ACEF H, J, K, L N U</th><th>@.025 @.025 @.025 @.13</th></tr></thead><tbody><tr><td>Thickn. "s" up to 2.38 above 2.38</td><td>GM @.05 @.13</td></tr></tbody></table>		inscrib. circle "d"	Tolerance class: A, F, J, C, H, K E, G, L	Tolerance value: @.005 @.013 @.025	3910	MN	@.08	1045	@.13	1520	@.15	2026	@.18	2632	@.20	3910	U	@.13	1045	@.20	1520	@.27	2026	@.38	2632	@.38	ACEG F, H	@.025 @.013	3910	J, K, L M, N	@.05	1045	@.08	1520	@.10	2026	@.13	2632	@.15	3910	U	@.08	1045	@.13	1520	@.18	2026	@.25	2632	@.25	A, F, J C, H, K E, G, L	@.005 @.013 @.025	M, N, U	No Toler. value given by DIN	ACEG F, H	@.025 @.013	J, K, L M, N, U	No Toler. value given by DIN	A, F, J C, H, K E, G, L	@.005 @.013 @.025	M, N	@.11 @.15 @.18	ACEG F, H	@.025 @.013	M, N	@.05 @.08 @.10	ACEF H, J, K, L N U	@.025 @.025 @.025 @.13	Thickn. "s" up to 2.38 above 2.38	GM @.05 @.13	R	F	A	M	G	W	T	Q	U	B	H	C	J	
inscrib. circle "d"	Tolerance class: A, F, J, C, H, K E, G, L	Tolerance value: @.005 @.013 @.025																																																																																						
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3910	U	@.13																																																																																						
1045		@.20																																																																																						
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A, F, J C, H, K E, G, L	@.005 @.013 @.025																																																																																							
M, N, U	No Toler. value given by DIN																																																																																							
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ACEF H, J, K, L N U	@.025 @.025 @.025 @.13																																																																																							
Thickn. "s" up to 2.38 above 2.38	GM @.05 @.13																																																																																							
P	pentagon 108°	C	7																																																																																					
R	round	D	15°																																																																																					
S	square 90°	E	20°																																																																																					
T	triangular 60°	F	25°																																																																																					
C	rhomboid 80°	G	30°																																																																																					
D	rhomboid 55°	N	0																																																																																					
E	rhomboid 75°	P	11°																																																																																					
M	rhomboid 86°	O	Indicated for other clearance angles requiring descriptions.																																																																																					
V	rhomboid 35°																																																																																							
W	trigon 80° with enlarged corner angles																																																																																							
L	rectangular 90°																																																																																							
A	rhomboid 85°																																																																																							
B	rhomboid 82°																																																																																							
K	rhomboid 55°																																																																																							
X	Special design																																																																																							

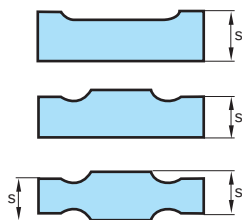
Integer to be preceded by a 0 if size requires only one code number.

Integer to be preceded by a 0 if size requires only one code number.



04

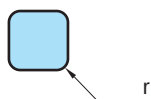
6. Insert thickness



	s
01	1,59
T1	1,98
02	2,38
03	3,18
T3	3,97
04	4,76
05	5,56
06	6,35
07	7,94
09	9,52
12	12,70

08

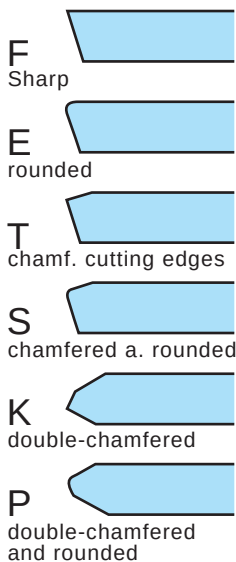
7. Cutting corner



r	
00	sharp cutting top
02	0,2 mm
04	0,4 mm
08	0,8 mm
12	1,2 mm
16	1,6 mm
24	2,4 mm
32	3,2 mm
	for round inserts
00	round insert inscribed circle inch
M0	round insert inscribed circle metric

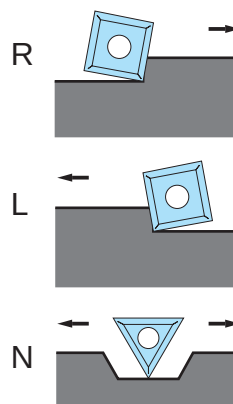
(S)

8. Cutting edge



(N)

9. Cutting direction

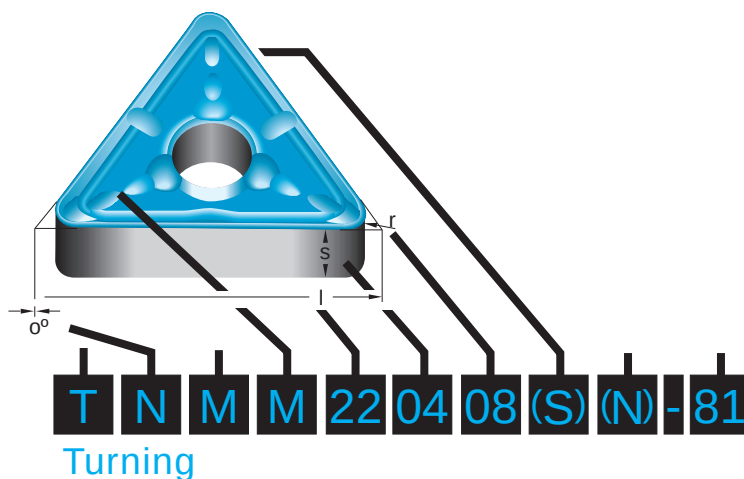


— 22

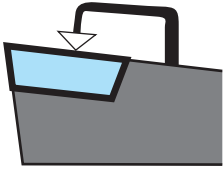
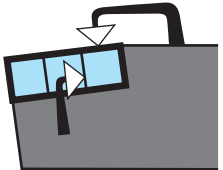
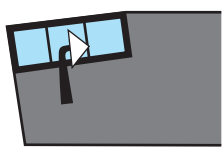
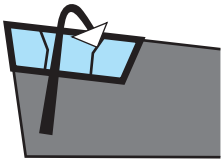
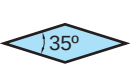
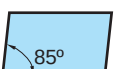
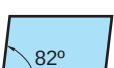
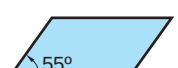
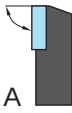
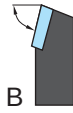
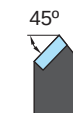
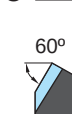
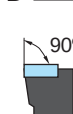
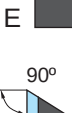
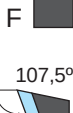
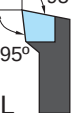
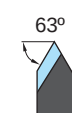
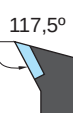
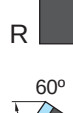
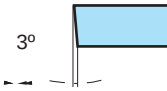
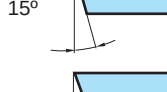
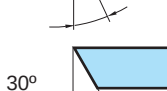
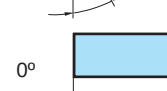
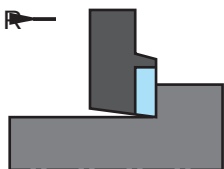
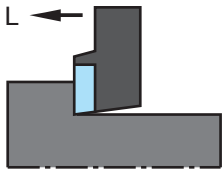
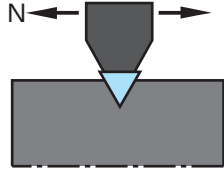
10. Manufacturer's type designation

Chip breaker design turning

- 01
- 04
- 11
- 22
- 23
- 25
- 28
- 33
- 41
- 42
- 43
- 46
- 55
- 63
- 66
- 75
- 81
- 85
- 92





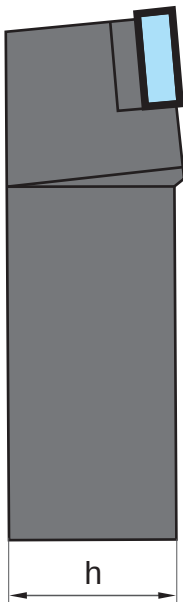
P	C	L	N	R
1. Clamping system insert	2. Insert shape	3. Toolholder shape	4. Clearance angle insert	5. Version
 C Top clamping by clamping finger for inserts without hole  M Top and hole clamping for inserts with hole  P Hole clamping by toggle lever for inserts with hole  S Top clamping by screw for inserts with hole	H  O  P  S  T  C  D  E  M  V  W  L  A  B  K  R 	90° 75° A  B  90° 45° C  D  60° 90° E  F  90° 107,5° G  H  93° 75° J  K  95° 50° L  M  63° 117,5° N  P  107,5° 75° Q  R  45° 60° S  T  93° 72,5° U  V  60° 85° W  Y 	A 3°  B 5°  C 7°  D 15°  E 20°  F 25°  G 30°  N 0°  P 11° 	right-hand toolholder  left-hand toolholder  neutral toolholder 



ISO-Code Toolholders for turning

2 5

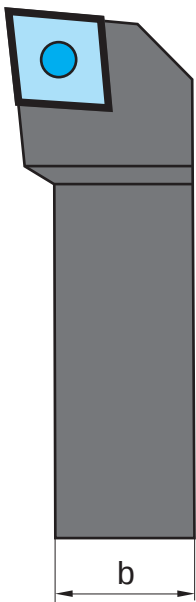
6.
Shank height



Shank height
preceded by 0
e.g. 8mm=08

2 5

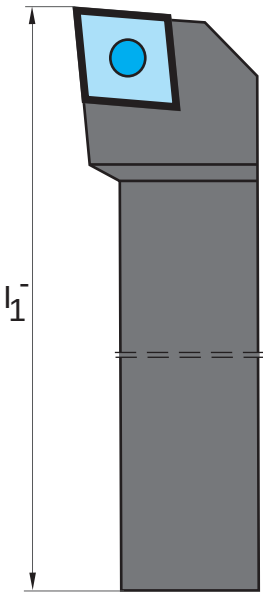
7.
Shank width



Shank width
preceded by 0
e.g. 8mm=08

M

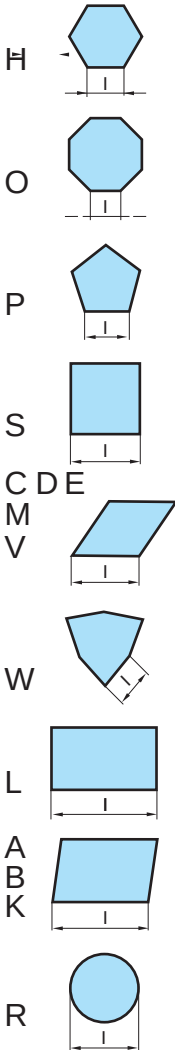
8.
Toolholder
length



l ₁	ISO
32	A
40	B
50	C
63	D
80	E
100	F
125	G
160	H
200	J
250	K
315	L
400	M
500	N
630	P
800	Q
1000	R
1250	S
1600	T
2000	U
2500	V
3150	W
4000	X

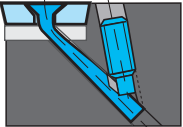
1 2

9.
Insert size



H1

10.
Manufacturer's
type
designation



H1
With Perfect
damping system
for stable
H3
Tool life
control



S
40
T -
P
C

1.
Boring bar
design

2.
Shank
diameter

3.
Boring bar
length

4.
Clamping
system
insert

5.
Insert shape

S
Solid steel

A
Solid steel with
internal coolant
supply

B
Solid steel with
anti-vibration shank

D
Solid steel with
anti-vibration shank
and internal coolant
supply

C
Steel head with
carbide shank

E
Steel head with
carbide shank
and internal coolant
supply

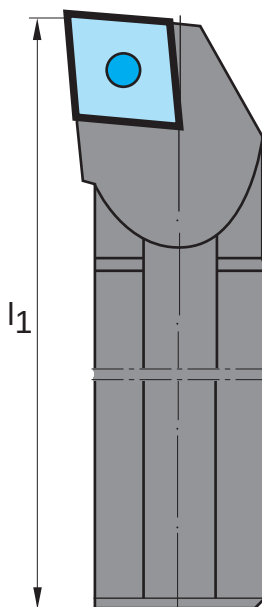
F
Steel head with
carbide anti-vibration
shank

G
Steel head with
carbide anti-vibration
shank and internal
coolant supply

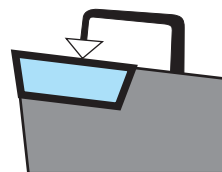
H
Heavy metal tool

J
Heavy metal tool
with internal coolant
supply

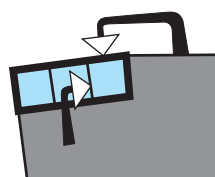
Digit means shank
diameter d.
Digits behind the
comma not considered.
Single-digit numbers
preceded by 0, e.g.
8 mm designated 08



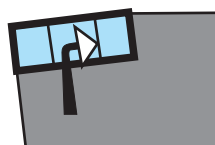
l ₁	ISO
32	A
40	B
50	C
60	D
70	E
80	F
90	G
100	H
110	J
125	K
140	L
150	M
160	N
170	P
180	Q
200	R
250	S
300	T
350	U
400	V
450	W
500	Y
Special length	X



C
Top clamping by
clamping finger for
inserts without hole



M
Top and hole
clamping for
inserts with hole



P
Hole clamping by
toggle lever for
inserts with hole



S
Top clamping by
screw for inserts
with hole

H

O

P

S

T

C

D

E

M

V

W

L

A

B

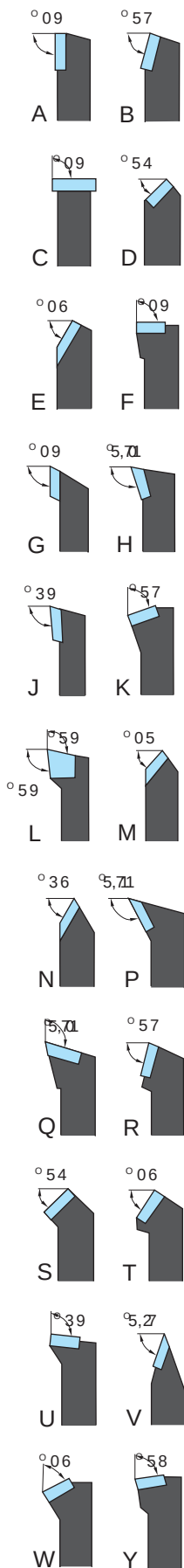
K

R



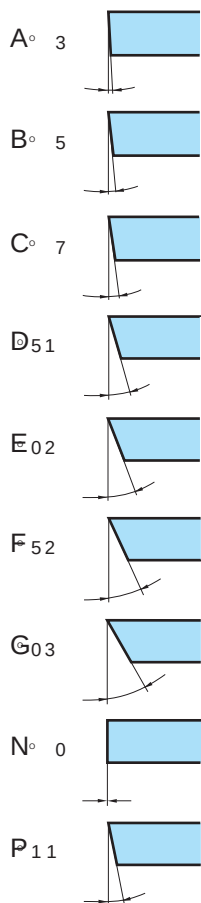
L

6.
Boringbar
shape



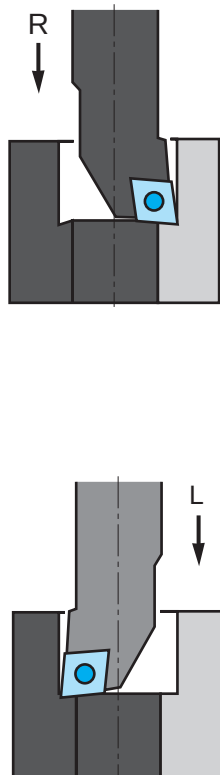
N

7.
Clearence
angleinsert



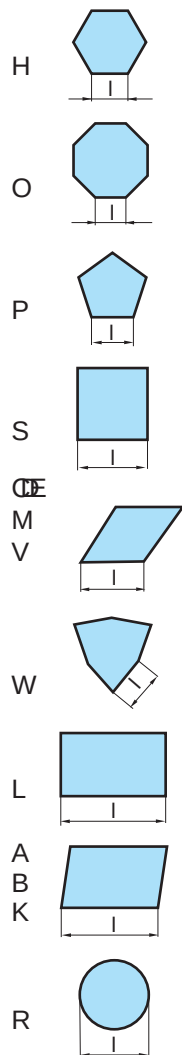
R

8.
Version



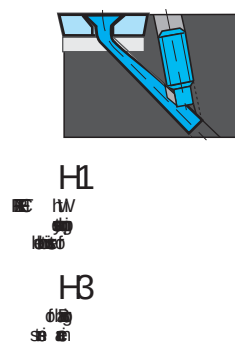
1 2

9.
Insertsize



H4

10.
Manufacturer's
type
designation



Indexable inserts - Summary



Page	Insert			coated						uncoated								
				CPX	13E	CM2	CW2	CM3	CL4	CM5	P10	P20	P25	GX	PVA	KM1	KMF	
61		CCGT	060202		●											●		
04				●											●			
09T302				●	●													
04				●	●													
61		CCGT	060202-11															
04-11																		
09T302-11																		
04-11																		
61		CCMT	060204		●	●					●					●		
08				●	●													
09T304				●	●				●					●	●			
08				●	●				●					●	●			
120408				●	●				●						●			
12				●	●				●						●			
62		CCMT	060204-11															
09T304-11																		
08-11																		
120404-11																		
21		CNMA	120404		●	●												
08				●	●													
12				●	●													
16				●	●													
160612				●	●													
16				●	●													
190608				●	●													
12				●	●													
16				●	●													
24				●	●					●								
21		CNMG	120404		●	●		●		●								
08				●	●		●		●									
12				●	●		●		●									
16				●	●		●		●									
160604				●	●		●		●									
08				●	●		●		●									
12				●	●		●		●									
16				●	●		●		●									
190604				●	●		●		●									
08				●	●		●		●									
12				●	●		●		●									
16				●	●		●		●									
21		CNMG	120404-22													●		
08-22																●		
12-22																	●	
160608-22																	●	
12-22																	●	
22		CNMG	120404-23															
08-23																		
22		CNMG	120408-25								●							
12-25											●							
160608-25												●						
12-25												●						
22		CNMG	120404-33															
08-33																		
12-33																		
23		CNMG	160604-42			●												
08-42				●														
12-42				●														
16-42				●														
190608-42					●													
12-42				●														
23		CNMG	16-42								●						●	

● = stocked without symbol = upon request



Indexable inserts - Summary

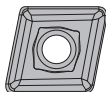
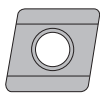
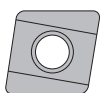
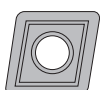
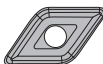
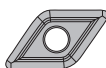
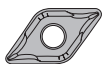
Page	Insert			coated						uncoated							
				CPX	13E	CM2	CW2	CM3	CL4	CM5	P10	P20	P25	GX	PVA	KM1	KMF
23		CNMG	090304-43		●												
08-43				●													
12-43			●	●													
120404-43			●	●		●											
08-43			●	●		●											
12-43			●	●		●											
23		CNMG	120408-46		●												
12-46			●			●											
16-46			●			●											
160608-46																	
12-46			●														
16-46			●			●											
190612-46									●								
16-46									●								
24		CNMG	120408-55	●	●		●		●	●							
12-55			●	●		●		●	●								
160608-55			●	●		●		●	●								
12-55			●	●		●		●	●								
24		CNMG	120408-66	●	●		●		●	●							
12-66			●	●		●		●	●								
16-66			●	●		●		●	●								
160612-66			●	●		●		●	●								
16-66			●	●		●		●	●								
190612-66			●	●		●		●	●								
16-66			●	●		●		●	●								
24		CNMM	120404	●	●		●										
08			●	●		●		●									
12			●	●		●		●									
16			●			●		●									
160612			●			●		●									
16			●			●		●									
190608			●			●		●									
12			●	●		●		●									
16			●	●		●		●									
24	●			●		●											
25		CNMM	120408-63	●	●		●										
12-63			●			●											
160604-63				●													
08-63			●														
12-63			●						●								
16-63			●						●								
190612-63			●						●								
16-63			●			●			●								
24-63									●								
25		CNMM	120408-75	●	●		●		●	●							
12-75			●	●		●		●	●								
16-75			●	●		●		●	●								
160612-75			●	●		●		●	●								
16-75			●	●		●		●	●								
190612-75			●	●		●		●	●								
16-75			●	●		●		●	●								
24-75			●	●		●		●	●								
250924-75	●	●		●		●	●										
25		CNMM	120408-81	●			●			●							
12-81			●			●			●								
190612-81			●			●			●								
16-81			●			●			●								
26		CNMM	120408-85		●												
12-85				●													
16-85																	
160608-85				●													
12-85				●													
16-85									●								
190612-85								●									
16-85									●								
24-85									●								

● = stocked

without symbol = upon request

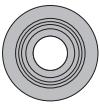
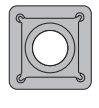
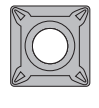
Indexable inserts - Summary



Page	Insert			coated						uncoated							
				CPX	13E	CM2	CW2	CM3	CL4	CM5	P10	P20	P25	GX	PVA	KM1	KMF
26		CNMM	160616-92		●		●		●	●							
			24-92		●		●		●	●							
			190616-92		●		●		●	●							
			24-92		●		●		●	●							
			250924-92						●	●							
			32-92						●	●							
63		CPEX	060201L1								●			●			
			R1								●			●			
			060203L1								●			●			
			R1							●			●				
63		CPEX	060203L2								●			●			
			L3								●			●			
			R2								●						
			R3								●			●			
63		CPGT	050204								●			●			
			08								●			●			
64		DCMT	070202				●										
			04		●	●				●				●	●		
			08			●											
			11T304		●	●				●				●	●		
			08		●	●				●					●		
64		DCMT	070202-11														
			04-11														
			11T304-11														
29		DNMA	150608		●												
			12		●					●							
			16							●					●		
29		DNMG	150402		●	●		●									
			0604		●	●		●		●							
			08		●	●		●		●							
			12		●	●		●		●							
			16		●	●		●		●							
29		DNMG	150604-22													●	
			08-22													●	
			12-22													●	
30		DNMG	150604-23														
			08-23														
30		DNMG	150608-25							●							
			12-25							●							
30		DNMG	110404-33														
			08-33														
			150604-33														
			08-33														
			12-33														
31		DNMG	150604-43		●	●		●									
			08-43		●	●		●									
			12-43		●	●		●									
			16-43		●		●			●							
31		DNMG	150608-46		●												
			12-46		●												
			16-46							●							
31		DNMG	110404-55		●	●											
			08-55		●	●		●		●							
			12-55		●	●		●		●							
			150608-55		●	●		●		●							
			12-55		●	●		●		●							
32		DNMG	150608-66		●	●		●		●							
			12-66		●	●		●		●							
			16-66		●	●		●		●							



Indexable inserts - Summary

grp	tbl			class						class							
				XFC	E31	2VC	2VC	3VC	4LC	5VC	01P	02P	52P	X G	AVP	1MK	FMK
23		MMD	400	•	•			•		•							
			80		•			•		•							
			21	•				•		•							
			61	•				•		•							
23		MMD	500	•				•		•							
			52	•				•									
			56							•							
33		MMD	500	•	•			•		•							
			52	•	•			•		•							
			56	•	•			•		•							
33		MMD	800	•				•		•							
			82	•				•		•							
			86	•						•							
33		MMD	500		•												
			52		•					•							
			56							•							
56		XUK	150		•	•		•				•			•		•
			1 R		•	•		•				•			•		•
			100		•	•		•				•			•		•
			1 R		•	•		•				•			•		•
56		XUK	250	•	•			•				•			•		•
			2 R	•	•			•				•			•		•
			200	•	•			•				•			•		•
			2 R	•	•			•				•			•		•
			250					•									
			2 R					•									
66		XGR TGR XMR TMR	000		•			•							•		•
			001					•						•	•		•
			002					•						•	•		•
			001		•	•		•									
			002		•	•		•		•							
			003		•			•		•							
			002					•		•							
			002					•		•							
			002					•		•							
			002					•		•							
			002					•		•							
			004							•							
66		TGR	100													•	•
66		TGR XGR TGR TGR	200														•
			200														•
			200														•
			200														•
63		AMR	000	•				•									
			001	•				•									
			000	•						•							
			002	•						•							
			003	•						•							
63		GMR	000	•	•			•									
			001	•	•			•									
			000	•													
			001	•						•							
			002	•						•							
			003	•						•							
76		TMS	400		•	•				•					•		•
			80		•	•				•					•		•
			402			•		•								•	•
			80		•	•		•		•					•		•
			21			•		•								•	
			200			•				•							
76		TMS	1100														
			110														
			1100														

Indexable inserts - Summary



Page	Insert			coated						uncoated							
				CPX	13E	CM2	CW2	CM3	CL4	CM5	P10	P20	P25	GX	PVA	KM1	KMF
68		SNGN	090308					●									
			120404					●					●				
			08		●			●		●		●	●	●			●
			12					●		●							●
			190400					●		●			●				
39		SNMA	090304		●												
			08		●												
			120404		●												
			08	●	●												
			12	●	●												
			16	●													
			24	●					●								
			150608	●													
			12	●					●								
			190608	●			●		●								
			12	●					●								
			16	●													
			24	●					●	●							
			250724	●					●	●							
39		SNMG	120404	●	●												
			08	●	●		●		●								
			12	●	●		●		●								
			16	●					●	●							
			150608	●					●	●							
			12	●			●										
			16	●					●	●							
			190612	●	●		●		●								
			16	●					●	●							
			250716	●					●	●							
			24						●	●							
			250924						●	●							
39		SNMG	120408-22														●
			12-22														●
			190612-22														●
			16-22														●
40		SNMG	120404-23														
			08-23														
40		SNMG	090304-33														
			120404-33														
			08-33														
			12-33														
40		SNMG	150604-42		●												
			08-42		●												
			12-42	●					●								
			16-42														
			190612-42	●													
			16-42	●						●							
41		SNMG	090304-43	●	●												
			08-43	●	●		●										
			120404-43	●	●		●										
			08-43	●	●		●										
			12-43	●	●		●										
41		SNMG	120408-46	●					●								
			12-46	●					●								
			16-46							●							
			150608-46				●										
			12-46	●					●								
			190612-46				●			●							
			16-46							●							
41		SNMG	120408-55	●	●		●		●	●							
			12-55	●	●		●		●	●							
			150612-55	●	●		●		●	●							

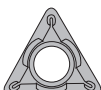


Indexable inserts - Summary

Page	Insert			coated						uncoated								
				CPX	13E	CM2	CW2	CM3	CL4	CM5	P10	P20	P25	GX	PVA	KM1	KMF	
42		SNMG	120408-66	●				●		●	●							
			12-66	●				●		●	●							
			16-66	●				●		●	●							
			150612-66	●				●		●	●							
			190612-66	●				●		●	●							
			16-66	●				●		●	●							
42		SNMM	090304	●	●													
			08	●	●													
			12	●				●										
			120404	●	●			●										
			08	●	●			●		●								
			12	●	●			●		●								
			16	●				●		●								
			150612	●				●		●								
			16					●		●	●							
			190608	●				●		●								
			12	●	●			●		●								
			16	●	●			●		●								
			24							●	●							
			250716							●	●							
			24	●				●		●	●							
			250924							●								
42		SNMM	120412-63	●														
			16-63							●	●							
			150604-63	●														
			08-63	●														
			12-63	●						●								
			16-63	●						●	●							
			190612-63	●						●								
			16-63							●	●							
			250724-63							●								
43		SNMM	120408-75	●	●			●		●	●							
			12-75	●	●			●		●	●							
			16-75	●	●			●		●	●							
			150612-75	●	●			●		●	●							
			16-75	●	●			●		●	●							
			190612-75	●	●			●		●	●							
			16-75	●	●			●		●	●							
43		SNMM	120408-81	●				●										
			12-81	●														
			190612-81	●						●								
			16-81	●							●							
43		SNMM	120408-85		●													
			12-85		●													
			16-85															
			150608-85	●						●	●							
			12-85	●	●					●								
			16-85							●	●							
			190612-85	●						●								
			16-85	●						●								
44		SNMM	190616-92		●			●		●	●							
			24-92		●			●		●	●							
			250724-92		●			●		●	●							
			32-92							●	●							
			250924-92		●			●		●	●							
			32-92					●		●	●							
68		SNUN	090308		●													
			120408															
			12						●		●		●	●		●		
			16								●							
			150412						●									
			190408															
			12															
			16															
			250616								●							
			20								●							
			24								●							

Indexable inserts - Summary



Page	Insert			coated						uncoated							
				CPX	13E	CM2	CW2	CM3	CL4	CM5	P10	P20	P25	GX	PVA	KM1	KMF
70		SPGN	090304		●												
			08					●								●	
			120300		●											●	
			08					●								●	
			12					●								●	
			120408					●								●	
			190400									●					
			08									●					
12									●								
69		SPGR	090302			●											
			04					●									
			08						●								
			120302			●											
			04					●									
			08					●									
12						●											
69		SPMR	090302														
			04					●									
			08			●		●									
			120302														
			04					●									
			08		●	●		●		●							
12						●											
70		SPUN	090304		●											●	
			08					●									
			120304					●				●			●		
			08		●			●		●	●	●		●			
			12						●					●			
			150412					●				●					
			190408								●						
			12					●		●							
			250616S							●							
			20S							●							
71		TCGR	060102							●							
			04		●			●			●				●		
			08		●			●			●				●		
72		TCGT	06T102		●											●	
			04		●											●	
			08		●	●										●	
		TCMT	090202		●	●										●	
			04		●	●										●	
			08		●	●										●	
			110202		●	●										●	
			04		●	●		●		●						●	
			08		●	●		●		●						●	
			16T304		●	●		●		●						●	
			08		●	●		●		●						●	
12			●														
72		TCGT	06T102-11														
			04-11														
		TCMT	110204-11														
			16T304-11														
73		TNGN	160404					●							●		
			08					●							●		
			12		●			●				●				●	
			220408					●				●	●		●		
			12					●				●	●		●		



Indexable inserts - Summary

Page	Insert			coated						uncoated								
				CPX	13E	CM2	CW2	CM3	CL4	CM5	P10	P20	P25	GX	PVA	KM1	KMF	
47		TNMA	160304	●	●													
			08	●	●													
			12	●	●													
			16	●	●													
			160404	●	●													
			08	●	●													
			12	●														
			16	●					●									
			220404	●	●													
			08	●	●													
			12	●	●													
			16	●					●									
			270612				●			●								
			16						●	●								
			330724						●	●								
47		TNMG	110304	●	●		●											
			08	●	●		●											
			160304	●	●		●											
			08	●	●		●											
			12	●	●		●											
			160404	●	●		●											
			08	●	●		●		●									
			12	●	●		●		●									
			16	●	●		●		●									
			220404	●	●		●											
			08	●	●		●		●									
			12	●	●		●		●									
			16	●			●		●									
			270612	●			●		●									
			16	●					●	●								
330716						●	●											
330924						●	●											
47		TNMG	160408-22													●		
			12-22													●		
			220408-22														●	
			12-22														●	
48		TNMG	160404-23															
			08-23															
48		TNMG	110304-33															
			08-33															
			160404-33															
			08-33															
12-33																		
48		TNMG	160404-41	●	●													
			08-41	●			●		●									
			12-41	●					●	●								
			220408-41	●	●													
			12-41	●			●		●									
			16-41	●					●	●								
49		TNMG	110304-43	●	●		●											
			08-43	●	●		●											
			160404-43	●	●		●											
			08-43	●	●		●											
			12-43	●	●		●											
			220408-43	●					●	●								
			12-43	●					●	●								
49		TNMG	160408-46	●	●				●									
			12-46		●				●									
			220408-46	●	●		●											
			12-46		●		●		●									
			16-46						●	●								
49		TNMG	160408-55	●	●		●		●	●								
			12-55	●	●		●		●	●								
			220408-55	●	●		●		●	●								
			12-55	●	●		●		●	●								

● = stocked

without symbol = upon request

Indexable inserts - Summary



Page	Insert			coated						uncoated							
				CPX	13E	CM2	CW2	CM3	CL4	CM5	P10	P20	P25	GX	PVA	KM1	KMF
50		TNMG	160408-66	●	●		●		●	●							
12-66			●	●		●		●	●								
220412-66			●	●		●		●	●								
16-66			●	●		●		●	●								
50		TNMM	110302	●	●												
04			●	●													
08			●	●		●											
160304			●	●		●											
08			●	●		●											
12			●	●		●		●									
160404			●	●		●		●									
08			●	●		●		●									
12			●	●		●		●									
220404			●	●		●		●									
08			●	●		●		●									
12			●	●		●		●									
16						●		●	●								
270608			●			●		●									
12			●					●									
16			●					●									
24								●	●								
32								●	●								
330716								●	●								
24									●								
50		TNMM	160408-63				●										
12-63								●									
220408-63			●														
12-63			●														
16-63								●	●								
51		TNMM	160408-75	●	●		●		●	●							
12-75			●	●		●		●	●								
16-75			●	●		●		●	●								
220412-75			●	●		●		●	●								
16-75			●	●		●		●	●								
51		TNMM	160408-81	●			●		●								
12-81			●			●		●									
220404-81			●	●													
08-81			●			●		●									
12-81			●			●		●									
16-81			●			●		●	●								
270616-81			●					●	●								
51		TNMM	160408-85		●												
12-85				●													
16-85								●									
220408-85				●													
12-85				●													
16-85								●									
73		TNUN	110304		●												
08				●													
160304							●										
08							●										
12							●										
160404							●										
08							●								●		
12							●								●		
16									●								
220408							●										
12							●										
16									●								

● = stocked without symbol = upon request



Indexable inserts - Summary

Page	Insert			coated						uncoated									
				CPX	13E	CM2	CW2	CM3	CL4	CM5	P10	P20	P25	GX	PVA	KM1	KMF		
74		TPGN	110204						●								●		
			08						●								●		
			110304						●									●	
			08						●									●	
			160300						●									●	
			04		●				●		●		●	●				●	
			08		●				●		●		●	●				●	
			12						●		●		●					●	
			220400						●				●						
			08						●				●	●				●	
			12						●				●	●				●	
			16						●		●								
			270616							●				●					
75		TPGR	090202			●													
			04					●											
			08					●											
			110302					●											
			04					●											
			08					●											
			160302					●								●			
			04					●											
75		TPMR	090202					●											
			04					●								●			
			08					●											
			110302					●											
			04		●	●		●			●					●			
			08		●			●											
			160302					●											
			04		●	●		●			●			●		●			
			08		●	●		●			●			●		●			
			12					●											
			220404					●						●					
			08					●						●					
			12					●						●					
16					●						●								
74		TPUN	110304		●			●		●		●			●				
			08		●			●		●		●			●				
			160304		●			●		●	●		●	●		●			
			08		●			●		●	●		●	●		●			
			12					●		●			●			●			
			220404					●								●			
			08					●		●			●	●		●			
			12					●					●	●		●			
			16							●			●	●					
270616							●				●								
76		VBMT	160404		●	●				●									
			08		●	●				●									
			12		●	●				●									
76		VBMT	110302-11													●			
			04-11														●		
			160404-11														●		
			08-11														●		
76		TPUN	110302-22														●		
			04-22														●		
			08-22														●		
			160404-22														●		
			08-22														●		
			12-22														●		

● = stocked

without symbol = upon request



Page	Insert	coated							uncoated						
		CPX	13E	CM2	CW2	CM3	CL4	CM5	P10	P20	P25	GX	PVA	KM1	KMF
54		VNMG 160408	●												
		12	●												
		220408	●												
		12	●												
54		VNMG 160404-04	●	●		●									
		08-04	●	●		●									
55		VNMM 160408-85	●					●							
		12-85	●					●							
		220408-85	●					●							
		12-85	●					●							
58		WNMG 080408	●	●		●		●							
		12	●	●		●		●							
		16	●			●		●							
58		WNMG 060404-33													
		08-33													
		080404-33													
		08-33													
58		WNMG 060404-43	●	●		●									
		08-43	●	●		●									
		080404-43	●	●		●									
		08-43	●	●		●									
59		WNMG 060408-55	●	●											
		080408-55	●	●		●		●	●						
		12-55	●	●		●		●	●						
59		WNMG 080408-66	●	●		●		●	●						
		12-66	●	●		●		●	●						
		16-66	●	●		●		●	●						



Indexable inserts - Summary

Grp	Ref	Part	Code	db								dm																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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25		25L	1R																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		



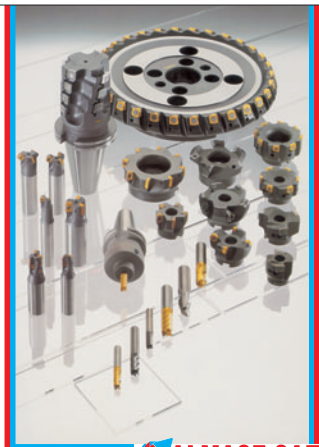
Indexable inserts - Summary

Page	Insert		coated						uncoated							
			CPX	13E	CM2	CW2	CM3	CL4	CM5	P10	P20	P25	GX	PVA	KM1	KMF
152		1.81501 R131										●				
		L131										●				
		1.81502 L131										●				
		1.81801 R131										●				
		L131										●				
151		1.82101 R121										●				
		R122										●				
		L121										●				
		L122										●				
171		6.44102-000														
		6.44105-000		●			●		●		●				●	
		6.44110-000		●			●		●		●		●		●	
		6.44404-000		●					●							
		6.44408-000		●					●							
		6.44604-000													●	
172		6.44702 R520													●	
		L520													●	
		R640								●					●	
		L640								●					●	
		6.44702 R520													●	
		L520													●	
		R640					●			●	●				●	
		L640					●			●	●				●	
171		6.46105-000		●			●		●	●		●		●		
		6.46110-000		●			●		●		●		●		●	
		6.46210-000		●			●									
172		6.46705 R640		●			●			●	●					
		L640					●			●	●					
173		6.62104-000		●			●		●			●	●		●	
173		6.62208-000		●			●		●			●	●		●	
173		6.62308 R 000		●			●		●						●	
174		6.62404-000		●					●							
		6.62408-000		●					●							
174		6.62604-000													●	
		6.62608-000													●	
176		6.62704 R941					●									
		L941					●					●			●	
		6.62801 R910								●					●	
		L910								●					●	
		6.62803 L910										●	●		●	
		L940								●		●	●		●	
		R950													●	
		L950					●					●			●	
		6.62804 R941								●		●				
		L941								●		●				
175		6.66108-000		●			●		●		●	●			●	
175		6.66208-000		●			●		●			●	●		●	
		6.66212-000		●			●					●	●		●	
175		6.66708 L 962										●				

● = stocked without symbol = upon request

ALMAESE SAZ CUTTING GRADE TABLE

[illegible]



1501 E Milling

ALMASE SAZ



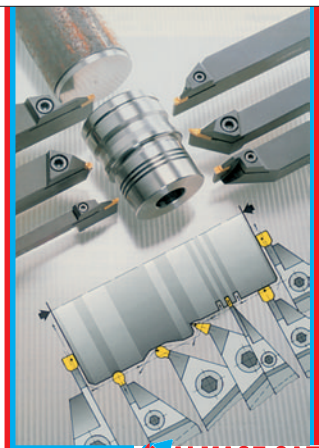
1601 E Drilling

ALMASE SAZ



1701 E Tool system / adaptors

ALMASE SAZ



1201 E Part-off / groove

ALMASE SAZ



1301 E Threading

ALMASE SAZ



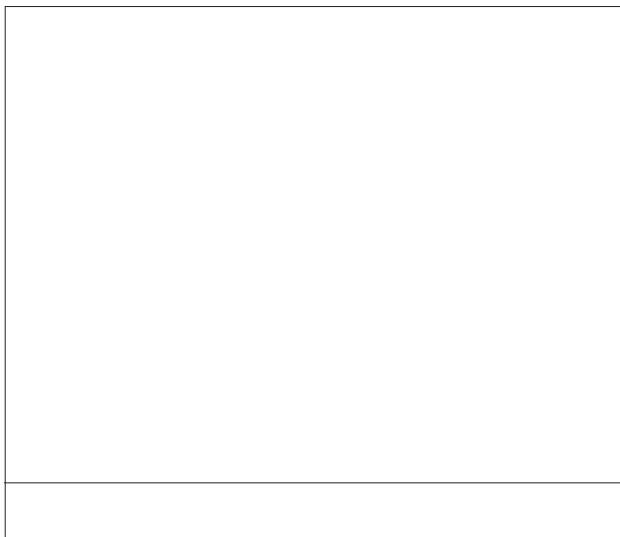
6101 E Wear parts

ALMASE SAZ



4101 E Mining

ALMASE SAZ



2101 E Rock Tools

ALMASE SAZ

ALMASE SAZ

HeadOffice : 21 Arash Blvd., Africa Ave., Tehran 19177 - IRAN P.O. Box 19395 - 5565

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Tel : (00982697) 3003 - 5025 Fax : (00982697) 4004

1101 E Turning

ALMASE SAZ