

TURNING



TURNING



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External Toolholders

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Boring Bars

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Inserts

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Recommended Cutting Conditions

A316

Tool Selection Guide

Holders

Insert type		General turning (For red color, refer to Rhino catalog)						
		C	D	R	S	T	V	W
								
Negative insert 		07, 09, 12-25	08, 13, 11, 15	09-25	09, 12-31	13, 16-33	13, 16	04, 06, 08
Positive insert 		03-12	07, 11	06-32	09-19	06 - 27	08-22	06
 Lever lock	Ext. A7	●	●	●	●	●		●
	Int. A18, A19	●	●		●	●		
 Screw clamp	Ext. A8, A10, A11, A15	●	●	●	●	●	●	
	Int. A16, A18, A19	●	●		●	●	●	●
 Hook lever	Ext. A12				●			
	Int. A17							
 Multi lock	Ext. A12		●			●	●	●
	Int. A17							●
 T-holder	Ext. A6, A14, A15	●	●	●	●	●	●	●
	Int. A18, A19	●	●		●		●	●
 Top clamp	Ext. A13			●	●	●		
	Int. A17				●	●		
 Wedge clamp	Ext. A12					●		
	Int. A18					●		
 Dimple holder	Ext. A13	●	●		●			
	Int. A18	●						

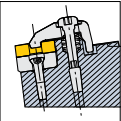
Tool Selection Guide

Holders

General turning (For red color, refer to Rhino catalog)					High feed turning				
H	K	XNMG	Y	BTVC	FCMX	TNMV	XNMV	ZNMV	ZNMV Y-BF
									
05, 10	16	09, 11	13			21	11	14	14
				11	10				
				•	•				
							•		
							•		
•						•	•	•	•
•							•		
	•								
	•								

Tool Selection Guide

External holders

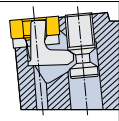


T T-Holder

	TCBNR/L A100	TCKNR/L A100	TCLNR/L A101	TXJNR/L A110 TXJNR/L-TB A111
	TDJNR/L A102	TDNNR/L A102		
	TTGNR/L A106	TTJNR/L A106	TTQNR/L(-TB) A107	
	TSDNN A104	TSKNR/L A105	TSSNR/L A105	
	TVJNR/L A108	TVQNR/L A108		
	TZQNR/L A112	TZQNR/L-TB A112	TZXNN A113	TZXNN-TB A113
	TWLNR/L A109			THSNR/L A103

Tool Selection Guide

External holders

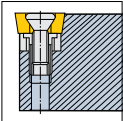


P Lever lock

	 PCBNR/L A58	 PCKNR/L A58	 PCLNR/L A59	 PCLNR/L-TB A59
	 PDJNR/L A60	 PDJNR/L-TB A60	 PDNNR/L A61	
	 PTFNR/L A67	 PTGNR/L A68	 PTTNR/L A68	
	 PSBNR/L A65	 PSDNN A65	 PSKNR/L A66	 PSSNR/L A66
	 PWLNR/L-TB A69			
	 PRDCN A62	 PRGCR/L A63	 PRGNR/L A64	

Tool Selection Guide

External holders

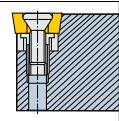


S Screw clamp

	SCACR/L-SH A70	SCACR/L-SH-TB A70	SCLCR/L-SH A71	SCLCR/L-SH-TB A71
	SCLCR/L A72			
	SDJCR/L-SH A73	SDJCR/L-SH-TB A73	SDJCR/L A74	SDJNR/L A74
	SDNCN-SH A75	SDNCN-SH-TB A75	SDNCN A76	SDQNR/L A76
	STFCR/L A81	STGCR/L-SH A82	STGPR-SH A82	STGCR/L-SH-TB A82
	STGCR/L A83			
	SFXCN A77			

Tool Selection Guide

External holders

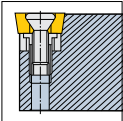


S Screw clamp

	SVJBR/L-SH A84	SVJBR/L-SH-TB A84	SVJBR/L A85	SVJBR/L-TB A85
	SVJCR/L-SH A86	SVJCR/L-SH-TB A86	SVJCR/L A87	SVJNR/L A87
	SVPBR/L A88	SVVBN-SH A89	SVVBN-SH-TB A89	SVVBN A90
	SVVCN A90	LVJBR/L A92	LVJBR-SH A92	LVQBR/L A93
	LVBN A93			
	SSDCN A80	SSSCR/L A80		
	SRDCN A78	SRGCR/L A79	SRGCR/L-TB A79	

Tool Selection Guide

External holders



TM... Miniature tool holder (Screw clamp)

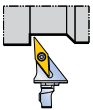
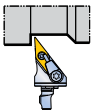
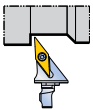
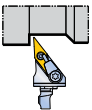
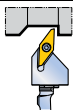
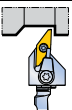
TMB Back turning holders				TMB-SVXCR A91 TMB-SVXCR-TB A91
				TMS-SCLCL A94
TMS Sleeve holders				TMS-SDUCL A95 TMS-SDUCR/L-TB A95
				TMS-SVUBL A96 TMS-SVUBR/L-TB A96 TMS-SVUCL A96
TMY Y-axis holders				TMY-SDJCR A97 TMY-SDJCR-TB A97
				TMY-SVJBR A98 TMY-SVJBR-TB A98
TMZ Shift holders				TMZ-SDJCR A99
				TMZ-SVLBR A99

Tool Selection Guide

External holders

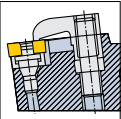


QE Modular head (Screw clamp)

QE1 External turning modular head		 	QE1 SDJCR A137 QE1 SDJCR-TB A137
		   	QE1 SVJBR A138 QE1 SVJBR-TB A138 QE1 SVJCR A139 QE1 SVJCR-TB A139
QE1B Back turning modular head		 	QE1B SVXCR A140 QE1B SVXCR-TB A140
QE1Y Y-axis modular head		 	QE1Y SDJCR A141 QE1Y SDJCR-TB A141

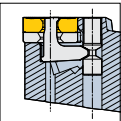
Tool Selection Guide

External holders



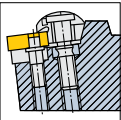
M Multi lock

	MDJNR/L A52	MDNNN A52	MDQNR/L A53
	MTJNR/L A54		MWLNR/L A57
	MVJNR/L A55	MVQNR/L A55	MVVNN A56



H Hook lever holder

	HSBNR/L A51	HSDNN A51

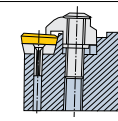


W Wedge clamp

	WTENN A114	WTGNR/L A114	WTJNR/L A115

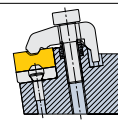
Tool Selection Guide

External holders



C Top clamp

	CTCPN A49	CTFPR/L A49	CTGPR/L A50
	CSDPN A48		
	CKJNR/L A47	CKNNR/L A47	
	CRDCN-120 A116 CRDCN-140 A116	CRDCN-T A117	CRDCR/L-T A117 CRGCR/L-120 A118 CRGCR/L-140 A118

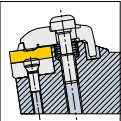


T-CH CH dimple holder

	TCBNR/L-CH A120	TCKNR/L-CH A120	TCLNR/L-CH A121
	TDJNR/L-CH A122	TDNNN-CH A122	
			TSSNR/L-CH A123

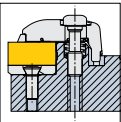
Tool Selection Guide

External holders



T-DA DA dimple holder

	TCLNR/L-DA A124		TSDNN-DA A125	TSKNR/L-DA A125

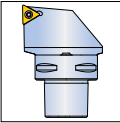


T-F Flat T-Holder

				
	TCLNR/L-F A126	CCLNR/L-F A119		
				
	TDJNR/L-F A127			
				
	TSDNN-F A130	TSKNR/L-F A130	TSRNR/L-F A131	TSSNR/L-F A131
				
	TTJNR/L-F A132			
				
	TRDNN-F A129	TRGNR/L-F A129		
				TEGNR/L-F A128

Tool Selection Guide

External and internal C-adapter

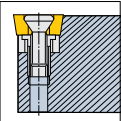


C C-Adapter

	C...TCLNR/L A146	C...SCLCR/L A151	C...SCLCR/L A154
	C...TDJNR/L A146	C...SDJCR/L A151	C...SDUCR/L A154
	C...TTGNR/L A148 C...TTJNR/L A148	C...STGCR/L A152 C...STJCR/L A152	C...STFCR/L A155
	C...TSDNN A147	C...TSSNR/L A147	
	C...TVJNR/L A148	C...SVJBR/L A153	C...SVVBN A153 C...SVQBR/L A155
	C...TZQNR/L-TB A150		C...TWLNR/L A149
	C...SRDCN A152		

Tool Selection Guide

Internal boring bars

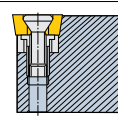


S Screw clamp

	S-SCLCR/L A174 C-SCLCR/L A175 E-SCLCR/L A175	S-SCLPR/L A176 A-SCLPR/L A176	E-SCLPR/L A177	S-SDQCR/L A178
	A-SDQNR/L A178	A-SDLNR/L A177	S-SDUCR/L A179	A-SDUNR/L A179
	S-SDZCR/L A180			
	S-STFCR/L A182 C-STFCR/L A182	S-STFPR/L A183 A-STFPR/L A183	C-STFPR/L A184 E-STFPR/L A184	S-STUBR/L A185 C-STUBR/L A185
	C-STZBR/L A186			
	S-SVJBR/L A187 S-SVJCR/L A187	S-SVJPR/L A188	A-SVLNR/L A188	S-SVPBR/L A189 S-SVPCR/L A189
	A-SVPCR/L A190	S-SVQBR/L A191 S-SVQCR/L A191	S-SVUBR/L A192 S-SVUCR/L A192	

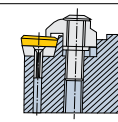
Tool Selection Guide

Internal boring bars



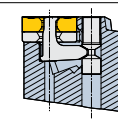
S Screw clamp

	 S-SSKCR/L A181		 A-SXUNR/L A190
	 A-SVLNR/L A188	 A-SVPCR/L A190	 S-SWUBR/L A193 C-SWUBR/L A193



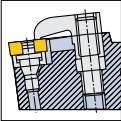
C Top clamp

	 S-CSKPR/L A166		 S-CTFCR/L A167 S-CTFPR/L A167		 S-CKUNR/L A165
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H Hook lever holder

	 A-HXUNR/L A168
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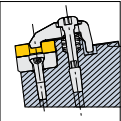


M Multi lock

	 S-MWLNR/L A169
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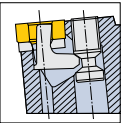
Tool Selection Guide

Internal boring bars



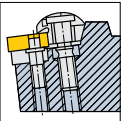
T T-Holder

	A-TCLNR/L A194		A-TXUNR/L A199		A-TDUNR/L A195
	A-TSKNR/L A197		S-TWLNRL A198 A-TWLNRL A198		A-THSNR/L A196



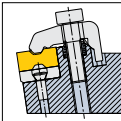
P Lever lock

	S-PCLNR/L A170		S-PSKNR/L A172
	S-PDUNR/L A171	S-PDZNR/L A171	S-PTFNR/L A173



W Wedge clamp

	S-WTFNR/L A200



T-CH CH dimple holder

	S-TCLNR/L-CH A201

Tool Selection Guide

Internal boring bars

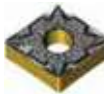


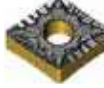
QH Modular head

	QH-SCLCR/L A208	QH-PCLNR/L A203	QH-TCLNR/L A205
	QH-SXUNR/L A212		QH...Y-TZXNN-TB A213
	QH-SDUCR/L A209	QH-SDUCR/L-VH A214	QH-PDUNR/L A203
	QH-TDUNR/L A206		
	QH-SDUNR/L-VH A215		
	QH-SVUBR/L A211	QH-SVLCR/L-VH A214	QH-TVUNR/L A206
	QH-TDUNR/L A206	QH...Y-TTXNN-TB A213	QH-PTFNR/L A204
	QH-STFCR/L A210		
	QH-TWLNRL/L A207		

Tool Selection Guide

Negative inserts

	T-TURN				
Application	Super finishing		Finishing		
Chip breaker	FA	EA	FLP	FG	SF
Insert					
Material	P	M S	P	P	P M
C 	• A229	• A228	• A229	• A229	• A231
D 	• A235	• A234	• A235	• A235	
S 		• A243		• A244	
T 		• A248	• A248	• A248	• A250
V 	• A251	• A251	• A251	• A251	
W 		• A253	• A254	• A253	
X 					
Y 					

	T-TURN				
Application	Finishing		Medium		
Chip breaker	FX	FC	MLP	MC	VF
Insert					
Material	P	P M	P	P	P M
C 		• A229	• A230	• A229	
D 		• A235	• A236	• A236	• A237
S 		• A244		• A244	
T 		• A248	• A249	• A249	• A250
V 	• A252	• A251			
W 		• A253	• A254	• A254	
X 					
Y 					

Tool Selection Guide

Negative inserts

	T-TURN				
Application	Medium				
Chip breaker	MGS	ML	MP	EM	MGP
Insert					
Material	S	P M S	M S	M S	P
C 	• A230	• A226 A230	• A230	• A228	• A229
D 	• A236	• A234 A236	• A236	• A234	• A236
R 					
S 	• A244	• A244	• A245	• A243	• A244
T 		• A249	• A249	• A248	• A249
V 		• A251 A252		• A251	• A252
W 	• A254	• A254	• A254	• A253	• A254
Y 					

	T-TURN				
Application	Medium			Roughing	
Chip breaker	PC	MT	No Notation	ET	RGP
Insert					
Material	P	P M K	P K	M S	P
C 	• A231	• A230	• A228	• A228	• A231
D 	• A237	• A237	• A234	• A234	
R 			• A240		
S 	• A245	• A245	• A243	• A243	
T 	• A250	• A249	• A247	• A248	
V 	• A252	• A252	• A251		
W 	• A255	• A255		• A253	• A255
Y 					

Tool Selection Guide

Negative inserts

	T-TURN				
Application	Roughing				
Chip breaker	RT	KT	RX	RH	EH
Insert					
Material	P M K	K	P	P	M
C	 A231	 A229	 A233	 A233	 A232
D	 A237	 A235	 A238		
R					
S	 A245	 A244	 A246	 A246	 A245
T	 A250	 A249	 A250	 A250	
V					
W	 A255	 A254			
Y					

	T-TURN				
Application	Roughing				Finishing wiper
Chip breaker	HT	HD	HY	HZ	WS
Insert					
Material	P	P	P	P	P M K
C	 A227 A232	 A227	 A227 A232	 A227 A232	 A232
D					 A238
R					
S	 A242 A245	 A241	 A242 A246	 A242 A246	
T					
V					
W					 A255
Y					

Tool Selection Guide

Negative inserts

	T-TURN				WINTURN
Application	Medium wiper		Medium		Roughing
Chip breaker	WT	GU	SU	KNUX	TNMV
Insert					
Material	P M K S	P K	P M S	P M	P M
C 					
D 					
H 					
S 					
T 					
V 					
W 					
Y 					

	POSSTURN				
Application	Finishing / Medium				
Chip breaker	XNMV	ZNMV	ZNMV Y-BF		
Insert					
Material	P K S	P S P	S		
C 					
D 					
H 					
K 					
T 					
V 					
X 					
Z 					

Tool Selection Guide

Positive inserts

	T-TURN				
Application	Super finishing		Finishing		Medium
Chip breaker	FA		FG	FX	PC FM
Insert					 
Material	P M		P M S	P	P M S P M
C 	A263		A263 A264		A263 A264 A263 A264
D 	A268		A268		A268 A268
R 					A271
S 			A272		A272 A272
T 	A276 A279		A276 A279		A276 A279 A276 A279
V 	A282		A282	A282	A282 A284 A282 A284
W 					
F 					

	T-TURN				
Application	Medium		Medium wiper	Roughing	
Chip breaker	MT		MGS	WT	No Notation RA
Insert					 
Material	P M K		M S	P M K	P M K S P
C 	A263			A263	
D 	A268				
R 	A271		A271		A271
S 	A272				A273
T 	A276				A279
V 	A282				
W 					
F 					

Tool Selection Guide

Positive inserts

	T-TURN					TURN SPEED
Application	Roughing		Finishing			Medium
Chip breaker	No Notation	FF	GF	GW	FGS	FCMX
Insert						
Material	P	P M S	P M S	P M S	S P	
C		• A261	• A260	• A260		
D		• A266 A269	• A265 A269	• A265		
R		• A271				
S						
T		• A274 A277	• A275 A277			
V		• A281 A285	• A281 A285	• A281	• A282	
W		• A286				
F						• A270

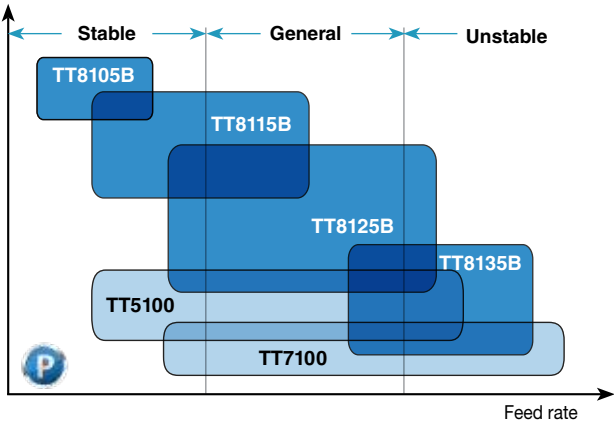
	T-TURN					
Application	Finishing					
Chip breaker	SL	SA	SM	SH	FL	ST
Insert						
Material	P M S	P M S	P M S	P M S	M N S	P M S
C	• A262	• A261	• A262	• A262	• A261	
D	• A267	• A266	• A267	• A267	• A266	• A267
R					• A271	
S					• A272	
T		• A275			• A275	
V	• A281 A283	• A281 A283	• A281 A283	• A283	• A283	
W						
F						

Grades

Selection guide for turning grades

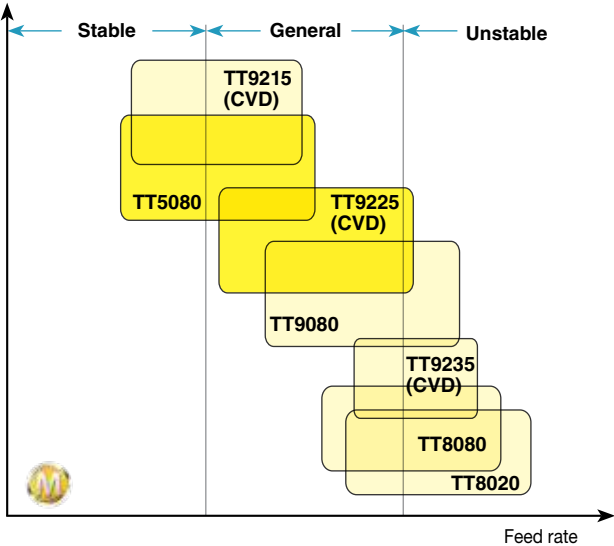
For steel (**SPEED RUSH** - CVD coated)

Cutting speed



For stainless steel (CVD & PVD coated)

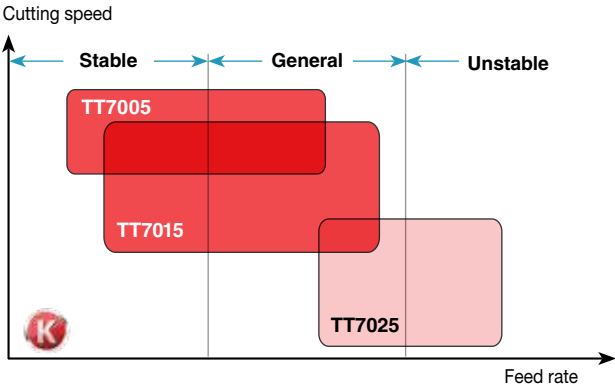
Cutting speed



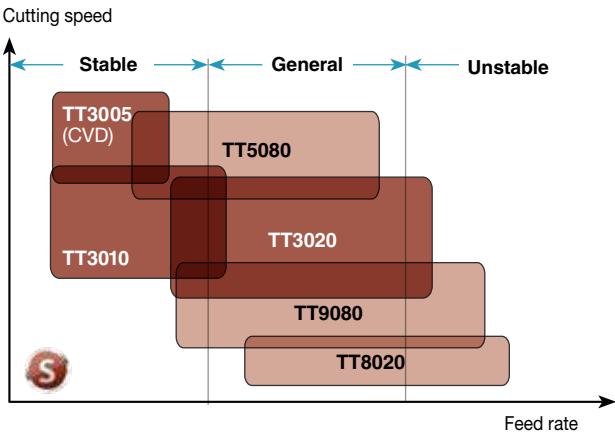
Grades

Selection guide for turning grades

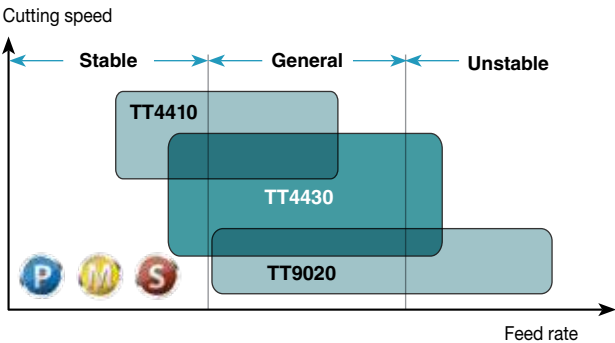
For cast iron (CVD coated)



For super alloys (CVD & PVD coated)



For small parts machining (PVD coated)



Grades

Carbide grades

Grades	ISO	Characteristics & applications
TT7005 CVD coated	K05 – K15	• High speed turning of gray cast iron in continuous conditions
TT7015 CVD coated	K10 – K25	• General turning of gray and ductile cast iron in continuous and interrupted conditions
TT7025 CVD coated	K20 – K35	• Interrupted turning of gray and ductile cast iron especially good in ductile cast iron
TT8105B CVD coated	P05 – P15	• High speed turning of steel in continuous conditions
TT8115B CVD coated	P05 – P20	• General turning of steel in high speed conditions
TT3005 CVD coated	S05 – S15	• Finish turning of heat resistant super alloys in high speed and low depth of conditions
TT9215 CVD coated	M05 – M20 S05 – S20	• High speed turning of stainless steel and heat resistant super alloys in continuous conditions
TT4410 PVD coated	M05 – M25 P05 – P25 S05 – S25	• High speed turning of small parts for stainless steel, steel and titanium alloys in continuous conditions
TT3010 PVD coated	S05 – S20	• High speed turning of heat resistant super alloys in continuous conditions
TT5080 PVD coated	M05 – M25 S05 – S25	• Wide range of turning for stainless steel and heat resistant super alloy
TT3020 PVD coated	S10 – S30	• General turning of heat resistant super alloy
TT8125B CVD coated	P15 – P30	• General turning of steel in wide range of conditions
TT5100 CVD coated	P20 – P35 M20 – M35	• Wide range of turning for mild steel, low carbon steel, low carbon alloy steel and stainless steel
TT9225 CVD coated	M15 – M30 S15 – S30	• General turning of stainless steel and heat resistant super alloy
TT9020 PVD coated	P20 – P40 M20 – M40	• General turning of small parts for steel and stainless steel

Grades

Carbide grades

Grades	ISO	Characteristics & applications
TT4430 PVD coated	M20 – M40 P20 – P40 S20 – S40	• General turning of small parts for stainless steel, steel and titanium alloy
TT9080 PVD coated	M20 – M40 P20 – P40 S20 – S40	• General turning of stainless steel, steel and heat resistant super alloy
TT8135B CVD coated	P25 – P40	• Interrupted turning of steel in low speed conditions
TT7100 CVD coated	P30 – P45	• Heavy interrupted turning of steel
TT9235 CVD coated	M25 – M40 S25 – S40	• Interrupted turning of stainless steel and heat resistant super alloy in low speed conditions
TT8080 PVD coated	M30 – M50 P30 – P50 S30 – S50	• Interrupted and rough turning of stainless steel and steel • Interrupted turning of heat resistant super alloys in low speed conditions
TT8020 PVD coated	M30 – M50 P30 – P50 S30 – S50	• Low speed turning of stainless steel, heat resistant super alloys and low carbon steel
PV3010 Cermet PVD coated	P05 – P20 M05 – M20 K05 – K20	• Good surface finish turning of steel, stainless steel and cast iron in high speed conditions
CT3000 Cermet uncoated	P10 – P20 M10 – M20 K10 – K20	• Excellent surface finish turning of steel, stainless steel and cast iron
K10 Carbide	K05 – K15 N05 – N15 S05 – S15	• General turning of cast iron, non-ferrous materials of aluminum and titanium alloy

Grades

CBN, PCD, Ceramic grades

Grades	ISO	Characteristics & applications
TB610 CBN	H05 – H10	• High speed continuous turning of hardened steel
TB2015 CBN	H10 – H20	• Light interrupted turning of hardened steel
TB650 CBN	H10 – H20	• General turning of hardened steel
TB670 CBN	H20 – H30	• Medium interrupted turning of hardened steel
TB7015 CBN	H25 – H35 K10 – K20	• High speed turning of cast iron and general turning of carbide roll
TB7020 Solid CBN	K10 – K25	• High speed and light interrupted turning of cast iron. Solid CBN insert
TB730 CBN	K05 – K10 P10 – P20	• General turning of sintered or powder metals
AW120 Ceramic, Al ₂ O ₃ +ZrO ₂	K05 – K15	• High speed continuous turning of white cast iron
AB2010 Ceramic, PVD coated	H05 – H10	• High speed finish turning of hardened steel
AB20 Ceramic, Al ₂ O ₃	H05 – H15	• Continuous and finish turning of hardened steel
AB30 Ceramic, Al ₂ O ₃	H10 – H15 K05 – K15	• General turning of hardened steel under HRC 55 and cast iron
TC430 Ceramic, Whisker	S05 – S15	• High speed turning of super alloys especially for Ni-based super alloy
TC3020 Ceramic, SiAlON	S15 – S25	• General turning and milling of super alloy
TC3030 Ceramic, SiAlON	S25 – S35	• Rough turning and milling of super alloy
AS500 Ceramic, SiAlON	K15 – K25	• General and light interrupted turning of gray cast iron
SC10 Ceramic, CVD coated	K25 – K35	• General turning of ductile cast iron
AS10 Ceramic, Si ₃ N ₄	K25 – K35	• Interrupted turning of gray cast iron
TD1010 PCD	N05 – N15	• Bi-modal composition for high speed turning of non-ferrous materials, high Si aluminum alloy, ceramic and sintered tungsten carbide
TD1020 PCD	N10 – N25	• General turning of non-ferrous materials and finish turning of carbide roll
TD1030 PCD	N20 – N35	• Low Si aluminum alloys and composite plastics (CFRP, GFRP)

Recommendations for Chip Breakers



ISO Negative inserts

For steel

	← Stable Unstable →
Finishing	WS FLP FG FC
Medium	MLP PC MGP MT
Roughing	RGP RT

For stainless steel

	← Stable Unstable →
Finishing	EA
Medium	GG-ML ML EM MP
Roughing	ET

For super alloys

	← Stable Unstable →
Finishing	EA
Medium	GG-ML ML MGS MP
Roughing	ET

For cast iron

	← Stable Unstable →
Finishing	
Medium	MT No Notation
Roughing	KT No Notation

For aluminum

	← Stable Unstable →
Finishing	
Medium	GG-ML ML
Roughing	

Recommendations for Chip Breakers



ISO Positive inserts

For steel

	 ← Stable  → Unstable 
Finishing	  FA FG
Medium	   FM PC MT
Roughing	

For stainless steel

	 ← Stable  → Unstable 
Finishing	  FA FG
Medium	 PC
Roughing	

For super alloys

	 ← Stable  → Unstable 
Finishing	 FG
Medium	 PC
Roughing	

For cast iron

	 ← Stable  → Unstable 
Finishing	
Medium	 MT
Roughing	

For aluminum

	 ← Stable  → Unstable 
Finishing	
Medium	 GT-FL
Roughing	

Recommendations for Chip Breakers

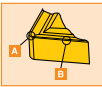


Chip breakers for Swiss turn (Ground type)

ISO Positive inserts

	 Stable   Unstable
Finishing	 SL
Finishing-Medium	 SA  SM
Roughing	 SH  ST

Negative inserts

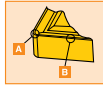


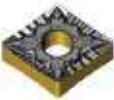
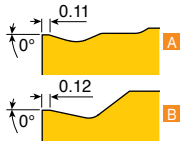
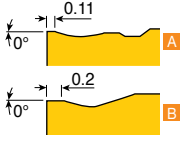
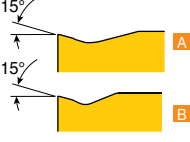
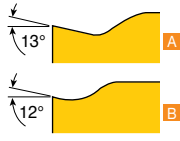
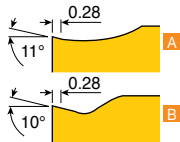
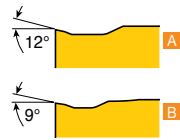
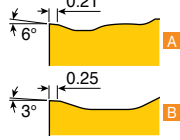
Chip breaker name and geometry			Applications and features
FA		CNMG 1204 18° 18°	• For super finish applications • Steel, stainless steel and heat resistant alloy machining • Excellent chip control
EA		CNMG 1204 15° 12.5°	• For finishing applications • Exotic materials • Excellent chip control at low feeds and depths of cut
FLP		CNMG 1204 10° 10°	• For finishing applications for steel machining • Wide supporting area
FG		CNMG 1204 18° 12°	• For finish and semi finish applications • Steel, stainless steel and cast iron machining • Low cutting forces
SF		CNMG 1204 14° 0° 0.15	• For finishing applications • Stainless steel and heat resistant alloy machining • Low cutting forces
FX		VNMG 1604 20° 11°	• For finishing applications on mild steels • Narrow chip breaker design for optimal chip control
FC		CNMG 1204 4° 2°	• Ideal for finishing applications • Low carbon steel & low carbon alloy steel • Effective chip breaking in both turning and facing operations

Chip Breakers

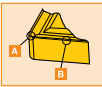


Negative inserts



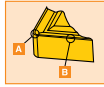
Chip breaker name and geometry			Applications and features
MLP		CNMG 1204 	• For semi-finishing and medium applications on steels • Wave cutting edge
MC		CNMG 1204 	• For medium applications • Steel and cast iron machining • Strong rake geometry • Excellent chip control on medium turning applications
MGS		CNMG 1204 	• Low cutting resistance and heat generation in high-temperature alloy machining • High rake angle for smooth chip formation
ML		CNMG 1204 	• For medium light applications • Stainless steel, steel and aluminum • Very high positive rake geometry to minimize built-up-edge and cutting forces
MP		CNMG 1204 	• For medium machining applications • Steel and stainless steel • High positive rake geometry to optimize machining and provide stable machining conditions
EM		CNMG 1204 	• For medium applications • Stainless steel machining • Sharp land design for low cutting force
MGP		CNMG 1204 	• Wide range for medium application on steels • Wide groove and several dimples

Negative inserts



Chip breaker name and geometry			Applications and features
PC		CNMG 1204 A B	• For medium to semi-finishing applications • Steel & Automotive component • Positive geometry • Excellent chip control on medium applications
MT		CNMG 1204 A B	• For medium rough applications • Steel, cast iron and stainless steel • Tough rake angle for general use
No Notation		CNMG 1204 A B	• For medium rough applications • Steel and cast iron machining • Strong rake geometry • Suitable for manual lathes
ET		CNMG 1204 A B	• For roughing applications on exotic materials • Low cutting force • Wide chip control range when roughing
RGP		CNMG 1204 A B	• For roughing applications on steels • Reliable cutting edge with low cutting force
RT		CNMG 1906 A B	• For roughing applications • Steel and cast iron machining • Very strong rake geometry
KT		CNMG 1204 A B	• For roughing applications on cast iron • Stable broad supporting area • Reliable, uniform performance

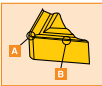
Negative inserts

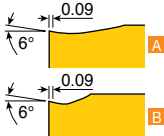
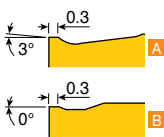


Chip breaker name and geometry			Applications and features
RX		CNMM 1906	• For semi heavy roughing applications • Steel, stainless steel and cast iron machining • Strong cutting edge with flat land • Low cutting force
RH		CNMM 1906	• For roughing applications • Steel, stainless steel and cast iron machining • Very strong rake geometry
EH		CNMM 2509	• Heavy turning for stainless and mild steel • Low cutting force in stainless steel machining • Reliable & uniform performance • Excellent chip control due to the specially designed chip breaker geometry • Single sided insert
HT		CNMM 1906	• For heavy roughing applications • Low cutting force for low horse power machines • Excellent chip control due to changeable land and a flexible chip breaker
HD		CNMD 2509	• For heavy roughing applications • For all kinds of shafts, connecting-rods and ship building components • Flexible chip breaker offers excellent chip evacuation
HY		CNMM 2509	• For heavy roughing applications • For large depth of cut and high feed • Strong cutting edge credit to a wide land and large land angle
HZ		CNMM 2509	• For heavy roughing applications • For large depth of cut and high feed • Extremely strong cutting edge credit to a wide land and large land angle • Suitable for high cutting conditions

Chip Breakers

Negative inserts

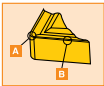


Chip breaker name and geometry		Applications and features
WS	wiper  CNMG 1204 	• For super finish applications • Steel, cast iron and stainless steel machining • Excellent chip control and low cutting forces
WT	wiper  CNMG 1204 	• For medium to rough machining applications • Steel, cast iron and stainless steel machining • Stable cutting and low cutting forces at high feed rates

Chip Breakers

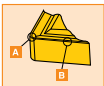


Negative inserts



KNUX type

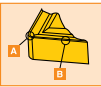
Chip breaker name and geometry			Applications and features
11		KNUX 1604	• For medium light to medium applications • Steel and stainless steel machining • Positive rake geometry to minimize cutting forces • Excellent chip control
12		KNUX 1604	• For medium to medium rough applications • Steel and stainless steel • Strong rake geometry • Wide chip control range



HNMG type

Chip breaker name and geometry			Applications and features
GU		HNMG 0504	• For medium applications • For general turning of steels and cast irons • Strong rake geometry
SU		HNMG 0504	• For exotic materials • Stainless steels, super alloys, low carbon steels, low carbon alloy steel machining • Sharp geometry to minimize built-up edge

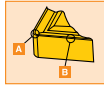
Positive inserts-pressed

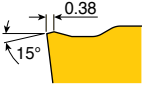
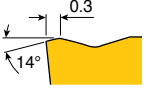


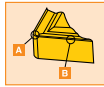
Chip breaker name and geometry			Applications and features
FA		DCMT 11T3 6° 6°	• For super finish applications • Very tight chipbreaker • Excellent chip control
FG		CCMT 09T3 17° 9°	• For finish to medium light applications • Steel and stainless steel machining • Low cutting forces • Excellent chip control
FX		VBMT 1604 12° 7°	• For finishing applications on mild steels • Narrow chip breaker design for optimal chip control
PC		CCMT 09T3 6° 6°	• For medium applications • Suitable for a wide variety of materials • Low cutting force
FM		CCMT 09T3 5° 5°	• Medium and semi-finishing machining for steel and stainless steel • Precision machining • Low cutting force chip breaker geometry
MT		CCMT 09T3 0° 0.12	• For medium to medium rough applications • Steel, stainless steel and cast iron machining • Negative rake geometry for general use
WT		CCMT 09T3 0° 0.09 0° 0.12	• For medium to rough machining applications • Steel, cast iron and stainless steel machining • Stable cutting and low cutting forces at high feed rates
PMR-		TPMR 1103 5°	• For medium to medium rough applications • Steel, stainless steel and cast iron • Positive rake geometry

Chip Breakers

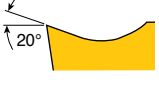
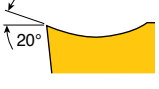
Positive inserts-pressed



Chip breaker name and geometry			Applications and features
RA		RCMX 3209 	• For heavy and interrupted machining applications • Steel, stainless steel and cast iron machining • Optimized chip groove geometry
No Notation		RCMX 1204 	• For high feed roughing applications • Steel, stainless steel and cast iron machining • Strong rake geometry



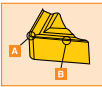
Positive inserts-ground

Chip breaker name and geometry			Applications and features
FF		CCGT 0301 	• For finish to medium applications • For small component machining • Excellent surface finish
GF		CCET 0602 	• For super finish applications • Steel, stainless steel and alloy steel machining
GW		CCET 0602 	• For super finish applications • Wiper geometry for good surface finish • Steel, stainless steel and alloy steel machining
FGS		VBGT 1604 	• Lower cutting resistance and heat generation in heat resistant super alloys machining • High rake angle for smooth chip formation
SL		CCGT 09T3 	• High performance in low depth of cut and low feed machining • Excellent chip segmentation due to wave geometry edge and special inclined design

Chip Breakers



Positive inserts-ground



Chip breaker name and geometry			Applications and features
SA		CCGT 09T3 14° 10° A B	• For finish to medium applications • Steel & aluminum machining • Low cutting force
SM		CCGT 09T3 15° 10° A B	• 1st recommended chip breaker for Swiss type automatic lathe • Stable cutting edge and low cutting resistance
SH		CCGT 09T3 3.5° 6° A B	• Suitable for deep depth of cut machining • Excellent chip control in a wide machining range
FL		CCGT 1204 20° A	• For finish to medium applications • Aluminum machining • Very high positive rake geometry to minimize built-up-edge
ST		DCGT 11T3 23° A	• Capable of deep depth of cut machining up to 5 mm • Low cutting force due to the high positive rake geometry • Stable chip evacuation

Turning Toolholders



P	C	L	N	R
1	2	3	4	5

1 Clamping system

P	C	S	M	T	W	H
Lever lock	Top clamp	Screw clamp	Multi lock	T-holder	Wedge clamp	Hook lever

2 Insert shape

C	D	E	H	K	R	S	T	V	W

3 Approach angle

Symbol	Shape	Offset	Symbol	Shape	Offset	Symbol	Shape	Offset
A		x	J		○	V		x
			K		○	W		○
B		x	L		○	X	Special angle	
			M		x	C*		x
D		x	N		x	H*		○
E		x	R		○	Q*		○
F		○	S		○			
G		○	T		○			
			U		○			

* TaeguTec standard

5 Hand of tool

R: Right hand
N: Neutral
L: Left hand

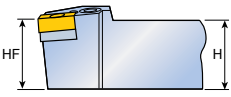
4 Insert clearance angle

N	B	C	P

25 **25** **M** **12** -

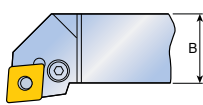
6 **7** **8** **9** **10** **11**

6 Shank height



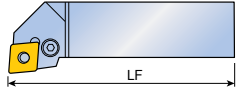
Integers to be preceded by 0
e.g.: H=8mm indicated by 08

7 Shank width



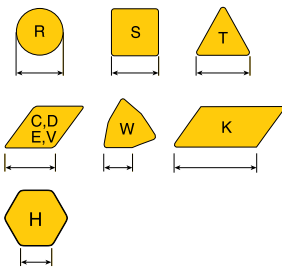
Integers to be preceded by 0
e.g.: B=8mm indicated by 08

8 Tool length



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

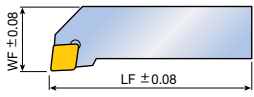
9 Cutting edge length



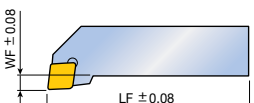
See page A225

10 Qualified tool

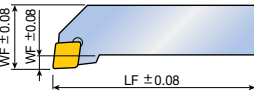
Q



F



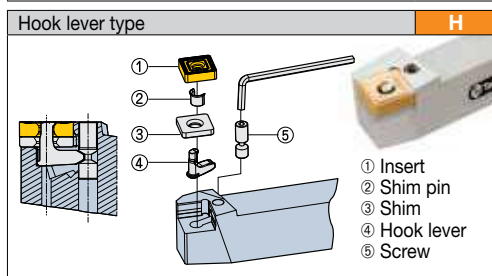
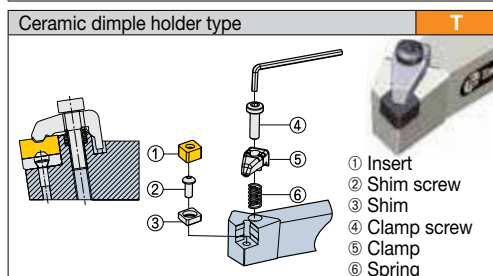
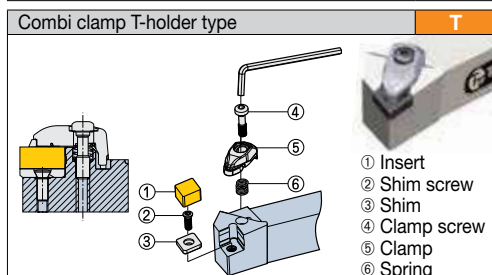
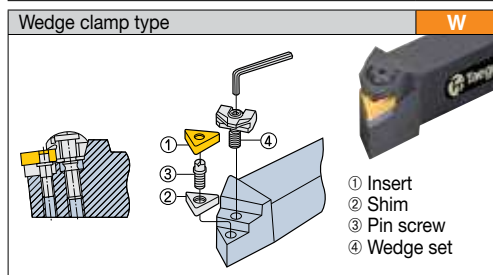
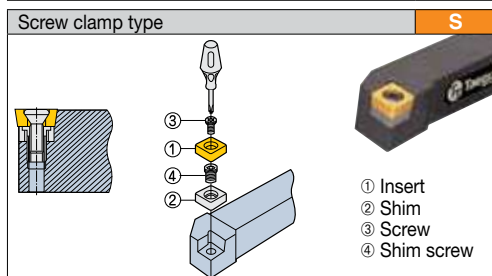
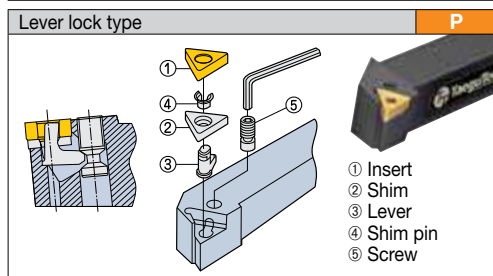
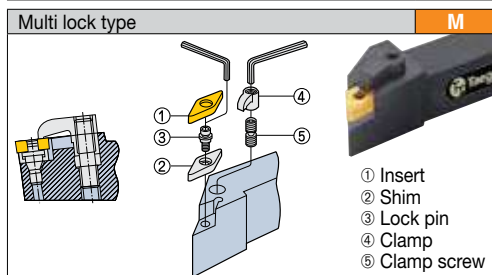
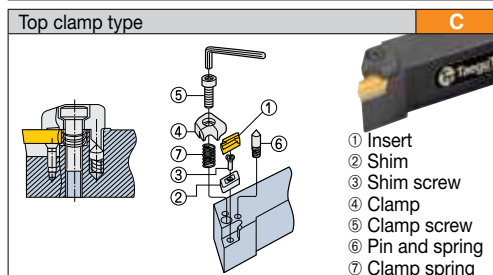
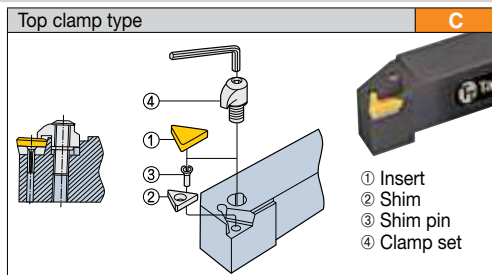
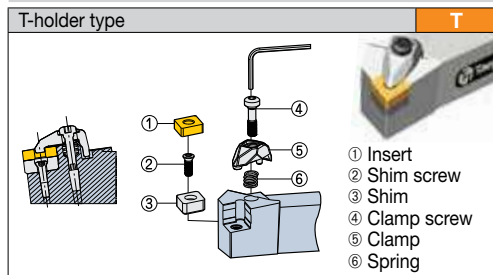
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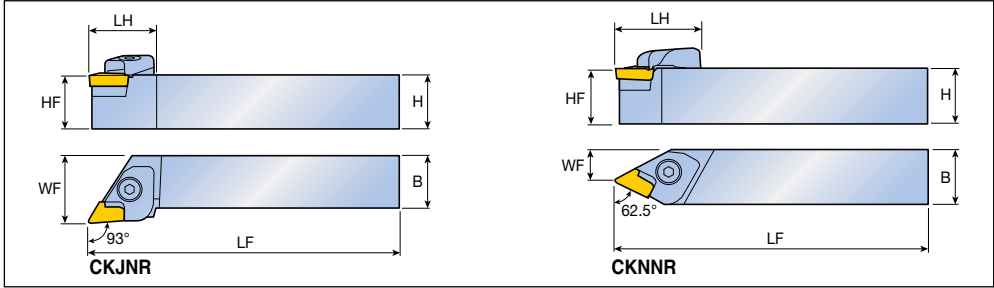
11 Manufacturer's type designation

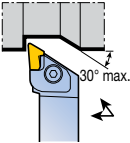
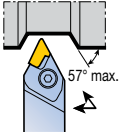
Unique to manufacturer

Toolholder Clamping System



Top clamp type holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
93° 	CKJNR/L 2020 K16	20	20	20	125	35	25		KNUX 1604...R/L 11 KNUX 1604...R/L 12 A239
	2020 M16	20	20	20	150	35	25		
	2525 M16	25	25	25	150	32	32		
	3225 P16	32	32	25	170	33.3	32		
	3232 M16	32	32	32	150	33.3	40		
	3232 P16	32	32	32	170	33.3	40		
	4040 R16	40	40	40	200	33.3	50		
62.5° 	CKNNR/L 2525 M16	25	25	25	150	44.7	14.4		
	3225 M16	32	32	25	150	44.7	14.4		

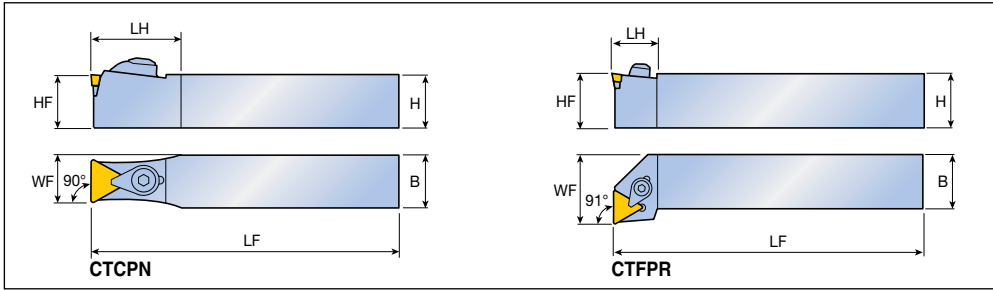
Spare parts

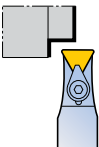
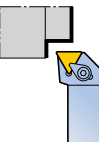
Designation	Clamp	Screw	Clamp spring	Pin	Pin spring	Shim	Shim screw	Wrench
...16	CL 16KR/L	CLS 16K	KSP 90	KP 48S	KSP 48	CSK 1604R/L	FH M3x0.5x10	L-W 4 L-W 2

CSDPN

[illegible]

Top clamp type holders



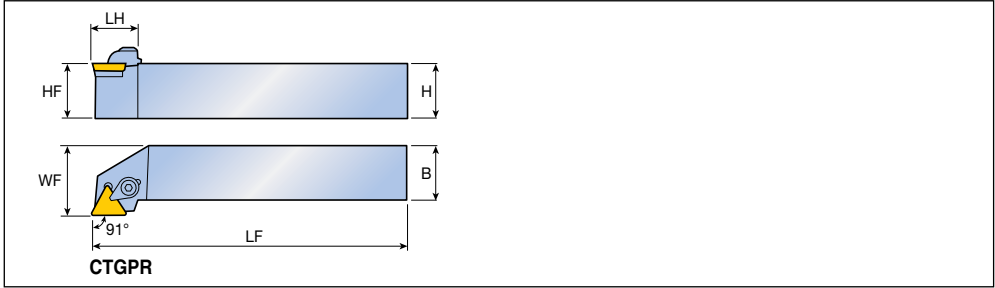
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
90° 	CTCPN 2009 K11	20	20	9	125	20	9.4	TPMR,TP...N 1103...
	2513 Q16	25	25	13	180	30	14.1	TPMR,TP...N 1603...
	2525 M22	25	25	25	150	50	19.4	TPMR,TP...N 2204...
91° 	CTFPR/L 1616 H11	16	16	16	100	14.4	20	TPMR,TP...N 1103...
	2020 K11	20	20	20	125	16	25	TPMR,TP...N 1603...
	2020 K16	20	20	20	125	20	25	
	2525 M16	25	25	25	150	20	32	


A279-A280,
A302,
A313-A314,

Spare parts

Designation	Clamp			Screw		Shim	Shim pin	Snap ring	Wrench
									
CTCPN ...11	CL 2C	-	-	CLS 2C	-	-	-	CSR 2C	L-W 2.5
CTCPN ...16	CL 3C	-	-	CLS 3C	-	CST 32	CSP 3	CSR 2	L-W 3
CTCPN ...22	-	CLM 12	-	-	XNSM 0825	CST 43	CSP 16K	CSR 4	L-W 4
CTFPR/L...11	-	-	CL 2	CLS 2	-	-	-	CSR 2	L-W 2.5
CTFPR/L...16	-	-	CL 3	CLS 3	-	CST 32	CSP 3	WSR 4	L-W 3

Top clamp type holders

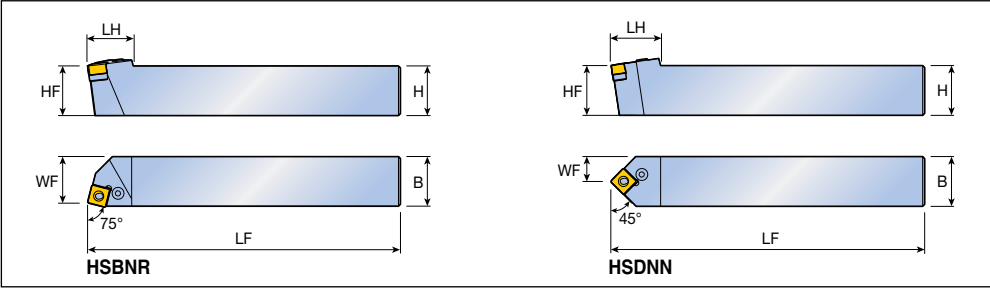


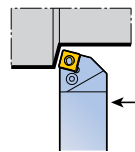
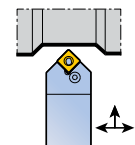
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
	CTGPR/L 1212 F11	12	12	12	80	19	16	TPMR,TP...N 1103...
	1616 H11	16	16	16	100	18	20	 A279-A280, A302, A313-A314,
	2020 K11	20	20	20	125	19	25	
	2020 K16	20	20	20	125	25	25	TPMR,TP...N 1603...
	2525 M16	25	25	25	150	25	32	TPMR,TP...N 2204...
	2525 M22	25	25	25	150	30	32	
	3232 P22	32	32	32	170	30	40	

Spare parts

Designation	Clamp	Screw	Shim	Shim pin	Snap ring	Wrench		
...11	CL 2	CLS 2	-	-	CSR 2	L-W 2.5		
...16	CL 3	CLS 3	CST 32	CSP 3	WSR 4	L-W 3		
...22	CL 4	CLS 4	CST 43	CSP 16K	CSR 4	L-W 4		

Hook lever type holders

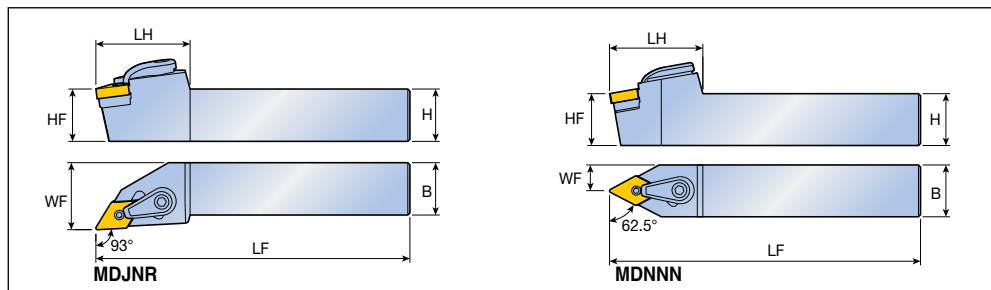


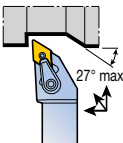
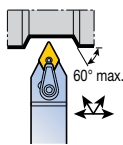
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
75° 	HSBNR/L 4040 S3109	40	40	40	250	55	35		SNMD 3109...  A241, A242
	5050 T3109	50	50	50	300	55	43		
45° 	HSDNN 4040 S3109	40	40	40	250	60	20		SNMD 3109...
	5050 T3109	50	50	50	300	60	25		

Spare parts

Designation	Lever 	Screw 	Shim 	Shim pin 	Wrench 		
...3109	LCL 32-NX	LCS 8	LSS 104	LSP 8	L-W 5		

Multi lock type holders

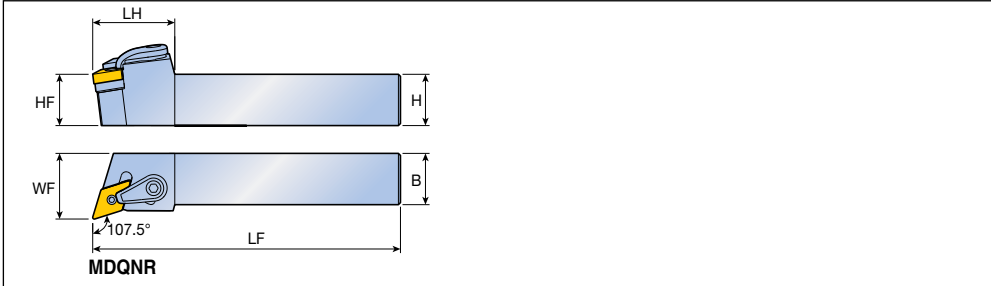


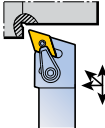
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
93° 	MDJNR/L 2020 K15	20	20	20	125	45	25	DN... 1504... 
	2525 M15	25	25	25	150	45	32	A234-A238,
	2020 K15A	20	20	20	125	45	25	DN... 1506... A293, A304
	2525 M15A	25	25	25	150	45	32	
	3232 P15A	32	32	32	170	45	40	
62.5° 	MDNNN 2525 M15	25	25	25	150	45	12.5	DN... 1504...
	3225 P15	32	32	25	170	45	12.5	
	2525 M15A	25	25	25	150	45	12.5	DN... 1506...

Spare parts

Designation	Clamp	Screw	Shim	Lock pin	Wrench			
...15	CLM 30	XNSM 0825	S 45	MLP 4	L-W 2.5, L-W 4			
...15A	CLM 30	XNSM 0825	MSD 43	MLP 4-06	L-W 2.5, L-W 4			

Multi lock type holders

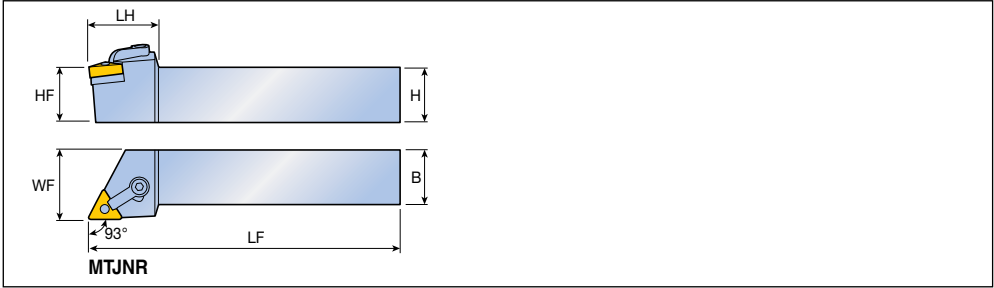


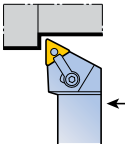
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
107.5° 	MDQNR/L 2020 K15	20	20	20	125	40	25		DN... 1504... 
	2525 M15	25	25	25	150	40	32		A234-A238,
	2525 M15A	25	25	25	150	40	32		DN... 1506... A293, A304

Spare parts

Designation	 Clamp	 Screw	 Shim	 Lock pin	 Wrench			
...15	CLM 30	XNSM 0825	S 45	MLP 4	L-W 2.5, L-W 4			
...15A	CLM 30	XNSM 0825	MSD 43	MLP 4-06	L-W 2.5, L-W 4			

Multi lock type holders



Approach angle	Designation	Dimension (mm)						Insert	
		H	HF	B	LF	LH	WF		
93° 	MTJNR/L 2020 K16	20	20	20	125	28	25	TN... 1604...  A247-A250, A299, A307	
	2525 M16	25	25	25	150	28	32		
	2525 M1604	25	25	25	150	28	32		

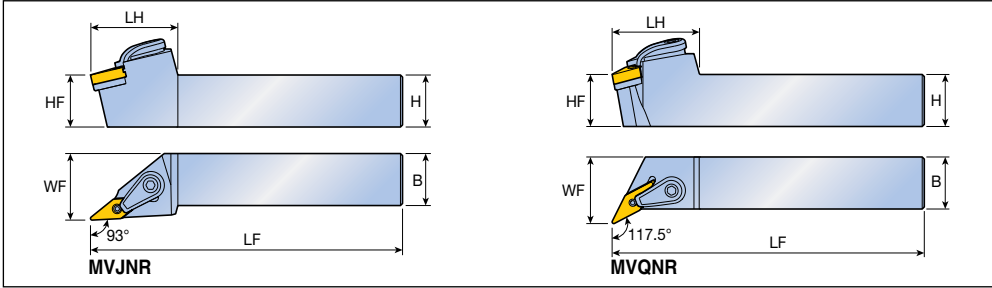
Spare parts

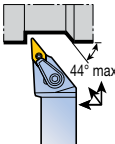
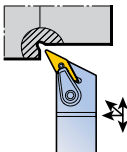
Designation	Clamp 	Screw 	Shim 	Lock pin 	Wrench 			
...16	CLM 6	XNSM 0520	S 3	MLP 3	L-W 2, L-W 2.5			
...1604	CLM 6	XNSM 0520	S 31	MLP 3	L-W 2, L-W 2.5			

MVJNR/L MVQNR/L



Multi lock type holders

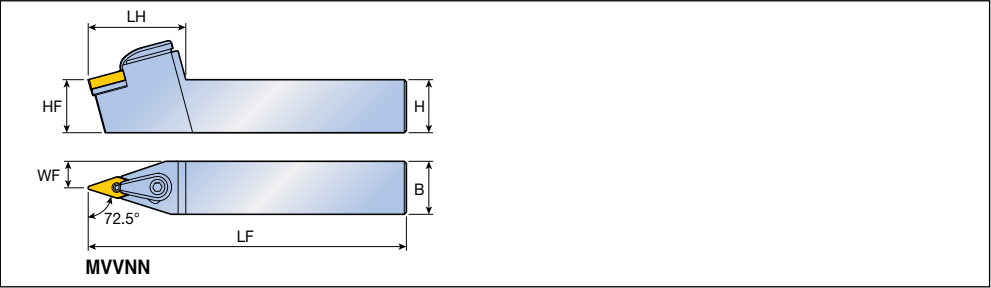


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
93° 	MVJNR/L 2020 K16	20	20	20	125	42	25	VN... 1604...  A251-A252, A300, A308
	2525 M16	25	25	25	150	42	32	
	3225 P16	32	32	25	170	42	32	
	3232 P16	32	32	32	170	42	40	
117.5° 	MVQNR/L 2020 K16	20	20	20	125	42	25	
	2525 M16	25	25	25	150	42	32	
	3232 P16	32	32	32	170	42	40	

Spare parts

Designation	Clamp 	Screw 	Shim 	Lock pin 	Wrench 			
...16	CLM 30	XNSM 0825	IVSN 324	MLP 3	L-W 2, L-W 4			

Multi lock type holders

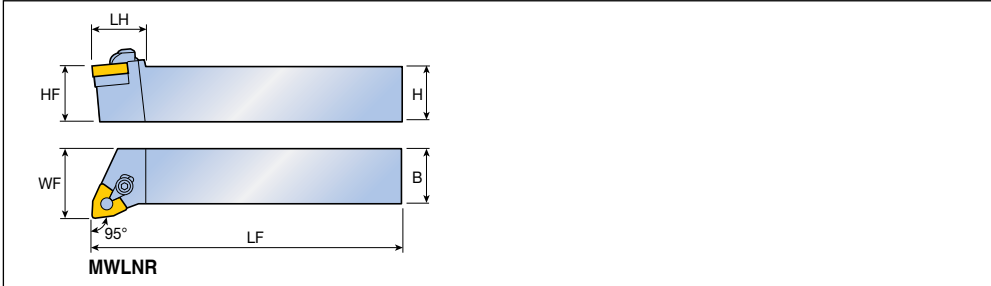


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
72.5° 	MVVNN 2020 K16	20	20	20	125	46	10.0	VN... 1604... A251-A252, A300, A308
	2525 M16	25	25	25	150	46	12.5	

Spare parts

Designation	Clamp	Screw	Shim	Lock pin	Wrench			
...16	CLM 30	XNSM 0825	IVSN 324	MLP 3	L-W 2, L-W 4			

Multi lock type holders

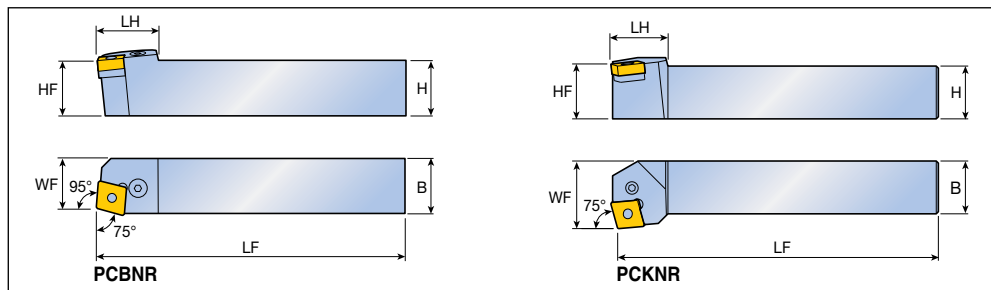


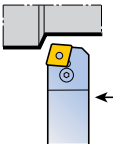
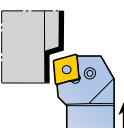
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
95° 	MWLNLR/L 1616 H06	16	16	16	100	19.4	16	WN... 0604...
	2020 K08	20	20	20	125	25	25	WN... 0804... A253-A255, A300-A309
	2525 M08	25	25	25	150	25	32	

Spare parts

Designation	Clamp 	Screw 	Shim 	Lock pin 	Snap ring 	Wrench 		
...06	CL 2	CLS 2	MSW 32	MLP 3	CSR 2	L-W 2, L-W 2.5		
...08	CL 2	CLS 2	MSW 43	MLP 4	CSR 2	L-W 2.5		

Lever lock type holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
75° 	PCBNR/L 2020 K12	20	20	20	125	28	17.5		CN... 1204...
	2525 M12	25	25	25	150	28	22.5		 A226-A233, A291, A292, A303
	3225 P12	32	32	25	170	28	22.5		
	2525 M16	25	25	25	150	32	22		
	3232 P16	32	32	32	170	32	27		CN... 1606...
	3232 P1906D	32	32	32	170	37	27		CN... 1906...
	4040 S1906D	40	40	40	250	37	37		
	4040 S2509D	40	40	40	250	50	37		CN... 2509...
	5050 T2509D	50	50	50	300	50	47		
75° 	PCKNR/L 2020 K12	20	20	20	125	27	25		CN... 1204...
	2525 M12	25	25	25	150	24	32		

► CNMD, CNMM, CNMG type insert can be mounted on "-D" holder

Spare parts

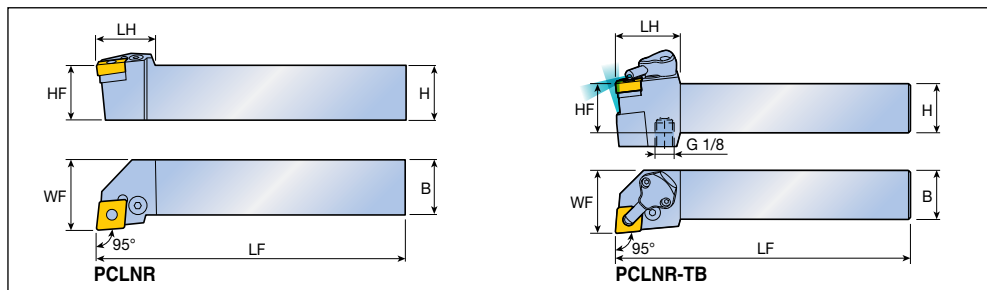
Designation	Lever	Screw	Shim	Shim pin	Wrench			
...12	 LCL 4	 LCS 4	 LSC 42	 LSP 4	 L-W 3			
...16	LCL 5	LCS 5	LSC 53	LSP 5	L-W 3			
...1906	LCL 6D	LCS 25C	LSC 64D	LSP 6	L-W 4			
...2509	LCL 8	LCS 8	LSC 84D	LSP 8	L-W 5			

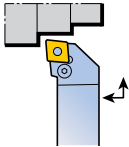
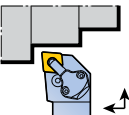
► Apply LSC 85D shim when using CN...2507... insert

PCLNR/L PCLNR/L-TB



Lever lock type holders



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
95° 	PCLNR/L 1616 H12	16	16	16	100	27	20	CN... 1204...  A226-A233, A291, A292, A303
	2020 K12	20	20	20	125	27	25	
	2525 M12	25	25	25	150	27	32	
	3225 P12	32	32	25	170	27	32	CN... 1606...
	3232 P12	32	32	32	170	27	40	
	2525 M16	25	25	25	150	33	32	
	3225 P16	32	32	25	170	33	32	CN... 1906...
	3232 P16	32	32	32	170	33	40	
	2525 M1906D	25	25	25	150	38	32	
	3225 P1906D	32	32	25	170	38	32	CN... 2509...
	3232 P1906D	32	32	32	170	38	40	
	4040 S1906D	40	40	40	250	38	50	
95°  	PCLNR/L 2525 M12-TB	25	25	25	150	33	32	CN... 1204...
	3232 P12-TB	32	32	32	170	33	40	

► CNMD, CNMM, CNMG type insert can be mounted on "-D" holder

Spare parts

Designation	Lever	Screw	Shim	Shim pin	Cooling unit	O-ring	Wrench	
								
1616...12	LCL 4	LCS 4S	LSC 42	LSP 4	-	-	-	L-W 3
...12	LCL 4	LCS 4	LSC 42	LSP 4	-	-	-	L-W 3
...16	LCL 5	LCS 5	LSC 53	LSP 5	-	-	-	L-W 3
...1906	LCL 6D	LCS 25C	LSC 64D	LSP 6	-	-	-	L-W 4
...2509	LCL 8	LCS 8	LSC 84D	LSP 8	-	-	-	L-W 5
PCLNR/L...TB	LCS 4	LCS 4	LSC 42	LSP 4	CU-CW-TB	ID 6.4x0.9	T 8	L-W 2, L-W 3

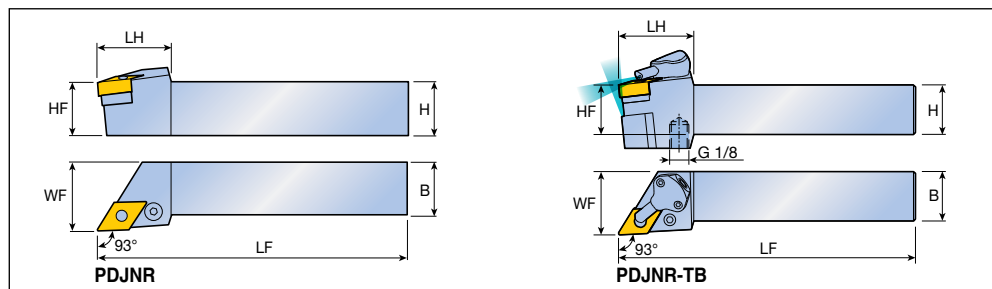
► Apply LSC 85D shim when using CN...2507... insert

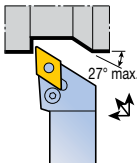
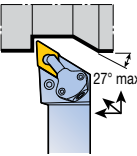
► Please refer to A135 page for COOL-BURST accessories

PDJNR/L PDJNR/L-TB



Lever lock type holders



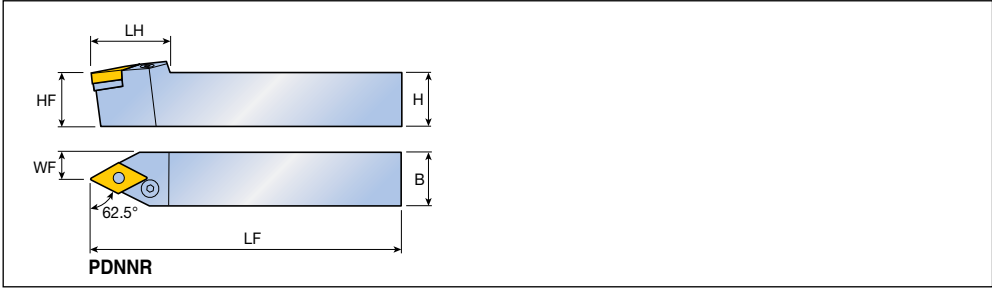
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
93° 	PDJNR/L 1616 H11	16	16	16	100	30	20		DN... 1104...
	2020 K11	20	20	20	125	30	25		 A234-A238, A293, A304
	2525 M11	25	25	25	150	30	32		
	2020 K15	20	20	20	125	34	25		
	2525 M15	25	25	25	150	34	32		DN... 1506...
	3225 P15	32	32	25	170	34	32		
	3232 P15	32	32	32	170	34	40		
	2020 K15A	20	20	20	125	34	25		DN... 1504...
	2525 M15A	25	25	25	150	34	32		
93°  	PDJNR/L 2525 M1504-TB	25	25	25	150	37	32		DN... 1504...
	2525 M1506-TB	25	25	25	150	37	32		DN... 1506...

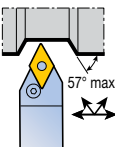
Spare parts

Designation	Lever	Screw	Shim	Shim pin	Cooling unit	O-ring	Wrench	
								
...11	LCL 12C	LCS 3	LSD 32	LSP 3A	-	-	-	L-W 2.5
...15	LCL 4A	LCS 4	LSD 42	LSP 4	-	-	-	L-W 3
...M1504-TB	LCL 4A	LCS 4	LSD 43	LSP 4	CU-D-TB	ID 6.4x0.9	T 8	L-W 2, L-W 3
...M1506-TB	LCL 4A	LCS 4	LSD 42	LSP 4	CU-D-TB	ID 6.4x0.9	T 8	L-W 2, L-W 3

► Please refer to A135 page for COOL-BURST accessories

Lever lock type holders

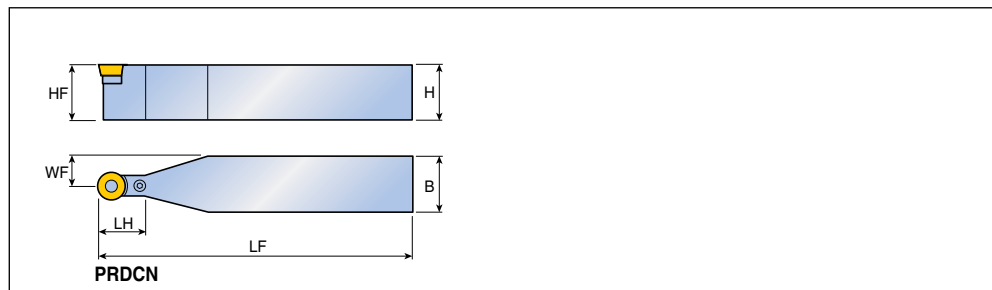


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
62.5° 	PDNNR/L 2020 K15	20	20	20	125	36.5	10	DN... 1506...
	2525 M15	25	25	25	150	36.5	12	A234-A238, A293, A304
	3232 P15	32	32	32	170	36.5	16.8	

Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
...15	 LCL 4A	 LCS 4	 LSD 42	 LSP 4	 L-W 3			

Lever lock type holders

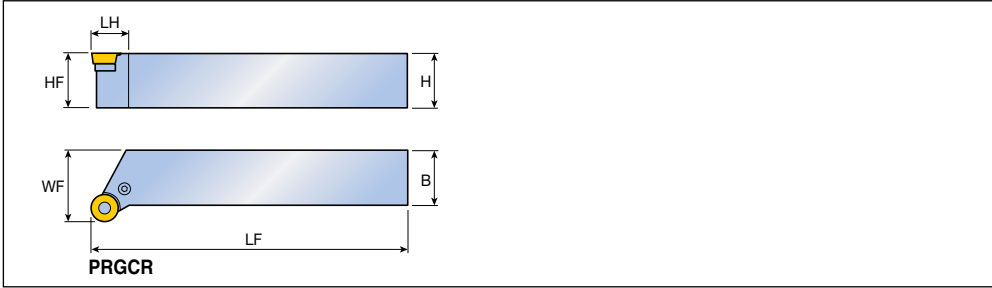


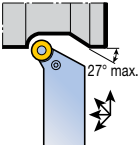
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
	PRDCN 2020 M10	20	20	20	150	30	10.0		RC...X 1003...
	2525 M10	25	25	25	150	30	12.5		RC...X 1204... A271
	2020 K12	20	20	20	125	30	10.0		
	2525 M12	25	25	25	150	30	12.5		
	3225 Q12	32	32	25	180	30	12.5		RC...X 1606...
	2525 Q16	25	25	25	180	30	12.5		
	3225 Q16	32	32	25	180	30	12.5		
	3232 Q16	32	32	32	180	30	16.0		RC...X 2006...
	3232 S20	32	32	32	250	40	16.0		
	4040 S20	40	40	40	250	40	20.0		
	4040 S25	40	40	40	250	50	20.0		RC...X 2507...
	4040 T25	40	40	40	300	50	20.0		RC...X 3209...
	5050 U32	50	50	50	350	60	25.0		

Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
...10	LCL 10C	LCS 2	LSR 32	LSP 3A	L-W 2			
...12	LCL 12C	LCS 3	LSR 1203	LSP 3A	L-W 2.5			
...16	LCL 16C	LCS 16C	LSR 1604	LSP 16C	L-W 2.5			
...20	LCL 20C	LCS 5	LSR 2004	LSP 5	L-W 3			
...25	LCL 25C	LCS 25C	LSR 2506	LSP 6	L-W 4			
...32	LCL 32C	LCS 8	LSR 3206	LSP 8	L-W 5			

Lever lock type holders

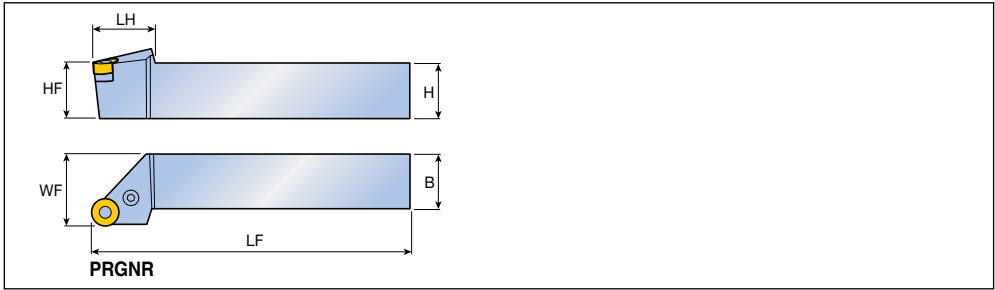


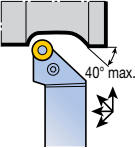
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
 90°	PRGCR/L 2020 K10	20	20	20	125	14.5	25	RC...X 1003...
	2525 M10	25	25	25	150	17.5	32	
	3225 P10	32	32	25	170	17	32	
	2020 K12	20	20	20	125	18	25	RC...X 1204...
	2525 M12	25	25	25	150	18	32	
	3225 P12	32	32	25	170	18	32	
	2525 M16	25	25	25	150	23	32	RC...X 1606...
	3225 P16	32	32	25	170	23	32	
	3232 P16	32	32	32	170	23	40	
	4040 P16	40	40	40	170	23	50	
	3232 P20	32	32	32	170	27.5	40	RC...X 2006...
	4040 S25	40	40	40	250	33.5	50	RC...X 2507...
	4040 S32	40	40	40	250	41	50	RC...X 3209...

Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
...10	LCL 10C	LCS 2	LSR 32	LSP 3A	L-W 2			
...12	LCL 12C	LCS 3	LSR 1203	LSP 3A	L-W 2.5			
...16	LCL 16C	LCS 16C	LSR 1604	LSP 16C	L-W 2.5			
...20	LCL 20C	LCS 5	LSR 2004	LSP 5	L-W 3			
...25	LCL 25C	LCS 25C	LSR 2506	LSP 6	L-W 4			
...32	LCL 32C	LCS 8	LSR 3206	LSP 8	L-W 5			

Lever lock type holders



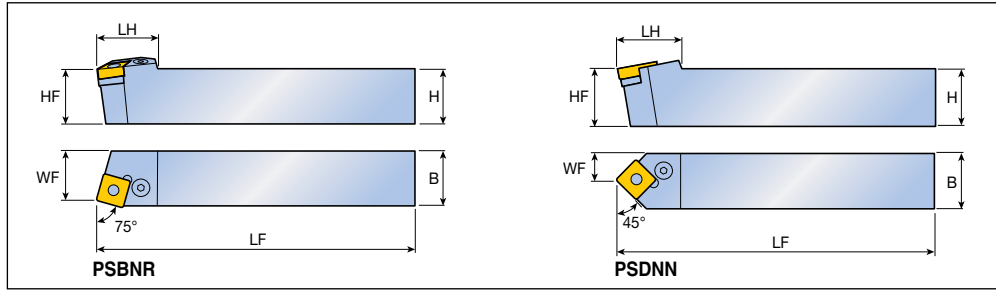
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
90° 	PRGNR/L 2525 M12	25	25	25	150	28	32	RNMG 120400
	3225 P15	32	32	25	170	35	32	RNMG 150600
	3232 P19	32	32	32	170	38	40	RNMG 190600

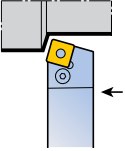
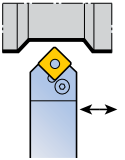

A240

Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
...12	LCL 4	LCS 4	LSR 42	LSP 4	L-W 3			
...15	LCL 5	LCS 5	LSR 53	LSP 5	L-W 3			
...19	LCL 6D	LCS 6	LSR 63	LSP 6	L-W 4			

Lever lock type holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
75° 	PSBNR/L 2020 K12	20	20	20	125	28	17		SN... 1204...  A241-A246, A296, A297, A306
	2525 M12	25	25	25	150	28	22		
	3225 P12	32	32	25	170	28	22		
	2525 M15	25	25	25	150	34	22		SN... 1506...
	3232 P1906D	32	32	32	170	39	27		SN... 1906...
	4040 S1906D	40	40	40	250	39	35		
	4040 S2509D	40	40	40	250	48	35		SN... 2509...
	5050 T2509D	50	50	50	300	48	43		
45° 	PSDNN 2020 K12	20	20	20	125	28	10.0		SN... 1204...
	2525 M12	25	25	25	150	28	12.5		
	3225 P12	32	32	25	170	28	12.5		
	2020 K15	20	20	20	125	34	10.0		SN... 1506...
	2525 M15	25	25	25	150	34	12.5		
	3225 P1906D	32	32	25	170	40.5	12.5		SN... 1906...
	3232 P1906D	32	32	32	170	40.5	16.0		
	4040 S1906D	40	40	40	250	40.5	20.0		
	5050 S1906D	50	50	50	250	40.5	25.0		
	4040 S2509D	40	40	40	250	49	20.0		SN... 2509...
	5050 T2509D	50	50	50	300	49	25.0		

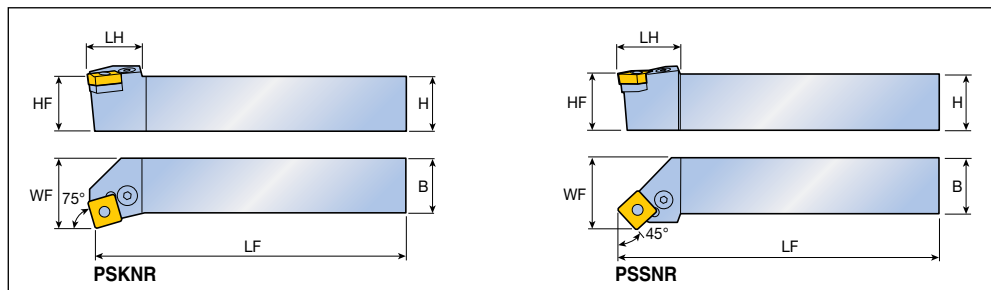
► SNMD, SNMM, SNMG type insert can be mounted on "-D" holder

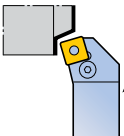
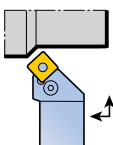
Spare parts

Designation	Lever 	Screw 	Shim 	Shim pin 	Wrench 			
...12	LCL 4	LCS 4	LSS 42	LSP 4	L-W 3			
...15	LCL 5	LCS 5	LSS 53	LSP 5	L-W 3			
...1906	LCL 6D	LCS 25C	LSS 64D	LSP 6	L-W 4			
...2509	LCL 8	LCS 8	LSS 84D	LSP 8	L-W 5			

► Apply LSC 85D shim when using CN...2507... insert

Lever lock type holders



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
75° 	PSKNR/L 2020 K12	20	20	20	125	25	25	SN... 1204...
	2525 M12	25	25	25	150	25	32	 A241-A246, A296, A297, A306
	2525 M15	25	25	25	150	32	32	
	3232 P15	32	32	32	170	32	40	
	3232 P1906D	32	32	32	170	38	40	SN... 1906...
	4040 S1906D	40	40	40	250	38	50	SN... 2509...
	4040 S2509D	40	40	40	250	42	50	
	5050 T2509D	50	50	50	300	42	60	
45° 	PSSNR/L 2020 K12	20	20	20	125	30	25	SN... 1204...
	2525 K12	25	25	25	125	30	32	
	2525 M12	25	25	25	150	30	32	
	3225 P12	32	32	25	170	30	32	
	3232 P12	32	32	32	170	32	40	SN... 1506...
	3232 P15	32	32	32	170	37	40	
	3232 P1906D	32	32	32	170	42	40	
	4040 S1906D	40	40	40	250	42	50	SN... 1906...
	4040 S2509D	40	40	40	250	53	50	SN... 2509...

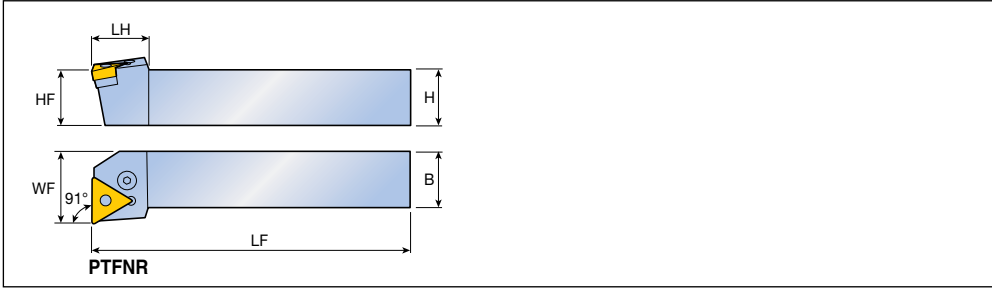
► SNMD, SNMM, SNMG type insert can be mounted on "-D" holder

Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
...12	LCL 4	LCS 4	LSS 42	LSP 4	L-W 3			
...15	LCL 5	LCS 5	LSS 53	LSP 5	L-W 3			
...1906	LCL 6D	LCS 25C	LSS 64D	LSP 6	L-W 4			
...2509	LCL 8	LCS 8	LSS 84D	LSP 8	L-W 5			

► Apply LSC 85D shim when using CN...2507... insert

Lever lock type holders

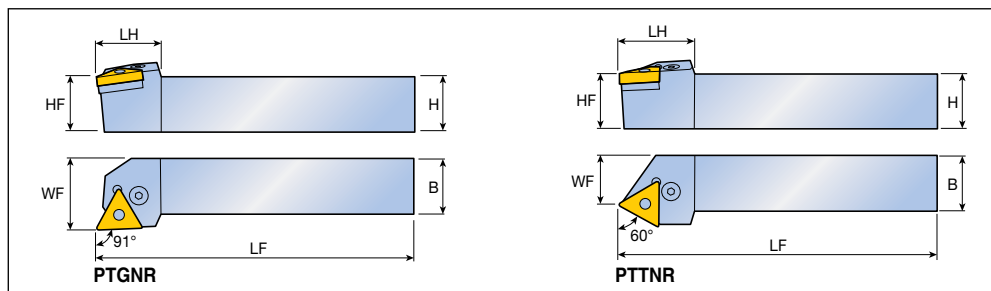


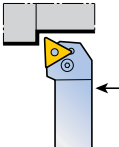
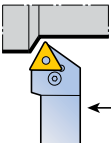
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
91° 	PTFNR/L 2020 K16	20	20	20	125	20	25		TN... 1604... A247-A250, A299, A307
	2525 M16	25	25	25	150	20	32		

Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
...16	 LCL 3	 LCS 3	 LST 31.8	 LSP 3A	 L-W 2.5			

Lever lock type holders

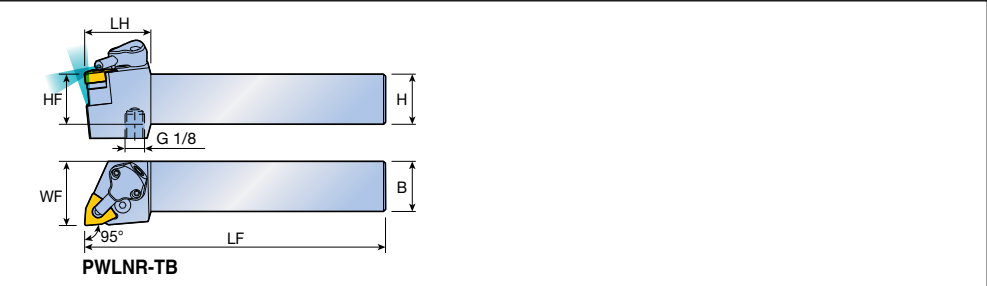


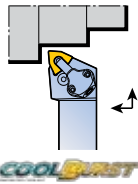
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
	PTGNR/L 1010 E11	10	10	10	70	15	12	TN... 1103...  A247-A250, A299, A307
	1212 F11	12	12	12	80	15	16	
	2525 M11	25	25	25	150	30	32	
	1616 H16	16	16	16	100	22	20	TN... 1604...
	2020 K16	20	20	20	125	22	25	
	2525 M16	25	25	25	150	22	32	
	3232 P16	32	32	32	170	22	40	TN... 2204...
	2525 M22	25	25	25	150	29	32	
	3232 P22	32	32	32	170	29	40	
	PTTNR/L 1616 H16	16	16	16	100	24	13	TN... 1604...
	2020 K16	20	20	20	125	24	17	
	2525 M16	25	25	25	150	24	22	

Spare parts

Designation	Lever 	Screw 	Shim 	Snap ring 	Shim pin 	Wrench 		
...11	LCL 2B	LCS 2B	-	LSR 2B	-	L-W 2		
...16	LCL 3	LCS 3	LST 31.8	-	LSP 3A	L-W 2.5		
...22	LCL 4	LCS 4	LST 42	-	LSP 4	L-W 3		

Lever lock type holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
95° 	PWLNR/L 2525 M08-TB	25	25	25	150	33	32		WN... 0804...  A253-A255, A300, A309
	3232 P08-TB	32	32	32	170	33	40		

Spare parts

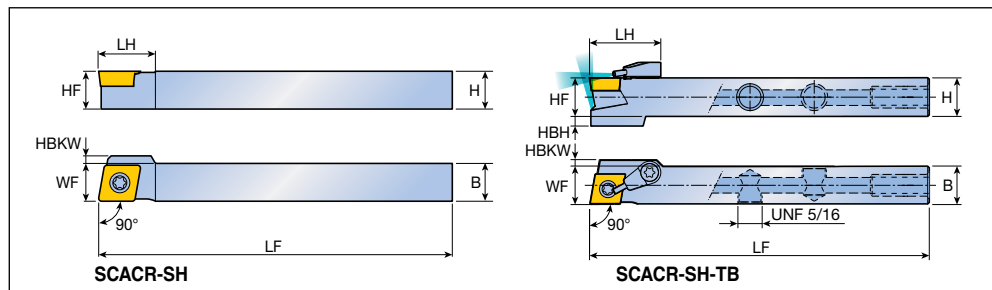
Designation	Lever	Screw	Shim	Shim pin	Cooling unit	O-ring	Wrench	
								
...08-TB	LCL 4	LCS 4	TWN 423(T)	LSP 4	CU-CW-TB	ID 6.4x0.9	T 8	L-W 2, L-W 3

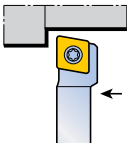
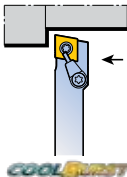
► Please refer to A135 page for COOL-BURST accessories

SCACR/L-SH SCACR/L-SH-TB



Screw type holders



Approach angle	Designation	Dimension (mm)								Insert
		H	HF	HBH	B	LF	LH	WF	HBKW	
90° 	# SCACR/L 1010 K06-SH	10	10	-	10	125	10	10	-	CC... 0602...
	1010 K09-SH	10	10	-	10	125	15	10	2	CC... 09T3...
	1212 K09-SH	12	12	-	12	125	15	12	-	
	1616 K09-SH	16	16	-	16	125	16	16	-	A260-A263, A310
90° 	# SCACR/L 1212 K09-SH-TB	12	12	3	12	125	23	12	2	
	1616 K09-SH-TB	16	16	-	16	125	23	16	-	

► #: TOP-MINI holders

Spare parts

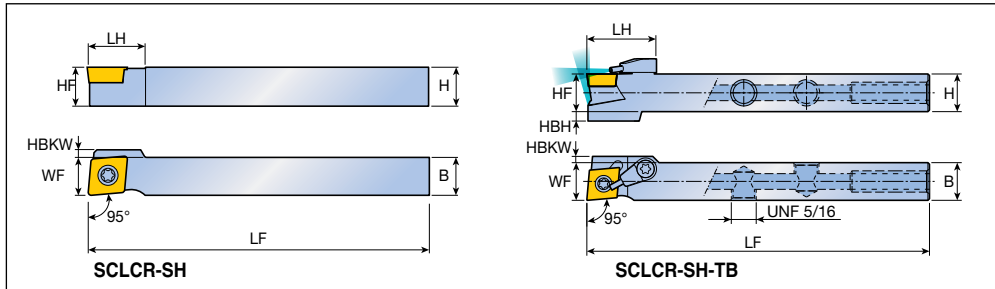
Designation	Screw 	Cooling unit 	Plug 	Wrench 			
...06-SH	SO 25065I	-	-	T 7	-		
...09-SH	SO 35080I	-	-	T 15	-		
SCACR/L-SH-TB	SO 35080I	S-CU-TB	PLG 5/16 UNF	T 15	L-W 5/32		

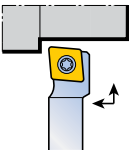
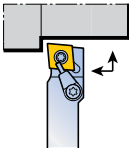
► Please refer to A135 page for COOL-BURST accessories

SCLCR/L-SH SCLCR/L-SH-TB



Screw type holders



Approach angle	Designation	Dimension (mm)								Insert
		H	HF	HBH	B	LF	LH	WF	HBKW	
95° 	# SCLCR/L 0808 K06-SH	8	8	-	8	125	8	8	-	CC... 0602...
	1010 K06-SH	10	10	-	10	125	10	10	-	
	1010 K09-SH	10	10	-	10	125	15	10	2	CC... 09T3...
	1212 K09-SH	12	12	-	12	125	15	12	-	
	1616 K09-SH	16	16	-	16	125	16	16	-	
95° 	# SCLCR/L 1212 K09-SH-TB	12	12	3	12	125	23	12	2	
	1616 K09-SH-TB	16	16	-	16	125	23	16	-	


A260-A263,
A310

► #: TOP-MINI holders

Spare parts

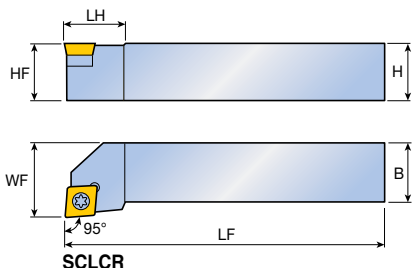
Designation	Screw 	Cooling unit 	Plug 	Wrench 			
...06-SH	SO 25065I	-	-	T 7	-		
...09-SH	SO 35080I	-	-	T 15	-		
SCLCR/L-SH-TB	SO 35080I	S-CU-TB	PLG 5/16 UNF	T 15	L-W 5/32		

► Please refer to A135 page for COOL-BURST accessories

SCLCR/L



Screw type holders

[illegible]

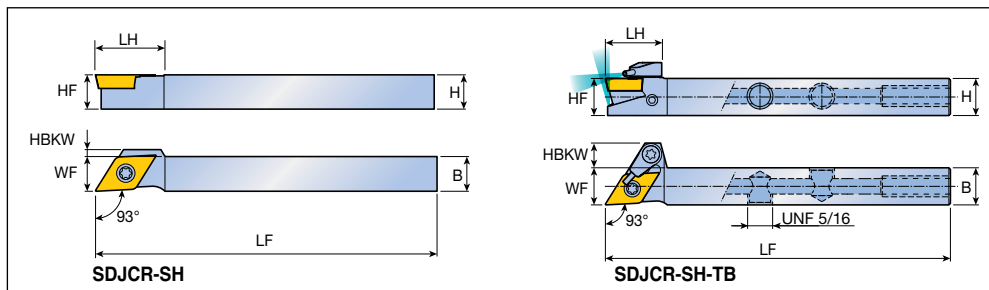
Spare parts

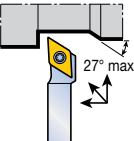
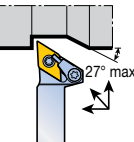
Designation	Screw	Shim	Shim screw	Wrench			
							
...06	SO 25065I	-	-	T 7			
...F09	SO 35080I	-	-	T 15			
...09	SO 35124I	SSC 32	SO 50090S	T 15			
...12	SO 45130I	SSC 43N	SO 60105S	T 20			

SDJCR/L-SH SDJCR/L-SH-TB



Screw type holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBKW	
93° 	# SDJCR/L 0808 K07-SH	8	8	8	125	12.7	8	-	DC... 0702...  A265-A268, A311
	1010 K07-SH	10	10	10	125	15	10	-	
	1010 K11-SH	10	10	10	125	20	10	2	
	1212 K11-SH	12	12	12	125	20	12	-	
	1616 K11-SH	16	16	16	125	20	16	-	
	2020 K11-SH	20	20	20	125	20	20	-	
93°  	# SDJCR/L 1212 K11-SH-TB	12	12	12	125	19	12	8	
	1616 K11-SH-TB	16	16	16	125	19	16	4	
	2020 K11-SH-TB	20	20	20	125	20	20	-	

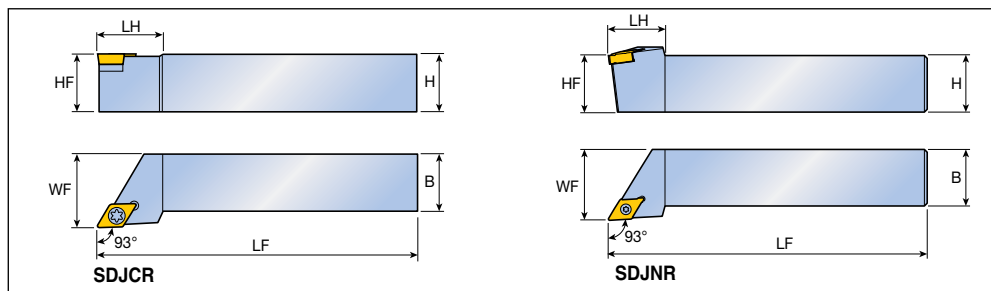
► #: TOP-MINI holders

Spare parts

Designation	Screw	Cooling unit	Plug	Wrench			
...07	SO 25065I	-	-	T 7	-		
...11-SH	SO 35080I	-	-	T 15	-		
SDJCR/L-SH-TB	SO 35080I	S-CU-TB	PLG 5/16 UNF	T 15	L-W 5/32		

► Please refer to A135 page for COOL-BURST accessories

Screw type holders

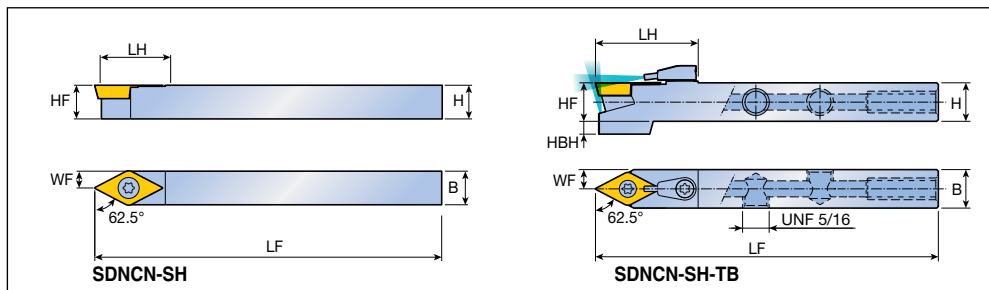


Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
93° 	SDJCR/L 1212 F07	12	12	12	80	15	16		DC... 0702...
	1616 H07	16	16	16	100	15	20		A265-A268,
	2020 K07	20	20	20	125	20	25		A311
	1616 H11	16	16	16	100	24	20		DC... 11T3...
	2020 K11	20	20	20	125	24	25		
	2525 M11	25	25	25	150	28	32		
93° 	SDJNR/L 1616 H11	16	16	16	100	25	20		DN... 1104...
	2020 K11	20	20	20	125	25	25		A234-A235,
	2525 M11	25	25	25	150	25	32		A237

Spare parts

Designation	Screw	Shim	Shim screw	Wrench				
...07	SO 25065I	-	-	T 7				
...11	SO 35124I	SSD 32	SO 50090S	T 15				
...1104...	SO 35120I	SSD 32	SO 50090S	T 10				

Screw type holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	HBH	B	LF	LH	WF	
62.5° 	# SDNCN 0808 K07-SH	8	8	-	8	125	15	4	DC... 0702...
	1010 K07-SH	10	10	-	10	125	15	5	DC... 11T3... A265-A268, A311
	1010 K11-SH	10	10	-	10	125	22	5	
	1212 K11-SH	12	12	-	12	125	22	6	
	1616 K11-SH	16	16	-	16	125	22	8	
62.5° 	# SDNCN 1212 K11-SH-TB	12	12	4	12	125	32	6	
	1616 K11-SH-TB	16	16	-	16	125	32	8	

► #: TOP-MINI holders

Spare parts

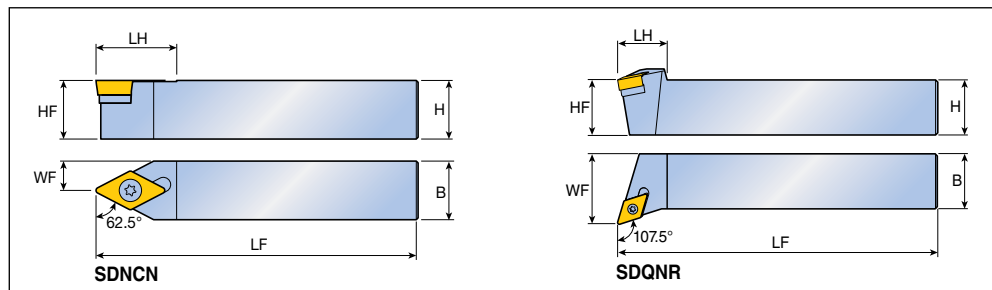
Designation	Screw	Cooling unit	Plug	Wrench			
...07	SO 25065I	-	-	T 7	-		
...11-SH	SO 35080I	-	-	T 7	-		
SDNCN-SH-TB	SO 35080I	S-CU-TB	PLG 5/16 UNF	T 15	L-W 5/32		

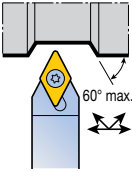
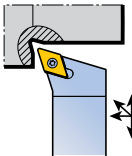
► Please refer to A135 page for COOL-BURST accessories

SDNCN SDQNR/L



Screw type holders

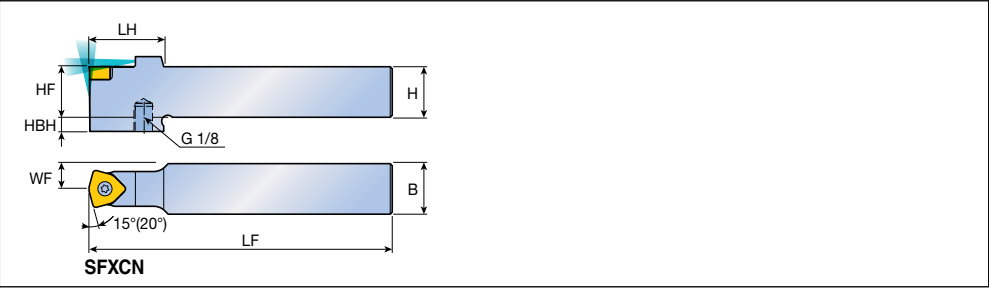


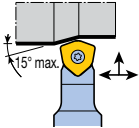
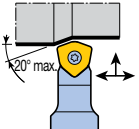
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
62.5° 	SDNCN 0808 F07	8	8	8	80	15	4		DC... 0702...
	1010 F07	10	10	10	80	15	5		A265-A268,
	1616 H11	16	16	16	100	22	8		A311
	2525 M11	25	25	25	150	22	12.5		
107.5° 	SDQNR/L 1616 H11	16	16	16	100	22	20		DN... 1104...
	2020 K11	20	20	20	125	22	25		A234-A235,
	2525 M11	25	25	25	150	22	32		A237

Spare parts

Designation	Screw	Shim	Shim screw	Wrench			
...07	SO 25065I	-	-	T 7			
SDNCN ...11	SO 35124I	SSD 32	SO 50090S	T 15			
SDQNR/L...11	SO 35120I	SSD 32	SO 50090S	T 10			

Screw type holders for FCMX high feed inserts

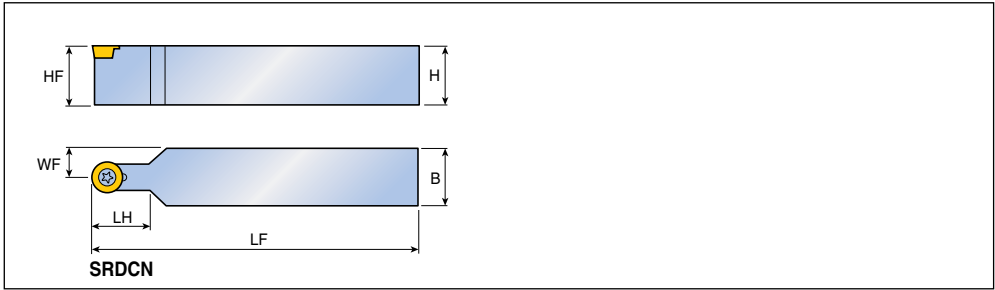


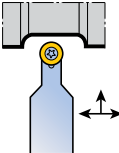
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBH	
15°	SFXCN 2525 M1006	25	25	25	150	37	12.5	7	FCMX 1006...  A270
	3232 P1006	32	32	32	170	37	16	-	
 FCMX HFG									
20°  FCMX HFP									

Spare parts

Designation	Screw	Wrench					
							
...1006	SO 45130I	T 20					

Screw type holders

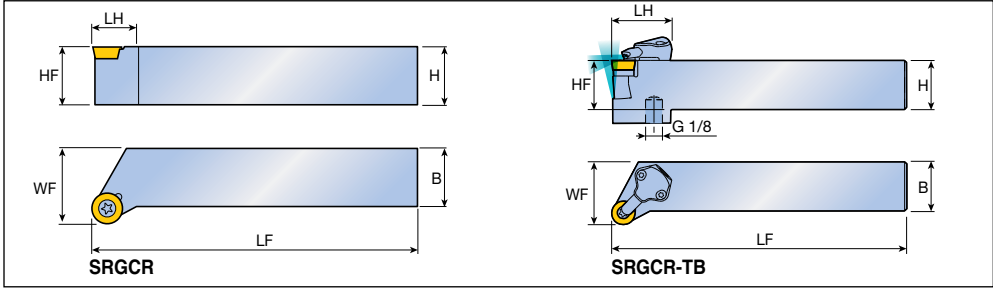


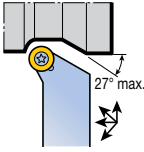
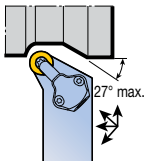
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
45° 	SRDCN 1616 H08	16	16	16	100	20	8	RC...T 0803...  A271
	2020 K08	20	20	20	125	25	10	
	2525 M08	25	25	25	150	30	12.5	
	1616 H10	16	16	16	100	16	8	RC...T 10T3...
	2020 K10	20	20	20	125	20	10	
	2525 M10	25	25	25	150	25	12.5	
	2525 M12	25	25	25	150	25	12.5	RC...T 1204...

Spare parts

Designation	Screw 	Wrench 						
...08	SO 30040I	T 9						
...10	TS 40097I	T 15						
...12	SO 40050I	T 15						

Screw type holders



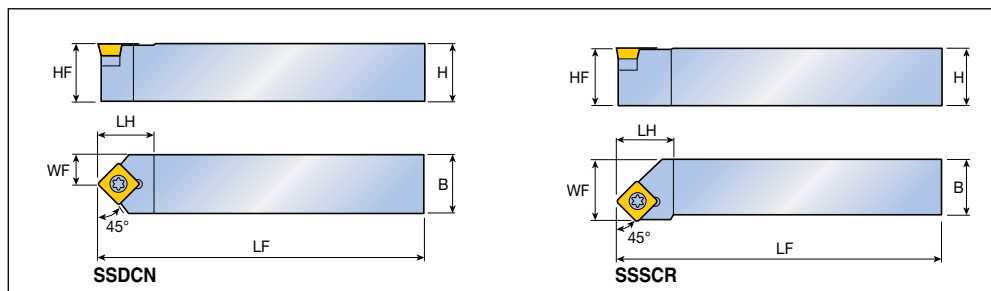
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
90° 	SRGCR/L 1616 H10	16	16	16	100	12.3	20	RC...T 10T3...  A271
	2020 K10	20	20	20	125	14	25	
	2525 M10	25	25	25	150	14	32	
90°  	SRGCR/L 2525 M12-TB	25	25	25	150	30	32	RC...T 1204...

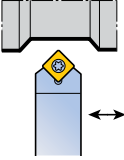
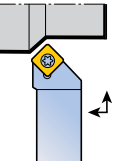
Spare parts

Designation	Screw	Shim	Shim screw	Cooling unit	O-ring	Wrench	
...10							
TS 40097I	-	-	-	-	-	T 15	-
SRGCR/L...TB	TS 35110I	SSR 32	TS 5035062S	CU-R-TB	ID 6.4x0.9	T 8, T 15	L-W 2, L-W 3.5

► Please refer to A135 page for COOL-BURST accessories

Screw type holders

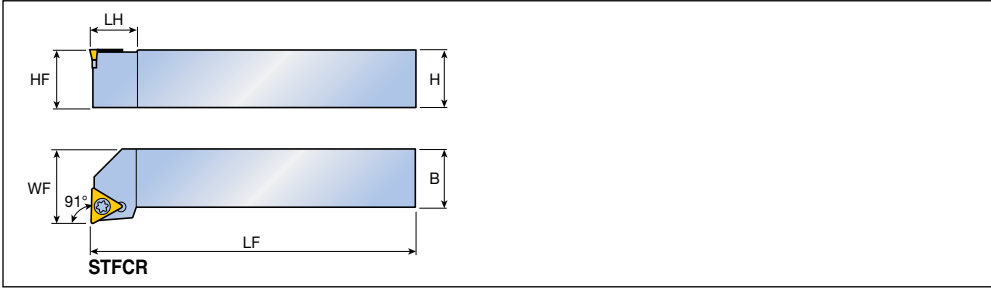


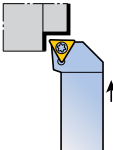
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
45° 	SSDCN 1212 F09	12	12	12	80	15.5	6		SC... 09T3...  A271, A312
	1616 H09	16	16	16	100	15.5	8		
45° 	SSSCR/L 1212 F09	12	12	12	80	15.5	14		SC... 09T3...
	1616 H09	16	16	16	100	15.5	17		
	2020 K12	20	20	20	125	24	22		SC... 1204...
	2525 M12	25	25	25	150	24	27		

Spare parts

Designation	Screw 	Shim 	Shim screw 	Wrench 				
...F09	SO 35080I	-	-	T 15				
...H09	SO 35124I	SSS 32	SO 50090S	T 15				
...12	SO 45130I	SSS 43N	SO 60105S	T 20				

Screw type holders

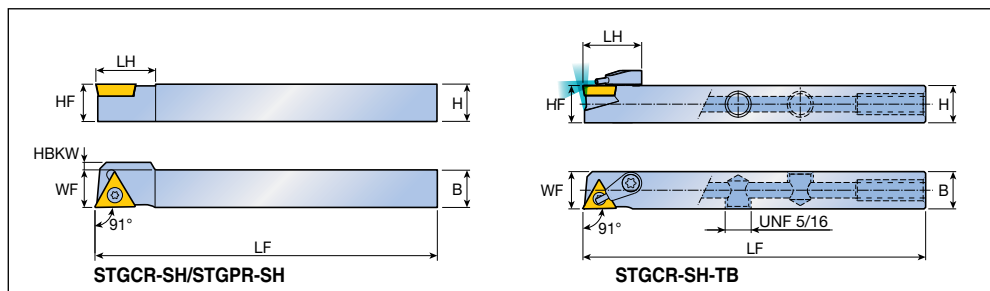


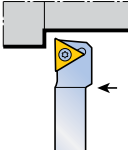
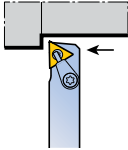
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
91° 	STFCR/L 1212 F1102	12	12	12	80	14	16	TC...T 1102...
	1616 H16	16	16	16	100	19	20	TC... 16T3... A275, A276, A313, A314
	2020 K16	20	20	20	125	19	25	
	2525 M16	25	25	25	150	20	32	

Spare parts

Designation	Screw 	Shim 	Shim screw 	Wrench 				
...1102	SO 25065I	-	-	T 7				
...16	SO 35124I	SST 32	SO 50090S	T 15				

Screw type holders



Approach angle	Designation	Dimension (mm)								Insert
		H	HF	B	LF	LH	WF	HBKW		
91°	# STGCR/L 0808 E08-SH	8	8	8	70	11	8	2	TC...T 0802...  A275, A313, A314	
	1010 F08-SH	10	10	10	80	11	10	-		
	# STGCR 1010 K11-SH	10	10	10	125	16	10	2	TC...T 1103...  A277-A279	
	1212 K11-SH	12	12	12	125	16	12	-		
	1616 K11-SH	16	16	16	125	16	16	-		
	# STGPR/L 1010 K11-SH	10	10	10	125	16	10	2	TP...T 1103...  A277-A279	
	1212 K11-SH	12	12	12	125	16	12	-		
	1616 K11-SH	16	16	16	125	16	16	-		
91°	# STGCR 1212 K11-SH-TB	12	12	12	125	20	12	-	TC...T 1103...  A275	
 	1616 K11-SH-TB	16	16	16	125	20	16	-		

► #: TOP-MINI holders

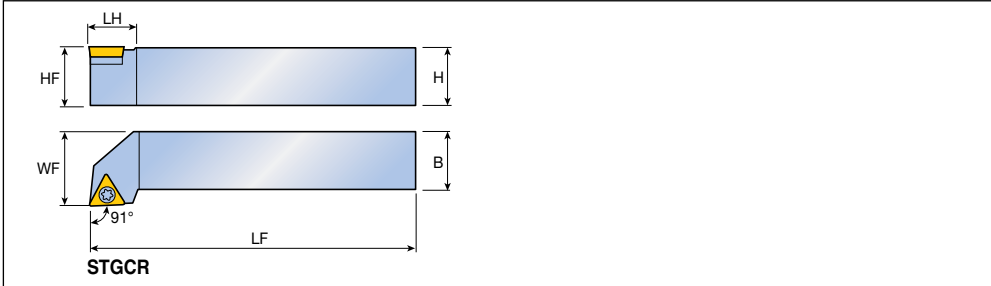
► Only -FF/-GF inserts available for 11 size holders

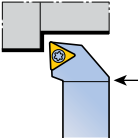
Spare parts

Designation	Screw	Cooling unit	Plug	Wrench			
...08-SH	TS 200431/HG-P	-	-	T 6P	-		
...11	SO 25065I	-	-	T 7	-		
STGCR/L-SH-TB	SO 25065I	S-CU-TB	PLG 5/16 UNF	T 7	L-W 5/32		

► Please refer to A135 page for COOL-BURST accessories

Screw type holders



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
91° 	STGCR/L 0808 E08	8	8	8	70	10	10	TC...T 0802... 
	1010 F08	10	10	10	80	10	12	A275, A276,
	1010 E09	10	10	10	70	11	12	A313, A314
	1212 F1102	12	12	12	80	14.3	16	TC...T 1102...
	1616 H1102	16	16	16	100	14.3	20	
	1616 H16	16	16	16	100	21	20	TC...T 16T3...
	2020 K16	20	20	20	125	21	25	
	2525 M16	25	25	25	150	21	32	

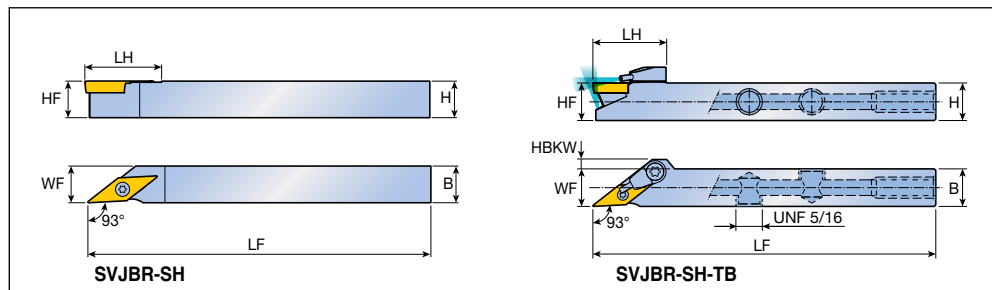
Spare parts

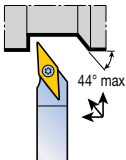
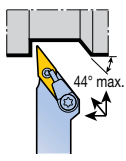
Designation	Screw 	Shim 	Shim screw 	Wrench 			
...08	TS 20043I/HG-P	-	-	T 6P			
...09	SO 22050I	-	-	T 7			
...1102	SO 25065I	-	-	T 7			
...16	SO 35124I	SST 32	SO 50090S	T 15			

SVJBR/L-SH SVJBR/L-SH-TB



Screw type holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBKW	
93° 	# SVJBR/L 1010 K11-SH	10	10	10	125	21	10	-	VB... 1103... 
	1212 K11-SH	12	12	12	125	21	12	-	
	1616 K11-SH	16	16	16	125	21	16	-	
93°  	# SVJBR/L 1212 K11-SH-TB	12	12	12	125	23.6	12	3	
	1616 K11-SH-TB	16	16	16	125	23.6	16	-	

► #: TOP-MINI holders

Spare parts

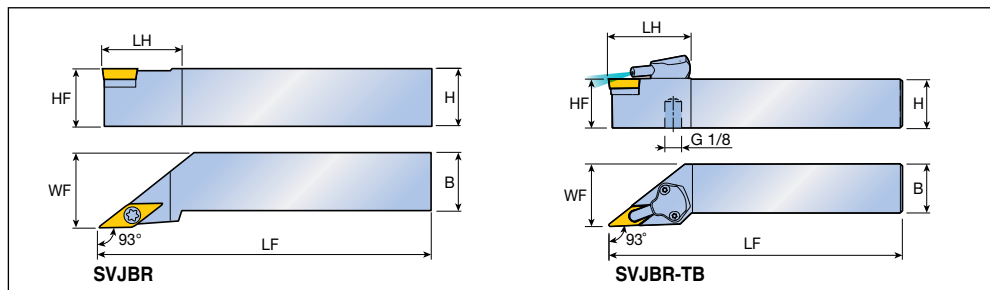
Designation	Screw 	Cooling unit 	Plug 	Wrench 			
...11	SO 25065I	-	-	T 7	-		
SVJBR/L-SH-TB	SO 25065I	S-CU-TB	PLG 5/16 UNF	T 7	L-W 5/32		

► Please refer to A135 page for COOL-BURST accessories

SVJBR/L SVJBR/L-TB



Screw type holders



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
93° 	SVJBR/L 2020 K16	20	20	20	125	35	25	VB... 1604... A281, A282, A315
	2525 M16	25	25	25	150	35	32	
	3225 P16	32	32	25	170	35	32	
	3232 P16	32	32	32	170	35	40	
93° COOLBURST	SVJBR/L 2525 M16-TB	25	25	25	150	42	32	

Spare parts

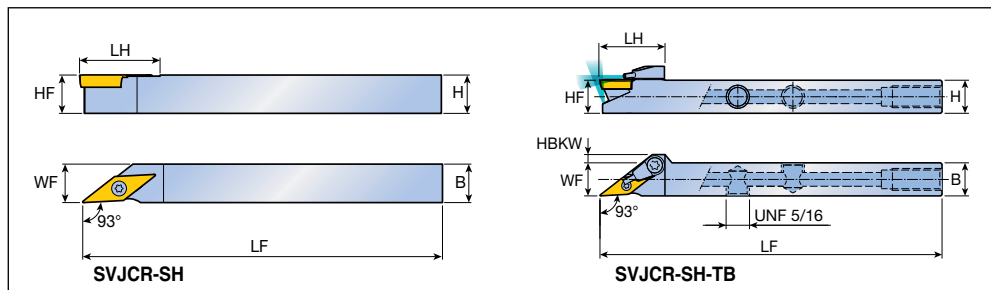
Designation	Screw	Shim	Shim screw	Cooling unit	O-ring	Wrench	
...16							
SO 35124I	SO 35124I	SSV 32	SO 50090S	-	-	T 15	-
SVJBR/L-TB	SO 35124I	SSV 32	TS 5035062S	CU-V-TB	ID 6.4x0.9	T 8, T 15	L-W 3.5

► Please refer to A135 page for COOL-BURST accessories

SVJCR/L-SH SVJCR/L-SH-TB



Screw type holders



Approach angle	Designation	Dimension (mm)							Inserts
		H	HF	B	LF	LH	WF	HBKW	
93° 	# SVJCR/L 1010 K11-SH	10	10	10	125	21	10	-	VC... 1103... A283, A284
	1212 K11-SH	12	12	12	125	21	12	-	
	1616 K11-SH	16	16	16	125	21	16	-	
	2020 K11-SH	20	20	20	125	21	20	-	
93° 	# SVJCR/L 1212 K11-SH-TB	12	12	12	125	23.6	12	3	
	1616 K11-SH-TB	16	16	16	125	23.6	16	-	
	2020 K11-SH-TB	20	20	20	125	23.6	20	-	

► #: TOP-MINI holders

Spare parts

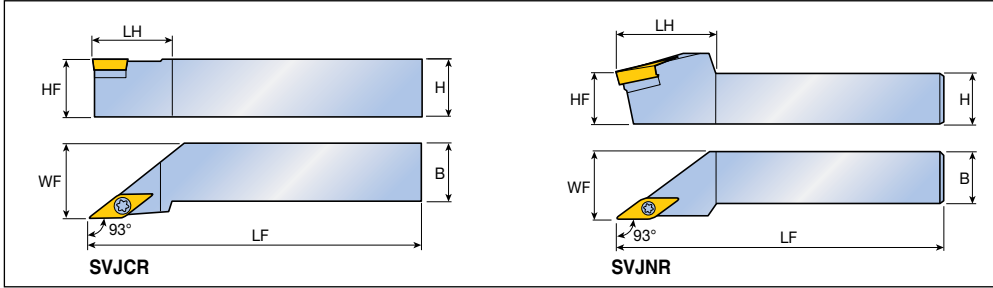
Designation	Screw	Cooling unit	Plug	Wrench			
...11-SH	SO 25065I	-	-	T 7	-		
SVJCR/L-SH-TB	SO 25065I	S-CU-TB	PLG 5/16 UNF	T 7	L-W 5/32		

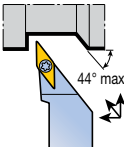
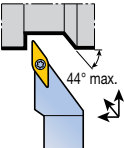
► Please refer to A135 page for COOL-BURST accessories

SVJCR/L SVJNR/L



Screw type holders

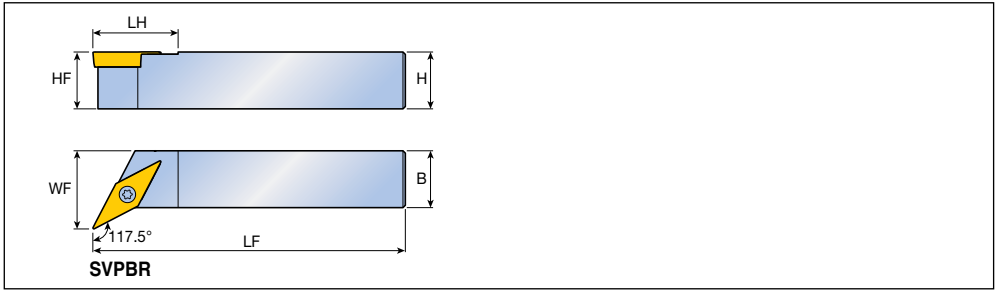


Approach angle	Designation	Dimension (mm)						Inserts
		H	HF	B	LF	LH	WF	
93° 	SVJCR/L 2020 K16	20	20	20	125	35	25	VC... 1604...  A283, A284
	2525 M16	25	25	25	150	35	32	
	3225 P16	32	32	25	170	35	32	
	3232 P16	32	32	32	170	47	40	
93° 	SVJNR/L 1616 H13	16	16	16	100	30	20	VN... 1304...  A251-A252
	2020 K13	20	20	20	125	35	25	
	2525 M13	25	25	25	150	43	32	

Spare parts

Designation	Screw	Shim	Shim screw	Wrench			
...13	SO 35120I	SSVN 2.522	TS 5035062S	T 10	L-W 3.5		
...16	SO 35124I	SSV 32	SO 50090S	T 15	L-W 3.5		

Screw type holders

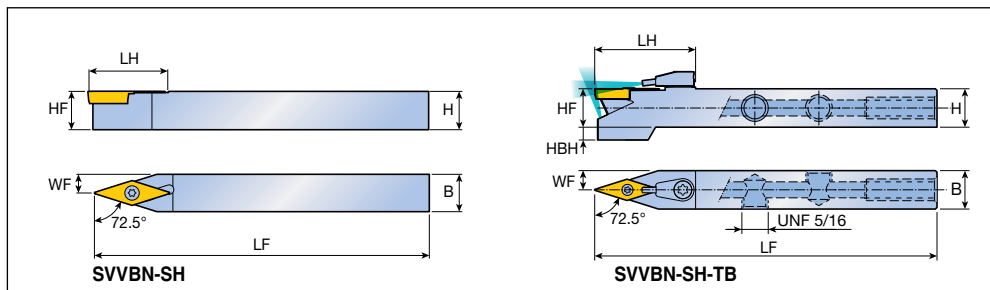


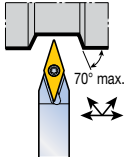
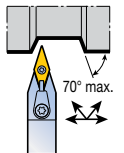
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
117.5° 	SVPBR/L 1010 E11	10	10	10	70	18	14.5	VB... 1103... A281, A282, A315
	1212 F11	12	12	12	80	18	16.5	
	1616 F11	16	16	16	80	18	20.5	
	2020 K11	20	20	20	125	18	25	
	2525 M11	25	25	25	150	18	32	
	2020 K16	20	20	20	125	25	25	VB... 1604...
	2525 M16	25	25	25	150	25	32	

Spare parts

Designation	Screw	Shim	Shim screw	Wrench				
...11	SO 25065I	-	-	T 7	-			
...16	SO 35124I	SSV 32	SO 50090S	T 15	L-W 3.5			

Screw type holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	HBH	B	LF	LH	WF	
72.5° 	# SVVBN 1010 K11-SH	10	10	-	10	125	22	5	VB... 1103...  A281, A282, A315
	1212 K11-SH	12	12	-	12	125	22	6	
	1616 K11-SH	16	16	-	16	125	22	8	
72.5°  	# SVVBN 1212 K11-SH-TB	12	12	2	12	125	31.5	6	
	1616 K11-SH-TB	16	16	-	16	125	31.5	8	

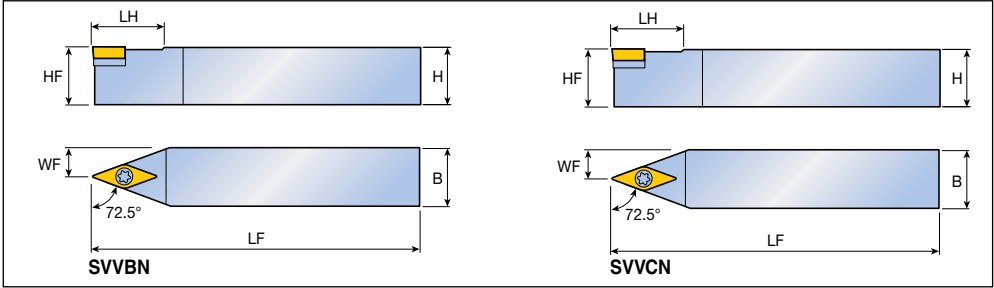
► #: TOP-MINI holders

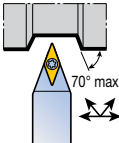
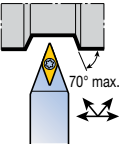
Spare parts

Designation	Screw 	Cooling unit 	Plug 	Wrench 				
...11	SO 25065I	-	-	T 7	-			
SVVBN-SH-TB	SO 25065I	S-CU-TB	PLG 5/16 UNF	T 7	L-W 5/32			

► Please refer to A135 page for COOL-BURST accessories

Screw type holders



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
72.5° 	SVVBN 2020 K16	20	20	20	125	31.5	10.0	VB... 1604...  A281-A282, A315
	2525 M16	25	25	25	150	31.5	12.5	
	3225 P16	32	32	25	170	31.5	12.5	
72.5° 	SVVCN 2020 K16	20	20	20	125	31.5	10.0	VC...T 1604...  A283-A284, A315
	2525 M16	25	25	25	150	31.5	12.5	
	3225 P16	32	32	25	170	31.5	12.5	
	3232 P16	32	32	32	170	32	16.0	

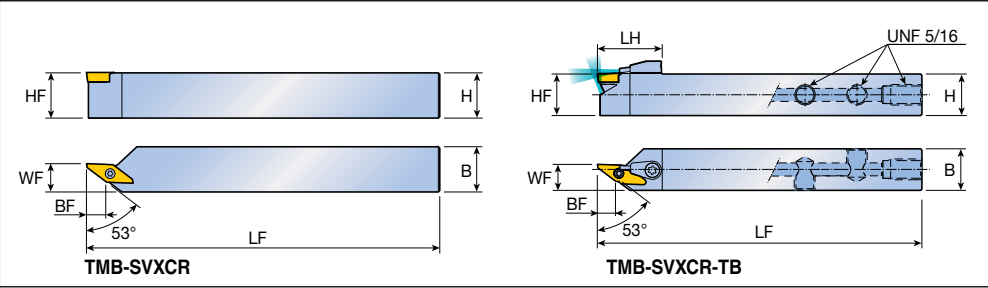
Spare parts

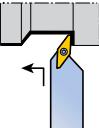
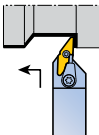
Designation	Screw	Shim	Shim screw	Wrench		
						
...16	SO 35124I	SSV 32	SO 50090S	T 15	L-W 3.5	

TMB-SVXCR TMB-SVXCR-TB



Screw type back turning holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	BF	
53° 	# TMB-SVXCR 1212 K11	12	12	12	125	-	10	7.2	BTVC 1103...  A259
	1616 K11	16	16	16	125	-	10	7.2	
53°  	# TMB-SVXCR 1212 K11-TB	12	12	12	125	25	10	7.2	
	1616 K11-TB	16	16	16	125	25	10	7.2	

► #: TOP-MINI holders

Spare parts

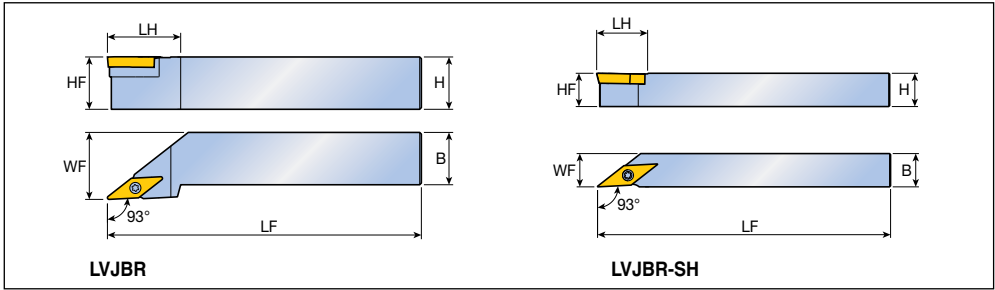
Designation	Screw	Cooling unit	Plug	Wrench		
						
TMB-SVXCR	SO 25065I	-	-	T 7	-	
TMB-SVXCR-TB	SO 25065I	S-CU-TB	PLG 5/16 UNF	T 7	L-W 5/32	

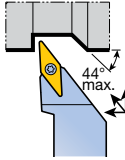
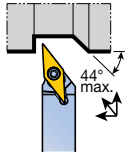
► Please refer to A135 page for COOL-BURST accessories

LVJBR/L LVJBR-SH



Screw type holders

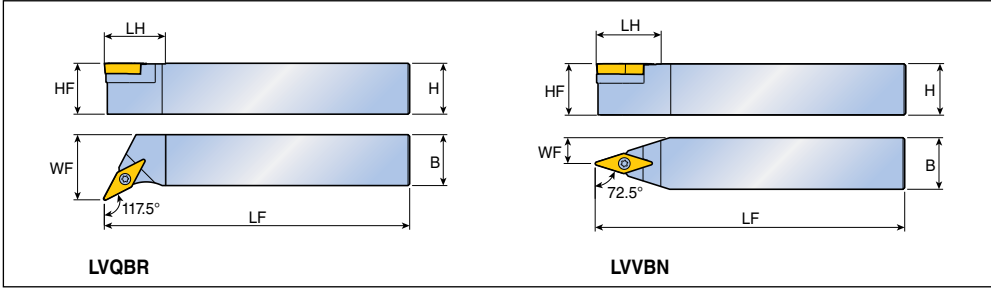


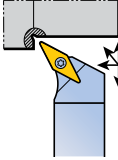
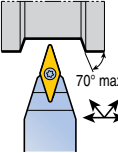
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
93° 	LVJBR/L 2020 K16	20	20	20	125	35	25	VBMX 1604...  A282
	2525 M16	25	25	25	150	35	32	
93° 	LVJBR 1616 K16-SH	16	16	16	125	24.5	16	

Spare parts

Designation	Screw	Shim	Shim screw	Wrench		
						
LVJBR/L	SO 35124I	SSVX 32	TS 5035062S	T 15	L-W 3.5	
LVJBR-SH	SO 35080I	-	-	T 15	-	

Screw type holders



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
117.5°	LVQBR/L 2525 M16	25	25	25	150	30	32	VBMX 1604...  A282
								
72.5°	LVVBN 2525 M16	25	25	25	150	31.5	12.5	
								

Spare parts

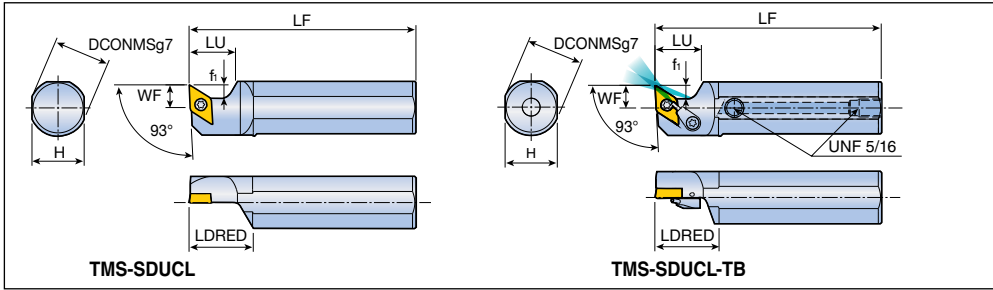
Designation	Screw	Shim	Shim screw	Wrench		
						
LVQBR/L	SO 35124I	SSVX 32	TS 5035062S	T 15	L-W 3.5	
LVVBN	SO 35124I	SSVX 32	TS 5035062S	T 15	L-W 3.5	

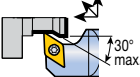
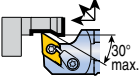
TMS-SCLCL


A260-A263,
A310

[illegible]

Sleeve holders



Approach angle	Designation	Dimension (mm)								Insert
		DCONMS	H	LF	f ₁	LU	LDRED	WF		
	# TMS-16X SDUCL 11	16	15	85	6	20	28	10	DC... 11T3...  A265-A268, A311	
	19.05H SDUCL 11	19.05	17	100	6	20	28	10		
	20H SDUCL 11	20	18	100	6	20	28	10		
	22H SDUCL 11	22	20	100	6	20	28	10		
	25H SDUCL 11	25	23	100	6	20	28	10		
 	# TMS-16X SDUCR 11-TB	16	15	85	6	20	28	10		
	19.05H SDUCL 11-TB	19.05	17	100	6	20	28	10		
	20H SDUCL 11-TB	20	18	100	6	20	28	10		
	22H SDUCL 11-TB	22	20	100	6	20	28	10		
	25H SDUCL 11-TB	25	23	100	6	20	28	10		

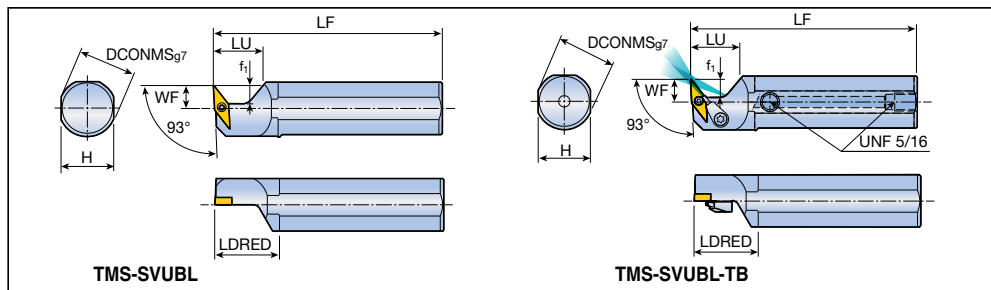
► #: TOP-MINI holders

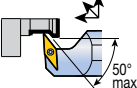
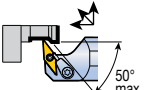
Spare parts

Designation	Screw	Cooling unit	Plug	Wrench		
						
TMS-SDUCL	SO 35080I	-	-	T 15	-	
TMS-SDUCL-TB	SO 35080I	S-CU-TB	PLG 5/16 UNF	T 15	L-W 5/32	

► Please refer to A135 page for COOL-BURST accessories

Sleeve holders



Approach angle	Designation	Dimension (mm)							Insert	
		DCONMS	H	LF	f ₁	LU	LDRED	WF		
93° 	# TMS-19.05H SVUBL 11	19.05	17	100	8	21	25	10	VB... 1103...  A281-A282, A315	
	20H SVUBL 11	20	18	100	8	21	25	10		
	22H SVUBL 11	22	20	100	8	21	25	10		
	25H SVUBL 11	25	23	100	8	21	28	10		
	# TMS-19.05H SVUCL 11	19.05	17	100	8	21	25	10	VC... 1103...  A282-A283, A315	
	22H SVUCL 11	22	20	100	8	21	25	10		
	25.4H SVUCL 11	25	23	100	8	21	28	10		
	25H SVUCL 11	25	23	100	8	21	28	10		
	93°  	# TMS-16X SVUBR 11-TB	16	15	85	8	21	25	10	VB... 1103...  A281-A282, A315
19.05H SVUBL 11-TB		19.05	17	100	8	21	25	10		
20H SVUBL 11-TB		20	18	100	8	21	25	10		
22H SVUBL 11-TB		22	20	100	8	21	25	10		
25H SVUBL 11-TB		25	23	100	8	21	28	10		

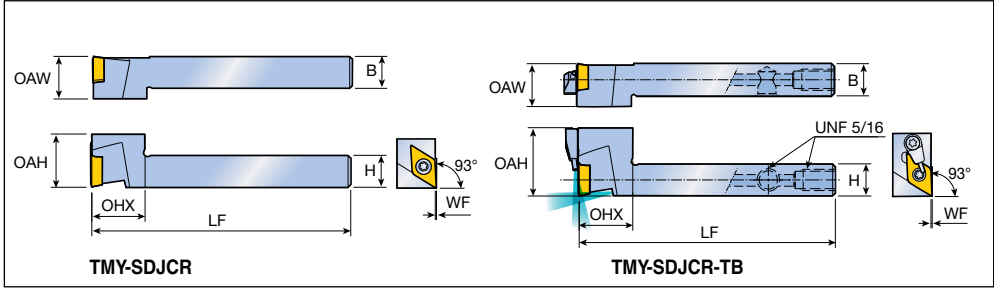
► #: TOP-MINI holders

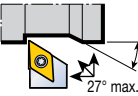
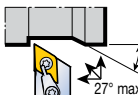
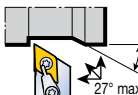
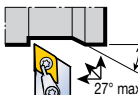
Spare parts

Designation	Screw	Cooling unit	Plug	Wrench		
TMS-SVUBL	SO 25065I	-	-	T 7	-	
TMS-SVUBR/L-TB	SO 25065I	S-CU-TB	PLG 5/16 UNF	T 7	L-W 5/32	

► Please refer to A135 page for COOL-BURST accessories

Y-axis holders



Approach angle	Designation	Dimension (mm)							Insert
		H	B	LF	OHX	OAH	OAW	WF	
  93°   93°	# TMY-SDJCR 1212 K11	12	12	125	21	20	16	0	DC... 11T3...  A265-A268, A311
	SDJCR 1616 K11	16	16	125	21	20	16	0	
  93°   93°	# TMY-SDJCR 1212 K11-TB	12	12	125	21	25.5	16	0	
	SDJCR 1616 K11-TB	16	16	125	21	25.5	16	0	

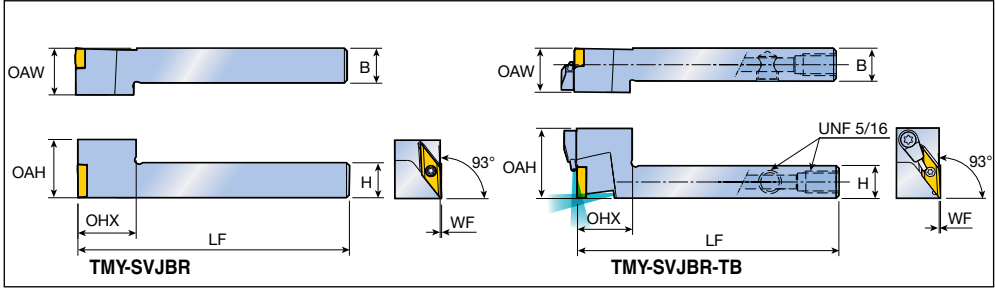
► #: TOP-MINI holders

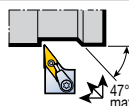
Spare parts

Designation	Screw	Cooling unit	Plug	Wrench		
						
TMY-SDJCR	SO 35080I	-	-	T 15	-	
TMY-SDJCR-TB	SO 35080I	S-CU-TB	PLG 5/16 UNF	T 15	L-W 5/32	

► Please refer to A135 page for COOL-BURST accessories

Y-axis holders



Approach angle	Designation	Dimension (mm)							Insert
		H	B	LF	OHX	OAH	OAW	WF	
93°  	# TMY-SVJBR 1212 K11	12	12	125	20	20	16	0	VB... 1103...  A281-A282, A315
	SVJBR 1616 K11	16	16	125	20	20	16	0	
93°   	# TMY-SVJBR 1212 K11-TB	12	12	125	20	25.5	16	0	
	SVJBR 1616 K11-TB	16	16	125	20	25.5	16	0	

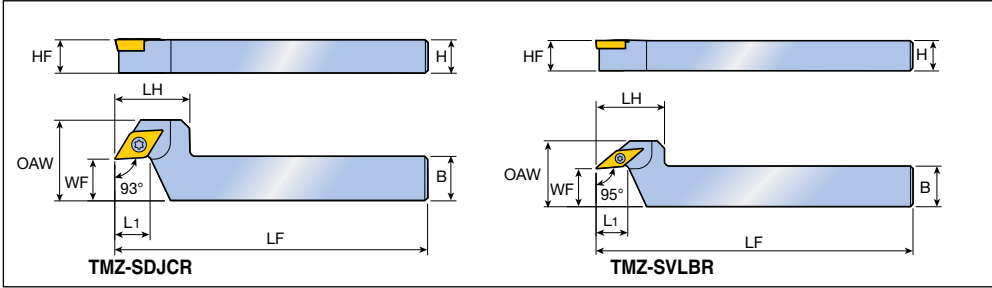
► #: TOP-MINI holders

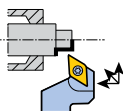
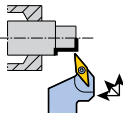
Spare parts

Designation	Screw	Cooling unit	Plug	Wrench	
					
TMY-SVJBR	SO 25065I	-	-	T 7	-
TMY-SVJBR-TB	SO 25065I	S-CU-TB	PLG 5/16 UNF	T 7	L-W 5/32

► Please refer to A135 page for COOL-BURST accessories

Shift holders



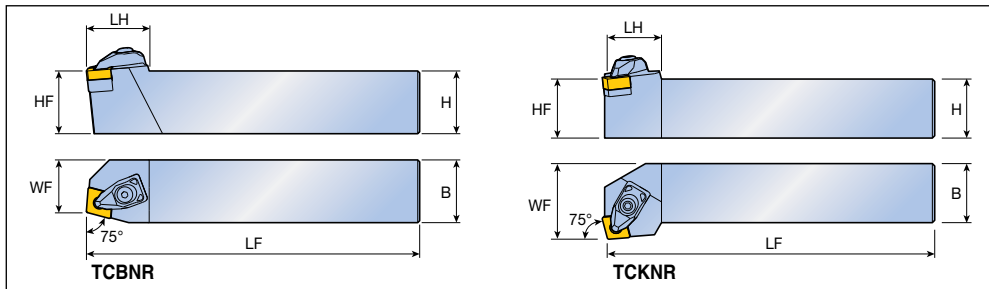
Approach angle	Designation	Dimension (mm)								Insert
		H	HF	B	LF	L1	OAW	LH	WF	
	# TMZ-SDJCR 1216 K11-F15	12	12	16	125	12.5	29	27	15	DC... 11T3...  A265-A268, A311
	SDJCR 1620 K11-F15	16	16	20	125	16.3	29	30	15	
	# TMZ-SVLBR 1216 K11-F15	12	12	16	125	12.3	26	27	15	VB... 1103...  A218-A282, A315
	SVLBR 1620 K11-F15	16	16	20	125	16.2	26	30	15	

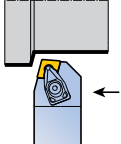
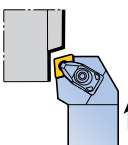
► #: TOP-MINI holders

Spare parts

Designation	Screw	Wrench				
						
TMZ-SDJCR	SO 35080I	T 15				
TMZ-SVLBR	SO 25065I	T 7				

T-holders

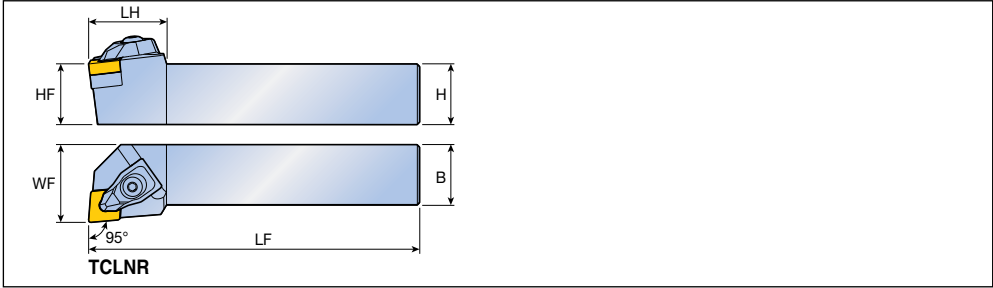


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
75° 	TCBNR/L 2525 M12	25	25	25	150	32	22.5	CN... 1204...
	3232 P19	32	32	32	170	42	27	CN... 1906... A226, A228-A232
75° 	TCKNR/L 2525 M12	25	25	25	150	25	32	CN... 1204...

Spare parts

Designation	Clamp 	Clamp screw 	Spring 	Shim 	Shim screw  		Wrench  	
...12	DLM 4	DLS 4	DSP 4	TSC 44	SO 40050I	-	L-W 3	T 15
...19	DLM 6	DLS 5	DSP 5	LSC 63	-	SO 80180I	L-W 4	-

T-holders

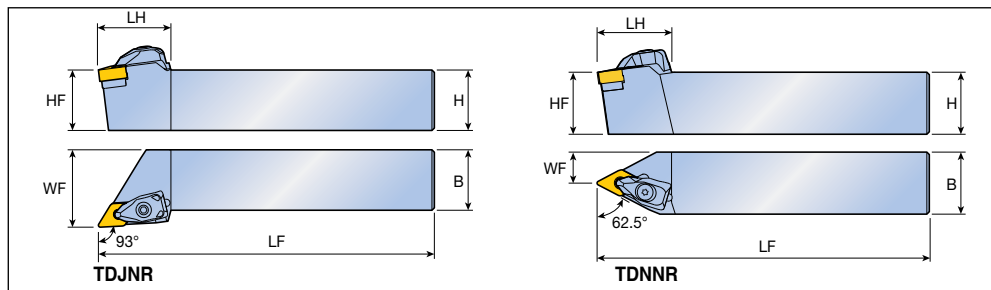


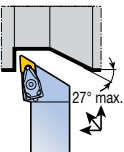
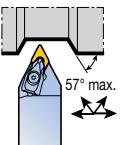
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
	TCLNR/L 2020 K12	20	20	20	125	32	25		CN... 1204... A226, A228-A232
	2525 M12	25	25	25	150	32	32		
	3225 P12	32	32	25	170	32	32		
	3232 P12	32	32	32	170	32	40		CN... 1606...
	2525 M16	25	25	25	150	36	32		
	3232 P16	32	32	32	170	36	40		
	3232 P19	32	32	32	170	42	40		CN... 1906...
	4040 S19	40	40	40	250	42	50		

Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw		Wrench	
...12	DLM 4	DLS 4	DSP 4	TSC 44	SO 40050I	-	L-W 3	T 15
...16	DLM 5	DLS 5	DSP 5	TSC 54	SO 50090I	-	L-W 4	T 20
...19	DLM 6	DLS 5	DSP 5	LSC 63	-	SO 80180I	L-W 4	-

T-holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
93° 	TDJNR/L 2020 K11	20	20	20	125	30	25		DN... 1104...
	2525 M11	25	25	25	150	30	32		DN... 1506...
	2020 K15	20	20	20	125	39	25		
	2525 M15	25	25	25	150	39	32		DN... 1504...
	3232 P15	32	32	32	170	39	40		
	2020 K1504	20	20	20	125	39	25		
	2525 M1504	25	25	25	150	39	32		
62.5° 	TDNNR/L 2525 M11	25	25	25	150	30	12.5		DN... 1104...

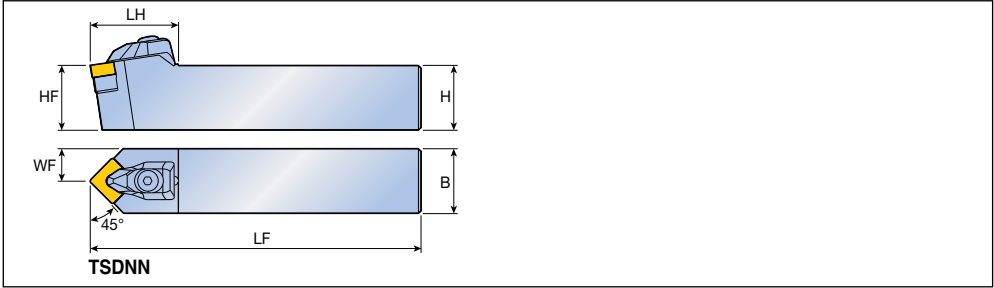
A234-A238

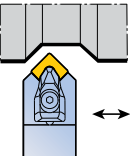
Spare parts

Designation	Clamp	Clamp screw	Spring	Shim		Shim screw	Wrench	
...11	DLM 3	DLS 3	DSP 3	LSD 32	-	SO 40085I	L-W 2.5	T 15
...15	DLM 4	DLS 4	DSP 4	-	TSD 43	SO 40050I	L-W 3	T 15
...1504	DLM 4	DLS 4	DSP 4	-	TSD 44	SO 40050I	L-W 3	T 15

[illegible][illegible]

T-holders

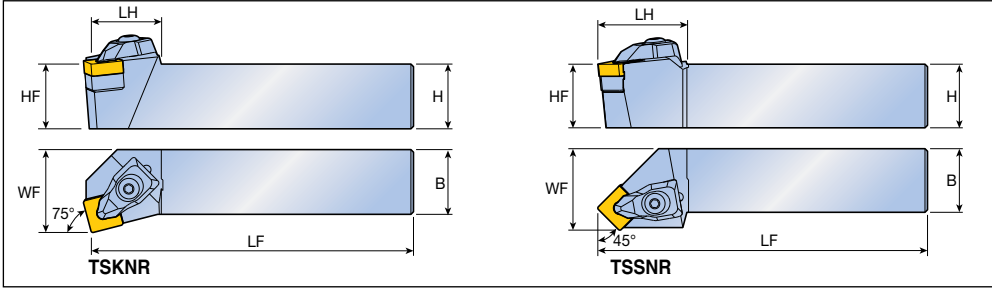


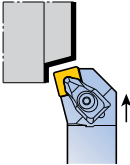
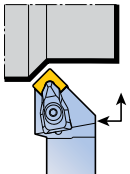
Approach angle	Designation	Dimension (mm)						Insert	
		H	HF	B	LF	LH	WF		
45° 	TSDNN 2525 M12	25	25	25	150	34	12.5	SN... 1204...	 A241-A246, A296, A297, A306
	3232 P19	32	32	32	170	44	16	SN... 1906...	

Spare parts

Designation	Clamp 	Clamp screw 	Spring 	Shim 	Shim screw 		Wrench 	
...12	DLM 4	DLS 4	DSP 4	TSS 44	SO 40050I	-	L-W 3	T 15
...19	DLM 6	DLS 5	DSP 5	LSS 63	-	SO 80180I	L-W 4	-

T-holders

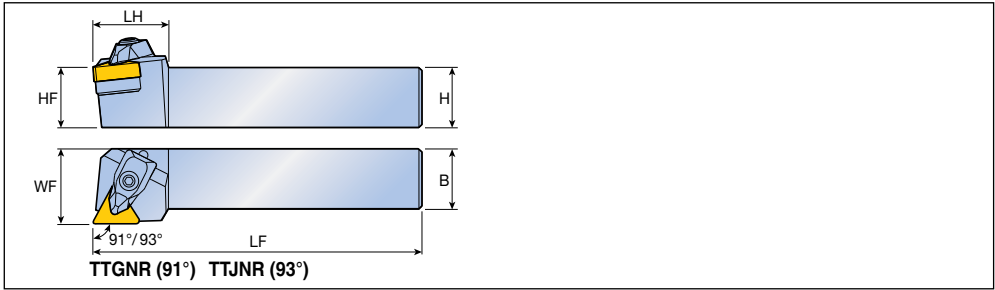


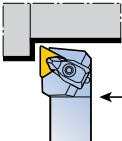
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
75° 	TSKNR/L 2525 M12	25	25	25	150	27	32	SN... 1204...  A241-A246, A296, A297, A306
45° 	TSSNR/L 2525 M12	25	25	25	150	35	32	SN... 1204...

Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench		
								
...12	DLM 4	DLS 4	DSP 4	TSS 44	SO 40050I	L-W 3	T 15	

T-holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
	TTGNR/L 2525 M16	25	25	25	150	25	32	TN... 1604...  A247-A250, A299, A307	
	TTJNR/L 2020 K16	20	20	20	125	25	25		
	2525 M16	25	25	25	150	25	32		

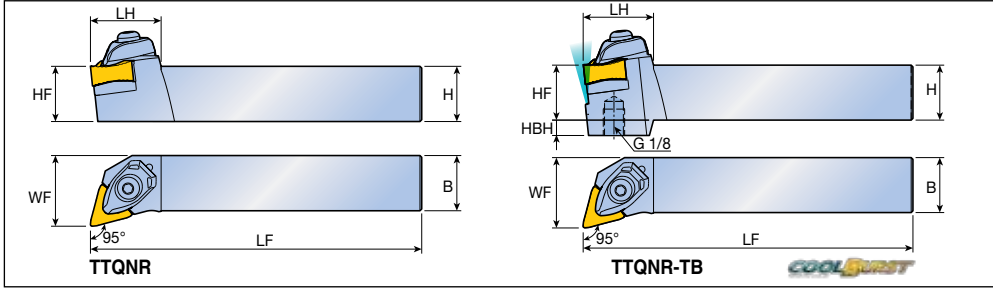
Spare parts

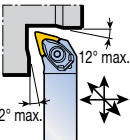
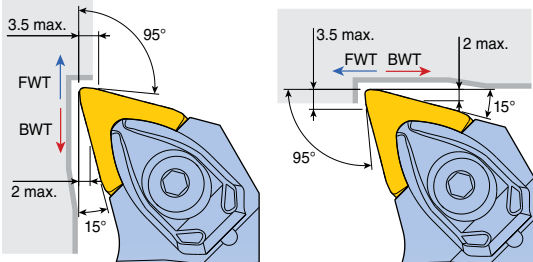
Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench		
...16	DLM 3	DLS 3	DSP 3	TST 33	SO 35080I	L-W 2.5	T 15	

TTQNR/L TTQNR/L-TB



T-holders



Approach angle	Designation	Dimension (mm)							Insert	
		H	HF	B	LF	LH	WF	HBH		
95° 	TTQNR/L 2525 M2109	25	25	25	150	32	32	-	TNMV 2109... 	
	3232 P2109	32	32	32	170	32	40	-		
	TTQNR/L 2525 M2109-TB	25	25	25	150	32	32	7		
	3232 P2109-TB	32	32	32	170	32	40	-		
										
Facing										
Ext. Turning										

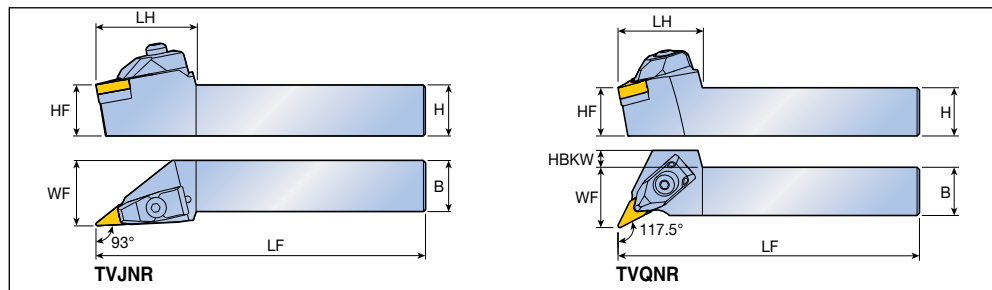
- BWT: Backward turning
- FWT: Forward turning

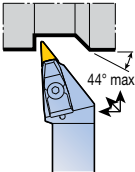
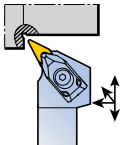
Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
...2109	DLM 4.4T-NV	DLS 5	DSP 5	TSTV 210510	TS 35083I/HG	L-W 4	T 10
...2109-TB	DLM 4.4T-NV	DLS 5	DSP 5	TSTV 210510	TS 35083I/HG	L-W 4	T 10

► Please refer to A135 page for COOL-BURST accessories

T-holders

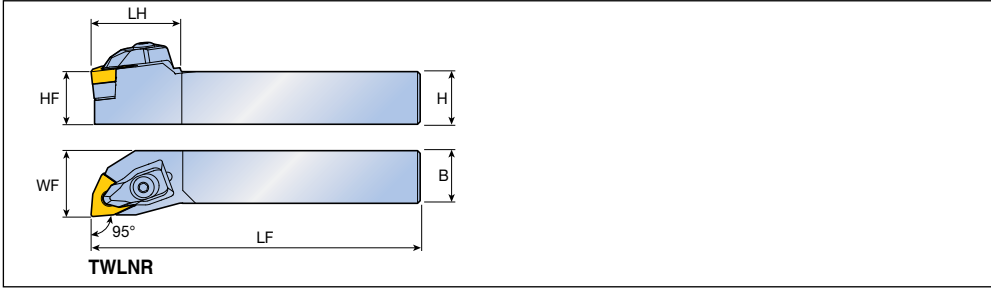


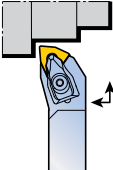
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
93° 	TVJNR/L 2020 K13	20	20	20	125	49	25		VN... 1304... A251-A252
	2525 M13	25	25	25	150	49	32		
	2020 K16	20	20	20	125	49	25		VN... 1604... A251-A252, A300, A308
	2525 M16	25	25	25	150	49	32		
117.5° 	TVQNR/L 2020 K16	20	20	20	125	42	25	8	VN... 1604...
	2525 M16	25	25	25	150	42	32	2	

Spare parts

Designation	Clamp 	Clamp screw 	Spring 	Shim 	Shim screw  		Wrench  	
...13	DLM 3V	DLS 5	DSP 5	MSV 2.522	SC 4-SH	-	L-W 4	T 15
...16	DLM 3V	DLS 5	DSP 5	TSV 33	-	SO 35080I	L-W 4	T 15

T-holders

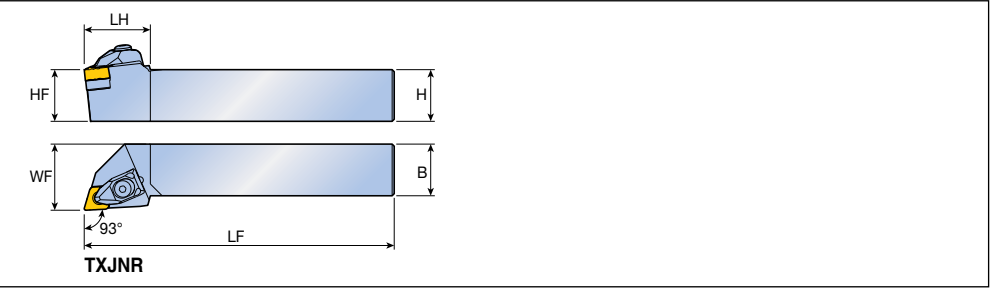


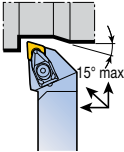
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
95° 	TWLNR/L 2020 K06	20	20	20	125	26	25	WN...G 0604... 
	2525 M06	25	25	25	150	26	32	A253-A255,
	2020 K08	20	20	20	125	34.2	25	WN... 0804... A300, A309
	2525 M08	25	25	25	150	34.2	32	
	3232 P08	32	32	32	170	34.2	40	

Spare parts

Designation	Clamp 	Clamp screw 	Spring 	Shim 	Shim screw 	Wrench 	
...06	DLM 3	DLS 3	DSP 3	PSW 32	SO 40090I	L-W 2.5	T 15
...08	DLM 4	DLS 4	DSP 4	TSW 44	SO 40050I	L-W 3	T 15

T-holders

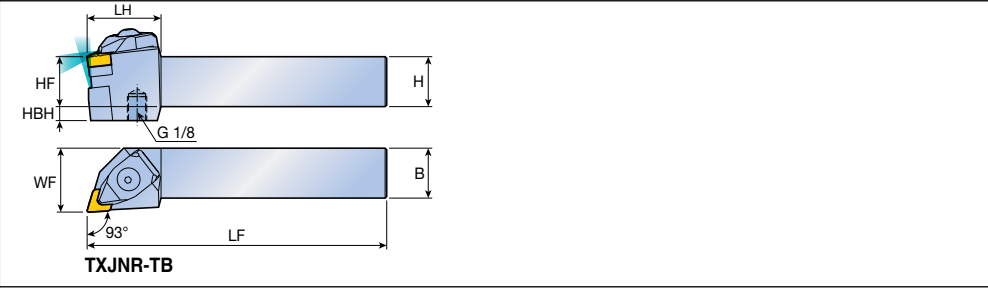


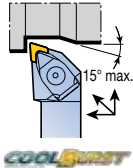
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
93° 	TXJNR/L 2020 K1105	20	20	20	125	32	25		XN... 1105...  A257
	2525 M1105	25	25	25	150	32	32		

Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
							
...1105	DLM 3.5-NX	DLS 4	DSP 4	TSX 3.53	SO 50090I	L-W 3	T 20

T-holders with high pressure coolant



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBH	
93°	TXJNR/L 2525 M1105-TB	25	25	25	150	37	32	7	XN... 1105... POSSTURN A257
									

Spare parts

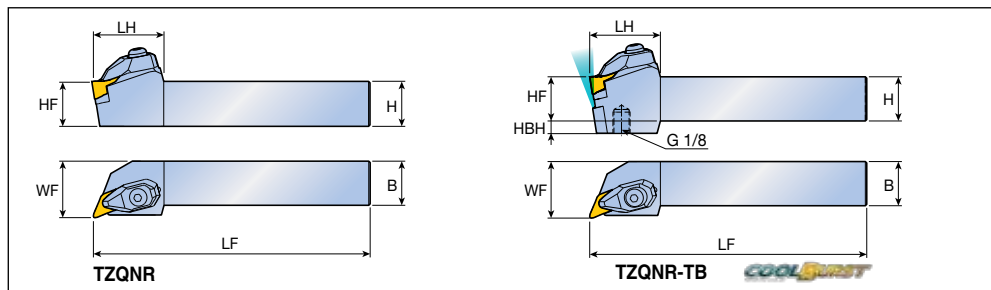
Designation	Clamp	Clamp screw	Spring	Upper O-ring	Lower O-ring	Shim	Shim screw	Wrench	
									
...1105	DLM 3.5-NX-TB	BH M5x0.8x 21-MO-TB	DSP 4	O-RING ID5.28x 1.78	O-RING ID7.59x 2.62	TSX 3.53	SO 50090I	L-W 3	T 20

► Please refer to A135 page for COOL-BURST accessories

TZQNR/L TZQNR-TB



T-holders for ZNMV insert



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBH	
ZNMV 23°(BWT) 95°(FWT)	TZQNR/L 2525 M1410	25	25	25	150	40	32	-	ZNMV 1410...
	3232 P1410	32	32	32	170	40	40	-	
	TZQNR/L 2525 M1410-TB	25	25	25	150	40	32	7	
	3232 P1410-TB	32	32	32	170	40	40	-	
ZNMV Y-BF 28°(BWT) 118°(FWT)									

- BWT: Backward turning
- FWT: Forward turning

Spare parts

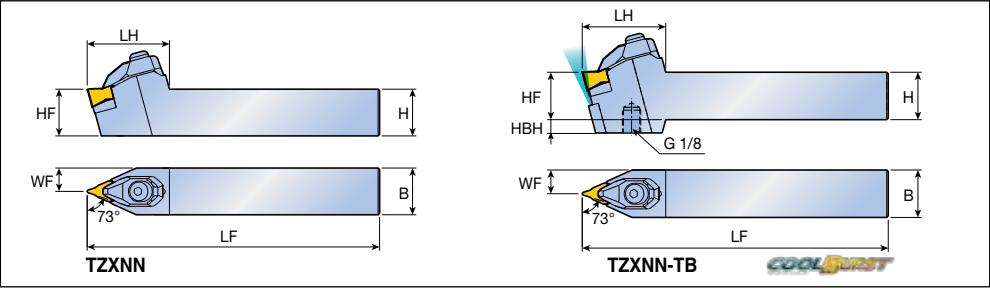
Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
...							
...1410	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 350831/HG	L-W 4	T 10
...1410-TB	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 350831/HG	L-W 4	T 10

► Please refer to A135 page for COOL-BURST accessories

TZXNN TZXNN-TB



T-holders for ZNMV Y-BF insert



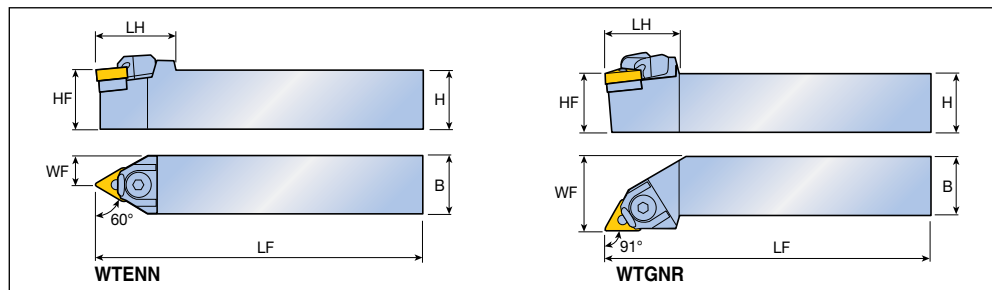
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBH	
73° 	TZXNN 2525 M1410	25	25	25	150	44	12.5	-	ZNMV 1410...Y-BF
	3232 P1410	32	32	32	170	44	16	-	
	TZXNN 2525 M1410-TB	25	25	25	150	44	12.5	7	
	3232 P1410-TB	32	32	32	170	44	16	-	

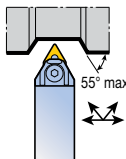
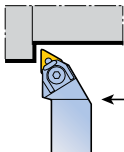
Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
...1410	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 350831/HG	L-W 4	T 10
...1410-TB	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 350831/HG	L-W 4	T 10

► Please refer to A135 page for COOL-BURST accessories

Wedge clamp type holders

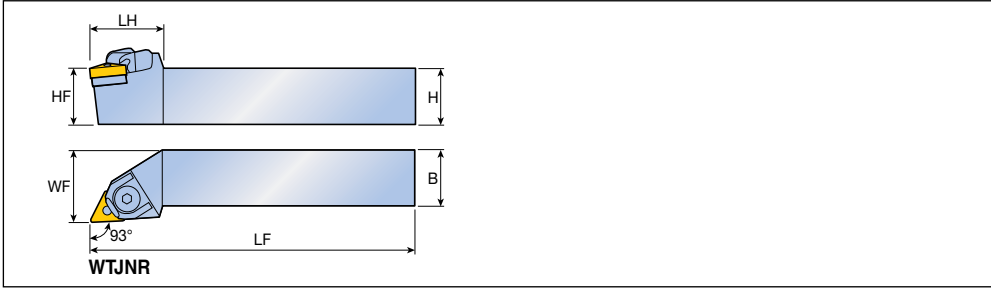


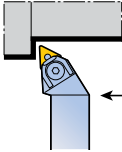
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
60° 	WTENN							
	2020 K16	20	20	20	125	35	10.0	TN... 1604...
	2525 M16	25	25	25	150	35	12.5	 A247-A250, A299, A307
	2525 M22	25	25	25	150	38	12.5	
	3225 P22	32	32	25	170	38	12.5	
	3232 P22	32	32	32	170	38	16.0	
91° 	WTGNR/L							
	2020 K16	20	20	20	125	32	25	TN... 1604...
	2525 M16	25	25	25	150	32	32	
	2525 M22	25	25	25	150	38	32	TN... 2204...
	3232 P22	32	32	32	170	38	40	

Spare parts

Designation	Wedge clamp	Screw	Snap ring	Shim	Pin screw	Wrench	
...16	WC 33	WCS 4	WSR 4	WST 33	WSS 33	L-W 3, L-W 2.5	
...22	WC 43	WCS 4	WSR 4	WST 43	WSS 43	L-W 3	

Wedge clamp type holders

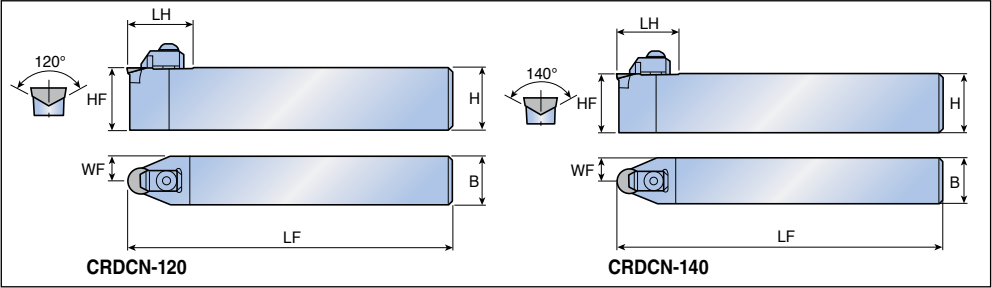


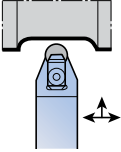
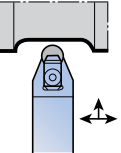
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
93° 	WTJNR/L 2020 K16	20	20	20	125	32	25		TN... 1604...  A247-A250, A299, A307
	2525 M16	25	25	25	150	32	32		
	3225 P16	32	32	25	170	32	32		
	3232 P16	32	32	32	170	38	40		
	2525 M22	25	25	25	150	38	32		
	3232 P22	32	32	32	170	38	40		TN... 2204...

Spare parts

Designation	Wedge clamp 	Screw 	Snap ring 	Shim 	Pin screw 	Wrench 	
...16	WC 33	WCS 4	WSR 4	WST 33	WSS 33	L-W 3, L-W 2.5	
...22	WC 43	WCS 4	WSR 4	WST 43	WSS 43	L-W 3	

Top clamp type holders for V bottom insert



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
45° 	CRDCN 2525 M06-120	25	25	25	150	28	12.5		RCGX 0606...
	3225 P06-120	32	32	25	170	28	12.5		
	3225 P09-120	32	32	25	170	30	12.5		RCGX 0907...
	3225 P12-120	32	32	25	170	32	12.5		RCGX 1207...
45° 	CRDCN 2525 M06-140	25	25	25	150	28	12.5		RCGX 0603...FT
	3225 P06-140	32	32	25	170	28	12.5		
	3225 P09-140	32	32	25	170	30	12.5		RCGX 0903...FT
	3225 P12-140	32	32	25	170	32	12.5		RCGX 1204...FT

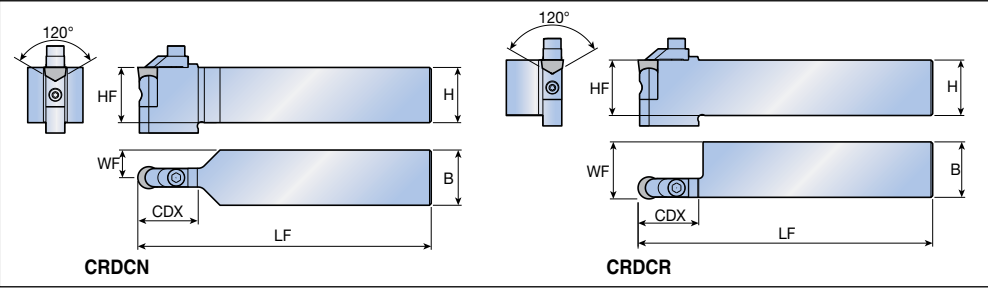
Spare parts

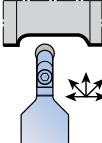
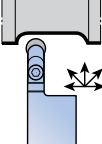
Designation	Clamp	Clamp screw	Shim	Shim screw		Wrench	
							
...06-120	BCL 6-20A	BH M6x1x25	CERS 06	SO 22050I	-	L-W 4	T 7
...09-120	BCL 6-20A	BH M6x1x25	CERS 09	-	BH M2.5x0.45x10	L-W 4, L-W 1.5	-
...12-120	BCL 6	BH M6x1x25	CERS 12	-	BH M2.5x0.45x10	L-W 4, L-W 1.5	-
...06-140	BCL 6-20A	BH M6x1x25	CBRS 06	SO 22050I	-	L-W 4	T 7
...09-140	BCL 6-20A	BH M6x1x25	CBRS 09	-	BH M2.5x0.45x10	L-W 4, L-W 1.5	-
...12-140	BCL 6	BH M6x1x25	CBRS 12	-	BH M2.5x0.45x10	L-W 4, L-W 1.5	-

CRDCN-T CRDCR/L-T



Narrow top clamp type holders for V bottom insert

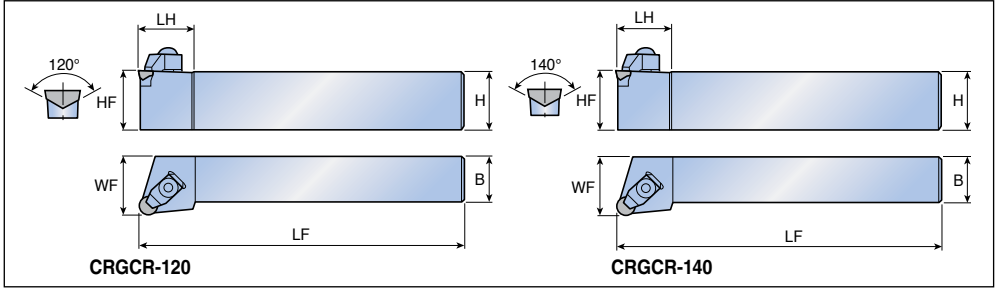


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	CDX	WF	
45° 	CRDCN 3232 P0907-120-T30 3232 P1207-120-T35	32	32	32	170	30	16	RCGX 0907... RCGX 1207... A301
		32	32	32	170	35	16	
45° 	CRDCR/L 3232 P0907-120-T30 CRDCR 3225 P0907-120-T30 CRDCL 3232 P1207-120-T35	32	32	32	170	30	32.8	RCGX 0907... RCGX 1207... A312
		32	32	25	170	30	32.8	
		32	32	32	170	35	32.9	

Spare parts

Designation	Clamp	Clamp screw	Shim	Shim screw	Wrench	
						
...0907...	HCL 09-M	SH M5X0.8X12	CERS 09-T	SO 35124I	L-W 4	T 15
...1207...	HCL 12-M	SH M6X1X16	CERS 12-T	TS 40140AJ/HG	L-W 5	T 20

Top clamp type holders for V bottom insert

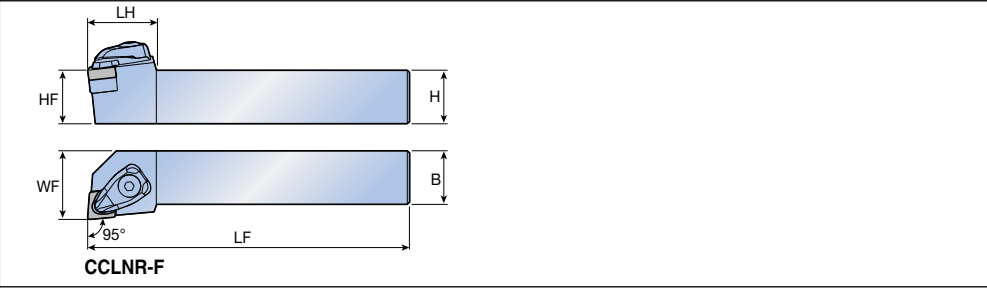


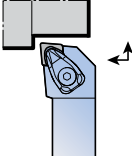
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
90° 	CRGCR/L 2525 M06-120	25	25	25	150	28	32		RCGX 0606...
	3225 P06-120	32	32	25	170	28	32		A301
	3225 P09-120	32	32	25	170	30	32		RCGX 0907...
	3225 P12-120	32	32	25	170	32	32		RCGX 1207...
90° 	CRGCR/L 3225 P06-140	32	32	25	170	28	32		RCGX 0603...FT
	3225 P09-140	32	32	25	170	30	32		A312
	3225 P12-140	32	32	25	170	32	32		RCGX 1204...FT

Spare parts

Designation	Clamp	Clamp screw	Shim	Shim screw		Wrench	
...06...	BCL 6-20A	BH M6x1x25	CERS 06	SO 22050I	-	L-W 4	T 7
...09...	BCL 6-20A	BH M6x1x25	CERS 09	-	BH M2.5x0.45x10	L-W 4, L-W 1.5	-
...12...	BCL 6	BH M6x1x25	CERS 12	-	BH M2.5x0.45x10	L-W 4, L-W 1.5	-

Combi Clamp Top holders for flat inserts



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
95° 	CCLNR/L 2525 M1204-F	25	25	25	150	32	32	CNGN 1204...	 A291, A292, A303

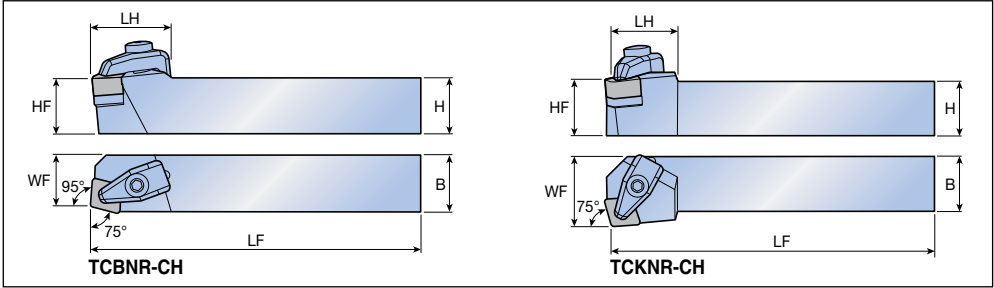
Spare parts

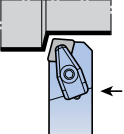
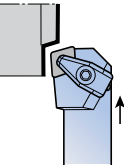
Designation	Clamp set	Shim	Shim screw	Wrench			
							
CCLNR/L...-F	CCL S-4F	TSC 44	SO 40050I	L-W 4	T 15		

TCBNR/L-CH TCKNR/L-CH



T-holders for CH dimple insert



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
75° 	TCBNR/L 2525 M12-CH	25	25	25	150	34.7	23		CNGX 1207...CH  A292
	3225 P12-CH	32	32	25	170	34	24		
75° 	TCKNR/L 2525 M12-CH	25	25	25	150	28	32		

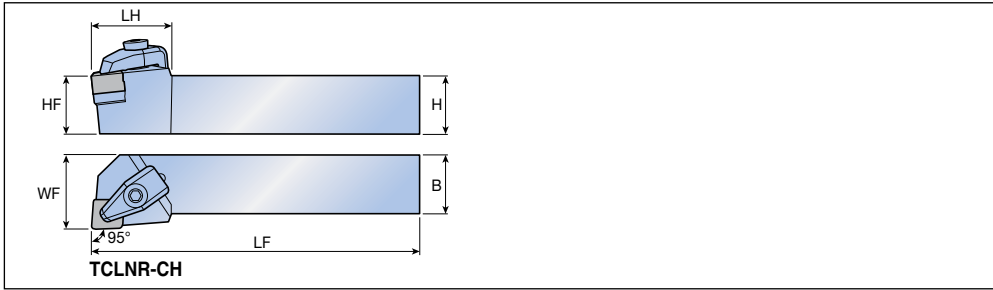
Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
							
...12-CH	CCL-4	CSC 4	DSP 5	TSC 43	SO 40050I	L-W 4	T 15

TCLNR/L-CH



T-holders for CH dimple insert



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
95° 	TCLNR/L 2525 M12-CH	25	25	25	150	33	32		CNGX 1207...CH A292
	3225 P12-CH	32	32	25	170	33	32		

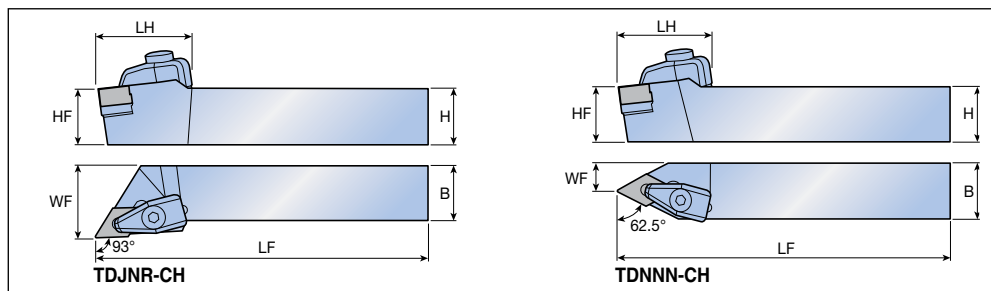
Spare parts

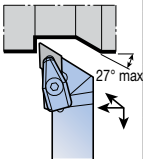
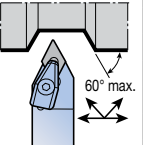
Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
...12-CH	CCL-4	CSC 4	DSP 5	TSC 43	SO 40050I	L-W 4	T 15

TDJNR/L-CH TDNNN-CH



T-holders for CH dimple insert

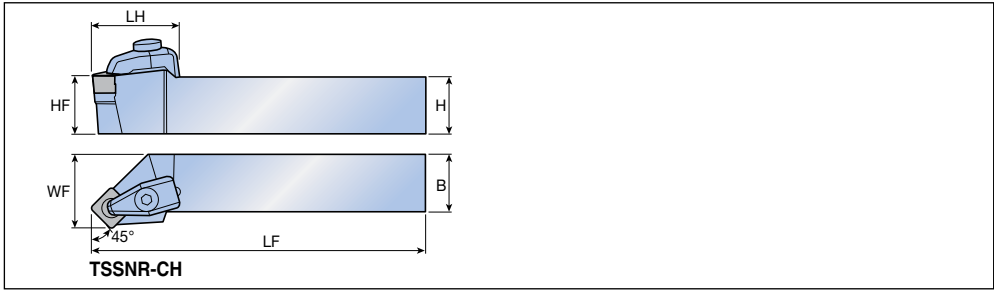


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
93° 	TDJNR/L 2525 M15-CH	25	25	25	150	38	32	DNGX 1507...CH  A293
	3225 P15-CH	32	32	25	170	38	32	
62.5° 	TDNNN 2525 M15-CH	25	25	25	150	40	12.5	

Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
...15-CH	 CCL-4	 CSC 4	 DSP 5	 TSD 43	 SO 40050I	 L-W 4	 T 15

T-holders for CH dimple insert



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
45° 	TSSNR/L 2525 M12-CH	25	25	25	150	35	32		SNGX 1207...CH
	3232 P12-CH	32	32	32	170	35	40		A297
	3225 P15-CH	32	32	25	170	35	32		
									SNGX 1507...CH

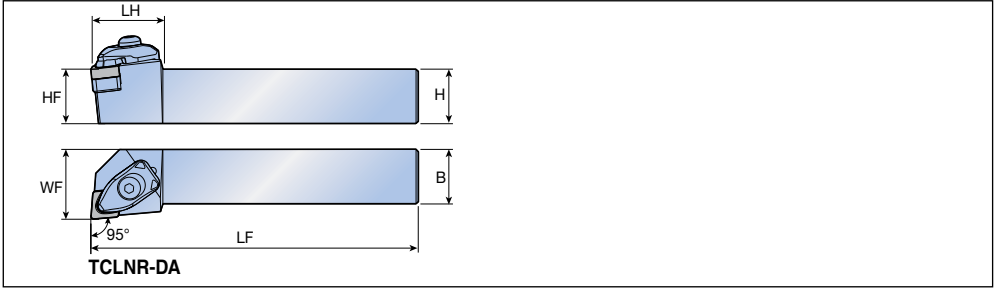
Spare parts

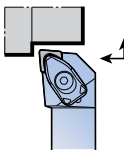
Designation	Clamp 	Clamp screw 	Spring 	Shim 	Shim screw 		Wrench 	
...12-CH	CCL-4	CSC 4	DSP 5	TSS 43	SO 40050I	-	L-W 4	T 15
...15-CH	CCL-4	CSC 4	DSP 5	S 50	-	BH M5x0.8x10	L-W 4, L-W 3	-

TCLNR/L-DA



Combi clamp T-holders for DA dimple inserts



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
95°	TCLNR/L 2525 M1204-DA	25	25	25	150	33	32	CNGX 1204...DA  A303
								

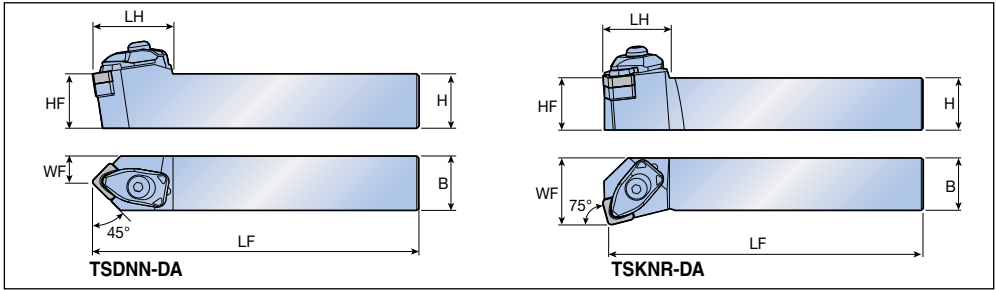
Spare parts

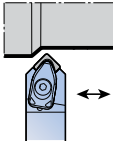
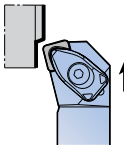
Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
							
...1204-DA	DCL S-4DA	DLS 5	DSP 5	TSC 44	SO 40050I	L-W 4	T 15

TSDNN-DA TSKNR/L-DA



Combi clamp T-holders for DA dimple inserts

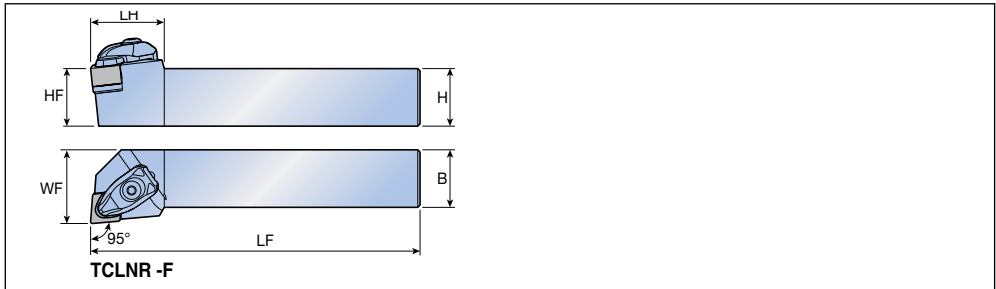


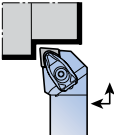
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
45° 	TSDNN 2525 M1204-DA	25	25	25	150	37	12.5	SNGX 1204...DA  A306	
75° 	TSKNR/L 2525 M1204-DA	25	25	25	150	29	32		

Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench		
								
...1204-DA	DCL S-4DA	DLS 5	DSP 5	TSS 44	SO 40050I	L-W 4	T 15	

Combi clamp T-holders for flat inserts

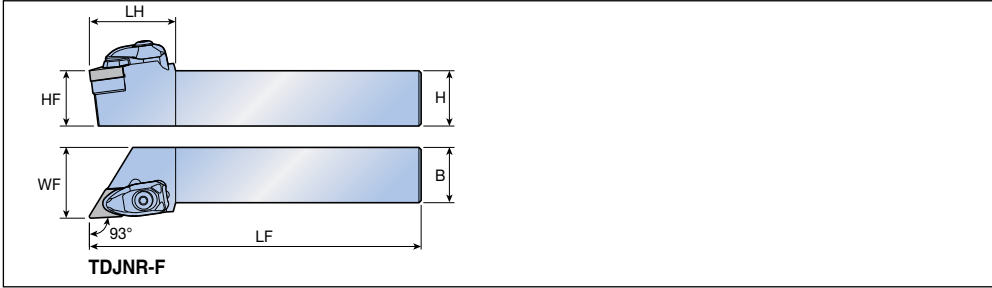


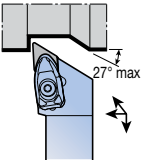
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
95° 	TCLNR/L 2525 M0903-F	25	25	25	150	25	32	CN...N 0903... 
	2020 K1204-F	20	20	20	125	32	25	CN...N 1204... A291, A292, A303
	2525 M1204-F	25	25	25	150	32	32	
	2020 K1207-F	20	20	20	125	32	25	CN...N 1207...
	2525 M1207-F	25	25	25	150	32	32	
	3232 P1207-F	32	32	32	170	32	40	

Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench		
								
...0903-F	DCL S-3F	DLS 3	DSP 3	LSC 32	SO 40085I	L-W 2.5	T 15	
...1204-F	DCL S-4F	DLS 4	DSP 4	TSC 44	SO 40050I	L-W 3	T 15	
...1207-F	DCL S-4F	DLS 4	DSP 4	TSC 42	SO 40050I	L-W 3	T 15	

Combi clamp T-holders for flat inserts

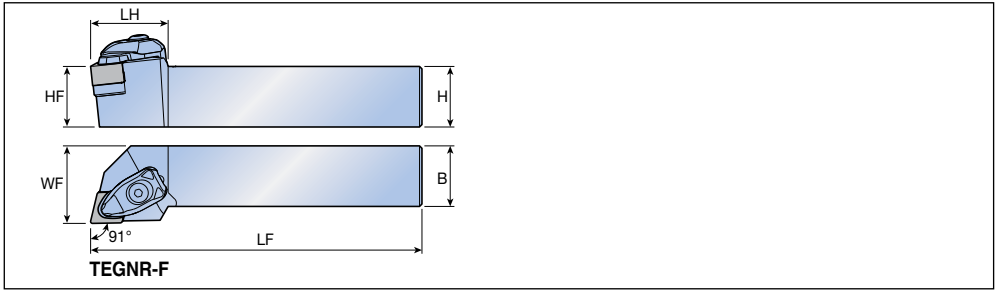


Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
93° 	TDJNR/L 2525 M1504-F	25	25	25	150	39	32		DN...N 1504... A293
	2525 M1507-F	25	25	25	150	39	32		DN...N 1507...
	3232 P1507-F	32	32	32	170	39	40		

Spare parts

Designation	Clamp 	Clamp screw 	Spring 	Shim 	Shim screw 	Wrench 		
...1504-F	DCL S-4F	DLS 4	DSP 4	TSD 44	SO 40050I	L-W 3	T 15	
...1507-F	DCL S-4F	DLS 4	DSP 4	TSD 42	SO 40050I	L-W 3	T 15	

Combi clamp T-holders for flat inserts



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
91°	TEGNER/L 2525 M1307-F	25	25	25	150	32	32	EN...N 1307...
								 A294

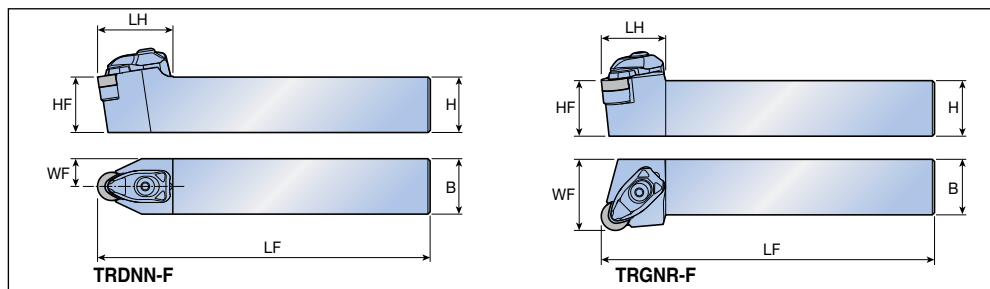
Spare parts

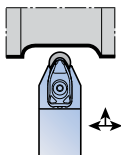
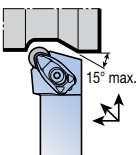
Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench		
...1307-F	 DCL S-4F	 DLS 4	 DSP 4	 E 43	 BH M5x0.8x10	 L-W 3		

TRDNN-F TRGNR/L-F



Combi clamp T-holders for flat inserts



Approach angle	Designation	Dimension (mm)						Insert		
		H	HF	B	LF	LH	WF			
45° 	TRDNN	2525 M0903-F	25	25	25	150	27	12.5	RN...N 0903...	
		2020 K1204-F	20	20	20	125	34	10	RN...N 1204...	
		2525 M1204-F	25	25	25	150	34	12.5	RN...N 1207...	
		2020 K1207-F	20	20	20	125	34	10		
		2525 M1207-F	25	25	25	150	34	12.5		
		3225 P1207-F	32	32	25	170	34	12.5		
		3232 P1207-F	32	32	32	170	34	16		
	90° 	TRGNR/L	2525 M0903-F	25	25	25	150	29	32	RN...N 0903...
			2020 K1204-F	20	20	20	125	29	25	RN...N 1204...
2525 M1204-F			25	25	25	150	29	32	RN...N 1207...	
2020 K1207-F			20	20	20	125	29	25		
2525 M1207-F			25	25	25	150	29	32		
3225 P1207-F			32	32	25	170	29	32		
3232 P1207-F			32	32	32	170	29	40		

 **A295, A305**

► RN...N 1204/1207 are exchangeable, RN...N 1203 is not exchangeable on same holder

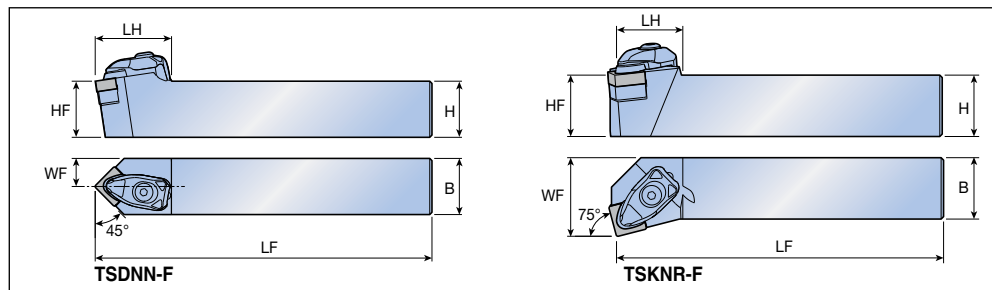
Spare parts

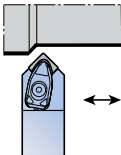
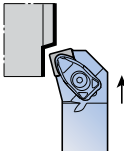
Designation	Clamp	Clamp screw	Spring	Shim		Shim screw	Wrench	
								
...0903-F	DCL S-3F	DLS 3	DSP 3	LSR 32	-	SO 40085I	L-W 2.5	T 15
...1204-F	DCL S-4F	DLS 4	DSP 4	-	TSR 45	SO 40050I	L-W 3	T 15
...1207-F	DCL S-4F	DLS 4	DSP 4	-	TSR 43	SO 40050I	L-W 3	T 15

TSDNN-F TSKNR/L-F



Combi clamp T-holders for flat inserts



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
45° 	TSDNN 2020 K1204-F	20	20	20	125	34	10	SN...N 1204...
	2525 M1204-F	25	25	25	150	34	12.5	 A296, A306
	2525 M1207-F	25	25	25	150	34	12.5	
	3225 P1207-F	32	32	25	170	34	12.5	
	3232 P1207-F	32	32	32	170	34	16	
75° 	TSKNR/L 2525 M1204-F	25	25	25	150	27	32	SN...N 1204...
	3232 P1204-F	32	32	32	170	27	40	SN...N 1207...
	2525 M1207-F	25	25	25	150	27	32	
	3232 P1207-F	32	32	32	170	27	40	

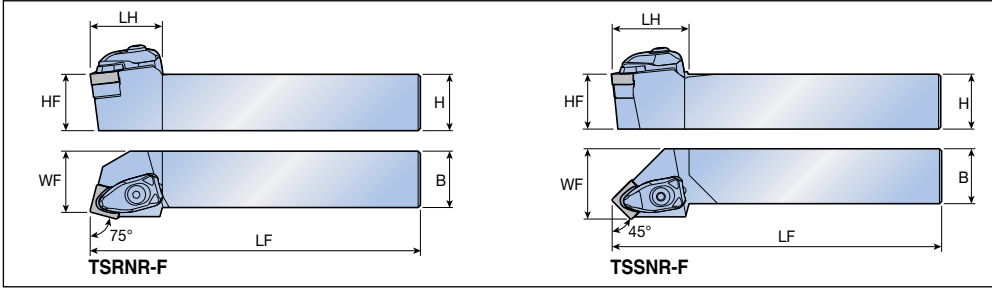
Spare parts

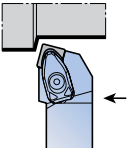
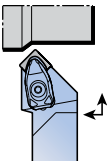
Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench		
								
...1204-F	DCL S-4F	DLS 4	DSP 4	TSS 44	SO 40050I	L-W 3	T 15	
...1207-F	DCL S-4F	DLS 4	DSP 4	TSS 42	SO 40050I	L-W 3	T 15	

TSRNR/L-F TSSNR/L-F



Combi clamp T-holders for flat inserts



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
75° 	TSRNR/L 2525 M1204-F	25	25	25	150	32	27		SN...N 1204...
	3232 P1204-F	32	32	32	170	32	35		SN...N 1207...  A296, A306
	2525 M1207-F	25	25	25	150	32	27		
	3225 P1207-F	32	32	25	170	32	27		
	3232 P1207-F	32	32	32	170	32	35		
45° 	TSSNR/L 2525 M1204-F	25	25	25	150	35	32		SN...N 1204...
	3232 P1204-F	32	32	32	170	35	40		SN...N 1207...
	2525 M1207-F	25	25	25	150	35	32		
	3232 P1207-F	32	32	32	170	35	40		

Spare parts

Designation	Clamp 	Clamp screw 	Spring 	Shim 	Shim screw 	Wrench 		
...1204-F	DCL S-4F	DLS 4	DSP 4	TSS 44	SO 40050I	L-W 3	T 15	
...1207-F	DCL S-4F	DLS 4	DSP 4	TSS 42	SO 40050I	L-W 3	T 15	

T-TURN



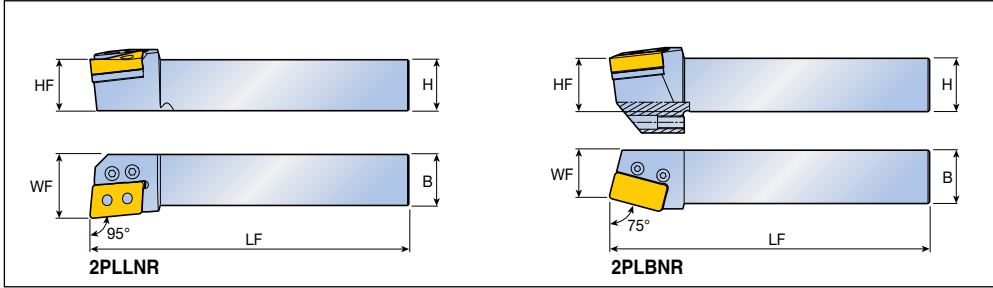
A299

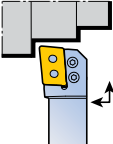
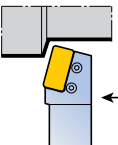
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2PLLNR/L 2PLBNR/L



Lever lock type holders with two pins

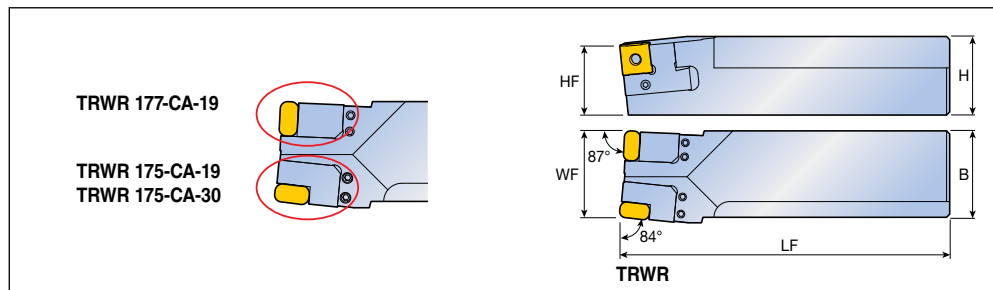


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	WF		
95° 	2PLLNR/L 4040 S4012	40	40	40	250	50		LNMM 4012...HX  A287
	5050 T4012	50	50	50	300	60		
75° 	2PLBNR/L 5050 T5014	50	50	50	300	45		LNMX 5014...

Spare parts

Designation	Lever	Screw	Shim	Shim pin	Set screw	Wrench	
							
2PLLNR/L...	LCL 8	LCS 8-L39	LN 4025-T6.35-R/L	LSP 8	-	L-W 5	
2PLBNR/L...	LCL 8	LCS 8-L43	LN 5025-T6.35	LSP 8	SS M12x1.75x25	L-W 5	

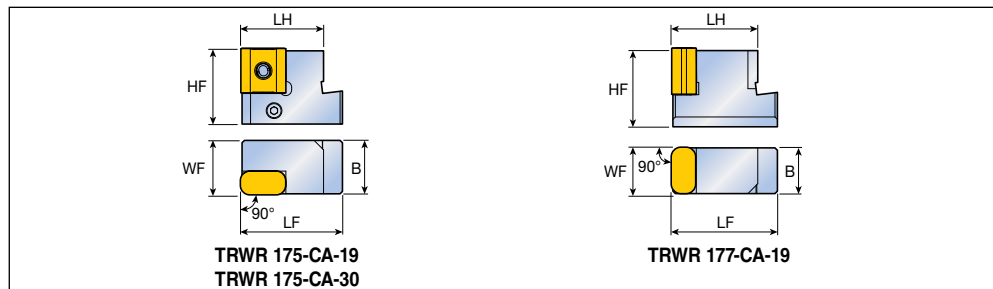
TOP-RAIL holders



Approach angle	Designation	Dimension (mm)						Cartridge
		H	HF	B	LF	WF		
	* TRWR/L 50-55 TG	50	44	55	210	55		Left
								TRWR/L 175-CA-19
								TRWR/L 175-CA-30
								Right
								TRWR/L 177-CA-19

► *: Cartridges are not included in TOP-RAIL holder, please order separately.

TOP-RAIL cartridges



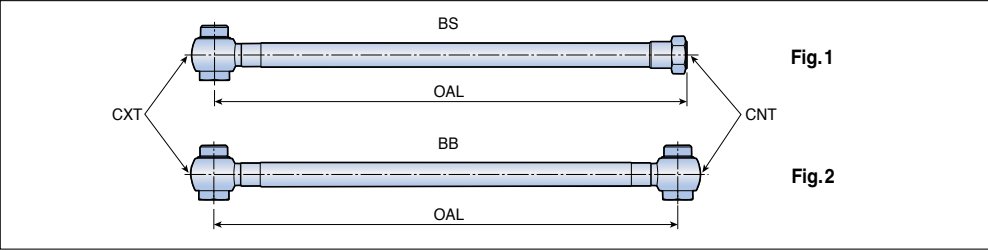
Designation	Dimension (mm)						Insert
	HF	B	LF	LH	WF		
TRWR/L 175-CA-19	32	22.6	43	35	23		LNMX 1919...
175-CA-30	32	22.6	43	35	23		LNMX 3019...
177-CA-19	32	18.6	43	35	19		LNMX 1919...



Spare parts

Designation	Screw	Pin	Lever	Screw	Wrench			
...50-55 TG						L-W 3		
...CA...	-	-	LCL 5	LCS 5	L-W 3			

Hose



Designation	Dimension				Fig.
	OAL (mm)	CXT	CNT	Max.pressure (Bar)	
TB HOSE G1/8-7/16-200BS	200	G1/8-28 BSPP	7/16-20 UNF (Flare 37°)	260	1
G1/8-7/16-250BS	250	G1/8-28 BSPP	7/16-20 UNF (Flare 37°)	260	1
G1/8-G1/8-200BB	200	G1/8-28 BSPP	G1/8-28 BSPP	260	2
G1/8-G1/8-250BB	250	G1/8-28 BSPP	G1/8-28 BSPP	260	2
5/16-7/16-200BS	200	5/16-24 UNF	7/16-20 UNF (Flare 37°)	200	1
5/16-G1/8-200BS	200	5/16-24 UNF	G1/8-28 BSPP	200	1

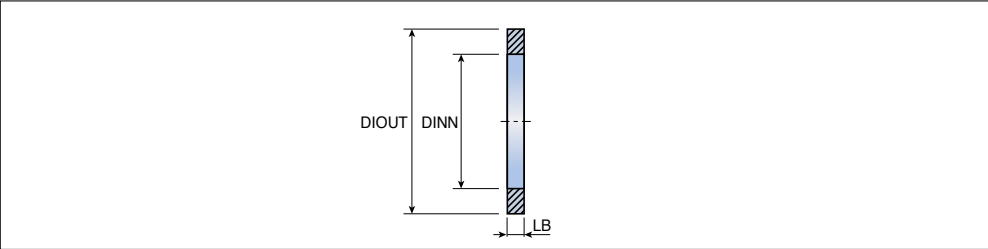
► Hose is ordered separately

Spare parts

Designation	Bolt	Seal washer
		
TB HOSE 5/16-7/16-200BS	TB BANJO BOLT 5/16" UNF	TB COPPER SEAL 5/16"
TB HOSE G1/8-G1/8-200BB	TB BANJO BOLT G1/8"	TB COPPER SEAL 1/8"
TB HOSE G1/8-G1/8-250BB	TB BANJO BOLT G1/8"	TB COPPER SEAL 1/8"

► Bolt and Seal washer are ordered separately

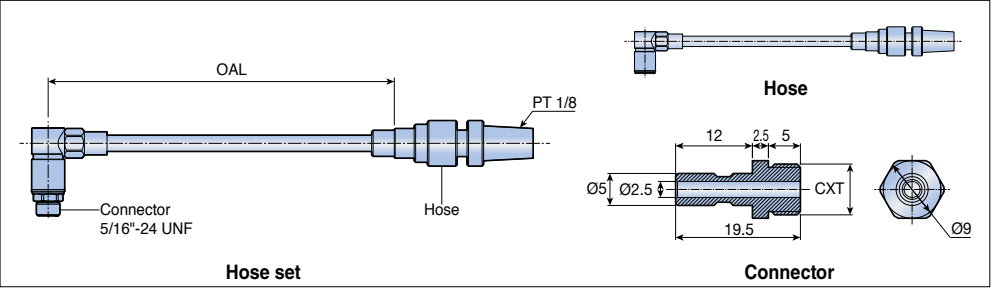
Seal washer



Designation	Dimension (mm)		
	DIOUT	DINN	LB
TB COPPER SEAL 1/8"	15	10	1
SEAL 5/16"	12	8	1

► Seal washer is ordered separately

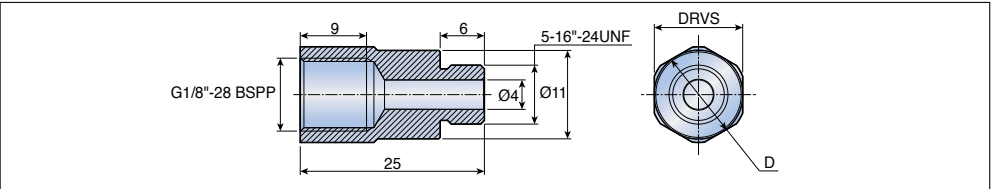
Coupling system



Components	Designation		Dimension		
			OAL (mm)	CXT	Maximum pressure (Bar)
Hose set	S-TB HOSE	R1/8-COUPLE-100	100	-	140
		R1/8-COUPLE-200	200	-	140
		R1/8-COUPLE-300	300	-	140
Hose	TB HOSE	R1/8-COUPLE-200	200	-	140
		R1/8-COUPLE-300	300	-	140
Connector	TB CONECTOR	5/16-COUPLE	-	5/16"-24 UNF	-
		G1/8-COUPLE	-	G1/8"-28 BSPP	-
		R1/8-COUPLE	-	PT 1/8"	-

► Hose set, hose and connector are ordered separately

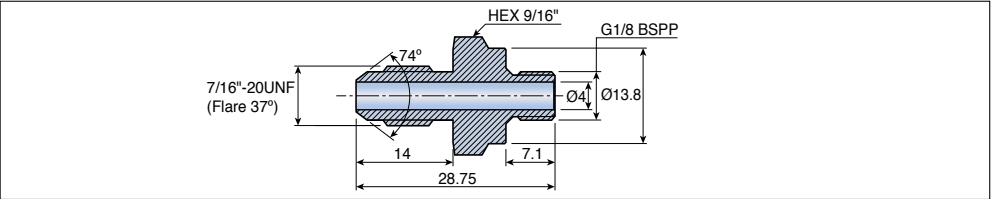
Connector



Designation	Dimension (mm)				
	D	DRVS			
TB CONECTOR 5/16"-G1/8"	13	12			
5/16"-G1/8"-12	12	11			

► Connector is ordered separately

Adapter



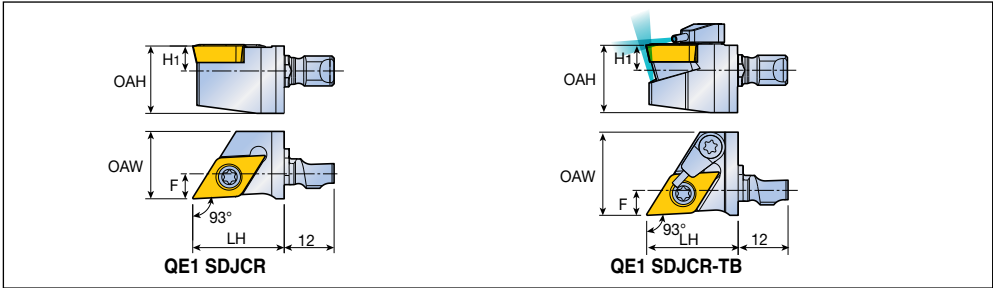
Designation
TB NIPPLE G1/8-7/16 UNF

► Adapter is ordered separately

QE1 SDJCR QE1 SDJCR-TB



Screw type modular heads for external turning



Approach angle	Designation	Dimension (mm)					Shank	Insert
		OAH	LH	OAW	H1	F		
93°	QE1 SDJCR 11	16.2	22.0	16.2	6.0	7.0	QE1 S12N-TB QE1 S16R-TB	DC... 11T3... A265-A268, A311
93°	QE1 SDJCR 11-TB	16.2	22.0	20.0	6.0	7.0		

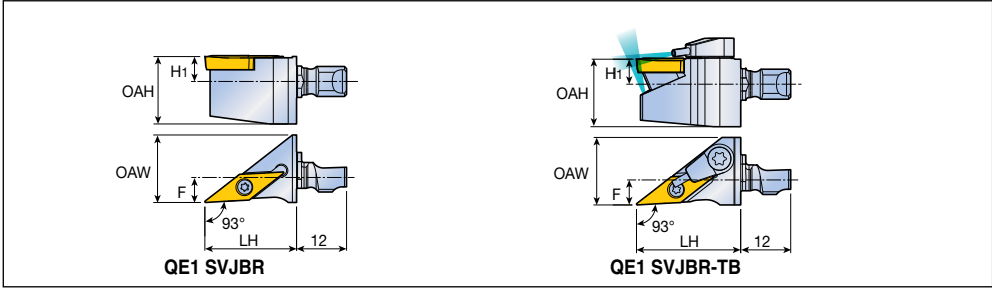
Spare parts

Designation	Screw	Cooling unit	Wrench			
...11	SO 35080I	-	T 15			
...11-TB	SO 35080I	S-CU-TB	T 15			

QE1 SVJBR QE1 SVJBR-TB



Screw type modular heads for external turning



Approach angle	Designation	Dimension (mm)					Shank	Insert
		OAH	LH	OAW	H1	F		
93°	QE1 SVJBR 11	16.2	22.0	16.2	6.0	7.0	QE1 S12N-TB QE1 S16R-TB	VB.. 1103.. A281, A282, A315
93°	QE1 SVJBR 11-TB	16.2	25.0	16.2	6.0	7.0		

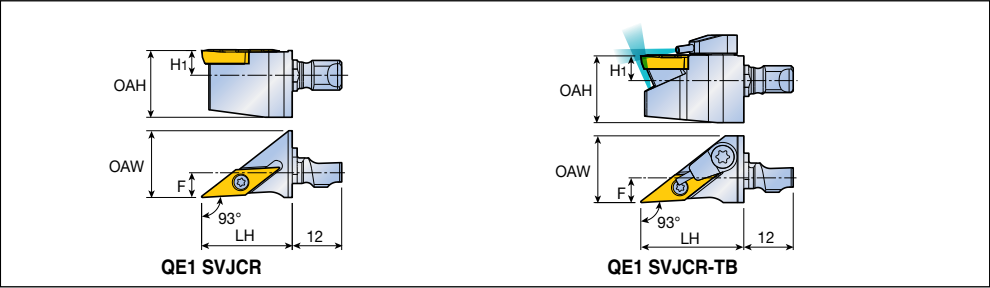
Spare parts

Designation	Screw	Cooling unit	Wrench			
...11	SO 25065I	-	T 7			
...11-TB	SO 25065I	S-CU-TB	T 7			

QE1 SVJCR QE1 SVJCR-TB



Screw type modular heads for external turning



Approach angle	Designation	Dimension (mm)					Shank	Insert
		OAH	LH	OAW	H1	F		
93°	QE1 SVJCR 11	16.2	22.0	16.2	6.0	7.0	QE1 S12N-TB QE1 S16R-TB	VC... 1103... A283, A284, A315
93°	QE1 SVJCR 11-TB	16.2	25.0	16.2	6.0	7.0		

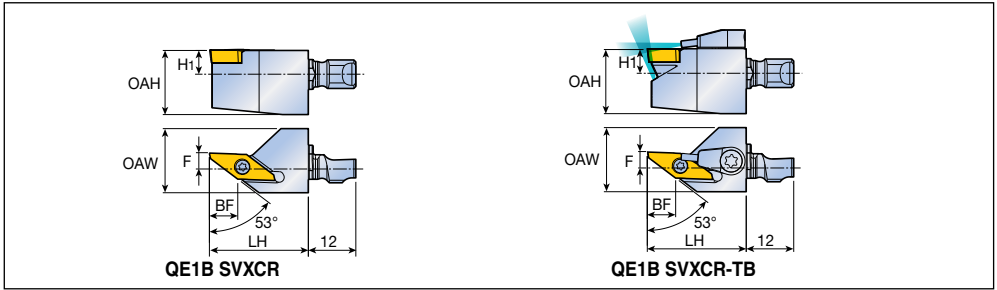
Spare parts

Designation	Screw	Cooling unit	Wrench			
...11	SO 25065I	-	T 7			
...11-TB	SO 25065I	S-CU-TB	T 7			

QE1B SVXCR QE1B SVXCR-TB



Screw type modular heads for back turning



Approach angle	Designation	Dimension (mm)						Shank	Insert
		OA H	LH	OAW	BF	H1	F		
53°	QE1B SVXCR 11	16.2	25.0	16.2	7.2	6.0	3.0	QE1 S12N-TB QE1 S16R-TB	BTVC 1103.. A259
53°	QE1B SVXCR 11-TB	16.2	25.0	16.2	7.2	6.0	3.0		

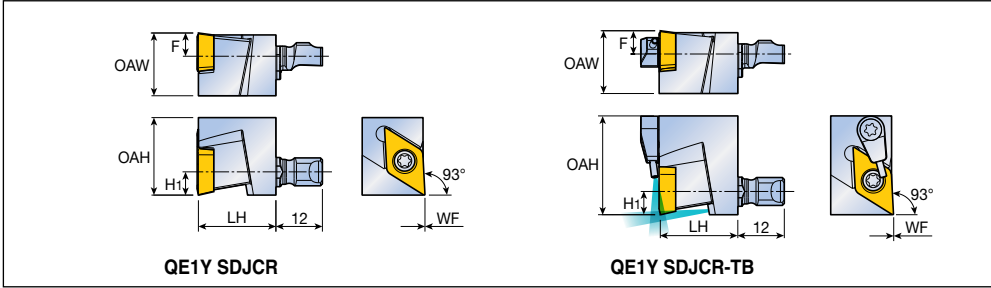
Spare parts

Designation	Screw	Cooling unit	Wrench			
...11	SO 25065I	-	T 7			
...11-TB	SO 25065I	S-CU-TB	T 7			

QE1Y SDJCR QE1Y SDJCR-TB



Screw type Y-axis modular heads



Approach angle	Designation	Dimension (mm)						Shank	Insert
		OAW	OAH	LH	WF	H1	F		
93°	QE1Y SDJCR 11	16.2	20.0	20.0	0.0	6.0	7.0	QE1 S12N-TB QE1 S16L-TB	DC.. 11T3.. A265-A268, A311
93°	QE1Y SDJCR 11-TB	16.2	25.5	20.0	0.0	6.0	7.0		

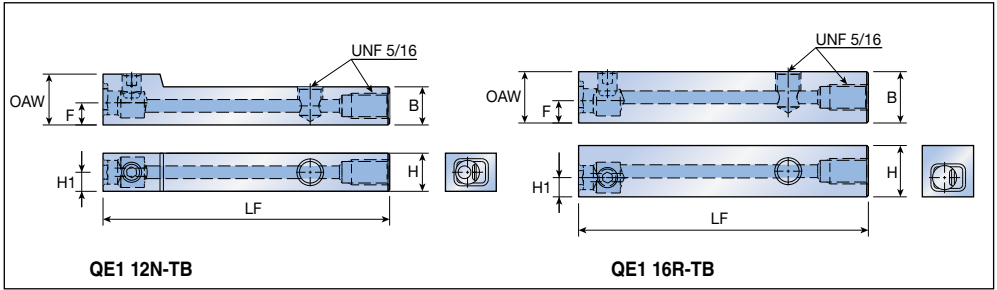
Spare parts

Designation	Screw	Cooling unit	Wrench			
...11	SO 35080I	-	T 15			
...11-TB	SO 35080I	S-CU-TB	T 15			

QE1 S12N-TB QE1 S16R/L-TB



High pressure coolant shanks for WIN-SWISS modular head



Designation	Dimension (mm)						Modular head
	H	H1	B	LF	OAW	F	
QE1 S12N-TB	12	6	12	107	16	7	QE1...R(-TB) QE1B...R(-TB)  QE1Y...R(-TB) A137-A141
QE1 S16R-TB	16	6	16	107	16	7	QE1...R(-TB) QE1B...R(-TB) QE1Y...R(-TB)
QE1 S16L-TB	16	6	16	107	16	7	QE1...R(-TB) QE1B...R(-TB) QE1Y...R(-TB)

Head designation	70 bar flow rate (ℓ/min)	100 bar flow rate (ℓ/min)	140 bar flow rate (ℓ/min)
QE1 SDJCR-TB *	9-11	11-13	14-16
QE1B SVXCR-TB	8-10	9-11	11-13
QE1Y SDJCR-TB	13-15	15-17	18-20

► * QE1 SVJBR, SVJCR, SDJNR same flow rate

Spare parts

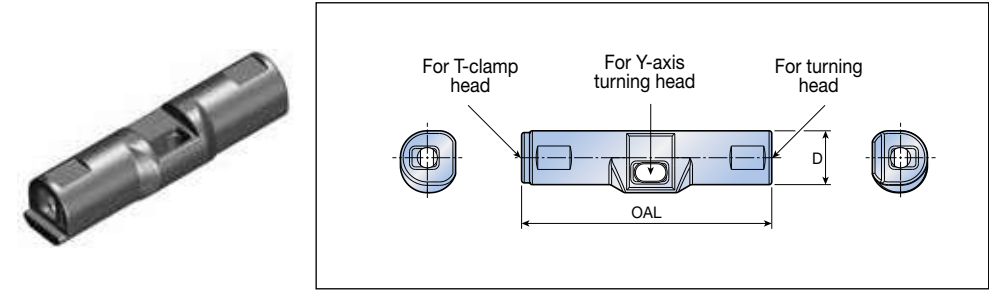
Designation	Screw	Plug	Wrench			
						
QE1...-TB	SS M6F-7	PLG 5/16 UNF	L-W 3	L-W 5/32		

► Please refer to A135 page for COOL-BURST accessories

QE1 FIX-20100



Insert replacement fixture



Designation	Dimensions (mm)	
	OAL	D
QE1 FIX-20100	93.0	20.0

► Fixture ordered separately

Insert replacement

► Due to the WIN-SWISS' small head sizes, replacing the inserts could be difficult.
Please use the fixture to facilitate insert replacement.

► Y-axis turning head



► T-clamp head



► Turning head

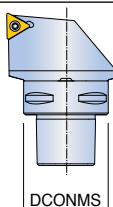


C4 - T C L N R

1 2 3 4 5 6

1 Coupling size

Symbol	D CONMS (mm)
C4	40
C5	50
C6	63



2 Clamping system

P	C	S	M	T	W	H
Lever lock	Top clamp	Screw clamp	Multi lock	T-holder	Wedge clamp	Hook lever

3 Insert shape

C	D	E	H	K	R	S	T	V	W

4 Approach angle

Symbol	Shape	Offset	Symbol	Shape	Offset	Symbol	Shape	Offset
A		x	J		○	V		x
			K		○	W		○
B		x	L		○	X	Special angle	
			M		x	C*		x
D		x	N		x	H*		○
E		x	R		○	Q*		○
F		○	S		○			
G		○	T		○			
			U		○			

* TaeguTec standard

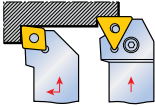
27 055 - 09

7 8 9 10

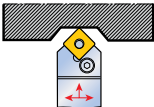
5 Insert clearance angle

			
N	B	C	P

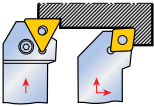
6 Hand of tool



R: Right hand

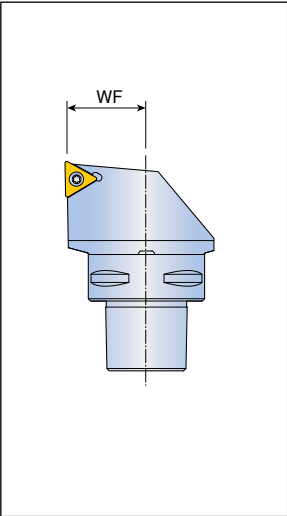


N: Neutral

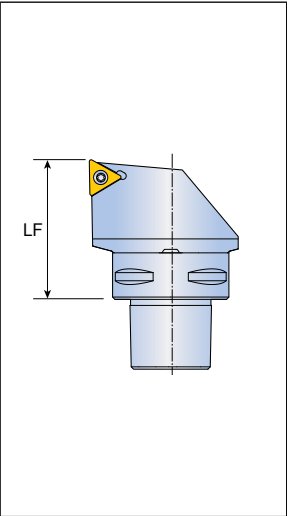


L: Left hand

7 WF dimension (mm)

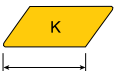


8 Tool length (mm)



9 Cutting edge length







See page A225

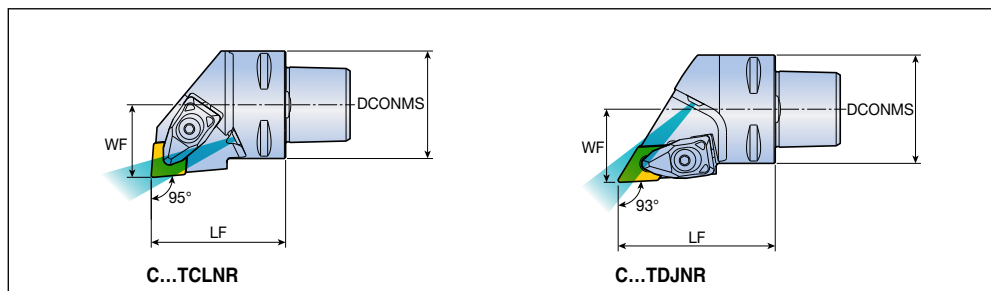
10 Manufacturer's type designation

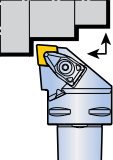
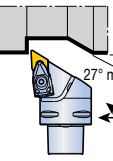
Unique to manufacturer

C...TCLNR/L C...TDJNR/L



T-holders with C-ADAPTER

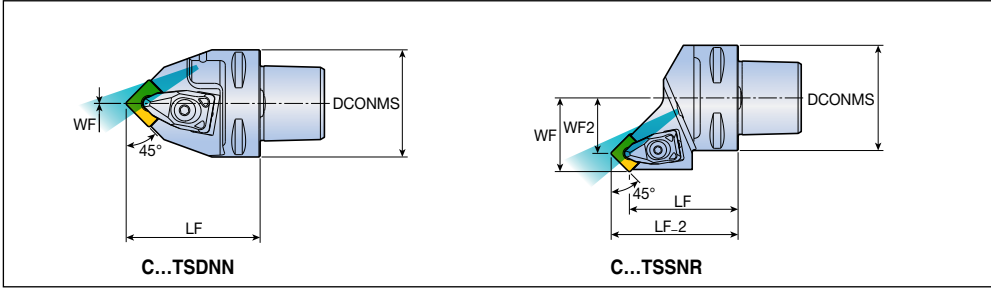


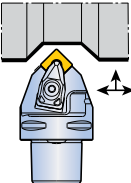
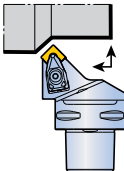
Approach angle	Designation	Dimension (mm)			Insert
		DCONMS	WF	LF	
95° 	C4-TCLNR/L 27050-12	40	27	50	CN...1204... 
	C5-TCLNR/L 35060-12	50	35	60	A226,
	C6-TCLNR/L 45065-12	63	45	65	A228-A232,
	C4-TCLNR/L 27055-16	40	27	55	CN...1606... A291, A292,
	C5-TCLNR/L 35060-19	50	35	60	CN...1906... A303
	C6-TCLNR/L 45065-19	63	45	65	
93° 	C4-TDJNR/L 27058-1504	40	27	58	DN...1504... 
	C4-TDJNR/L 27058-1506	40	27	58	DN...1506... A234-A238,
	C5-TDJNR/L 35060-1504	50	35	60	DN...1504... A293, A304
	C5-TDJNR/L 35060-1506	50	35	60	DN...1506...
	C6-TDJNR/L 45065-1504	63	45	65	DN...1504...
	C6-TDJNR/L 45065-1506	63	45	65	DN...1506...

Spare parts

Designation	Clamp 	Clamp screw 	Spring 	Shim 		Shim screw 	Nozzle 	Wrench 	
C4...12	DLM 4	DLS 4	DSP 4	TSC 44	-	SO 40050I	NZ 83	L-W 3	T 15
...12	DLM 4	DLS 4	DSP 4	TSC 44	-	SO 40050I	NZ 104	L-W 3	T 15
...16	DLM 5	DLS 5	DSP 5	TSC 54	-	SO 50090I	NZ 83	L-W 4	T 20
...19	DLM 6	DLS 5	DSP 5	LSC 63	-	SO 80180I	NZ 104	L-W 4	T 20
...1504	DLM 4	DLS 4	DSP 4	-	TSD 44	SO 40050I	NZ 83	L-W 3	T 15
C4...1506	DLM 4	DLS 4	DSP 4	-	TSD 43	SO 40050I	NZ 83	L-W 3	T 15
...1506	DLM 4	DLS 4	DSP 4	-	TSD 43	SO 40050I	NZ 104	L-W 3	T 15

T-holders with C-ADAPTER

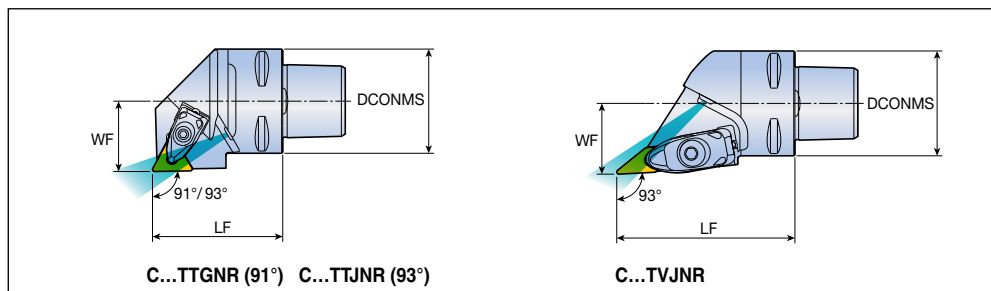


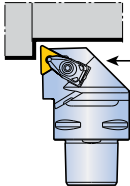
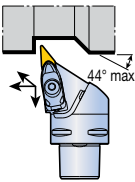
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	WF	WF2	LF	LF_2		
45° 	C4-TSDNN 00050-12	40	-	-	50	-	SN...1204...  A241, A243-A246	
	C5-TSDNN 00060-12	50	-	-	60	-		
	C6-TSDNN 00065-12	63	-	-	65	-		
45° 	C4-TSSNR/L 27042-12	40	27	18.7	42	50.3		
	C5-TSSNR/L 35052-12	50	35	26.7	52	60.3		
	C6-TSSNR/L 45056-12	63	45	36.7	56	64.3		

Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
								
C4...12	DLM 4	DLS 4	DSP 4	TSS 44	SO 40050I	NZ 83	L-W 3	T 15
...12	DLM 4	DLS 4	DSP 4	TSS 44	SO 40050I	NZ 104	L-W 3	T 15

T-holders with C-ADAPTER

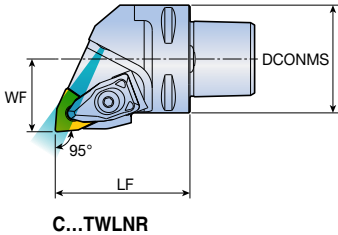


Approach angle	Designation	Dimension (mm)			Insert
		DCONMS	WF	LF	
91°/93° 	C4-TTGNR/L 27050-16	40	27	50	TN...1604...  A247-A250, A299, A307
	C5-TTGNR/L 35060-16	50	35	60	
	C6-TTGNR/L 45065-16	63	45	65	
	C4-TTJNR/L 27050-16	40	27	50	
	C5-TTJNR/L 35060-16	50	35	60	
	C6-TTJNR/L 45065-16	63	45	65	
93° 	C4-TVJNR/L 27068-16	40	27	68	VN...1604...  A251-A252, A300, A308
	C5-TVJNR/L 35065-16	50	35	65	
	C6-TVJNR/L 45068-16	63	45	68	

Spare parts

Designation	Clamp 	Clamp screw 	Spring 	Shim 		Shim screw 	Nozzle 	Wrench 	
C4...TT...16	DLM 3	DLS 3	DSP 3	TST 33	-	SO 35080I	NZ 83	L-W 2.5	T 15
...TT...16	DLM 3	DLS 3	DSP 3	TST 33	-	SO 35080I	NZ 104	L-W 2.5	T 15
C4...TV...16	DLM 3V	DLS 5	DSP 5	-	TSV 33	SO 35080I	NZ 83	L-W 4	T 15
...TV...16	DLM 3V	DLS 5	DSP 5	-	TSV 33	SO 35080I	NZ 104	L-W 4	T 15

T-holders with C-ADAPTER



Approach angle	Designation	Dimension (mm)			Insert
		DCONMS	WF	LF	
95°	C4-TWLNR/L 27050-06	40	27	50	WN...G 0604...
	C4-TWLNR/L 27050-08	40	27	50	WN... 0804...
	C5-TWLNR/L 35060-08	50	35	60	A253-A255,
	C6-TWLNR/L 45065-08	63	45	65	A300, A309

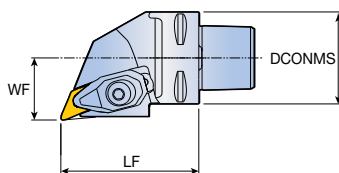
Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
...06	DLM 3	DLS 3	DSP 3	PSW 32	SO 40090I	NZ 83	L-W 2.5	T 15
C4...08	DLM 4	DLS 4	DSP 4	TSW 44	SO 40050I	NZ 83	L-W 3	T 15
...08	DLM 4	DLS 4	DSP 4	TSW 44	SO 40050I	NZ 104	L-W 3	T 15

C...TZQNR/L-TB

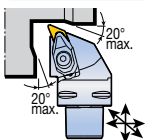


High pressure T-holders with C-ADAPTER

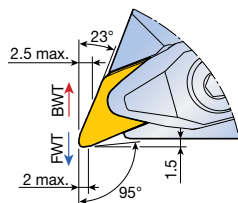
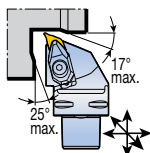


C...TZQNR-TB **COOLBUST**

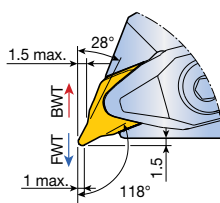
Approach angle	Designation	Dimension (mm)			Insert
		DCONMS	WF	LF	
ZNMV 23°(BWT) 95°(FWT)	C4-TZQNR/L 27060-1410-TB	40	27	60	ZNMV 1410... POSTURN A258
	C5-TZQNR/L 35060-1410-TB	50	35	60	
	C6-TZQNR/L 45065-1410-TB	63	45	65	



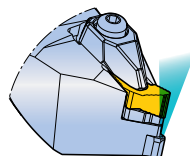
ZNMV Y-BF
28°(BWT)
118°(FWT)



ZNMV



ZNMV Y-BF



- BWT: Backward turning
- FWT: Forward turning

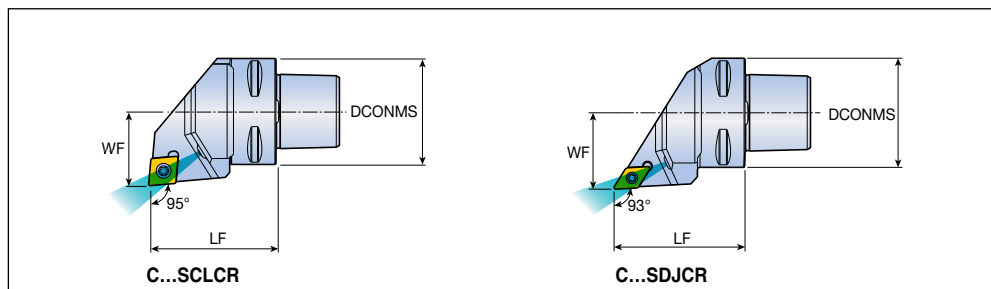
Spare parts

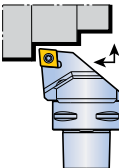
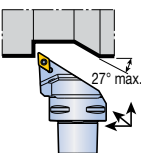
Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
C...1410-TB	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 350831/HG	L-W 4	T 10

C...SCLCR/L C...SDJCR/L



Screw type holders with C-ADAPTER



Approach angle	Designation	Dimension (mm)			Insert
		DCONMS	WF	LF	
95° 	C4-SCLCR/L 27050-09	40	27	50	CC... 09T3...  A260-A263, A310
	C5-SCLCR/L 35060-09	50	35	60	
	C6-SCLCR/L 45065-09	63	45	65	
	C4-SCLCR/L 27050-12	40	27	50	
	C5-SCLCR/L 35060-12	50	35	60	
	C6-SCLCR/L 45065-12	63	45	65	
93° 	C4-SDJCR/L 27050-11	40	27	50	DC... 11T3...  A265-A268, A311
	C5-SDJCR/L 35060-11	50	35	60	
	C6-SDJCR/L 45065-11	63	45	65	

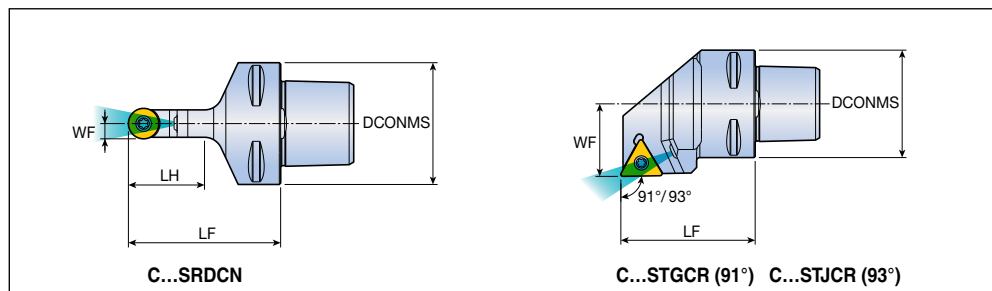
Spare parts

Designation	Screw	Shim		Shim screw	Nozzle	Wrench		
								
C4...09	SO 35124I	SSC 32	-	SO 50090S	NZ 83	T 15	L-W 3.5	
...09	SO 35124I	SSC 32	-	SO 50090S	NZ 104	T 15	L-W 3.5	
C4...11	SO 35124I	-	SSD 32	SO 50090S	NZ 83	T 15	L-W 3.5	
...11	SO 35124I	-	SSD 32	SO 50090S	NZ 104	T 15	L-W 3.5	
C4...12	SO 45130I	SSC 43N	-	SO 60105S	NZ 83	T 20	L-W 5	
...12	SO 45130I	SSC 43N	-	SO 60105S	NZ 104	T 20	L-W 5	

C...SRDCN C...STGCR/L C...STJCR/L



Screw type holders with C-ADAPTER



Approach angle	Designation	Dimension (mm)				Insert
		DCONMS	WF	LF	LH	
45°	C4-SRDCN 00050-10A	40	5	50	25	RC...T 10T3... 
	C5-SRDCN 00060-10A	50	5	60	25	
	C6-SRDCN 00065-10A	63	5	65	25	
	C4-SRDCN 00050-12A	40	6	50	28	RC...T 1204... 
	C5-SRDCN 00060-12A	50	6	60	28	
	C6-SRDCN 00065-12A	63	6	65	28	
91°/93°	C4-STGCR/L 27050-16	40	27	50	-	TC... 16T3... 
	C5-STGCR/L 35060-16	50	35	60	-	
	C4-STJCR/L 27050-16	40	27	50	-	
	C5-STJCR/L 35060-16	50	35	60	-	

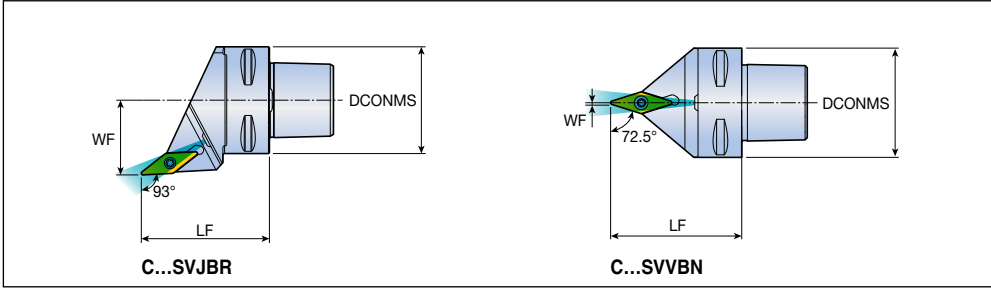
Spare parts

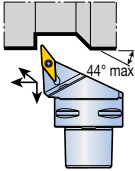
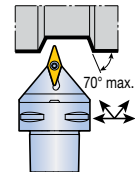
Designation	Screw	Shim		Shim screw	Nozzle	Wrench	
							
C4...10A	TS 40097I	TRC 3-0	-	SR TC-3	NZ 62	T 15	-
...10A	TS 40097I	TRC 3-0	-	SR TC-3	NZ 62	T 15	-
C4...12A	SO 40050I	TRC 4-0	-	SR TC-4S	NZ 62	T 15	-
...12A	SO 40050I	TRC 4-0	-	SR TC-4S	NZ 62	T 15	-
C4...16	SO 35124I	-	SST 32	SO 50090S	NZ 83	T 15	L-W 3.5
...16	SO 35124I	-	SST 32	SO 50090S	NZ 104	T 15	L-W 3.5

C...SVJBR/L C...SVVBN



Screw type holders with C-ADAPTER



Approach angle	Designation	Dimension (mm)			Insert
		DCONMS	WF	LF	
93° 	C4-SVJBR/L 27050-16	40	27	50	VB...T 1604...  A281, A282, A315
	C5-SVJBR/L 35060-16	50	35	60	
	C6-SVJBR/L 45065-16	63	45	65	
72.5° 	C4-SVVBN 00050-16	40	0.6	50	
	C5-SVVBN 00060-16	50	0.6	60	
	C6-SVVBN 00065-16	63	0.6	65	

Spare parts

Designation	Screw	Shim	Shim screw	Nozzle	Wrench			
								
C4...16	SO 35124I	SSV 32	SO 50090S	NZ 83	T 15	L-W 3.5		
...16	SO 35124I	SSV 32	SO 50090S	NZ 104	T 15	L-W 3.5		

CADAPTER

C...SCLCR

C...SDUCR

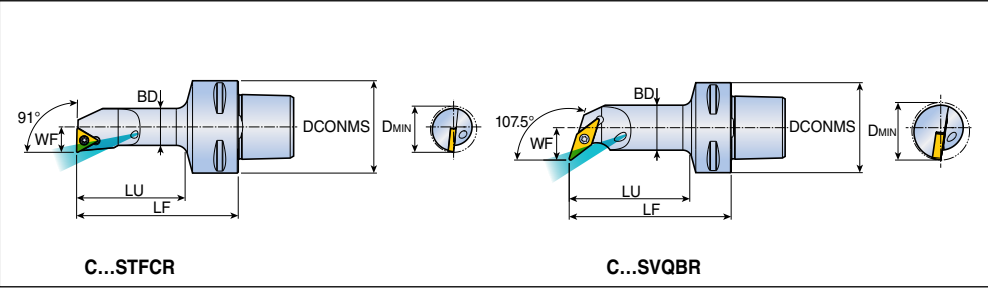
The diagram illustrates the adjustment range of the angle bracket. The top part shows the bracket in a 93° position, and the bottom part shows it in a 30° max position. A curved arrow indicates the range of movement between these two positions.

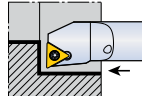
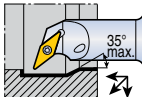
[illegible]

C...STFCR/L C...SVQBR/L



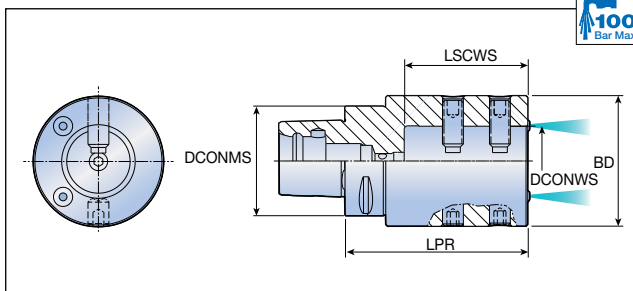
Screw type boring bar with C-ADAPTER



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	LF	LU	WF	BD	DMIN	
91° 	C4-STFCR/L-11070-1102	40	70	47	11	16	20	TC...T 1102... A275, A276, A313-A314
	C5-STFCR/L-11070-1102	50	70	46	11	16	20	
107.5° 	C4-SVQBR/L-18090-16	40	90	68	18	25	32	VBMT 1604... A282
	C5-SVQBR/L-18090-16	50	90	67	18	25	32	

Spare parts

Designation	Screw	Wrench				
						
C...STFCR/L	SO 25065I	T 7				
C...SVQBR/L	SO 35080I	T 15				

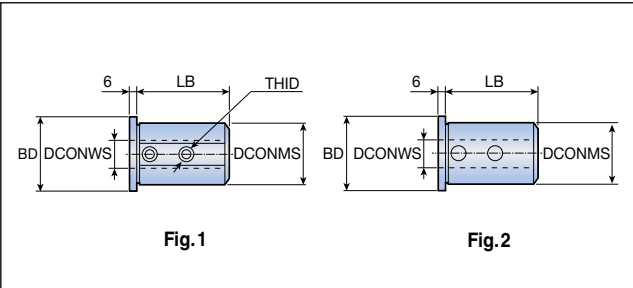


Spare parts

Designation	Stopper screw	Screw		Nozzle	Wrench	
						
C...60	SR M10x6 DIN913 ⁽¹⁾	SR M10x20 DIN915 ⁽³⁾	SR M10x12 DIN1835-B ⁽²⁾	SATZ- M12x1-M6	HP M12*	L-W 5*
C...70/72	SR M10x6 DIN913 ⁽¹⁾	SR M12x30 DIN915 ⁽³⁾	SR M12x16 DIN1835-B ⁽²⁾	SATZ- M12x1-M6	HP M12*	L-W 6*

► ⁽¹⁾ Rear stopper screw ⁽²⁾ Used on A-type sleeves ⁽³⁾ Used on B-type sleeves

Reduction sleeves for bars, used in holders with exchangeable adaptation

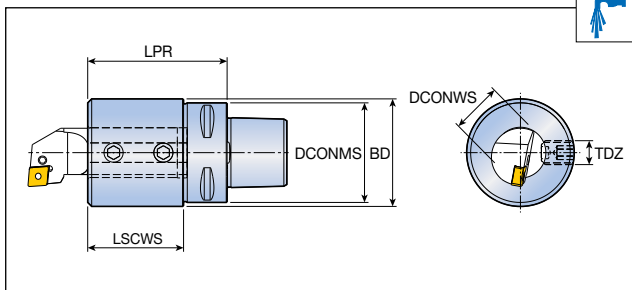


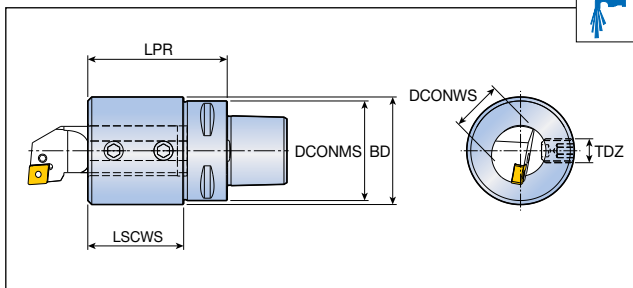
Designation	Dimension (mm)					Fig.
	DCONMS	DCONWS	BD	LB	THID	
SC 25T6A	25	6	31	56	M6	1
25T8A	25	8	31	56	M8	1
25T10A	25	10	31	56	M8	1
25T12A	25	12	31	56	M8	1
25T16B	25	16	31	56	-	2
25T20B	25	20	31	56	-	2
SC 40T6A	40	6	46	60	M6	1
40T8A	40	8	46	60	M8	1
40T10A	40	10	46	60	M8	1
40T12A	40	12	46	60	M8	1
40T16B	40	16	46	60	-	2
40T20B	40	20	46	60	-	2
40T25B	40	25	46	60	-	2
40T32B	40	32	46	60	-	2
SC 50T6A	50	6	56	70	M6	1
50T8A	50	8	56	70	M8	1
50T10A	50	10	56	70	M8	1
50T12A	50	12	56	70	M8	1
50T16B	50	16	56	80	-	2
50T20B	50	20	56	80	-	2
50T25B	50	25	56	80	-	2
50T32B	50	32	56	80	-	2

Spare parts

Designation	Screw		Wrench		
					
...25T/50T 6A	SR M6x6 DIN916	-	L-W 3*		
...25T 8A/10A/12A	SR M8x6 DIN916	-	L-W 4*		
...50T 8A/10A/12A	SR M8x6 DIN916	-	L-W 4*		
...40T 6A	-	SR M6x10 DIN1835-B	L-W 3*		
...40T 8A/10A/12A	-	SR M8x10 DIN1835-B	L-W 4*		

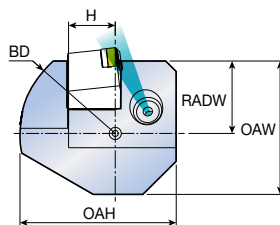
► *: Optional, should be ordered separately

[illegible]

[illegible]

Designation	Screw	Wrench				
...10	SR M6x10 DIN1835-B	L-W 3*				
...12/16	SR M8x10 DIN1835-B	L-W 4*				
...20	SR M10x12 DIN1835-B	L-W 5*				
...25/32/40/50	SR M12x16 DIN1835-B	L-W 6*				





Left-hand shown

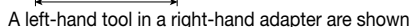
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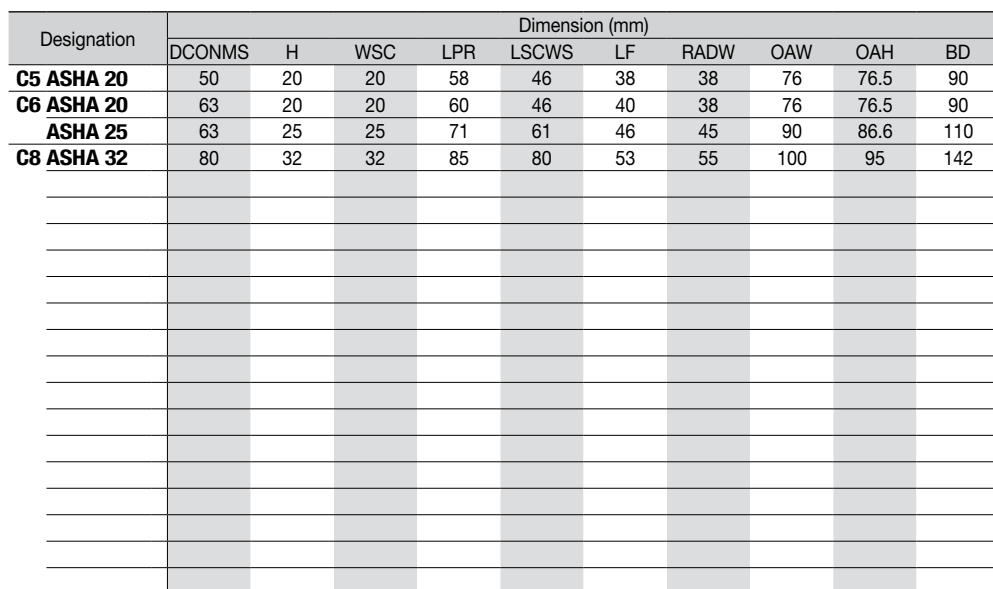
Spare parts

Designation	Screw	Nozzle	Wrench	
				
...16-1	SR M8x16 DIN915	SATZ-M10x1-M5	HP M10*	L-W 5*
...20-1	SR M10x25 DIN915	SATZ-M10x1-M5	HP M10*	L-W 5*
...25-1/32-1	SR M12x30 DIN915	SATZ-M12x1-M6	HP M12*	L-W 6*

► *: Optional, should be ordered separately

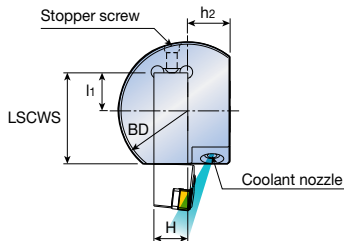
ADAPTER





Designation	Screw	Nozzle	Wrench	
...20	SR M10x25 DIN915	SATZ-M10x1-M5	HP M10*	L-W 5*
...25	SR M12x30 DIN915	SATZ-M12x1-M6	HP M12*	L-W 6*
...32	SR M12x30 DIN915	SATZ-M12x1-M6	HP M12*	L-W 6*

ADVANCECUTTING
TaeguTec

[illegible]

Designation	Stopper screw	Screw	Nozzle	Wrench
C3...16R/L	SR M6x8 DIN916 ⁽¹⁾	SR M10x20 DIN915	SATZ-M8x1-M3	L-W 3*, L-W 5*
C4...20R/L	SR M8x10 DIN913 ⁽¹⁾	SR M10x20 DIN912	EZ 125	L-W 4*, L-W 8*
C5...20R/L	SR M8x10 DIN916 ⁽¹⁾	SR M10x16	EZ 125	L-W 4*, L-W 8*



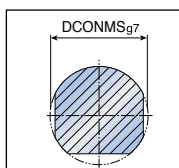
S 32 S - C T F P R - 16 -

1 2 3 4 5 6 7 8 9 10

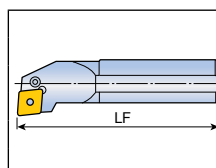
1 Boring bar

S	Steel shank
A	Coolant through steel shank
C	Carbide shank
E	Coolant through carbide shank
X	Special

2 Bar diameter



3 Tool length



K	125	U	350
M	150	V	400
Q	180	W	450
R	200	Y	500
S	250	X	Special
T	300		

4 Clamping system

Lever lock	Top clamp	Screw clamp	Multi lock	T-holder	Wedge clamp	Hook lever

5 Insert shape

C	D	E	H	K	R	S	T	V	W

6 Approach angle

L	K	U	Z	F	Q	P

7 Insert clearance angle

N	B
C	P

8 Hand of tool

R	
	Right hand Left handed insert used
L	
	Left hand Right handed insert used

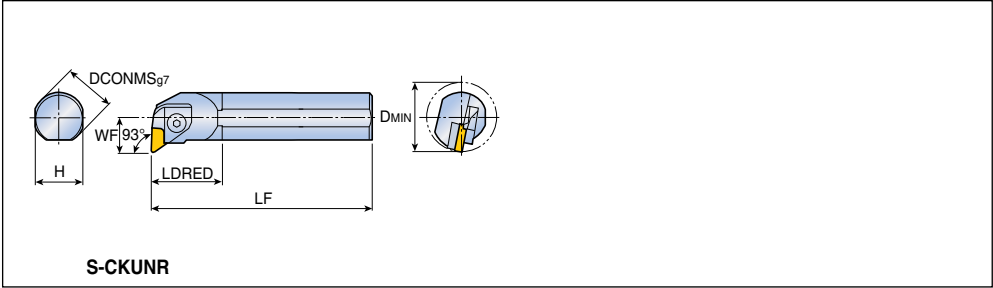
9 Cutting edge length

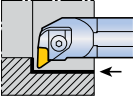
See page A225		

10 Manufacturer's type designation

Unique to manufacturer

Top clamp type boring bars



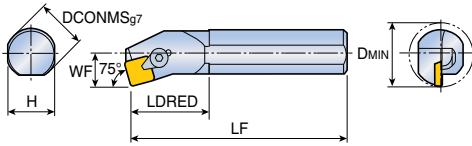
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
93°	S32T CKUNR/L 16	32	30	300	45	22	44	KNUX 1604...R/L  A239
	S40T CKUNR/L 16	40	37	300	55	27	54	
	S40V CKUNR/L 16	40	37	400	55	27	54	
	S50U CKUNR/L 16	50	47	350	60	35	67.2	
								

Spare parts

Designation	Clamp 	Screw 	Clamp spring 	Shim 	Shim screw 	Pin & spring 	Wrench 	
...16	CL 16KR/L	CLS 16K	KSP 90	CSK 1604R/L	FH M3x0.5 x10	KSP 48 KP 48S	L-W 4	

T-TURN

Top clamp type boring bars



S-CSKPR

[illegible]

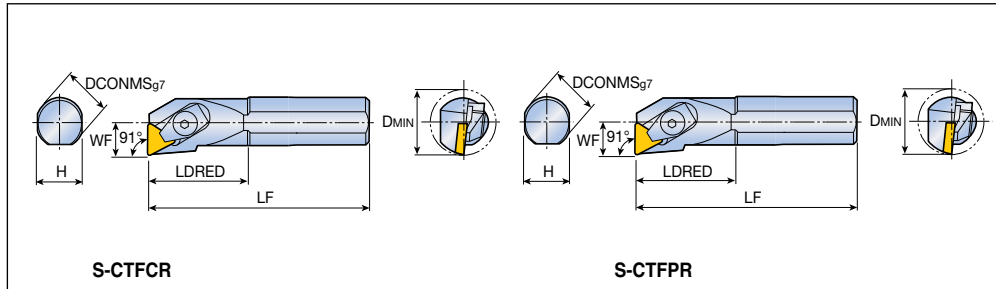
Spare parts

Designation	Clamp		Screw	Snap ring	Shim	Shim pin	Wrench
...09	CL 2C	-	CLS 2C	CSR 2C	-	-	L-W 2.5
S20R...12	CL 3C	-	CLS 3C	CSR 2	CSS 42	CSP 3	L-W 3
S25T ...12	-	CL 3	CLS 3S	WSR 4	CSS 42	CSP 3	L-W 3
S32U...12	-	CL 3	CLS 3	WSR 4	CSS 42	CSP 3	L-W 3

S-CTFCR/L S-CTFPR/L



Top clamp type boring bars

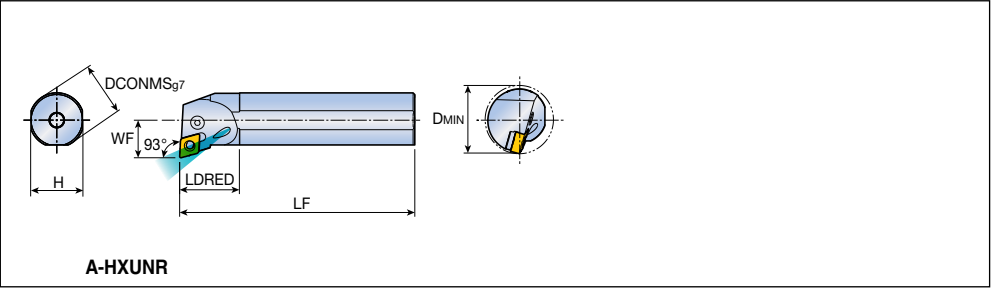


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
91°	S10K CTFCR/L 06	10	9	125	25	6.5	12	TCGR 0601...
91°	S10K CTFPR/L 06	10	9	125	25	6.5	12	TP...R 0601...
	S12M CTFPR/L 06	12	11	150	30	9	16	A278-A280, A302, A313-A314
	S12M CTFPR/L 09	12	11	150	25	9	16	
	S12M CTFPR/L 11	12	11	150	30	9	16	
	S16R CTFPR/L 11	16	15	200	30	11	20	TP...R, TP...N 1103...
	S20S CTFPR/L 11	20	18	250	35	13	25	TP...R, TP...N 1603...
	S16R CTFPR/L 16	16	15	200	40	11	20	
	S20S CTFPR/L 16	20	18	250	50	13	25	
	S25T CTFPR/L 16	25	23	300	40	17	32	
	S32T CTFPR/L 16	32	30	300	45	22	40	
	S40T CTFPR/L 16	40	37	300	41.5	27	50	
	S50U CTFPR/L 16	50	47	350	56	35	63	
	S40T CTFPR/L 22	40	37	300	41.5	27	50	TPMR, TP...N 2204...
	S50U CTFPR/L 22	50	47	350	56	35	63	

Spare parts

Designation	Clamp			Screw	Snap ring	Shim	Shim pin	Wrench
...06	CL 1.25	-	-	CLS 1.25	CSR 1.25	-	-	L-W 1.5
...09	CL 1.25	-	-	CLS 1.25	CSR 1.25	-	-	L-W 1.5
...11	-	CL 2C	-	CLS 2C	CSR 2C	-	-	L-W 2.5
S16R...16	-	CL 3C	-	CLS 3C	CSR 2	-	-	L-W 3
S20S...16	-	CL 3C	-	CLS 3C	CSR 2	-	-	L-W 3
S25T...16	-	-	CL 3	CLS 3S	WSR 4	-	-	L-W 3
...16	-	-	CL 3	CLS 3	WSR 4	CST 32	CSP 3	L-W 3
...22	-	-	CL 4	CLS 4	CSR 4	CST 43	CSP 16K	L-W 4

Hook lever type boring bars

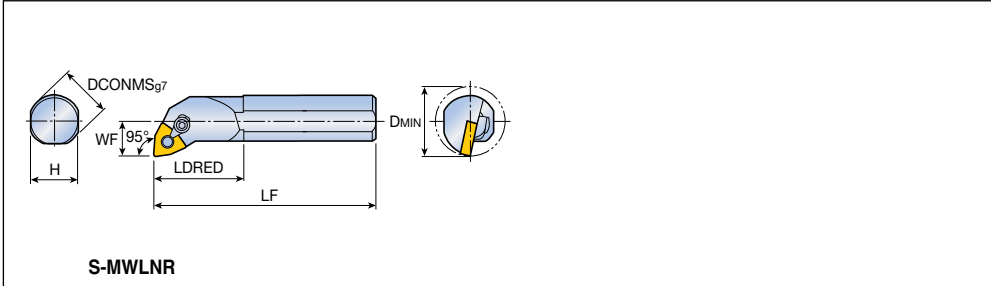


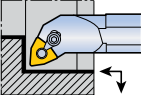
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
93°	A32S HXUNR/L 1105	32	30	250	35	22	40	XN... 1105...
								
								
								A257

Spare parts

Designation	Lever	Lever screw	Shim	Shim pin	Wrench			
...1105	 LCL 11-NX	 LCS 4S	 LSX 3.52B	 LSP 4	 L-W 3			

Multi lock type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95°	S25R MWLNLR/L 08	25	23	200	42	17	32	WN... 0804...  A253-A255, A300, A309
	S32S MWLNLR/L 08	32	30	250	45	22	40	
								

Spare parts

Designation	Clamp	Screw	Snap ring	Lock pin	Wrench			
								
...08	CL 2	CLS 2	CSR 2	MLP 4S	L-W 2.5			

T-TURN

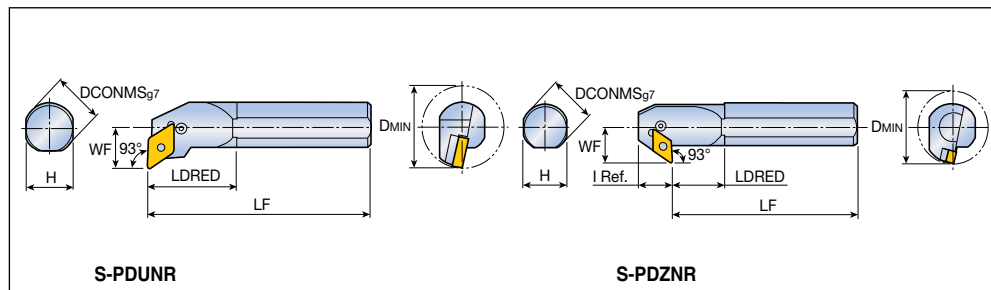
S-PCLNR

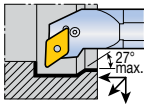
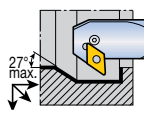
[illegible]

S-PDUNR/L S-PDZNR/L



Lever lock type boring bars



Approach angle	Designation	Dimension (mm)							Insert
		DCONMS	H	LF	LDRED	WF	I	DMIN	
93° 	S32T PDUNR/L 15	32	30	300	45	22	-	40	DN...1506...  A234-A238, A293, A304
	S40T PDUNR/L 15	40	37	300	55	27	-	50	
	S50U PDUNR/L 15	50	47	350	70	35	-	63	
	S32T PDUNR/L 15-A	32	30	300	35	22	-	40	
93°  For back boring	S32T PDZNR/L 15	32	30	300	30	25	26	45	DN...1506...
	S40T PDZNR/L 15	40	37	300	35	29	26	50	
	S50U PDZNR/L 15	50	47	350	45	35	27	63	

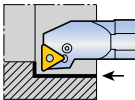
Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
S32T ...15								
S40T PDZ ...15	LCL 4A	LCS 4S	LSD 42	LSP 4	L-W 3			
...15	LCL 4A	LCS 4	LSD 42	LSP 4	L-W 3			
...15-A	LCL 4A	LCS 4S	LSD 42	LSP 4	L-W 3			

S-PSKNR

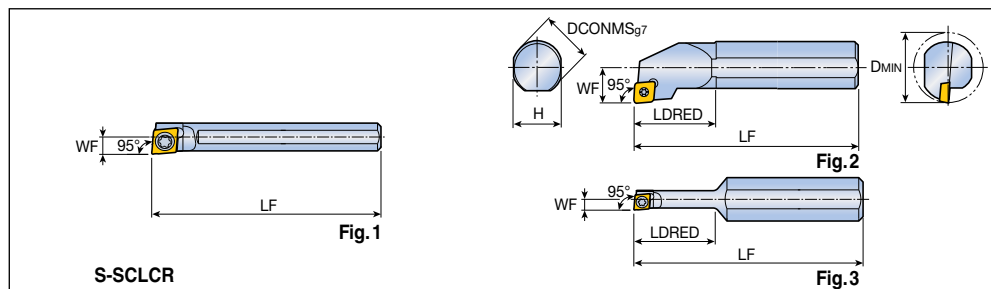
T-TURN

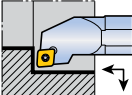
S-PTFNR

Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
 91°	S20Q PTFNR/L11	20	18	180	40	13	25	TN... 1103...
	S25T PTFNR/L16	25	23	300	40	17	32	TN... 1604... 
	S32T PTFNR/L16	32	30	300	45	22	40	A247-A250,
	S40T PTFNR/L16	40	37	300	60	27	50	A299, A307
	S50U PTFNR/L16	50	47	350	56	35	63	
	S40T PTFNR/L22	40	37	300	56	27	50	TN... 2204...
	S50U PTFNR 22	50	47	350	56	35	63	

[illegible]

Screw type boring bars



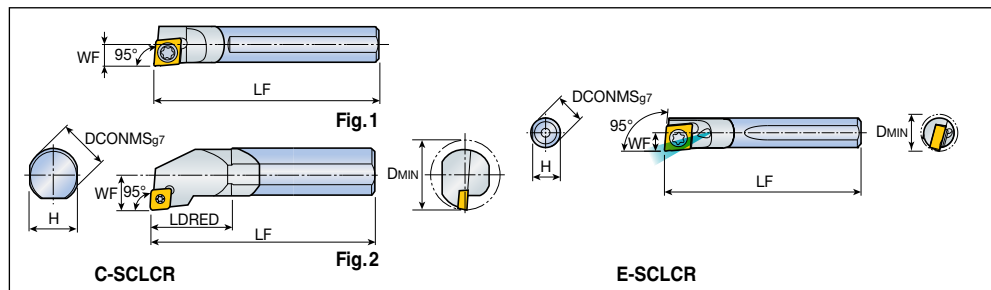
Approach angle	Designation	Dimension (mm)							Fig.	Insert
		DCONMS	H	LF	LDRED	WF	DMIN			
95° 	S04F SCLCR/L 03-D05	4	3.75	80	-	2.5	5	1	CC...T 0301...	 A260-A263, A310
	S05G SCLCR/L 03-D06	5	4.75	90	-	3	6	1		
	S10H SCLCR/L 03-D05	10	9	100	15	2.5	5	3		
	S06H SCLCR/L 04-D07	6	5.5	100	-	3.5	7	1	CC...T 0401...	
	S07J SCLCR/L 04-D08	7	6.5	110	-	4	8	1		
	S08K SCLCR/L 06	8	7	125	18	6	11	2	CC... 0602...	
	S10K SCLCR/L 06	10	9	125	20	7	13	2		
	S12M SCLCR/L 06	12	11	150	25	9	16	2		
	S16R SCLCR/L 06	16	15	200	30	11	20	2		
	S12M SCLCR/L 09	12	11	150	23	9	16	2	CC... 09T3...	
	S16R SCLCR/L 09	16	15	200	30	11	20	2		
	S20S SCLCR/L 09	20	18	250	32	13	25	2		
	S25T SCLCR/L 12	25	23	300	42	17	32	2	CC... 1204...	
	S32T SCLCR/L 12	32	30	300	45	22	40	2		
	S40T SCLCR/L 12	40	37	300	55	27	50	2		

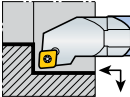
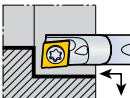
► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

Spare parts

Designation	Screw 	Shim 	Shim screw 	Wrench 			
...03	TS 16031I	-	-	T 6	-		
...04	TS 20038I/HG-P	-	-	T 6P	-		
S...K ...06	SO 25050I	-	-	T 7	-		
...06	SO 25065I	-	-	T 7	-		
...09	SO 35080I	-	-	T 15	-		
S25T ...12	SO 45100I	-	-	T 20	-		
...12	SO 45130I	SSC 43N	SO 60105S	T 20	L-W 5		

Screw type boring bars



Approach angle	Designation	Dimension (mm)							Fig.	Insert
		DCONMS	H	LF	LDRED	WF	DMIN			
95° 	✓ C04G SCLCR/L 03-D05	4	3.75	90	-	2.5	5	1	CC...T 0301...	 A260-A263, A310
	✓ C05H SCLCR/L 03-D06	5	4.75	100	-	3	6	1	CC...T 0401...	
	✓ C06J SCLCR/L 04-D07	6	5.5	110	-	3.5	7	1	CC...T 0401...	
	✓ C07K SCLCR/L 04-D08	7	6.5	125	-	4	8	1	CC... 0602...	CC... 09T3...
	✓ C08K SCLCR/L 06	8	7	125	15	6	11	2	CC... 0602...	
	✓ C10K SCLCR/L 06	10	9	125	15	7	13	2		
	✓ C12M SCLCR/L 06	12	11	150	18	9	16	2		
	✓ C12M SCLCR/L 09	12	11	150	18	9	16	2		
	✓ C16R SCLCR/L 09	16	15	200	25	11	20	2		
✓ C20S SCLCR/L 09	20	18	250	25	13	25	2			
95° 	✓ E04G SCLCR/L 03-D05	4	3.75	90	-	2.5	5	-	CC...T 0301...	
	✓ E05H SCLCR/L 03-D06	5	4.75	100	-	3	6	-	CC...T 0401...	
	✓ E06J SCLCR/L 04-D07	6	5.5	110	-	3.5	7	-	CC...T 0401...	
	✓ E07K SCLCR/L 04-D08	7	6.5	125	-	4	8	-		

► ✓: Designates carbide shank ► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

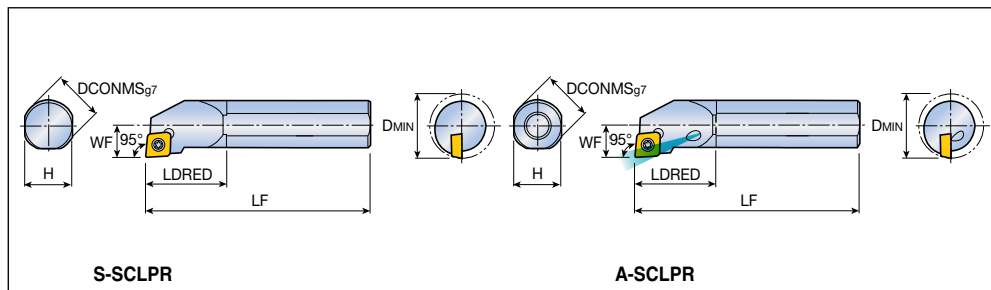
Spare parts

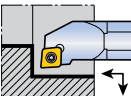
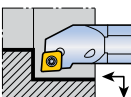
Designation	Screw 	Wrench 					
...03	TS 16031I	T 6					
...04	TS 20038I/HG-P	T 6P					
C08/C10...06	SO 25050I	T 7					
C12...06	SO 25065I	T 7					
...09	SO 35080I	T 15					

S-SCLPR/L A-SCLPR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95° 	S10K SCLPR/L 08	10	9	125	20	6	12	CP...T 0802...
	S12M SCLPR/L 08	12	11	150	23	8	16	CP...T 0903... 
	S16R SCLPR/L 09	16	15	200	30	10	20	
	S20S SCLPR/L 09	20	18	250	32	12.5	25	
95° 	A08H SCLPR/L 06	8	7	100	15	6	11	CP...T 0602...
	A10K SCLPR/L 06	10	9	125	15	7	13	CP...T 0903...
	A12M SCLPR/L 0903	12	11	150	19	9	16	
	A16Q SCLPR/L 0903	16	15	180	20	11	20	
	A20R SCLPR/L 0903	20	18	200	22	13	25	
	A12M SCLPR/L 09T3	12	11	150	19	9	16	CP...T 09T3...
	A16Q SCLPR/L 09T3	16	15	180	24.5	11	20	
	A20R SCLPR/L 09T3	20	18	200	22	13	25	

► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

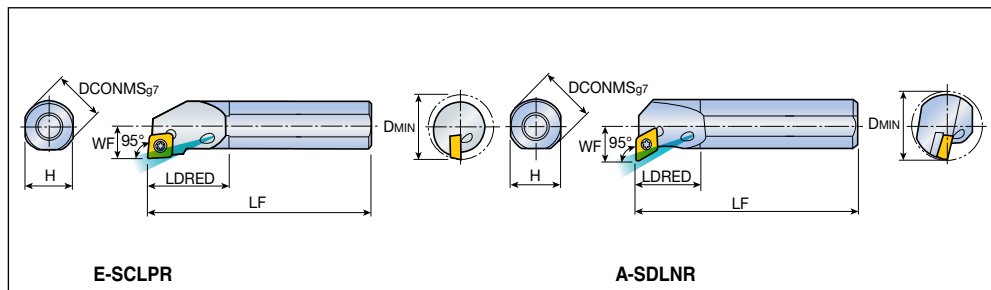
Spare parts

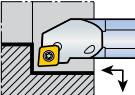
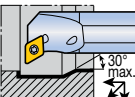
Designation	Screw 	Wrench 					
...06	SO 25050I	T 7					
...08	SO 30055I	T 9					
...09	SO 35080I	T 15					
...0903, 09T3	TS 35070I/HG	T 15					

E-SCLPR/L A-SDLNR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95° 	✓ E08K SCLPR/L 06	8	7	125	15	6	11	CP...T 0602... A264
	✓ E10K SCLPR/L 06	10	9	125	15	7	13	
	✓ E12M SCLPR/L 0903	12	11	150	19	9	16	CP...T 0903...
	✓ E16R SCLPR/L 0903	16	15	200	22	11	20	
	✓ E12M SCLPR/L 09T3	12	11	150	19	9	16	CP...T 09T3...
	✓ E16R SCLPR/L 09T3	16	15	200	22	11	20	
95° 	A20S SDLNR/L 11	20	18	250	28	13	24	DN...1104... A234-A235, A237
	A25T SDLNR/L 11	25	23	300	42	17	31	

► ✓: Designates carbide shank ► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

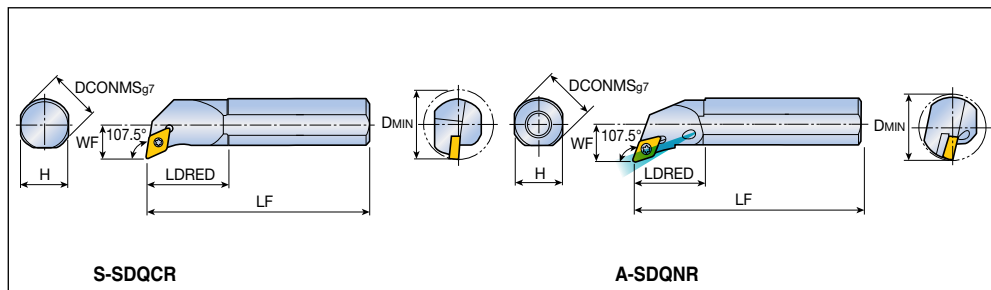
Spare parts

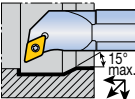
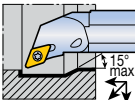
Designation	Screw 	Shim 	Shim screw 	Wrench  		Seal 		
...06	SO 25050I	-	-	T 7	-	-		
...09	TS 35070I/HG	-	-	T 15	-	-		
A20S...11	SO 35120I	-	-	T 10	-	PL 20		
A25T ...11	SO 35120I	SSD 32	SO 50090S	T 10	L-W 3.5	PL 25		

S-SDQCR/L A-SDQNR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
107.5° 	S10K SDQCR/L 07	10	9	125	20	7	13	DC... 0702...  A265-A268, A311
	S12M SDQCR/L 07	12	11	150	22	9	16	
	S16R SDQCR/L 07	16	15	200	27	11	20	
	S20S SDQCR/L 11	20	18	250	40	13	25	
	S25T SDQCR/L 11	25	23	300	50	17	32	DC... 11T3...
107.5° 	A16S SDQNR/L 11	16	15	250	30	13	23	DN... 1104...  A234-A237
	A20S SDQNR/L 11	20	18	250	31	15	27	
	A25T SDQNR/L 11	25	23	300	35	19	33	
	A32T SDQNR/L 11	32	30	300	44	26	44	

► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

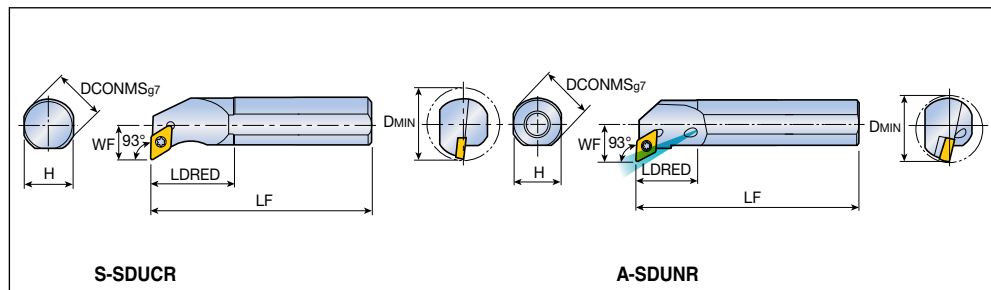
Spare parts

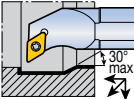
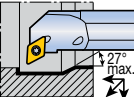
Designation	Screw	Shim	Shim screw	Wrench		Seal		
								
S10 ...07	SO 25050I	-	-	T 7	-	-		
S ...07	SO 25065I	-	-	T 7	-	-		
S ...11	SO 35080I	-	-	T 15	-	-		
A16S...11	SO 35120I	-	-	T 10	-	PL 16		
A20S...11	SO 35120I	SSD 32	SO 50090S	T 10	L-W 3.5	PL 20		
A25T ...11	SO 35120I	SSD 32	SO 50090S	T 10	L-W 3.5	PL 25		
A32T ...11	SO 35120I	SSD 32	SO 50090S	T 10	L-W 3.5	PL 32		

S-SDUCR/L A-SDUNR/L



Screw type boring bars



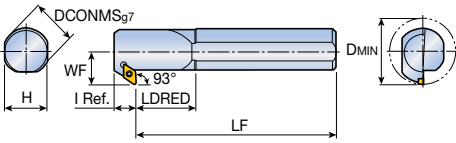
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
93° 	S10K SDUCR/L 07	10	9	125	20	7	13	DC... 0702...  A265-A268, A311
	S12M SDUCR/L 07	12	11	150	23	9	16	
	S16R SDUCR/L 07	16	15	200	30	11	20	
	S16R SDUCR/L 11	16	15	200	27	11	20	DC... 11T3...
	S20S SDUCR/L 11	20	18	250	32	13	25	
	S25T SDUCR/L 11	25	23	300	42	17	32	
	S32T SDUCR/L 11	32	30	300	55	22	40	
93° 	A20S SDUNR/L 11	20	18	250	30	15	27	DN... 1104...  A234-A237
	A25T SDUNR/L 11	25	23	300	30	19	33	
	A32T SDUNR/L 11	32	30	300	44	26	44	

► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

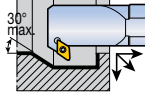
Spare parts

Designation	Screw	Shim	Shim screw	Wrench		Seal		
								
S ...07	SO 25065I	-	-	T 7	-	-		
S ...11	SO 35080I	-	-	T 15	-	-		
A20S...11	SO 35120I	-	-	T 10	-	PL 20		
A25T ...11	SO 35120I	SSD 32	SO 50090S	T 10	L-W 3.5	PL 25		
A32T ...11	SO 35120I	SSD 32	SO 50090S	T 10	L-W 3.5	PL 32		

Screw type back boring bars



S-SDZCR

Approach angle	Designation	Dimension (mm)							Insert
		DCONMS	H	LF	LDRED	WF	I	DMIN	
93° 	S16R SDZCR/L 07	16	15	200	23	13	12	22	DC... 0702...  A265-A268, A311
	S20S SDZCR/L 07	20	18	250	28	15	12	30	
	S25T SDZCR/L 07	25	23	300	33	18	12	33	
	S20S SDZCR/L 11	20	18	250	24	15	16	27	DC... 11T3...
	S32T SDZCR/L 11	32	30	300	34	22	16	40	
For back boring									

► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

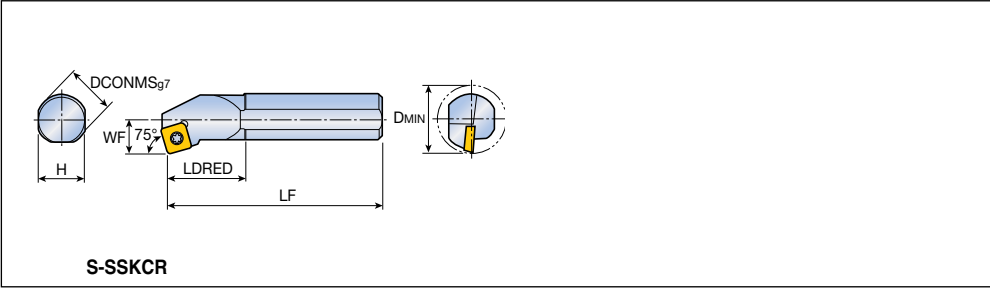
Spare parts

Designation	Screw	Shim	Shim screw	Wrench				
								
...07	SO 25065I	-	-	T 7	-			
S20S ...11	SO 35080I	-	-	T 15	-			
S32T ...11	SO 35124I	SSD 32	SO 50090S	T 15	L-W 3.5			

S-SSKCR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
75° 	S16R SSKCR/L 09	16	15	200	24.5	11	20	SC... 09T3... A272, A312
	S20S SSKCR/L 09	20	18	250	30	13	25	
	S25T SSKCR/L 12	25	23	300	33.4	17	32	SC... 1204...

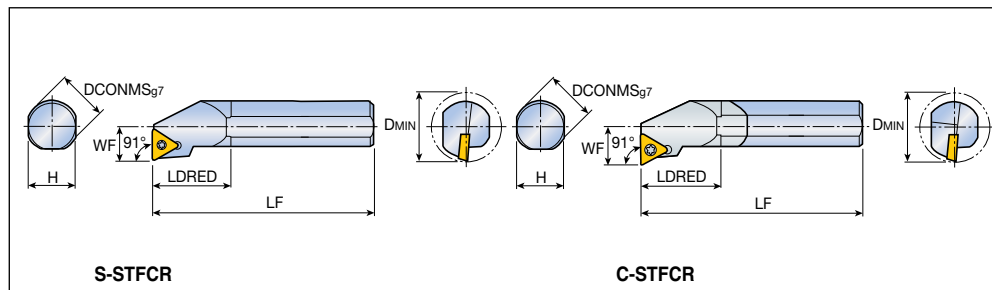
Spare parts

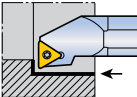
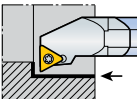
Designation	Screw	Wrench					
...09	SO 35080I	T 15					
...12	SO 45100I	T 20					

S-STFCR/L C-STFCR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
	S06H STFCR/L 06T1	6	5.4	100	12	4.5	8	TC...T 06T1...
	S08K STFCR/L 09	8	7	125	20	5	10	TC... 0902... A275, A276, A313, A314
	S10K STFCR/L 09	10	9	125	22.5	6	12	
	S12M STFCR/L 09	12	11	150	30	9	16	
	S16R STFCR/L 09	16	15	200	35	11	20	TC...T 1102...
	S10K STFCR/L 1102	10	9	125	17.7	6	12	
	S12M STFCR/L 1102	12	11	150	25	9	16	
	S16R STFCR/L 1102	16	15	200	35	11	20	TC... 16T3...
	S20S STFCR/L 1102	20	18	250	36	13	25	
	S20S STFCR/L 16	20	18	250	36	13	25	
	S25T STFCR/L 16	25	23	300	49	17	32	TC... 0902...
	S32T STFCR/L 16	32	30	300	45	22	40	
	S40T STFCR/L 16	40	37	300	60	27	50	
	✓ C10K STFCR/L 09	10	9	125	15	7	13	TC... 0902...
	✓ C10K STFCR 1102	10	9	125	15	7	13	TC...T 1102...
	✓ C12M STFCR/L 1102	12	11	150	20	9	16	
	✓ C16R STFCR/L 1102	16	15	200	25	11	20	

▶ ✓: Designates carbide shank ▶ L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

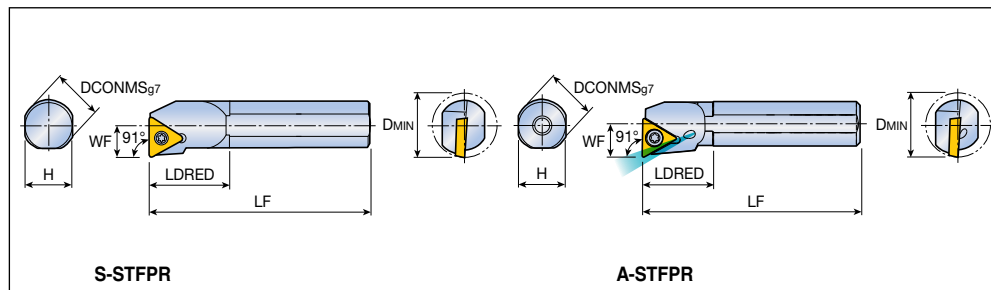
Spare parts

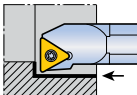
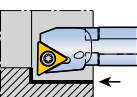
Designation	Screw	Shim	Shim screw	Wrench				
								
...06T1	TS 20038I	-	-	T 6	-			
S08K...09	TS 22046I	-	-	T 7	-			
...09	SO 22050I	-	-	T 7	-			
S10K...1102	SO 22050I	-	-	T 7	-			
...1102	SO 25065I	-	-	T 7	-			
S20S...16	SO 35080I	-	-	T 15	-			
S25T...16	SO 35080I	-	-	T 15	-			
S32T...16	SO 35124I	SST 32	SO 50090S	T 15	L-W 3.5			
S40T...16	SO 35124I	SST 32	SO 50090S	T 15	L-W 3.5			

S-STFPR/L A-STFPR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
91° 	S08K STFPR/L 09-X01	8	7	125	15	5	10	TPGX 0902...
	S08K STFPR/L 09	8	7	125	14	5	10	TP...T 0902...
	S10K STFPR/L 1103	10	9	125	25	6	12	TP... 1103...
	S12M STFPR/L 1103	12	11	150	30	8	16	
	S16R STFPR/L 1103	16	15	200	35	10	20	
	S16Q STFPR/L 1103	16	15	180	30	10	20	
	S16N STFPR/L 16	16	15	160	30	10	20	TP...T 1604...
	S20S STFPR/L 16	20	18	250	36	12.5	25	
91° 	A08H STFPR/L 09	8	7	100	16.7	6	11	TP...T 0902...
	A10K STFPR/L 1102	10	9	125	16.4	6	12	TP...T 1102...
	A12M STFPR/L 1102	12	11	150	19	9	16	
	A16Q STFPR/L 1102	16	15	180	20	11	20	
	A12M STFPR/L 1103	12	11	150	19	9	16	TP... 1103...
	A16Q STFPR/L 1103	16	15	180	20.5	11	20	
	A20R STFPR/L 16T3	20	18	200	26	13	25	TP...T 16T3...


A277-A280,
A302,
A313-A314

► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

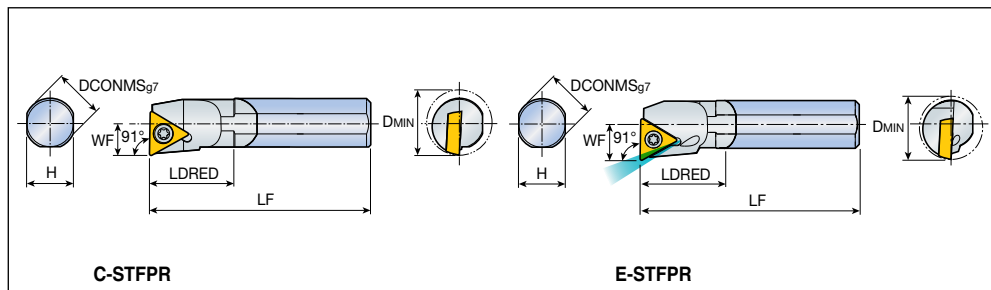
Spare parts

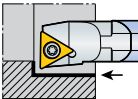
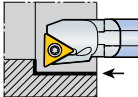
Designation	Screw 	Wrench 				
...09-X01	SO 25055I-MO	T 8				
...09	TS 22046I	T 7				
S10 ...1103	SO 30055I	T 9				
S12 ...1103	SO 30100I	T 9				
S16 ...1103	SO 30040I	T 9				
A ...1102	SO 25050I	T 7				
A ...1103	SO 30100I	T 9				
...16T3	TS 35070I/HG	T 15				
...16	SO 35124I	T 15				

C-STFPR/L E-STFPR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
91° 	✓ C10K STFPR/L 1103	10	9	125	15	6	12	TP... 1103... A277-A280,
	✓ C10K STFPR/L 1103	12	11	150	20	8	16	TP...T 1103... A302,
	✓ C10K STFPR/L 11-FF	10	9	125	15	6	12	A313-A314
	✓ C12M STFPR/L 11-FF	12	11	150	18	8	16	
91° 	✓ E08K STFPR/L 09	8	7	125	15	6	11	TP...T 0902...
	✓ E10K STFPR/L 1102	10	9	125	15	7	13	TP...T 1102...
	✓ E12M STFPR/L 1102	12	11	150	18	9	16	
	✓ E16R STFPR/L 1102	16	15	200	21.5	11	20	
	✓ E12M STFPR/L 1103	12	11	150	18	9	16	TP... 1103...
	✓ E16R STFPR/L 1103	16	15	200	22	11	20	

- ✓: Designates carbide shank ► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder
 ► Only -FF/-GF inserts available for 11 size holders

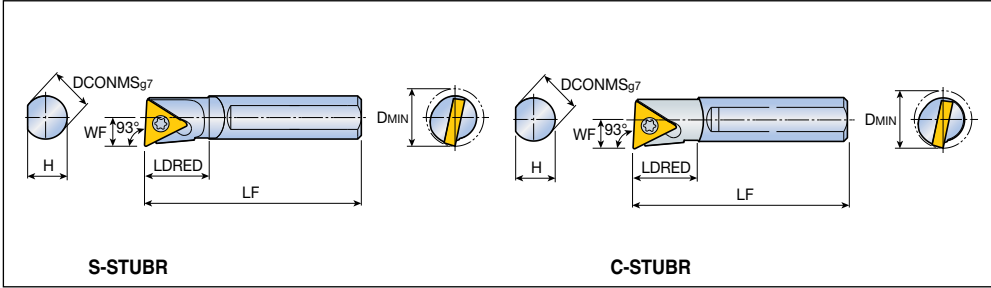
Spare parts

Designation	Screw 	Wrench 					
...09	TS 22046I	T 7					
C ...11-FF	SO 25065I	T 7					
C10K ...1103	SO 30055I	T 9					
C12M ...1103	SO 30100I	T 9					
E ...1102	SO 25050I	T 7					
E ...1103	SO 30100I	T 9					

S-STUBR/L C-STUBR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
93°	S06H STUBR/L 06-D08	6	5.5	100	8.6	4	8	TB...T 0601... A274
93°	✓ C06J STUBR/L 06-D08	6	5.5	110	8.6	4	8	

► ✓: Designates carbide shank ► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

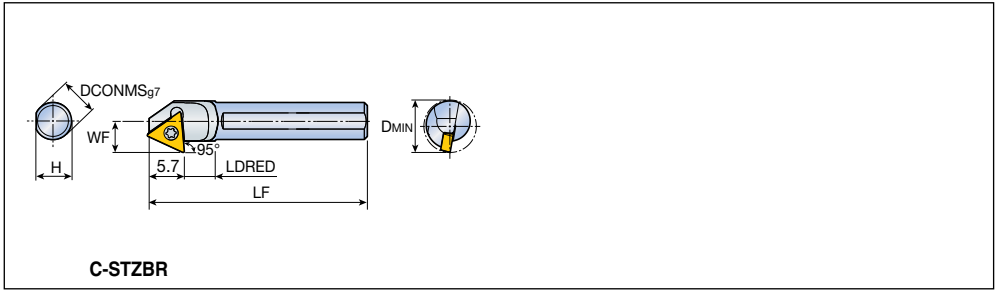
Spare parts

Designation	Screw	Wrench					
...06-D08	TS 20043I/HG-P	T 6P					

C-STZBR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95°	✓ C06J STZBR/L 06-D085	6	5.5	110	5	5.1	8.5	TB...T 0601... A274

► ✓: Designates carbide shank

Spare parts

Designation	Screw 	Wrench 					
...06-D085	SO 25043I	T 6P					

T-TURN

S-SVJBR

S-SVJCR

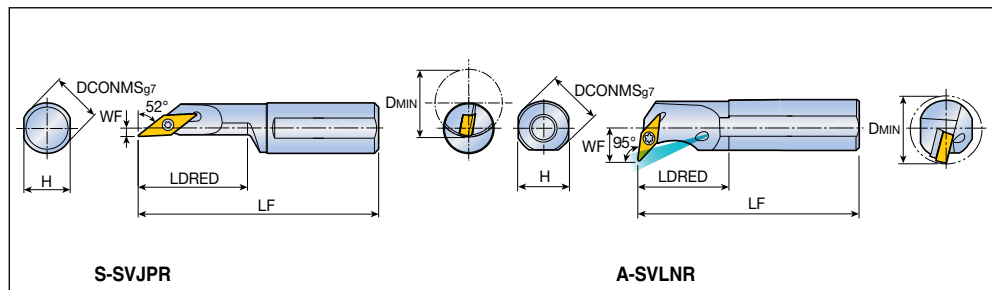
► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

[illegible]

S-SVJPR/L A-SVLNR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
52°	S12M SVJPR/L 08-D16	12	11	150	26	2	16	VP...T 0802... A285
95°	A25T SVLNR/L 13	25	23	300	40	16	31	VN... 13... A251-A252
	A32T SVLNR/L 13	32	30	300	45	20	38	

► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

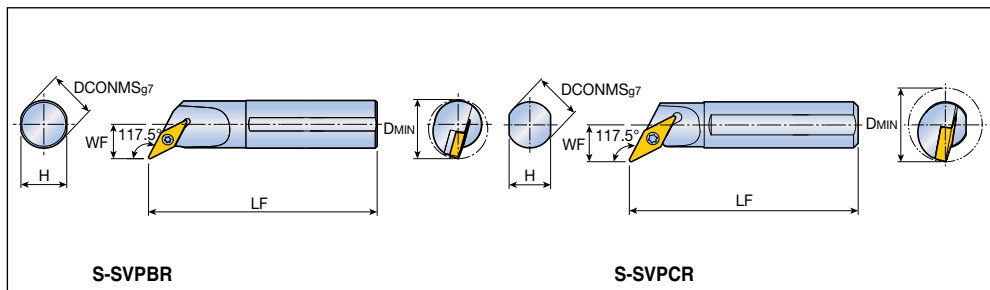
Spare parts

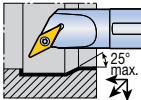
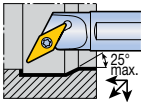
Designation	Screw	Shim	Shim screw	Wrench		Seal		
S...08-D16	TS 20043I/HG-P	-	-	T 6P	-	-		
A25T...13	SO 35120I	SSVN 2.523	TS 5035062S	T 10	L-W 3.5	PL 25		
A32T...13	SO 35120I	SSVN 2.523	TS 5035062S	T 10	L-W 3.5	PL 32		

S-SVPBR/L S-SVPCR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
117.5° 	S16Q SVPBR/L 11-D22	16	15	180	35	13.5	22	VB... 1103... A281-A282, A315
	S20R SVPBR/L 11-D26	20	18	200	41	15.5	26	
	S25S SVPBR/L 16	25	23	250	51	18	31	VB... 1604... A315
	S32S SVPBR/L 16	32	30	250	54	23	40	
117.5° 	S10K SVPCR/L 08-D16	10	9	125	16	8	16	VC...T 0802... VC...T 1103... A283-A284, A315
	S12M SVPCR/L 11-D20	12	11	150	19	10	20	

► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

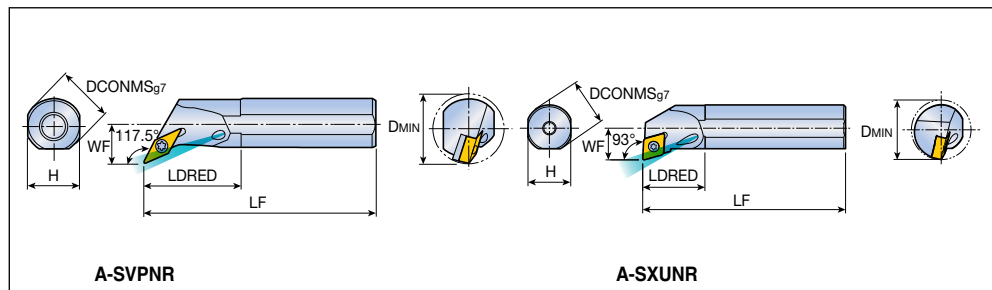
Spare parts

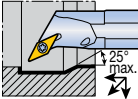
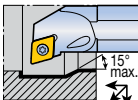
Designation	Screw 	Shim 	Shim screw 	Wrench 				
...08-...	TS 20038I/HG-P	-	-	T 6P	-			
...11-...	SO 25065I	-	-	T 7	-			
...16	SO 35124I	SSV32	SO 50090S	T 15	L-W 3.5			

A-SVPCR/L A-SXUNR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
117.5° 	A25T SVPNR/L 13	25	23	300	45	19	33	VN... 13...  A251-A252
	A32T SVPNR/L 13	32	30	300	47	26	44	
93° 	A25R SXUNR/L 1105	25	23	200	33.4	17	32	XN... 1105...  A257

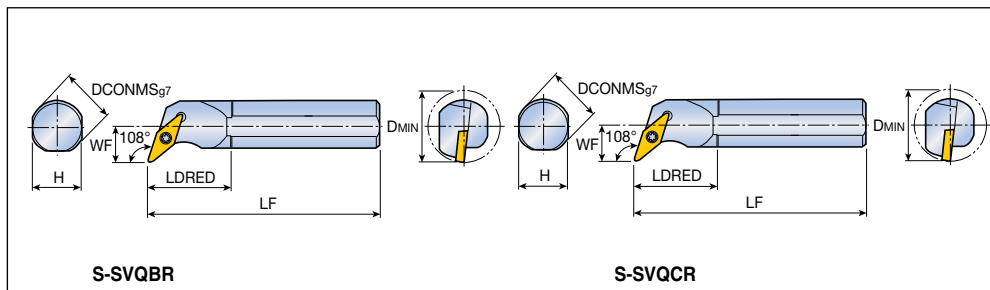
Spare parts

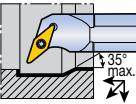
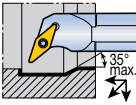
Designation	Screw 	Shim 	Shim screw 	Wrench 		Seal 		
...1105	TS 40G110I	-	-	T 15	-	-		
A25T...13	SO 35120I	SSVN 2.523	TS 5035062S	T 10	L-W 3.5	PL 25		
A32T...13	SO 35120I	SSVN 2.523	TS 5035062S	T 10	L-W 3.5	PL 32		

S-SVQBR/L S-SVQCR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
108° 	S25T SVQBR/L 16	25	23	300	40	17	32	VB... 1604...  A281-A282, A315
	S32T SVQBR/L 16	32	30	300	45	22	40	
	S40T SVQBR/L 16	40	37	300	41.5	27	50	
108° 	S32T SVQCR/L 16	32	30	300	45	22	40	VC...T 1604...  A283-A284, A315
	S40T SVQCR/L 16	40	37	300	55	27	50	

► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

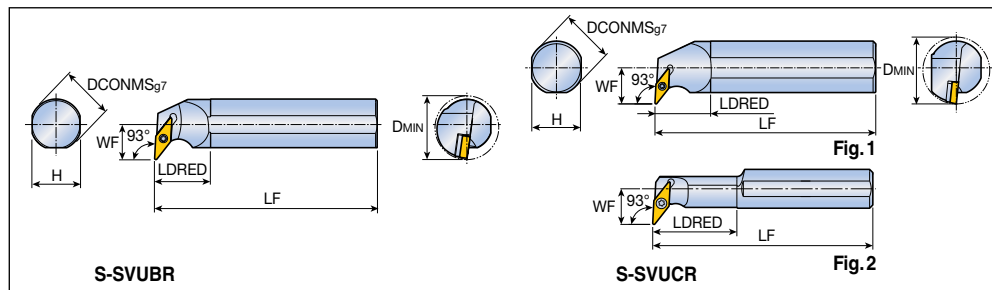
Spare parts

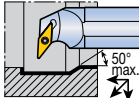
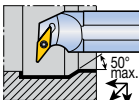
Designation	Screw	Shim	Shim screw	Wrench			
							
S25T...16	SO 35080I	-	-	T 15	-		
...16	SO 35124I	SSV 32	SO 50090S	T 15	L-W 3.5		

S-SVUBR/L S-SVUCR/L



Screw type boring bars



Approach angle	Designation	Dimension (mm)						Fig.	Insert
		DCONMS	H	LF	LDRED	WF	DMIN		
93° 	S32T SVUBR/L 16	32	30	300	45	22	40		VB... 1604...  A281-A282, A315
	S40T SVUBR/L 16	40	37	300	55	27	50		
93° 	S12M SVUCR/L 08-D16	12	11	150	26	11	16	2	VC...T 0802... VC...T 1103... VC...T 1604...  A283-A284, A315
	S16Q SVUCR/L 11-D20	16	15	180	32	15.5	20	2	
	S20R SVUCR/L 11-D25	20	18	200	40	17.5	25	2	
	S32T SVUCR/L 16	32	30	300	35	22	40	1	
	S40T SVUCR/L 16	40	37	300	41.5	27	50	1	

► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

Spare parts

Designation	Screw	Shim	Shim screw	Wrench				
								
...08-...	TS 20038I/HG-P	-	-	T 6P	-			
...11-...	SO 25065I	-	-	T 7	-			
...16	SO 35124I	SSV 32	SO 50090S	T 15	L-W 3.5			

T-TURN

Fig. 1

Fig. 2

S-SWUBR

C-SWUBR

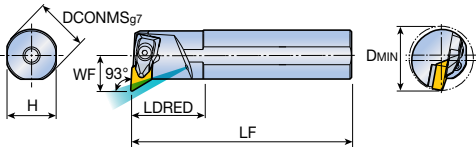
93°

Spare parts

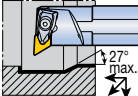
[illegible]

[illegible]

T-holder type boring bars



A-TDUNR

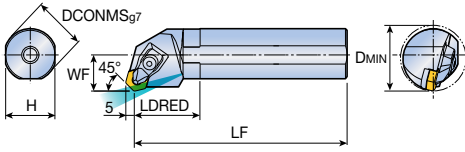
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
93°	A32T TDUNR/L 15	32	30	300	45	22	40	DN... 1506...  A234-A238, A293, A304
	A40T TDUNR/L 15	40	37	300	45	27	50	
	A50U TDUNR/L 15	50	47	350	45	35	63	
								

Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
								
A32T ...15	DLM 4	DLS 4	DSP 4	LSD 42	TS 50A105I	NZ 62	L-W 3	T 20
...15	DLM 4	DLS 4	DSP 4	TSD 43	SO 40050I	NZ 104	L-W 3	T 15

T-TURN

T-holder type boring bars



A-THSNR

[illegible]

Spare parts

[illegible]

A-TSKNR

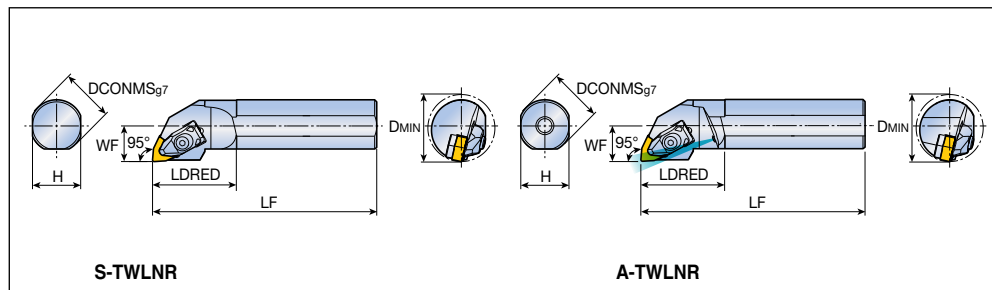
► L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

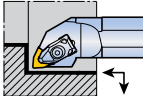
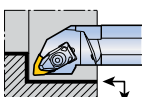
[illegible]

S-TWLNR/L A-TWLNR/L



T-holder type boring bars



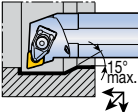
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95° 	S25T TWLNR/L 08	25	23	300	35	17	32	WN... 0804...  A253-A255, A300, A309
	S32T TWLNR/L 08	32	30	300	45	22	40	
95° 	A20S TWLNR/L 06	20	18	250	35	13	25	WN... 0604...
	A25T TWLNR/L 06	25	23	300	40	17	32	
	A32T TWLNR/L 06	32	30	300	45	22	40	WN... 0804...
	A25T TWLNR/L 08	25	23	300	40	17	32	
	A32T TWLNR/L 08	32	30	300	45	22	40	
	A40T TWLNR/L 08	40	37	300	45	27	50	

Spare parts

Designation	Clamp 	Clamp screw 	Spring 	Shim 	Shim screw 	Nozzle 	Wrench 	
A20S...06	DLM 3	DLS 3	DSP 3	-	-	NZ 62	L-W 2.5	-
...06	DLM 3	DLS 3	DSP 3	PSW 32	SO 40090I	NZ 62	L-W 2.5	T 15
...08	DLM 4	DLS 4	DSP 4	PSW 42	TS 50A105I	NZ 62	L-W 3	T 20
A40T...08	DLM 4	DLS 4	DSP 4	TSW 44	SO 40050I	NZ 104	L-W 3	T 15

T-holder type boring bars

A-TXUNR

Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
93°	A32S TXUNR/L 1105	32	30	250	35	22	40	XN... 1105...
								  A257

Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
								
A32S...1105	DLM 3.5-NX	DLS 4	DSP 4	LSX 3.52B	TS 50A105I	NZ 62	L-W 3	T 20

T-TURN

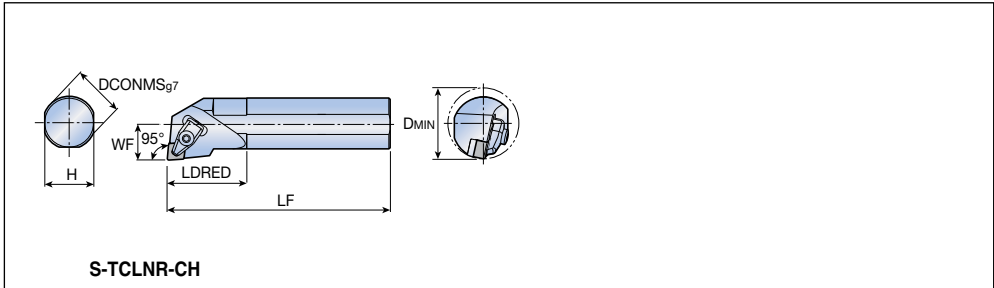


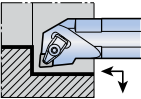
Designation	Wedge clamp	Screw	Snap ring	Shim	Pin screw	Wrench	
S25T ...16	WC 33	WCS 4B	WSR 4	-	WSS 33-1	L-W 3	
...16	WC 33	WCS 4	WSR 4	WST 33	WSS 33	L-W 3	
...22	WC 43	WCS 4	WSR 4	WST 43	WSS 43	L-W 3	

S-TCLNR/L-CH



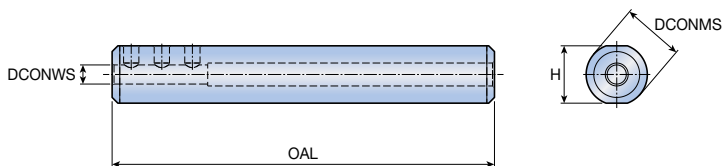
T-holder type boring bars for CH dimple insert



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95° 	S40T TCLNR/L 1207-CH	40	37	300	50	27	70	CN...X 1207...  A292
	S50U TCLNR/L 1207-CH	50	47	350	50	32	70	

Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
...1207-CH	 CCL 4	 CSC 4	 DSP 5	 TSC 43	 SO 40050I	 L-W 4	 T 15



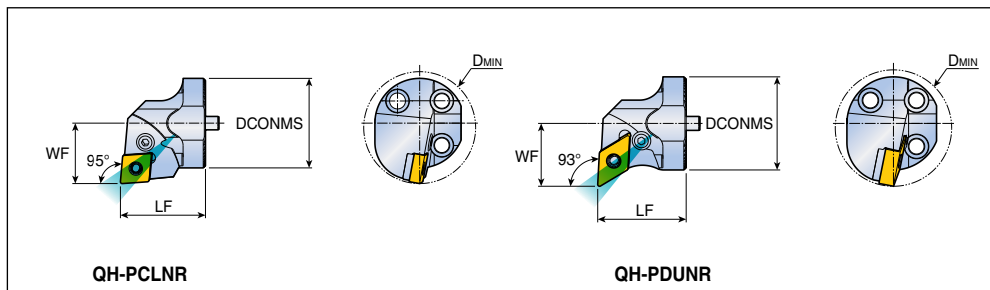
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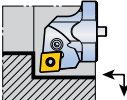
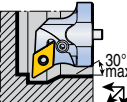
[illegible]

Spare parts

[illegible]

Screw type boring heads



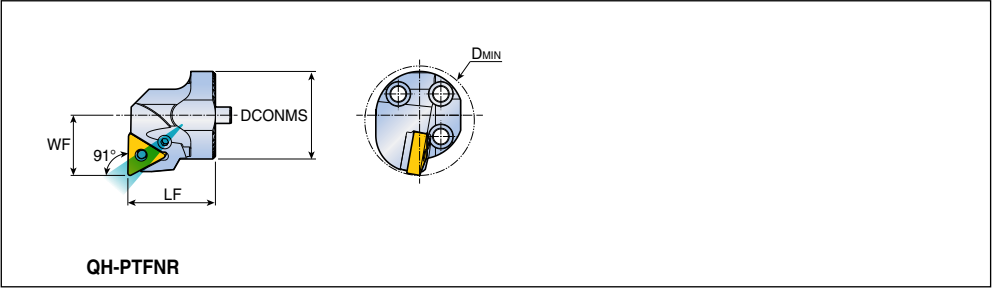
Approach angle	Designation	Dimension (mm)				Insert
		DCONMS	LF	WF	DMIN	
95° 	QH32-PCLNR/L-12	32	32	22	40	CN... 1204...  A226, A228-A232, A233, A291, A292, A303
	QH40-PCLNR/L-12 *	40	38	27	50	
93° 	QH40-PDUNR/L-1506 *	40	38	27	50	DN... 1506...  A234-A238, A293, A354

- *: When applying Ø50mm shank, DMIN for the assembly is Ø60mm
 When applying Ø60mm shank, DMIN for the assembly is Ø70mm

Spare parts

Designation	Lever	Screw	Shim		Shim pin	Wrench	
							
QH...12	LCL 4	LCS 4	LSC 42	-	LSP 4	L-W 3	
QH...1506	LCL 4A	LCS 4	-	LSD 42	LSP 4	L-W 3	

Screw type boring heads



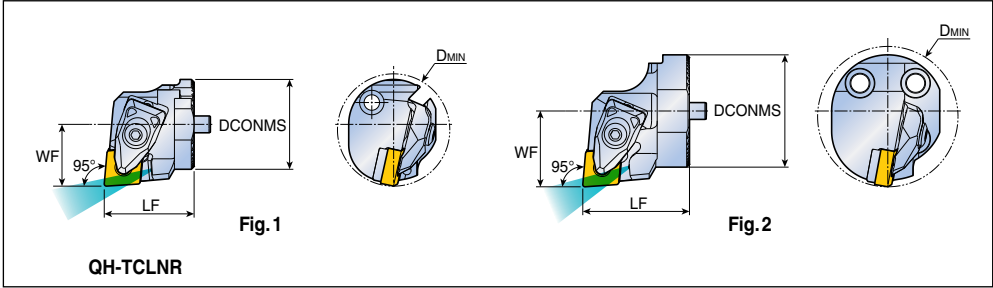
Approach angle	Designation	Dimension (mm)				Insert
		DCONMS	LF	WF	DMIN	
91° 	QH32-PTFNR/L-16	32	32	22	40	TNGA 1604... A247-A250, A299, A307
	QH40-PTFNR/L-16 *	40	38	27	50	

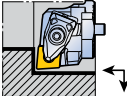
► *: When applying Ø50mm shank, DMIN for the assembly is Ø60mm
 When applying Ø60mm shank, DMIN for the assembly is Ø70mm

Spare parts

Designation	Lever 	Screw 	Shim 	Shim pin 	Wrench 		
QH...16	LCL 3	LCS 3	LST 31.8	LSP 3A	L-W 2.5		

Screw type boring heads



Approach angle	Designation	Dimension (mm)				Fig.	Insert
		DCONMS	LF	WF	DMIN		
95° 	QH32-TCLNR/L-12	32	32	22	40	1	CN... 1204...  A226, A228-A232, A233, A291, A292, A303
	QH40-TCLNR/L-12 *	40	38	27	50	2	

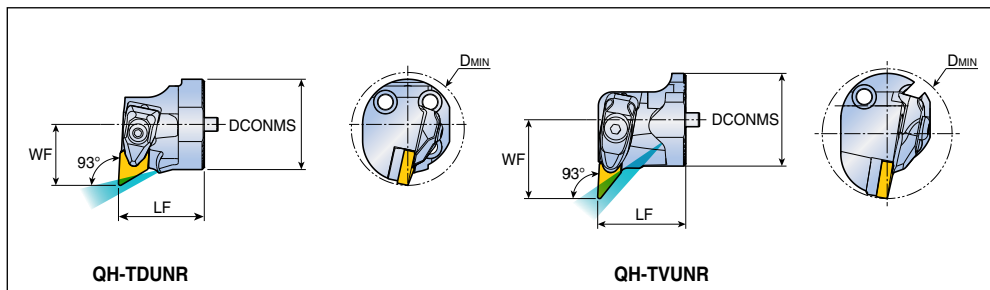
► *: When applying Ø50mm shank, DMIN for the assembly is Ø60mm
When applying Ø60mm shank, DMIN for the assembly is Ø70mm

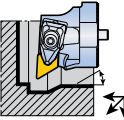
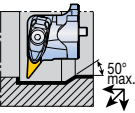
Spare parts

Designation	Lever 	Clamp screw 	Spring 	Shim 	Shim screw 	Wrech 	
QH...12	DLM 4	DLS 4	DSP 4	LSC 42	TS 50A105I	L-W 3	T 20

QH-TDUNR/L QH-TVUNR/L

Screw type boring heads



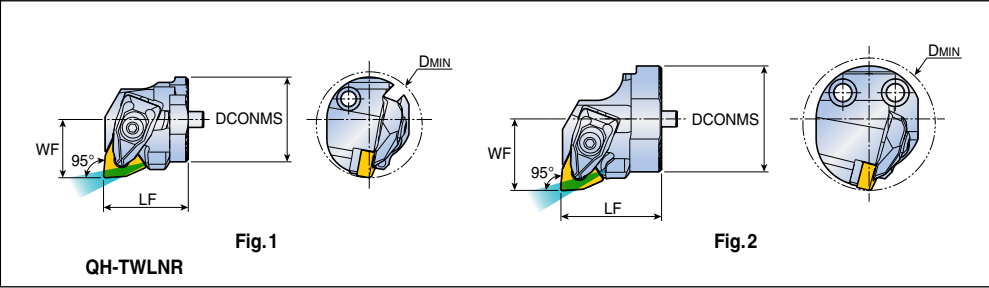
Approach angle	Designation	Dimension (mm)				Insert
		DCONMS	LF	WF	DMIN	
93° 	QH40-TDUNR/L-1504 *	40	38	27	50	DN... 1504...
	QH40-TDUNR/L-1506 *	40	38	27	50	DN... 1506...
						 A234-A238, A293, A304
93° 	QH40-TVUNR/L-16 *	40	38	34	56	VN... 16...
						 A251-A252, A300, A308

► *: When applying Ø50mm shank, DMIN for the assembly is Ø60mm
When applying Ø60mm shank, DMIN for the assembly is Ø70mm

Spare parts

Designation	Clamp 	Clamp screw 	Spring 	Shim 		Shim screw 	Wrench 	
QH...1504	DLM 4	DLS 4	DSP 4	LSD 43	-	SO 50090I	L-W 3	T 20
QH...1506	DLM 4	DLS 4	DSP 4	LSD 42	-	TS 50A105I	L-W 3	T 20
QH...16	DLM 3V	DLS 5	DSP 5	-	TSV 33	SO 35080I	L-W 4	T 15

Screw type boring heads



Approach angle	Designation	Dimension (mm)				Fig.	Insert
		DCONMS	LF	WF	DMIN		
95° 	QH32-TWLNLR/L-08	32	32	22	40	1	WNGA 0804... A300, A309
	QH40-TWLNLR/L-08 *	40	38	27	50	2	

► *: When applying Ø50mm shank, DMIN for the assembly is Ø60mm
When applying Ø60mm shank, DMIN for the assembly is Ø70mm

Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
QH...08	DLM 4	DLS 4	DSP 4	PSW 42	TS 50A105I	L-W 3	T 20

► *: When applying Ø50mm shank, D_{MIN} for the assembly is Ø60mm
When applying Ø60mm shank, D_{MIN} for the assembly is Ø70mm

Designation	Screw	Shim	Shim screw	Wrench			
...06	SO 250650I	-	-	T 7	-		
...09	SO 35080I	-	-	T 15	-		
QH32...12	SO 45100I	-	-	T 20	-		
QH40...12	SO 45130I	SSC 43N	SO 60105S	T 20	L-W 5		

HUSHBORE

Fig. 1 and Fig. 2 show the geometric models of the QH-SDUCR. Fig. 1 shows the side and top views of the device. The side view includes dimensions for width (WF), length (LF), and a 93° angle. The top view shows the diameter of the main body (DCONMS) and the diameter of the internal structure (DMIN). Fig. 2 shows the side and top views of the device, similar to Fig. 1, but with a different internal structure. The side view includes dimensions for width (WF), length (LF), and a 93° angle. The top view shows the diameter of the main body (DCONMS) and the diameter of the internal structure (DMIN).

► *: When applying Ø50mm shank, D_{MIN} for the assembly is Ø60mm
When applying Ø60mm shank, D_{MIN} for the assembly is Ø70mm

Designation	Screw	Shim	Shim screw	Wrench			
...07	SO 25065I	-	-	T 7	-		
...11	SO 35080I	-	-	T 15	-		
QH40...11	SO 35124I	SSD 32	SO 50090S	T 15	L-W 3.5		

Screw type boring heads

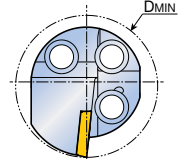


Fig.2

QH-STFCR

A275, A276,
A313, A314

► *: When applying Ø50mm shank, D_{MIN} for the assembly is Ø60mm
When applying Ø60mm shank, D_{MIN} for the assembly is Ø70mm

Spare parts

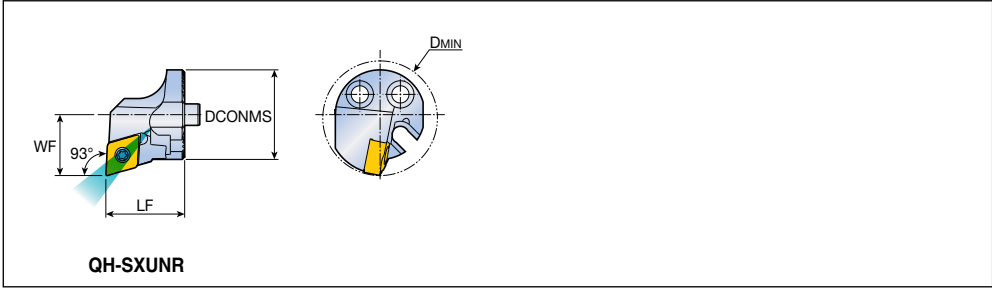
Designation	Screw	Shim	Shim screw	Wrench			
							
...-1102	SO 25065I	-	-	T 7	-		
...-16	SO 35124I	SST 32	SO 50090S	T 15	L-W 3.5		

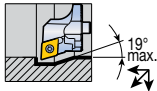
HUSHBORE

► *: When applying Ø50mm shank, D_{MIN} for the assembly is Ø60mm
When applying Ø60mm shank, D_{MIN} for the assembly is Ø70mm

Designation	Screw	Shim	Shim screw	Wrench			
SVUBR/L-11	SO 25065I	-	-	T 7	-		
SVUBR/L-16	SO 35124I	SSV 32	SO 50090S	T 15	L-W 3.5		

Screw type boring heads



Approach angle	Designation	Dimension (mm)				Coolant hole	Insert
		DCONMS	LF	WF	DMIN		
93°	QH32-SXUNR/L-1105	32	32	22	40	●	XN... 1105...
							 

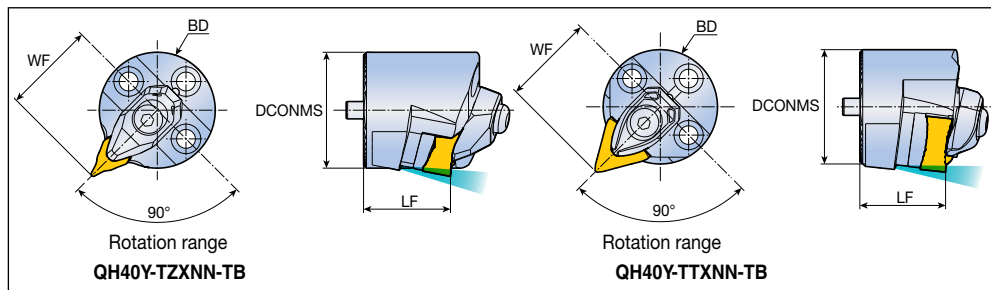
Spare parts

Designation	Screw	Wrench					
							
...1105	TS 40G110I	T 15					

QH40Y-TZXNN-TB QH40Y-TTXNN-TB



Y-axis turning heads



Approach angle	Designation	Dimension (mm)				Insert
		DCONMS	LF	WF	BD	
	QH40Y-TZXNN-1410-TB	40	30	32	40	ZNMV 1410...Y-... A258
	QH40Y-TTXNN-2109-TB	40	30	32	40	TNMV 2109... A256

► Only ZNMV 1410...Y-BF inserts available

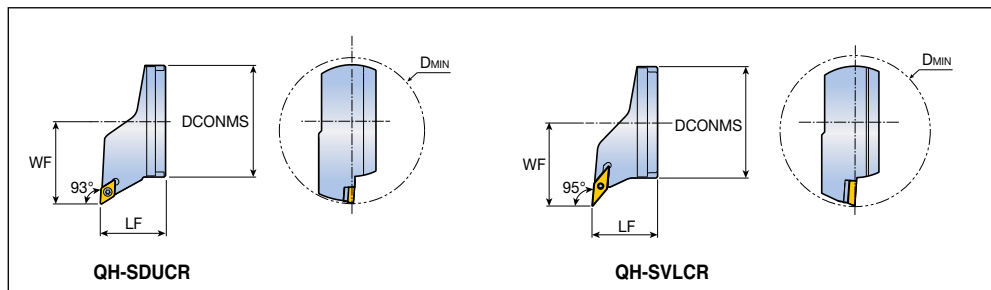
Spare parts

Designation	Clamp 	Clamp screw 	Spring 	Shim 		Shim screw 	Wrench 	
TZ...1410-TB	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	-	TS 35083I/HG	L-W 4	T 10
TT...2109-TB	DLM 4.4T-NV	DLS 5	DSP 5	-	TSTV 210510	TS 35083I/HG	L-W 4	T 10

QH-SDUCR/L-VH QH-SVLCR/L-VH



Screw type boring heads



Approach angle	Designation	Dimension (mm)				Insert
		DCONMS	LF	WF	DMIN	
93°	QH80-SDUCR/L-11-VH	77	45	57	100	DC...T 11T3... A266-A268, A311
95°	QH80-SVLCR/L-16-VH	77	45	57	100	VC...T 1604... A283

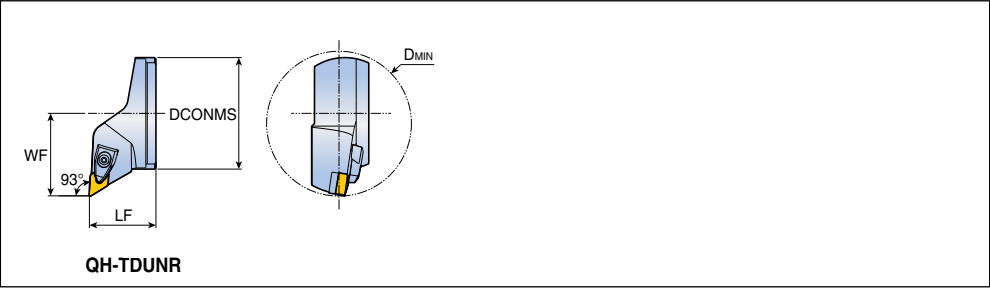
Spare parts

Designation	Screw	Shim		Shim screw	Stopper screw	Wrench		
SDUCR/L	SR 16-236 P	TDC 3-1P	-	SR TC-3P	SH M3x0.5x6	T-15/5	L-W 4	L-W 2.5
SVLCR/L...	SR 16-236 P	-	TVC 3-1P	SR TC-3P	SH M3x0.5x6	T-15/5	L-W 4	L-W 2.5

QH-TDUNR/L-VH



Screw type boring heads

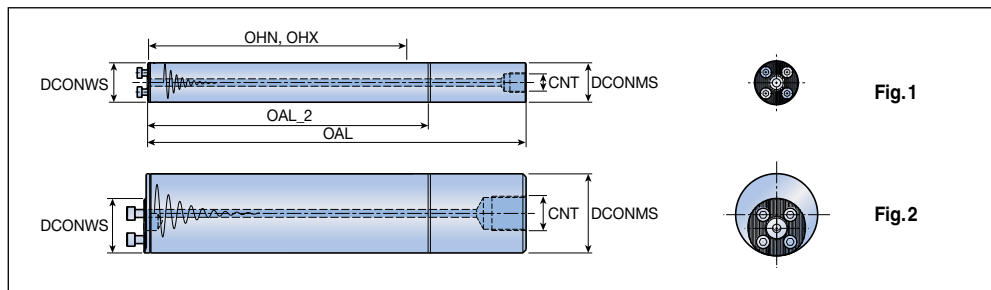


Approach angle	Designation	Dimension (mm)				Insert
		DCONMS	LF	WF	DMIN	
93° 	QH80-TDUNR/L-1504-VH	77	46	57	100	DN... 1504...
	QH80-TDUNR/L-1506-VH	77	46	57	100	DN... 1506... A234-A238, A293, A304

Spare parts

Designation	Shim	Shim screw	Clamp	Clamp Screw	Spring	Wrench	
-1504-VH	RDT 443	CSTB4S	DLM 4	DLS 4	DSP 4	T-15/5	L-W 3.0
-1506-VH	RDT 433	CSTB4S	DLM 4	DLS 4	DSP 4	T-15/5	L-W 3.0

Anti-vibration shanks for boring



Designation	Dimension (mm)							Coolant hole	Fig.
	DCONMS	DCONWS	OAL	OAL_2	OHN	OHX	CNT		
QS16A-7D	16	16	156.3	100	55	92	G 1/8	●	1
QS16E-10D⁽¹⁾	16	16	204.3	-	96	140	-	●	1
QS20A-7D	20	20	200.3	125	70	120	G 1/4	●	1
QS20E-10D⁽¹⁾	20	20	260.3	-	120	180	-	●	1
QS25A-7D	25	25	257.5	155	88	155	G 1/4	●	1
QS25A-10D	25	25	332.5	255	155	230	G 1/4	●	1
QS25E-12D⁽¹⁾	25	25	380.0	-	230	280	G 1/8	●	1
QS25E-14D⁽¹⁾	25	25	430.0	-	280	330	G 1/8	●	1
QS32A-7D	32	32	323.0	190	120	192	G 3/8	●	1
QS32A-10D	32	32	419.0	320	192	288	G 3/8	●	1
QS32E-12D⁽¹⁾	32	32	480.0	-	288	352	G 1/4	●	1
QS32E-14D⁽¹⁾	32	32	544.0	-	352	416	G 1/4	●	1
QS40A-7D	40	40	411.0	240	128	251	G 1/2	●	1
QS40A-10D	40	40	531.0	410	248	368	G 1/2	●	1
QS40E-12D⁽¹⁾	40	40	608.0	-	368	448	G 3/8	●	1
QS40E-14D⁽¹⁾	40	40	688.0	-	448	528	G 3/8	●	1
QS50A-7D	50	40	523.0	305	168	318	G 1/2	●	2
QS50A-10D	50	40	673.0	520	318	468	G 1/2	●	2
QS50E-12D⁽¹⁾	50	40	768.0	-	468	568	G 1/2	●	2
QS50E-14D⁽¹⁾	50	40	868.0	-	568	668	G 1/2	●	2
QS60A-7D	60	40	633.0	380	208	388	G 3/4	●	2
QS60A-10D	60	40	813.0	630	388	568	G 3/4	●	2
QS60E-12D⁽¹⁾	60	40	920.0	-	588	688	G 3/4	●	2
QS60E-14D⁽¹⁾	60	40	1040.0	-	688	808	G 3/4	●	2

- ▶ ⁽¹⁾ Carbide shank
- ▶ OHN: Minimum overhang
- ▶ OHX: Maximum overhang
- ▶ OAL_2: Minimum length after shortening(only steel bar can be shortened)

Spare parts

Designation	Screw	Wrench					
QS16	SH M3x0.5X10	L-W 2.5					
QS20	SH M3.5x0.6X10	L-W 2.5					
QS25	SH M4x0.7X12	L-W 3					
QS32	SH M5x0.8X12	L-W 4					
QS40/50/60	SH M6x1X16	L-W 5					

[illegible]

- ⁽¹⁾ Carbide shank ► OHN: Minimum overhang
► OHX: Maximum overhang ► OAL 2: Minimum length after shortening(only steel bar can be shortened)

Designation	Upper Clamp	Lower Clamp	Screw		Spring	Wrench
						
QS80	UCP-M10	LCP-M10	SH M10X1.5X25	SH M3X0.5X6	DSP 12.5X0.9X18	L-W 8

- ▶ Used with external 20x20 square holders
- ▶ Since there is a deviation in the $DMIN$ value for each holder, it is recommended to use the boring head after checking for interference with the workpiece.

[illegible]

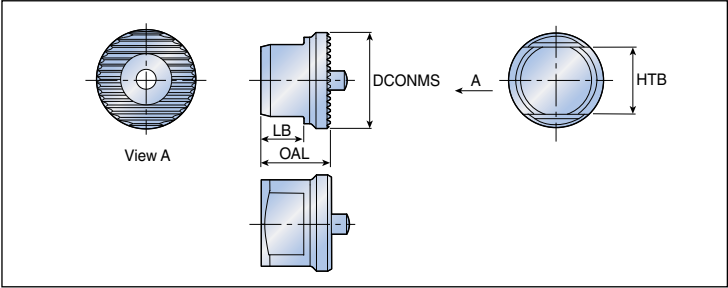
QSL

[illegible]

QH-SET



Center height set up device for Anti-vibration boring bars

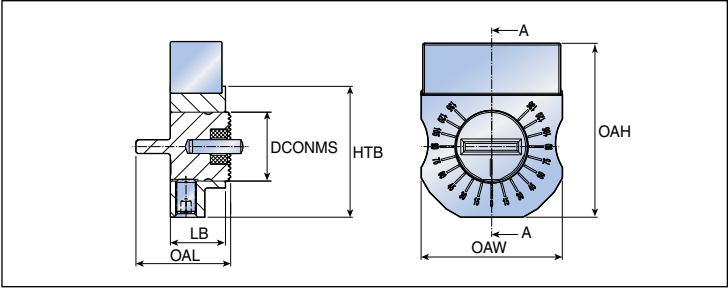


Designation	Dimension (mm)				
	DCONMS	HTB	OAL	LB	Shank
QH-SET 16-25	20	15	14.5	9	16, 20, 25
QH-SET 32-60	29	16	17.5	11.5	32, 40, 50, 60

QH-SET-LEV

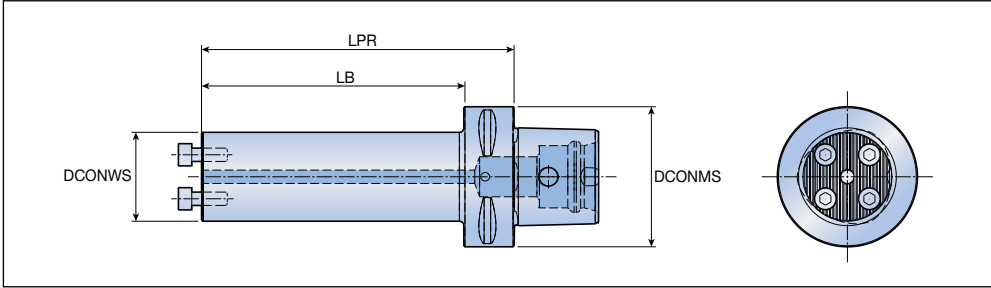


Center height set up device for Anti-vibration boring bars



Designation	Dimension (mm)						
	DCONMS	HTB	OAL	LB	Shank	OAH	OAW
QH-SET 16-25-LEV	20	38	27.5	16	16, 20, 25	50.5	41
QH-SET 32-60-LEV	29	49	28.0	16	32, 40, 50, 60	59.0	49

C-ADAPTERs with HUSH-BORE head connection



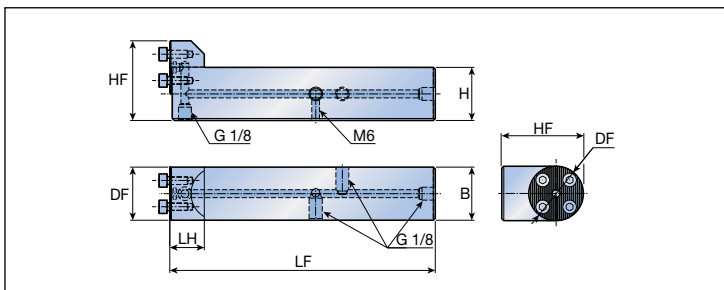
Designation	Dimension (mm)				Coolant hole
	DCONMS	DCONWS	LPR	LB	
C4-CS16A-2.5D	40	16	40	20	●
C4-CS20A-2.5D	40	20	50	30	●
C4-CS25A-2.5D	40	25	55	35	●
C4-CS32A-2.5D	40	32	75	55	●
C4-CS40A-3D	40	40	80	80	●
C5-CS16A-2.5D	50	16	40	20	●
C5-CS20A-2.5D	50	20	50	30	●
C5-CS25A-2.5D	50	25	55	35	●
C5-CS32A-2.5D	50	32	75	55	●
C5-CS40A-3D	50	40	100	80	●
C6-CS16A-2.5D	63	16	40	18	●
C6-CS20A-2.5D	63	20	50	28	●
C6-CS25A-2.5D	63	25	65	43	●
C6-CS32A-3D	63	32	90	68	●
C6-CS32A-4D	63	32	125	103	●
C6-CS40A-3D	63	40	100	78	●
C6-CS40A-4D	63	40	140	118	●
C6-CS16E-5D	63	16	80	58	●
C6-CS20E-5D	63	20	100	78	●
C6-CS25E-5D	63	25	115	93	●
C6-CS32E-5D	63	32	150	128	●
C6-CS40E-5D	63	40	185	163	●

► 5D: Carbide core type

Spare parts

Designation	Screw	Wrench			
					
CS16	SH M3x0.5X10	L-W 2.5			
CS20	SH M3.5x0.6X10	L-W 2.5			
CS25	SH M4x0.7X12	L-W 3			
CS32	SH M5x0.8X12	L-W 4			
CS40	SH M6x1X16	L-W 5			

► Please refer to A203-A212 pages for HUSH-BORE heads

[illegible]

Designation	Screw	Plug		Wrench	
...-D20...	SH M3.5x0.6X10	RSS M6	PLG G1/8-L6.5	L-W 2.5	
...-D25...	SH M4x0.7X12	RSS M6	PLG G1/8-L6.5	L-W 3	
...N2020/N2525-D32...	SH M5x0.8X12	RSS M6	PLG G1/8-L6.5	L-W 4	
...N3232-D32...	SH M5x0.8X12	-	PLG G1/8-L6.5	L-W 4	
...N2525-D40...	SH M6x1X16	RSS M6	PLG G1/8-L6.5	L-W 5	
...N3232/N4040-D40...	SH M6x1X16	-	PLG G1/8-L6.5	L-W 5	

A
22

Turning Inserts



C

N

M

G

1

2

3

4

1 Shape

C	D	E	H	K	R	S	T	V	W	Y

2 Clearance angle

N	B	C	P

3 Tolerance

Class	m	S	IC
A	±0.005	±0.025	±0.025
F	±0.005	±0.025	±0.013
C	±0.013	±0.025	±0.025
H	±0.013	±0.025	±0.013
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
M	±0.08~±0.18	±0.13	±0.05~±0.13
U	±0.13~±0.38	±0.13	±0.08~±0.25

Diameter of IC	Tolerance			
	On m		On IC	
	Class M	Class U	Class M	Class U
6.35	±0.08	±0.13	±0.05	±0.08
9.52	±0.08	±0.13	±0.05	±0.08
12.70	±0.13	±0.20	±0.08	±0.13
15.88	±0.15	±0.27	±0.10	±0.18
19.05	±0.15	±0.27	±0.10	±0.18
25.40	±0.18	±0.38	±0.13	±0.25
31.75	±0.18	±0.38	±0.13	±0.25

4 Type

A	G	M	R	B, W	T, H

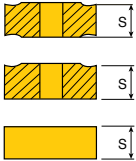
12 04 08 (R) MP

5 6 7 8 9

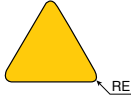
5 Cutting edge length

I.C(mm)	C	D	E	R	S	T	V,Y	W	K	H
										
3.97	03	04			03	06		02		
4.76	04	05			04	08	08			
5.56	05	06			05	09	09	03		
6.35	06	07			06	11	11			
7.94	08	09			07	13	13	05		
8.0				08						
9.52	09	11		09	09	16	16	06	16	
10.0				10						
11.11		13								
12.0				12						
12.7	12	15	13		12	22	22	08		05
15.88	16	19		15	15	27	27	10		
16.0				16						
19.05	19	23		19	19	33	33	13		10
20.0				20						
25.0				25						
25.4	25	31		25	25	44	44	17		
31.75	32	38			31	54	54	21		
32.0				32						

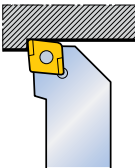
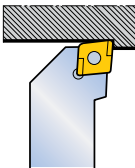
6 Thickness

	
01	1.59mm
T1	1.98mm
02	2.38mm
T2	2.78mm
03	3.18mm
T3	3.97mm
04	4.76mm
05	5.56mm
06	6.35mm
07	7.94mm
09	9.52mm

7 Corner radius

	
01	0.1mm
02	0.2mm
04	0.4mm
05	0.5mm
08	0.8mm
12	1.2mm
16	1.6mm
20	2.0mm
24	2.4mm
32	3.2mm

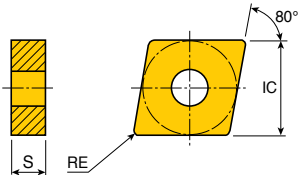
8 Hand of insert

	
R: Right hand	
	
L: Left hand	

9 Chip breaker

For chip breakers, see page A31-A42

Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76	0.1-1.6
16	15.88	6.35	1.2-1.6
19	19.05	6.35	0.8-1.6

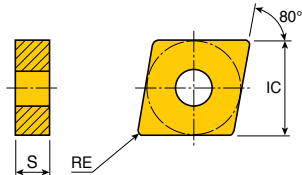
Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated												PVD coated				K10					
				Cermet																					
 Medium	CNGG 120401 ML	0.1-3.5	0.03-0.10	PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020		
	120402 ML	0.2-3.5	0.05-0.15															●		●				●	
	120404 ML	0.8-3.5	0.10-0.30															●		●				●	
	120408 ML	1.0-3.5	0.12-0.35															●		●				●	
 Roughing	CNMA 120404	1.0-5.0	0.15-0.50				●	●	●															●	
	120408	1.0-6.0	0.15-0.60				●	●	●															●	
	120412	1.5-6.0	0.15-0.70				●	●	●	●															
	120416	2.0-6.0	0.20-0.80				●	●	●																
	160612	2.0-8.0	0.15-0.70				●	●	●																
	160616	2.0-8.0	0.20-0.80					●																	
	190608	2.0-10.0	0.15-0.70						●																
	190612	2.0-10.0	0.15-0.70					●	●																
	190616	3.0-10.0	0.15-1.00				●	●	●																
 Roughing	CNMA 120408 WT	0.7-5.0	0.15-0.80				●																		



A58-A59, A100-A101, A146,
A170, A194, A203, A205

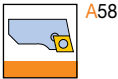
●: Standard items

Negative 80° rhombic inserts



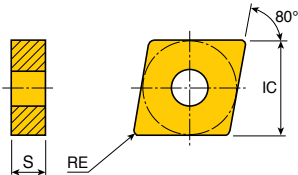
Size	Dimension (mm)		
	IC	S	RE
19	19.05	6.35	2.4
25	25.4	9.52	2.4

Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated										PVD coated									
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020
 Roughing	CNMD 250924 HD											●	●	●									
	Roughing	4.0-15.0	0.55-1.50																				
	Finishing	2.0-5.0	0.40-0.80																				
 Finishing																							
 Roughing	CNMD 190624 HT											●	●										
	Roughing	4.0-9.0	0.35-0.90																				
	Finishing	2.0-5.0	0.40-0.80																				
 Finishing	250924 HT											●	●										
	Roughing	5.0-12.0	0.55-1.30																				
	Finishing	2.0-5.0	0.40-0.80																				
 Roughing	CNMD 190624 HY											●	●										
	Roughing	4.0-12.0	0.50-1.10																				
	Finishing	2.0-5.0	0.40-0.80																				
 Finishing	250924 HY											●	●	●									
	Roughing	4.0-15.0	0.55-1.50																				
	Finishing	2.0-5.0	0.40-0.80																				
 Roughing	CNMD 250924 HZ											●	●	●									
	Roughing	4.0-15.0	0.55-1.50																				
	Finishing	2.0-5.0	0.40-0.80																				
 Finishing																							



●: Standard items

Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76	0.4-1.6
16	15.88	4.76	0.4-1.6
19	19.05	6.35	0.4-1.6

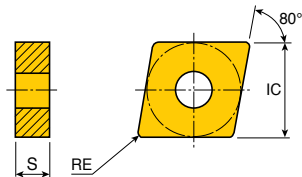
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		CVD coated										PVD coated						K10			
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080		TT3010	TT3020	TT9020
 Medium	CNMG 120404	1.0-5.0	0.17-0.45				●	●			●	●	●				●			●					●
	120408	1.5-5.0	0.23-0.60				●	●	●			●	●	●				●		●	●				
	120412	2.0-5.0	0.25-0.60				●	●				●	●				●								
	160604	2.0-6.5	0.20-0.45										●												
	160608	2.0-6.5	0.25-0.60									●	●				●								
	160612	2.0-6.5	0.27-0.60										●												
	160616	2.0-6.5	0.29-0.60									●													
	190604	3.0-8.0	0.20-0.45									●	●					●							
	190608	3.0-8.0	0.25-0.60				●	●				●	●	●				●							
	190612	3.0-8.0	0.30-0.60				●	●				●	●	●				●	●						
	190616	3.0-8.0	0.35-0.70									●	●	●				●							
 Finishing	CNMG 120404 EA	0.15-1.5	0.05-0.30											●	●	●	●		●	●	●	●	●		
	120408 EA	0.15-1.5	0.07-0.40											●	●	●	●		●		●	●	●		
 Medium	CNMG 120404 EM	0.5-5.0	0.11-0.50											●	●	●			●	●					
	120408 EM	0.5-5.0	0.13-0.50											●	●	●			●	●					
	120412 EM	0.5-5.0	0.15-0.55											●	●	●			●	●					
	120416 EM	0.5-5.0	0.17-0.60												●				●						
	160608 EM	0.5-6.5	0.13-0.50																●						
	160612 EM	0.5-6.5	0.15-0.55																●						
	190608 EM	0.5-8.0	0.13-0.50																●						
	190612 EM	0.5-8.0	0.15-0.55												●				●	●				●	
	190616 EM	0.5-8.0	0.17-0.60																●						
 Roughing	CNMG 120408 ET	1.2-5.5	0.17-0.55											●	●	●	●		●	●	●	●			
	120412 ET	1.2-5.5	0.20-0.60											●	●	●			●	●	●	●			
	160608 ET	2.5-7.0	0.20-0.60																●						
	160612 ET	2.5-7.0	0.25-0.60												●				●	●					
	190608 ET	3.0-9.0	0.20-0.60																●						
	190612 ET	3.0-9.0	0.25-0.60												●	●			●	●					
	190616 ET	3.0-9.0	0.30-0.65																●						



A58-A59, A100-A101, A146,
A170, A194, A203, A205

• Standard items

Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76	0.4-1.6
16	15.88	6.35	1.2-1.6
19	19.05	6.35	1.2-1.6

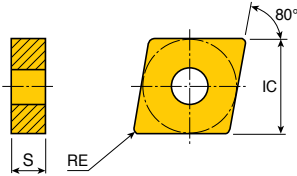
Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated										PVD coated			
				Germet PV3010 CT3000	TT3005 TT7005 TT7015 TT7025	TT8105B TT8115B TT8125B TT8135B	TT9215 TT9235	TT5100 TT7100	TT5080 TT8020 TT9080 TT3010 TT3020	TT9020	K10						
 Finishing	CNMG 120404 FA	0.2-2.0	0.05-0.20					● ●		●							
	120408 FA	0.3-2.0	0.05-0.25					● ●									
 Finishing	CNMG 120404 FC	0.2-2.5	0.05-0.30					● ● ●	● ●	●							
	120408 FC	0.3-2.5	0.08-0.35					● ● ●	● ●	●							
	120412 FC	0.3-2.5	0.10-0.40					● ●									
 Finishing	CNMG 120404 FG	0.2-2.5	0.05-0.30	● ●				● ●		●							
	120408 FG	0.3-2.5	0.08-0.35	● ●				● ●		●							
 Finishing	CNMG 120404 FLP	0.2-2.0	0.08-0.30					● ●									
	120408 FLP	0.3-2.0	0.10-0.30					● ●									
 Roughing	CNMG 120408 KT	0.38-7.0	0.19-0.53			● ● ●											
	120412 KT	0.50-7.0	0.25-0.70			● ● ●											
	120416 KT	0.75-7.0	0.28-0.85			● ● ●											
	160612 KT	0.8-9.0	0.25-0.75			● ●											
	160616 KT	1.0-9.0	0.30-0.85			● ●											
	190612 KT	1.0-14.0	0.25-0.75			● ●											
	190616 KT	1.5-14.0	0.30-0.85			● ●											
 Medium	CNMG 120404 MC	0.5-3.5	0.10-0.30			●	● ● ●			● ●	●						
	120408 MC	0.7-3.5	0.12-0.35				● ●			●							
	120412 MC	0.7-3.5	0.15-0.40				●										
 Medium	CNMG 120408 MGP	0.5-5.0	0.15-0.55				● ●										
	120412 MGP	0.6-5.0	0.17-0.55				● ●										

A58-A59, A100-A101, A146,
A170, A194, A203, A205

●: Standard items



Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76	0.4-1.2
16	15.88	6.35	0.8-1.2
19	19.05	6.35	0.8-1.6

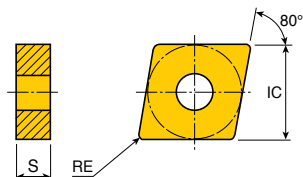
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated										PVD coated						K10	
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080		TT3010
 Medium	CNMG 120408 MGS	1.0-4.0	0.15-0.40			●														●	●		●
	120412 MGS	1.5-4.0	0.17-0.50			●														●	●		●
 Medium	CNMG 120404 ML	0.8-3.5	0.10-0.30								●	●		●	●		●		●	●			●
	120408 ML	1.0-3.5	0.12-0.35								●	●		●	●		●		●	●	●		●
	120412 ML	1.3-3.5	0.15-0.35														●		●				
 Medium	CNMG 120408 MLP	0.5-3.5	0.10-0.40								●	●	●										
	120412 MLP	0.6-3.5	0.15-0.50								●	●	●										
  Medium	CNMG 120404 MP	0.8-4.0	0.10-0.30								●	●		●	●	●	●		●	●			
	120408 MP	1.0-4.0	0.12-0.40								●	●		●	●	●	●	●		●	●		
	120412 MP	1.5-4.0	0.15-0.50								●	●		●	●		●		●	●			
	160612 MP ✓	2.5-6.0	0.15-0.50									●											
  Medium	CNMG 120404 MT	1.0-5.0	0.15-0.40		●		●	●	●		●	●					●		●	●			
	120408 MT	1.2-5.0	0.17-0.55	●	●		●	●	●		●	●	●	●	●	●	●	●	●	●	●		
	120412 MT	1.5-5.0	0.20-0.55				●	●			●	●	●	●	●	●	●	●	●	●			
	160608 MT ✓	2.0-6.5	0.20-0.55				●				●												
	160612 MT ✓	2.0-6.5	0.25-0.55				●				●	●					●		●	●			
	160616 MT	2.0-6.5	0.30-0.55								●												
	190608 MT	3.0-8.0	0.23-0.55				●				●	●		●	●	●	●		●	●			
	190612 MT	3.0-8.0	0.25-0.55								●	●	●		●	●	●		●	●			
	190616 MT	3.0-8.0	0.30-0.55									●											



A58-A59, A100-A101, A146,
A170, A194, A203, A205

▶ ✓: Type B chip breaker

●: Standard items



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76	0.4-1.6
16	15.88	6.35	0.8-1.6
19	19.05	6.35	0.8-1.6
25	25.4	9.52	2.4

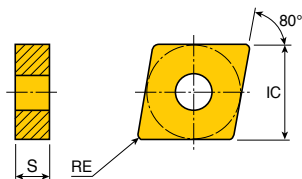
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated										PVD coated								
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020
 Medium	CNMG 120404 PC	0.4-5.0	0.10-0.40								•	•	•	•	•	•								
	120408 PC	0.5-5.0	0.15-0.50								•	•	•	•	•	•			•					
	120412 PC	0.6-5.0	0.17-0.55								•	•	•		•	•			•					
	120416 PC	0.8-5.0	0.20-0.60									•	•				•							
	160608 PC	2.0-6.5	0.20-0.55									•	•											
	160612 PC	2.0-6.5	0.25-0.55									•	•											
	160616 PC	2.0-6.5	0.30-0.55									•	•											
	190608 PC	3.0-8.0	0.23-0.55									•	•											
	190612 PC	3.0-8.0	0.25-0.55									•	•											
190616 PC	3.0-8.0	0.30-0.55										•												
 Roughing	CNMG 120408 RGP	2.5-6.0	0.25-0.70									•	•											
	120412 RGP	2.5-6.0	0.25-0.70									•	•											
	120416 RGP	2.5-6.0	0.30-0.70										•	•										
	190616 RGP	3.0-9.0	0.30-0.85										•	•										
 Type B Roughing	CNMG 120408 RT	2.5-6.0	0.25-0.70				•	•	•	•	•	•	•	•	•	•	•	•						
	120412 RT ✓	2.5-6.0	0.25-0.70				•	•	•		•	•	•	•	•	•	•							
	120416 RT	2.5-6.0	0.30-0.70					•		•	•													
	160612 RT	3.0-7.0	0.25-0.70				•	•			•	•	•			•	•	•						
	160616 RT	3.0-7.0	0.30-0.85				•	•			•	•												
	190608 RT	3.0-9.0	0.25-0.70						•		•	•				•								
	190612 RT	3.0-9.0	0.25-0.70				•	•		•	•	•	•	•	•		•	•	•					
	190616 RT	3.0-9.0	0.30-0.85				•	•			•	•	•			•	•		•					
	250924 RT	5.0-12.0	0.45-1.00								•	•					•							
 Finishing	CNMG 120404 SF	0.5-1.5	0.08-0.25													•		•	•					
	120408 SF	0.7-1.5	0.10-0.30									•	•			•		•	•					



► ✓: Type B chip breaker

●: Standard items

Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76	0.4-1.2
19	19.05	6.35	1.2-2.4
25	25.4	9.52	2.4-3.2

[illegible]

A58-A59, A100-A101, A146,
A170, A194, A203, A205

●: Standard items

Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76-5.56	0.8-1.2
16	15.88	6.35-7.94	0.8-2.4
19	19.05	6.35	0.8-2.4
25	25.4	7.94-9.52	2.4

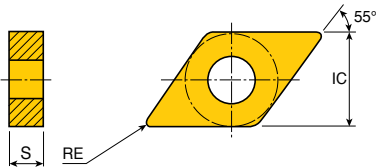
Insert	Designation	ap (mm)	Feed (mm/rev)	Germet	CVD coated										PVD coated									
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020
 Roughing	CNMM 120408 RH	2.5-6.0	0.30-0.70								●	●				●								
	120412 RH	2.5-6.0	0.30-0.80								●	●				●								
	160608 RH	3.0-8.0	0.30-0.70										●							●				
	160612 RH	3.0-8.0	0.30-0.80								●	●					●							
	160616 RH	4.0-8.0	0.45-1.00								●	●					●							
	190612 RH	4.0-9.0	0.35-0.80								●	●					●	●						
	190616 RH	4.0-9.0	0.45-1.00								●	●					●							
	190624 RH	4.0-9.0	0.55-1.20								●	●		●			●							
	250924 RH *	5.0-12.0	0.55-1.20									●												
 Roughing	CNMM 120408 RX	0.7-7.0	0.20-0.55								●	●												
	120412 RX	1.0-7.0	0.25-0.70								●	●												
	160612 RX	1.0-9.0	0.25-0.70								●						●							
	160616 RX	1.5-9.0	0.30-0.90								●	●	●		●	●								
	160624 RX	2.0-9.0	0.35-1.20							●		●												
	190608 RX	0.7-10.0	0.20-0.55									●												
	190612 RX	1.0-10.0	0.25-0.70								●	●												
	190616 RX	1.5-10.0	0.30-0.90								●	●	●											
	190624 RX	2.0-10.0	0.35-1.10									●	●											
	250724 RX	2.0-12.0	0.35-1.20									●												
	250924 RX	2.0-12.0	0.35-1.20									●												



► *: Chip breaker shape is not the same as shown in the catalogue

●: Standard items

Negative 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
11	9.52	4.76	0.8
15	12.7	4.76-6.35	0.1-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet	CVD coated										PVD coated						K10			
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT3010		TT3020	TT9020	TT4410
 Medium	DNGG 150401 ML	0.1-1.0	0.03-0.10																●					●
	150402 ML	0.2-1.2	0.05-0.15																●					●
	150404 ML	0.8-3.5	0.10-0.30																●					●
	150408 ML	1.0-3.5	0.12-0.35																●					●
 Roughing	DNMA 150408	0.8-4.0	0.15-0.65				●	●																
	150608	0.8-4.0	0.15-0.65				●	●																
	150412	1.2-4.0	0.15-0.65				●	●																
	150612	1.2-4.0	0.15-0.65					●																
 Medium	DNMG 150404	1.0-4.0	0.17-0.45					●				●												
	150604	1.0-4.0	0.17-0.45				●	●			●	●				●								
	150408	1.5-4.0	0.17-0.55								●													
	150608	1.5-4.0	0.17-0.55				●	●	●		●	●	●			●								●
	150412	1.5-4.0	0.25-0.55				●				●													
	150612	1.5-4.0	0.25-0.55				●		●		●	●				●								
	150416	2.5-4.0	0.25-0.65													●								
	150616	2.5-4.0	0.25-0.65								●													
 Finishing	DNMG 150404 EA	0.1-1.5	0.05-0.2											●										
	150408 EA	0.1-1.5	0.10-0.4											●										
	150604 EA	0.1-1.5	0.05-0.2											●				●	●	●	●			
	150608 EA	0.1-1.5	0.10-0.4											●				●	●	●	●			
 Medium	DNMG 110408 EM #	0.5-4.0	0.13-0.50											●	●	●								
	150408 EM	0.5-5.0	0.13-0.50											●	●	●								
	150608 EM	0.5-5.0	0.13-0.50											●	●	●		●		●				
	150412 EM	0.5-5.0	0.15-0.55											●	●	●								
	150612 EM	0.5-5.0	0.15-0.55											●	●	●								
 Roughing	DNMG 150408 ET	1.0-6.0	0.20-0.60											●	●	●		●					●	
	150412 ET	1.0-6.0	0.25-0.60											●	●	●		●					●	
	150608 ET	1.0-6.0	0.20-0.60											●	●			●		●	●	●		
	150612 ET	1.0-6.0	0.25-0.60											●	●			●		●	●	●		



A52, A53, A60-A61, A74,
A102, A146, A171, A177-A179,
A195, A203, A206, A215

► #: Insert with screw hole

●: Standard items

Size	Dimension (mm)		
	IC	S	RE
11	9.52	4.76	0.4-0.8
15	12.7	4.76-6.35	0.4-1.2

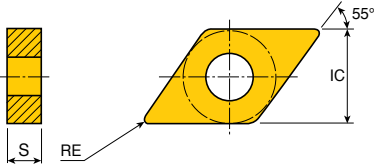
Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated													PVD coated						
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020
	DNMG 150408 FA	0.2-2.0	0.05-0.20										●			●							
	150608 FA	0.2-2.0	0.05-0.20										●			●							
Finishing																							
	DNMG 110404 FC #	0.5-2.0	0.07-0.20													●							
	110408 FC #	0.7-2.0	0.10-0.25										●	●			●	●					
	150404 FC	0.2-2.5	0.05-0.30									●	●	●									
	150604 FC	0.2-2.5	0.05-0.30									●				●							
	150408 FC	0.3-2.5	0.08-0.35									●	●	●			●						
	150608 FC	0.3-2.5	0.08-0.35									●	●	●			●						
	150412 FC	0.5-2.5	0.08-0.35									●	●	●									
	150612 FC	0.5-2.5	0.08-0.35										●										
 	DNMG 110404 FG #	0.5-2.0	0.07-0.20	●	●							●	●		●	●							
	110408 FG #	0.7-2.0	0.10-0.25	●	●							●				●							
	150404 FG	0.5-2.0	0.07-0.20	●	●							●	●	●		●							
	150604 FG	0.5-2.0	0.07-0.20	●	●							●	●	●		●							
	150408 FG ✓	0.7-2.0	0.10-0.25	●	●							●	●	●		●							
	150412 FG ✓	1.0-2.0	0.12-0.25									●											
	150608 FG ✓	0.7-2.0	0.10-0.25	●	●							●	●	●		●							
	DNMG 150604 FLP	0.2-2.0	0.08-0.30									●	●										
	150608 FLP	0.3-2.0	0.10-0.30									●	●										
	DNMG 150408 KT	0.38-7.0	0.17-0.47				●	●	●														
	150608 KT	0.38-7.0	0.17-0.47				●	●	●														
	150412 KT	0.5-7.0	0.23-0.63				●	●	●														
	150612 KT	0.5-7.0	0.23-0.63				●	●	●														



- ▶ #: Insert with screw hole
- ▶ ✓: Type B chip breaker

●: Standard items

Negative 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
15	12.7	4.76-6.35	0.4-1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		CVD coated										PVD coated				K10					
				PV3010	CT3000	TT3005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020		TT9080	TT3010	TT3020	TT9020	
 Medium	DNMG 150604 MC	0.5-3.5	0.10-0.30							•	•	•			•										
	150408 MC	0.7-3.5	0.12-0.35							•		•	•												
	150608 MC	0.7-3.5	0.12-0.35								•	•	•			•	•		•						
	150412 MC	1.0-3.5	0.15-0.35							•						•									
	150612 MC	1.0-3.5	0.15-0.35								•					•									
																•									
 Medium	DNMG 150608 MGP	0.5-4.0	0.15-0.50								•	•													
	150612 MGP	0.6-4.0	0.17-0.55									•	•												
 Medium	DNMG 150408 MGS	1.0-4.0	0.15-0.40		•																•	•		•	
	150608 MGS	1.0-4.0	0.15-0.40		•																	•	•		•
	150612 MGS	1.0-4.0	0.17-0.40		•																	•	•		•
 Medium	DNMG 150404 ML	0.8-3.5	0.10-0.30									•				•		•							
	150604 ML	0.8-3.5	0.10-0.30									•	•			•		•							•
	150408 ML	1.0-3.5	0.12-0.35										•			•		•							•
	150608 ML	1.0-3.5	0.12-0.35									•	•		•	•	•	•	•						•
 Medium	DNMG 150608 MLP	0.3-3.5	0.10-0.40								•	•													
	150612 MLP	0.35-3.5	0.15-0.50									•	•												
 Type B Medium	DNMG 150404 MP	0.8-4.0	0.10-0.30								•			•	•	•		•							
	150604 MP	0.8-4.0	0.10-0.30									•	•		•	•	•		•						
	150408 MP	1.0-4.0	0.12-0.40									•				•		•		•	•				
	150608 MP	1.0-4.0	0.12-0.40									•	•		•	•	•		•	•	•				
	150612 MP ✓	1.0-4.0	0.15-0.40									•		•	•	•	•		•						

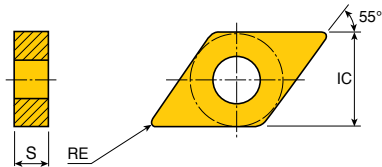


A52, A53, A60-A61, A74,
A102, A146, A171, A177-A179,
A195, A203, A206, A215

✓ ▽: Type B chip breaker

•: Standard items

Negative 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
11	9.52	4.76	0.8-1.2
15	12.7	4.76-6.35	0.4-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated															PVD coated						
				Germet																					
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10
 Medium	DNMG 110408 MT #	1.0-3.0	0.17-0.40	●			●	●			●	●					●		●						
	110412 MT #	1.0-3.0	0.20-0.45				●	●			●														
	150404 MT	0.8-4.0	0.15-0.40	●				●	●		●	●					●								
	150604 MT	0.8-4.0	0.15-0.40	●			●	●	●		●	●					●		●						
	150408 MT	1.0-4.0	0.17-0.50	●				●	●		●	●			●	●		●		●	●				
	150608 MT	1.0-4.0	0.17-0.50	●			●	●	●		●	●			●	●	●	●		●	●				
	150412 MT	1.3-4.0	0.20-0.50					●			●							●							
	150612 MT	1.3-4.0	0.20-0.50				●	●	●		●	●						●		●	●				
 Medium	DNMG 110408 PC #	0.5-3.0	0.17-0.40							●	●	●													
	150404 PC	0.4-4.0	0.10-0.40							●	●	●													
	150604 PC	0.4-4.0	0.10-0.40							●	●	●		●	●		●								
	150408 PC	0.5-4.0	0.15-0.50							●	●	●						●							
	150608 PC	0.5-4.0	0.15-0.50							●	●	●		●	●	●	●								
	150412 PC	0.6-4.0	0.17-0.55							●	●	●					●								
	150612 PC	0.6-4.0	0.17-0.55							●	●	●													
	 Roughing	DNMG 150408 RT	2.0-4.0	0.25-0.65					●	●	●	●													
150608 RT		2.0-4.0	0.25-0.65				●	●	●		●	●					●								
150412 RT		2.5-4.0	0.25-0.65					●				●													
150612 RT		2.5-4.0	0.25-0.65				●	●	●			●						●							
150616 RT		2.5-5.5	0.25-0.70								●	●						●							
 Right hand Medium		DNMG 150404 L-VF	0.7-4.5	0.10-0.35									●												
	150404 R-VF	0.7-4.5	0.10-0.35	●								●					●								
	150604 L-VF	0.7-4.5	0.10-0.35									●					●								
	150604 R-VF	0.7-4.5	0.10-0.35	●								●	●					●	●						
	150408 L-VF	1.0-4.5	0.12-0.45									●	●							●		●			
	150408 R-VF	1.0-4.5	0.12-0.45									●	●							●		●			
	150608 L-VF	1.0-4.5	0.12-0.45									●	●				●	●							
	150608 R-VF	1.0-4.5	0.12-0.45	●								●	●												

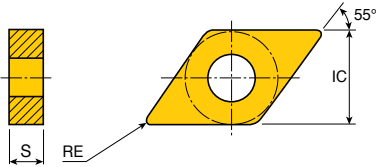


A52, A53, A60-A61, A74,
A102, A146, A171, A177-A179,
A195, A203, A206, A215

► #: Insert with screw hole

●: Standard items

Negative 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
15	12.7	4.76-6.35	0.8-1.6

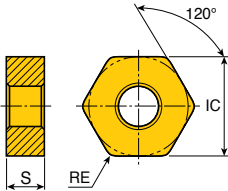
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A52, A53, A60-A61, A74,
A102, A146, A171, A177-A179,
A195, A203, A206, A215

- *: Wiper inserts should be applied to ☐DJNR/L..., ☐DUNR/L..., ☐DZNR/L...

●: Standard items

Negative 120° hexagonal inserts



Size	Dimension (mm)		
	IC	S	RE
05	12.7	4.76	0.8
10	19.05	6.35	1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet	CVD coated										PVD coated					K10				
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080		TT8020	TT9080	TT3010	TT3020
 Medium	HNMG 050408 GU	0.5-3.5	0.15-0.60				●	●																
	100612 GU	1.0-5.0	0.25-0.70				●	●					●											
 Medium	HNMG 050408 SU	0.5-3.5	0.15-0.50										●				●		●					
	100612 SU	1.0-5.0	0.25-0.70																●					

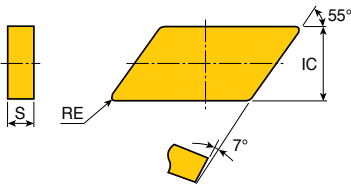
A103, A196

● : Standard items



KNUX

Negative 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
16	9.52	4.76	0.5-1.0

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet	CVD coated										PVD coated										
				PV3010 CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020		TT9080	TT3010	TT3020	TT9020	K10
 Right hand Medium	KNUX 160405 L11	1.5-5.0	0.15-0.35								●	●			●			●							●
	160405 R11	1.5-5.0	0.15-0.35				●				●	●	●		●	●		●							
	160410 L11	2.0-5.0	0.21-0.45								●	●				●									
	160410 R11	2.0-5.0	0.21-0.45								●	●				●									
 Right hand Medium	KNUX 160405 L12	2.0-5.0	0.24-0.50								●	●				●									
	160405 R12	2.0-5.0	0.24-0.50								●	●				●									
	160410 L12	2.5-6.0	0.30-0.60									●													
	160410 R12	2.5-6.0	0.30-0.60									●													

A47, A165

● : Standard items

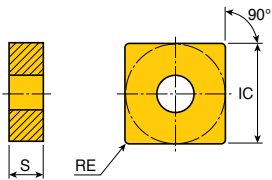


Size	Dimension (mm)		
	IC	S	
12	12.7	4.76	
15	15.88	6.35	
19	19.05	6.35	
25	25.4	9.52	

[illegible]

●: Standard items

Negative square inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76	0.8-1.6
15	15.88	6.35	1.2-1.6
19	19.05	6.35	1.2-1.6
25	25.4	7.94-9.52	2.4
31	31.75	9.52	2.4

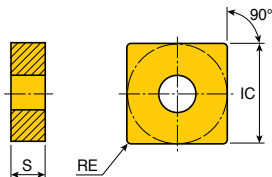
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		CVD coated										PVD coated								
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020
 Roughing	SNMA 120408	1.0-6.0	0.15-0.70				●	●																●
	120412	1.5-6.0	0.20-0.80				●	●																
	120416	2.0-6.0	0.30-1.00				●	●																
	150612	2.0-8.0	0.20-0.80				●																	
	150616	2.0-8.0	0.30-1.00					●																
	190612	2.0-10.0	0.20-0.80				●	●																●
	190616	2.0-10.0	0.30-1.00					●																
	250724	3.0-13.0	0.40-1.20					●		●														
 Roughing	SNMD 250924 HD										●	●	●											
	Roughing	4.0-15.0	0.55-1.50																					
	Finishing	2.0-5.0	0.40-0.80																					
 Roughing	SNMD 310924 HD										●	●				●								
	Roughing	7.0-25.0	0.60-1.50																					
	Finishing	2.0-5.0	0.40-0.80																					
																					</			



A51, A65, A66,
A104, A105, A147,
A172, A197

●: Standard items

Negative square inserts



Size	Dimension (mm)		
	IC	S	RE
19	19.05	6.35	2.4
25	25.4	9.52	2.4
31	31.75	9.52	2.4

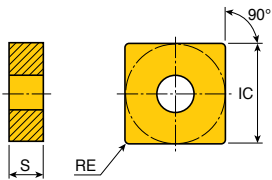
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated										PVD coated					K10		
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020		TT9080	TT3010
 Roughing	SNMD 190624 HT																						
	Roughing	4.0-9.0	0.55-1.20									•	•										
	Finishing	2.0-5.0	0.40-0.80																				
 Finishing	250924 HT																						
	Roughing	5.0-12.0	0.55-1.30									•	•										
	Finishing	2.0-5.0	0.40-0.80																				
 Roughing	SNMD 310924 HT																						
	Roughing	6.0-22.0	0.50-1.40									•	•				•						
	Finishing	2.0-5.0	0.40-0.80																				
 Finishing																							
 Roughing	SNMD 190624 HY																						
	Roughing	4.0-12.0	0.50-1.10									•	•										
	Finishing	2.0-5.0	0.40-0.80																				
 Finishing	250924 HY																						
	Roughing	4.0-15.0	0.55-1.50									•	•	•									
	Finishing	2.0-5.0	0.40-0.80																				
 Roughing	SNMD 250924 HZ																						
	Roughing	4.0-15.0	0.55-1.50									•	•	•									
	Finishing	2.0-5.0	0.40-0.80																				
 Finishing																							



A51, A65, A66,
A172

• Standard items

Negative square inserts



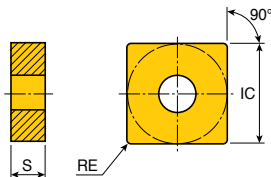
Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76	0.4-1.6
15	15.88	6.35	0.8-1.6
19	19.05	6.35	0.4-1.6
25	25.4	7.94-9.52	1.6-2.4

Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated														PVD coated								
				Germet																						
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10	
 Medium	SNMG 120404	1.0-5.0	0.17-0.45									●	●				●									
	120408	1.5-5.0	0.23-0.60				●	●	●			●	●	●			●									
	120412	2.0-5.0	0.25-0.60					●				●					●									
	120416	2.0-5.0	0.35-0.70									●					●									
	150608	1.5-6.0	0.25-0.60									●					●									
	150612	2.0-6.0	0.25-0.60									●														
	150616	2.0-6.0	0.35-0.70								●						●									
	190604	3.0-8.0	0.17-0.45										●													
	190608	3.0-8.0	0.25-0.60				●					●	●					●		●						
	190612	3.0-8.0	0.30-0.60				●	●				●	●	●				●								
	190616	3.0-8.0	0.35-0.70									●	●	●				●								
	250716	4.0-12.0	0.35-0.70									●	●					●								
250724	5.0-12.0	0.50-1.00									●	●					●									
250924	5.0-12.0	0.50-1.00										●														
 Finishing	SNMG 120404 EA	0.1-1.5	0.05-0.20											●	●				●							
	120408 EA	0.1-1.5	0.10-0.40											●	●				●							
 Medium	SNMG 120408 EM	0.8-5.0	0.13-0.50											●	●	●			●		●					
	120412 EM	0.8-5.0	0.15-0.55											●	●	●			●							
	150612 EM	0.8-6.5	0.15-0.55											●	●	●			●		●					
	150616 EM	0.8-6.5	0.17-0.60											●	●	●			●		●					
	190612 EM	0.8-8.0	0.15-0.55											●	●	●			●							
	190616 EM	0.8-8.0	0.17-0.60											●	●	●			●							
 Roughing	SNMG 120408 ET	2.0-7.0	0.25-0.70											●	●	●			●			●	●			
	120412 ET	2.0-7.0	0.30-0.70											●	●	●			●			●	●			
	190608 ET	3.0-9.0	0.30-0.75											●	●	●			●		●					
	190612 ET	3.0-9.0	0.35-0.75											●	●	●			●							

 A65, A66, A104, A105, A147, A172, A197

●: Standard items

Negative square inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76	0.4-1.6
15	15.88	6.35	1.2-1.6
19	19.05	6.35	1.6

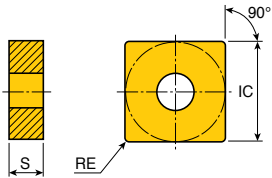
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated										PVD coated				K10				
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080		TT8020	TT9080	TT3010	TT3020
 Finishing	SNMG 120404 FC	0.2-2.5	0.05-0.30								●													
	120408 FC	0.2-2.5	0.08-0.35								●													
	120412 FC	0.3-2.5	0.10-0.40								●													
 Finishing	SNMG 120404 FG	0.5-3.0	0.07-0.20		●						●							●						
	120408 FG	0.7-3.0	0.10-0.25	●	●						●	●												
 Roughing	SNMG 120408 KT	0.38-7.0	0.19-0.53				●	●	●															
	120412 KT	0.50-7.0	0.28-0.70				●	●	●															
	120416 KT	0.75-7.0	0.30-0.75				●	●																
	150612 KT	0.6-8.5	0.30-0.75				●	●																
	150616 KT	0.9-8.5	0.30-0.85				●	●																
	190616 KT	1.3-12.0	0.30-0.85				●	●																
 Medium	SNMG 120408 MC	0.7-3.5	0.12-0.35								●	●				●			●					
	120412 MC	0.7-3.5	0.15-0.40								●					●								
 Medium	SNMG 120408 MGP	0.5-5.0	0.15-0.50								●	●												
 Medium	SNMG 120408 MGS	1.0-4.0	0.15-0.40			●															●	●		●
	120412 MGS	1.3-4.0	0.17-0.40			●															●	●		●
	190616 MGS	1.5-8.0	0.17-0.60			●															●	●		●
 Medium	SNMG 120408 ML	1.0-3.5	0.12-0.35								●	●				●			●					●
	120412 ML	1.0-3.5	0.15-0.35								●	●				●								



A65, A66, A104,
A105, A147, A172,
A197

●: Standard items

Negative square inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76	0.4-1.2
15	15.88	6.35	0.8
19	19.05	6.35	1.2-2.4
25	25.4	7.94-9.52	2.4-3.2

Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated										PVD coated										
				Cermet																				
				PV3010	CT3000	TT3005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10
 Type B Medium	SNMG 120404 MP ✓	0.8-4.0	0.10-0.30							●	●					●			●					
	120408 MP	1.0-4.0	0.12-0.40							●	●			●			●		●	●	●			
	120412 MP	1.3-4.0	0.15-0.40								●						●							
	150608 MP	1.5-6.0	0.25-0.60							●														
 Type B Medium	SNMG 120404 MT ✓	1.0-5.0	0.12-0.40	●						●							●							
	120408 MT	1.2-5.0	0.17-0.55	●			●	●	●	●	●		●	●	●	●		●	●					
	120412 MT	1.5-5.0	0.20-0.55				●			●	●			●			●		●	●				
	150612 MT ✓	2.0-7.0	0.30-0.65								●	●												
	190608 MT	3.0-8.0	0.17-0.55								●			●										
	190612 MT	3.0-8.0	0.20-0.55								●			●	●	●				●				
 Medium	SNMG 120404 PC	0.4-5.0	0.12-0.40								●													
	120408 PC	0.5-5.0	0.15-0.50							●	●			●		●					●			
	120412 PC	0.6-5.0	0.15-0.50								●	●												
 Type B Roughing	SNMG 120408 RT	2.5-6.0	0.25-0.70			●	●			●	●					●								
	120412 RT	2.5-6.0	0.30-0.70			●	●			●	●				●									
	120416 RT	2.5-6.0	0.40-0.70							●	●	●												
	150612 RT	3.0-7.0	0.30-0.70				●			●											●			
	190612 RT	3.0-9.0	0.30-0.75							●	●	●	●		●		●			●				
	190616 RT ✓	3.0-9.0	0.40-0.90							●	●	●		●		●			●	●				
	250924 RT	5.0-12.0	0.40-1.00										●											
 Roughing	SNMM250924 EH	2.8-18.0	0.45-1.20											●	●	●								
 Roughing	SNMM190612 HT	4.0-9.0	0.35-0.90							●	●													
	190616 HT	4.0-9.0	0.45-1.00							●	●						●							
	190624 HT	4.0-9.0	0.55-1.20							●														
	250724 HT	5.0-12.0	0.55-1.30							●	●			●		●	●							
	250924 HT	5.0-12.0	0.55-1.30							●							●							
	250932 HT	5.0-13.0	0.65-1.30								●													

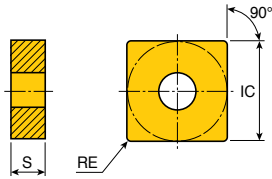


A65, A66, A104,
A105, A147, A172,
A197

▶ ✓: Type B chip breaker

●: Standard items

Negative square inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76	0.8-1.2
15	15.88	6.35-7.94	1.2
19	19.05	6.35	0.8-2.4
25	25.4	7.94-9.52	1.6-2.4

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet	CVD coated										PVD coated						K10				
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020		TT9080	TT3010	TT3020	TT9020
 Roughing	SNMM 190624 HY	4.0-12.0	0.50-1.10								•	•													
	250924 HY	4.0-15.0	0.55-1.50								•	•	•												
 Roughing	SNMM 250924 HZ	4.0-15.0	0.55-1.50								•	•													
 Roughing	SNMM 120408 RH	2.5-6.0	0.30-0.70								•						•								
	120412 RH	2.5-6.0	0.30-0.80								•						•								
	150612 RH	3.0-7.0	0.30-0.80								•						•								
	190608 RH*	3.0-9.0	0.30-0.70								•														
	190612 RH	4.0-9.0	0.30-0.80								•	•						•							
	190616 RH	4.0-9.0	0.45-1.00								•			•			•			•					
	190624 RH	4.0-9.0	0.55-1.20								•														
	250716 RH*	5.0-12.0	0.55-1.00								•														
	250724 RH*	5.0-12.0	0.55-1.20								•	•					•								
	250924 RH*	5.0-12.0	0.55-1.20								•														
 Roughing	SNMM 120408 RX	0.7-7.0	0.20-0.55								•	•	•												
	120412 RX	1.0-7.0	0.25-0.70								•	•	•												
	150612 RX	1.0-9.0	0.25-0.70								•	•	•												
	190612 RX	1.0-10.0	0.25-0.70								•	•													
	190616 RX	1.5-10.0	0.30-0.90								•														
	190624 RX	2.0-10.0	0.35-1.10								•														
	250724 RX	2.0-12.0	0.35-1.20								•														
	250924 RX	2.0-12.0	0.35-1.20								•	•													

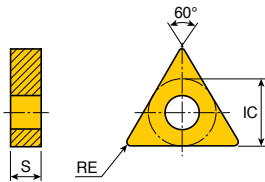


A65, A66, A104,
A105, A147, A172,
A197

► *: Chip breaker shape is not the same as shown in the catalogue

•: Standard items

Negative triangular inserts



Size	Dimension (mm)		
	IC	S	RE
11	6.35	3.18	0.4-0.8
16	9.52	4.76	0.4-1.6
22	12.7	4.76	0.4-1.6
27	15.88	6.35	0.8-1.6
33	19.05	7.94-9.52	1.6-2.4

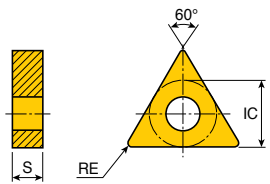
Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated												PVD coated									
				Germet PV3010 CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10	
 Left hand Medium	TNGG 160404 L	1.0-3.5	0.12-0.30	●								●													
	160404 R	1.0-3.5	0.12-0.30	●								●				●									
	160408 L	1.3-3.5	0.15-0.35	●																					
	160408 R	1.3-3.5	0.15-0.35	●								●													
	220404 L	1.0-5.0	0.12-0.30	●													●								
	220404 R	1.0-5.0	0.12-0.30	●								●						●							
	220408 L	1.3-5.0	0.15-0.35	●														●							
	220408 R	1.3-5.0	0.15-0.35	●															●						
 Roughing	TNMA 160404	1.0-4.0	0.15-0.30			●	●	●																	
	160408	1.0-4.0	0.15-0.40			●	●	●																	
	160412	1.5-4.5	0.20-0.50					●	●																
	160416	1.0-4.5	0.20-0.50			●																			
	220408	1.5-5.0	0.15-0.40					●	●																
	220412	1.5-5.0	0.20-0.50			●	●																		
	220416	2.0-5.0	0.20-0.61			●	●																		
 Medium	TNMG 110304	1.2-3.0	0.15-0.40								●	●													
	110308	1.5-3.0	0.17-0.40								●														
	160404	1.5-3.5	0.17-0.45				●	●	●		●	●					●						●		
	160408	2.0-3.5	0.17-0.55				●	●	●		●	●					●		●				●		
	160412	2.0-3.5	0.25-0.55								●						●								
	220404	1.5-5.0	0.17-0.45				●				●	●					●								
	220408	2.0-5.0	0.17-0.55				●	●			●	●					●	●							
	220412	2.0-5.0	0.25-0.55								●	●													
	220416	2.0-5.0	0.30-0.60									●													
	270608	2.0-5.0	0.17-0.55									●	●												
	270612	3.0-7.0	0.25-0.55									●													
	270616	3.0-7.0	0.30-0.60									●													
	330716	3.0-9.0	0.35-0.70									●	●					●							
	330924	3.0-9.0	0.40-0.80										●												

A54, A67, A68, A106,
A114, A115, A148,
A173, A200, A204

●: Standard items



Negative triangular inserts



Size	Dimension (mm)		
	IC	S	RE
11	6.35	3.18	0.4
16	9.52	4.76	0.4-1.2
22	12.7	4.76	0.8-1.2

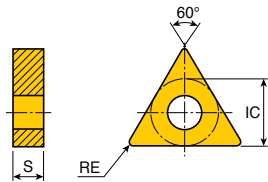
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated										PVD coated					K10			
				PV3010	CT3000	TT3005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080		TT3010	TT3020	TT9020
 Finishing	TNMG 160404 EA	0.1-1.5	0.05-0.20															●	●					
	160408 EA	0.1-1.5	0.10-0.40															●	●					
 Medium	TNMG 160408 EM	0.8-4.5	0.13-0.50															●	●					
	160412 EM	0.8-4.5	0.15-0.55															●	●					
	220408 EM	0.8-6.0	0.13-0.50															●	●	●				
	220412 EM	0.8-6.0	0.15-0.55															●						
 Roughing	TNMG 160408 ET	2.0-5.0	0.25-0.65															●	●	●				
	220408 ET	2.5-7.0	0.25-0.65															●	●	●				
	220412 ET	2.5-7.0	0.25-0.65															●	●	●				
 Finishing	TNMG 160404 FC	0.2-2.5	0.05-0.30							●	●	●			●		●							
	160408 FC	0.2-2.5	0.08-0.35							●	●	●			●	●	●							
	160412 FC	0.3-2.5	0.10-0.40							●	●													
 Finishing	TNMG 110304 FG	0.5-1.5	0.07-0.20	●													●							
	160404 FG	0.5-2.0	0.07-0.20	●	●					●	●						●							
	160408 FG	0.7-2.0	0.10-0.25	●	●					●	●						●							
	160412 FG	0.7-2.0	0.13-0.30	●																				
	220408 FG	0.7-2.0	0.10-0.25							●	●													
 Finishing	TNMG 160404 FLP	0.2-2.0	0.08-0.30							●	●													
	160408 FLP	0.3-2.0	0.10-0.30							●	●													
 Right hand Medium	TNMG 160404 L-FS	0.8-3.0	0.15-0.30	●						●					●									
	160404 R-FS	0.8-3.0	0.15-0.30	●						●					●		●							
	160408 L-FS	1.0-3.5	0.20-0.40							●														
	160408 R-FS	1.0-3.5	0.20-0.40							●					●		●		●					



A54, A67, A68, A106,
A114, A115, A148,
A173, A200, A204

●: Standard items

Negative triangular inserts



Size	Dimension (mm)		
	IC	S	RE
11	6.35	3.18	0.8
16	9.52	4.76	0.4-1.2
22	12.7	4.76	0.4-1.2
27	15.88	6.35	1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated										PVD coated										
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020
 Roughing	TNMG 160408 KT	0.34-6.2	0.17-0.42				●	●	●															
	160412 KT	0.45-6.3	0.20-0.56				●	●																
	220408 KT	0.38-7.0	0.19-0.53				●	●																
	220412 KT	0.5-7.0	0.25-0.70				●	●																
 Medium	TNMG 160408 MC	0.7-3.5	0.17-0.40								●	●				●								
 Medium	TNMG 160408 MGP	0.5-4.5	0.15-0.50								●	●												
	160412 MGP	0.6-4.5	0.17-0.55								●	●												
 Medium	TNMG 160404 ML	0.8-3.5	0.10-0.30								●	●				●		●	●					
	160408 ML	1.0-3.5	0.12-0.35								●	●	●			●		●	●					
	160412 ML	1.5-3.5	0.15-0.35													●								
	220404 ML	1.0-4.0	0.10-0.30													●								●
	220408 ML	1.0-4.0	0.12-0.35									●				●								●
 Medium	TNMG 160404 MLP	0.25-2.5	0.07-0.30								●	●												
	160408 MLP	0.30-2.5	0.10-0.40								●	●												
	160412 MLP	0.35-2.5	0.15-0.50								●	●												
 Medium	TNMG 160404 MP	0.8-3.5	0.10-0.30								●			●		●		●	●	●	●			
	160408 MP	1.0-3.5	0.12-0.40								●	●		●	●	●		●	●		●	●		
	160412 MP	1.5-3.5	0.15-0.40								●					●		●		●	●			
	220404 MP	1.0-3.5	0.12-0.35															●						
	220408 MP	1.0-4.0	0.12-0.40								●	●		●				●	●					
 Type B Medium	TNMG 110308 MT	1.0-3.0	0.17-0.40								●	●				●								
	160404 MT	1.0-3.5	0.17-0.40		●		●	●			●	●				●		●	●					
	160408 MT	1.2-3.5	0.17-0.50		●		●	●	●		●	●		●		●		●	●					
	160412 MT	1.5-3.5	0.20-0.50				●				●	●				●								
	220404 MT	1.2-5.0	0.15-0.40								●	●												
	220408 MT	1.2-5.0	0.17-0.50				●				●	●				●			●					
	220412 MT ✓	1.5-5.0	0.20-0.50								●	●				●		●						
	270612 MT ✓	3.0-7.0	0.20-0.50				●						●			●		●						

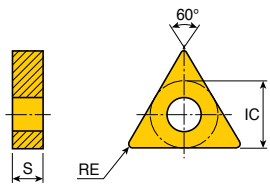
A54, A67, A68, A106,
A114, A115, A148,
A173, A200, A204

▶ ✓: Type B chip breaker

●: Standard items



Negative triangular inserts



Size	Dimension (mm)		
	IC	S	RE
16	9.52	4.76	0.4-1.2
22	12.7	4.76	0.8-1.6
27	15.88	6.35	1.2
33	19.05	9.52	2.4

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		CVD coated										PVD coated				
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9235	TT9255	TT1010	TT1020	TT1030	TT1040
 Medium	TNMG 160404 PC	1.0-3.5	0.15-0.40							•	•	•		•						
	160408 PC	0.5-4.5	0.15-0.50							•	•	•		•	•	•			•	
	160412 PC	0.6-4.5	0.17-0.55							•	•	•								
	220408 PC	1.2-5.0	0.17-0.50							•	•									
	220412 PC	1.5-5.0	0.20-0.50							•	•									
 Roughing	TNMG 160408 RT	2.0-5.0	0.25-0.65			•	•	•		•										
	160412 RT	2.0-5.0	0.25-0.65			•	•	•		•										
	220408 RT	2.0-7.0	0.25-0.65							•	•					•				
	220412 RT	2.5-7.0	0.25-0.65					•												
	330924 RT	3.0-9.0	0.35-0.70							•	•						•			
 Finishing	TNMG 160408 SF	0.7-1.5	0.10-0.30													•	•			
 Right hand Medium	TNMG 160404 L-VF	0.7-3.5	0.10-0.30	•						•	•					•				
	160404 R-VF	0.7-3.5	0.10-0.30	•	•					•	•					•		•		
	160408 L-VF	1.0-3.5	0.12-0.35							•						•				
	160408 R-VF	1.0-3.5	0.12-0.35							•	•					•				
 Type B Roughing	TNMM160408 RH	2.0-7.0	0.30-0.70							•										
	220408 RH	2.0-7.0	0.30-0.70							•	•	•								
	220412 RH	2.5-7.0	0.30-0.70							•						•	•			
	270612 RH ✓	3.0-8.0	0.30-0.80							•										
 Roughing	TNMM160408 RX	0.7-6.0	0.20-0.55							•	•	•								
	160412 RX	1.0-7.0	0.25-0.70							•	•	•								
	220408 RX	0.7-7.5	0.20-0.55							•	•	•								
	220412 RX	1.0-7.5	0.25-0.70							•	•	•								
	220416 RX	1.5-7.5	0.30-0.90							•	•	•								

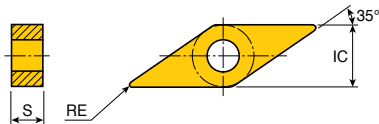


A54, A67, A68, A106,
A114, A115, A148,
A173, A200, A204

▶ ✓: Type B chip breaker

•: Standard items

Negative 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
13	7.94	4.76	0.4-0.8
16	9.52	4.76	0.1-1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated										PVD coated										
				PV3010	CT3000	TT3005	TT7005	TT7015	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430
 Medium	VNKG 160401 ML	0.1-1.0	0.03-0.10																					●
	160402 ML	0.2-1.2	0.05-0.15													●								●
	160404 ML	0.8-3.0	0.10-0.27													●								●
	160408 ML	0.8-3.5	0.10-0.30													●								●
 Medium	VNMG 160404	1.0-3.0	0.17-0.40				●	●	●	●					●									
	160408	1.5-3.0	0.17-0.50				●	●	●	●					●									
	160412	1.5-3.0	0.20-0.50				●	●	●	●														
 Finishing	VNMG 160404 EA	0.1-1.5	0.05-0.20									●	●			●	●	●	●					
	160408 EA	0.2-2.5	0.08-0.30						●			●				●		●	●					
 Medium	VNMG 160408 EM	0.8-3.5	0.13-0.50									●					●							
 Finishing	VNMG 160408 FA	0.3-2.0	0.05-0.25						●						●		●							
 Finishing	VNMG 130404 FC #	0.5-1.5	0.08-0.20						●	●			●											
	130408 FC #	0.5-2.0	0.10-0.23							●														
	160404 FC	0.3-2.5	0.05-0.30						●	●		●												
	160408 FC	0.3-2.5	0.08-0.35						●	●		●												
 Finishing	VNMG 130404 FG #	0.5-1.5	0.08-0.20		●						●	●				●	●							
	130408 FG #	0.5-2.0	0.10-0.23		●						●	●												
	160404 FG	0.5-2.0	0.08-0.20	●	●				●	●	●			●		●	●	●						
	160408 FG	0.5-2.0	0.10-0.23	●	●				●	●	●					●	●							
 Finishing	VNMG 160404 FLP	0.2-1.5	0.08-0.30							●	●													
	160408 FLP	0.3-1.5	0.10-0.30							●	●													
	160412 FLP	0.4-1.5	0.12-0.30							●	●													

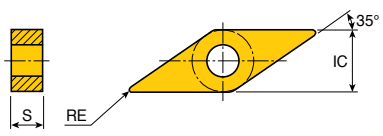


A55, A56, A87, A108,
A148, A188, A190, A206

► #: Insert with screw hole

●: Standard items

Negative 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
13	7.94	4.76	0.4-0.8
16	9.52	4.76	0.4-1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated								PVD coated								K10			
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080		TT3010	TT3020	TT9020
 Finishing	VNMG 160404 FX	0.2-2.0	0.05-0.20	●								●	●												
	160408 FX	0.2-2.0	0.07-0.20	●								●	●	●											
	160412 FX	0.2-2.0	0.10-0.23										●	●											
 Medium	VNMG 160408 MGP	0.5-3.0	0.17-0.36									●	●												
 Type B Medium	VNMG 130404 MT #	0.8-2.5	0.15-0.36	●				●	●		●						●								
	130408 MT #	1.0-2.5	0.17-0.36	●			●				●	●					●								
	160404 MT ✓	0.8-3.0	0.15-0.36	●						●	●	●			●		●		●						
	160408 MT	1.0-2.5	0.17-0.36	●			●	●	●		●	●			●	●	●		●	●					
 Medium	VNMG 160404 PC	0.4-3.0	0.15-0.36								●	●	●		●										
	160408 PC	0.5-3.0	0.17-0.36								●	●	●												
 Medium	VNMM160404 ML	0.8-3.0	0.10-0.27																					●	
	160408 ML	1.0-3.0	0.12-0.32														●							●	

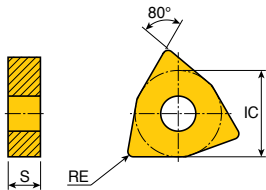


A55, A56, A87,
A108, A148,
A188, A190

- ▶ ✓: Type B chip breaker
- ▶ #: Insert with screw hole

●: Standard items

Negative 80° trigon inserts



Size	Dimension (mm)		
	IC	S	RE
06	9.52	4.76	0.4-1.2
08	12.7	4.76	0.4-1.6

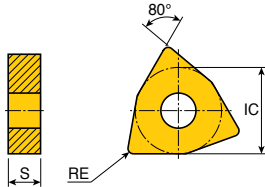
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		CVD coated										PVD coated								
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020
 Roughing	WNMA 060408	1.0-4.0	0.15-0.70				●																	
	060412	1.5-4.0	0.20-0.80				●																	
	080408	1.0-5.0	0.15-0.70				●	●																
	080412	1.5-5.0	0.20-0.80				●	●																
	080416	1.5-5.0	0.20-0.80				●	●																
 Finishing	WNMG 080404 EA	0.1-1.5	0.05-0.20															●		●				
	080408 EA	0.1-1.5	0.10-0.40											●	●	●		●						
 Medium	WNMG 060408 EM	0.8-3.0	0.13-0.50												●			●		●				
	060412 EM	0.8-3.0	0.15-0.55												●	●	●		●		●			
	080404 EM	0.8-4.0	0.10-0.45												●	●	●				●			
	080408 EM	0.8-4.0	0.12-0.45												●	●	●		●		●			
	080412 EM	0.8-4.0	0.12-0.45												●	●	●		●		●			
 Roughing	WNMG 060408 ET	0.8-4.0	0.15-0.50												●	●	●		●		●			
	060412 ET	0.8-4.0	0.15-0.50												●	●	●		●		●			
	080408 ET	0.8-4.5	0.15-0.55													●	●		●					
	080412 ET	0.8-4.5	0.20-0.50													●	●		●					
 Finishing	WNMG 060404 FC	0.5-2.0	0.07-0.20									●	●		●									
	080404 FC	0.5-2.0	0.07-0.20									●		●										
	080408 FC	0.5-2.0	0.07-0.20									●	●	●		●	●	●						
	080412 FC	0.5-2.0	0.10-0.25										●											
 Finishing	WNMG 060404 FG	0.5-2.0	0.07-0.20	●	●							●	●				●							
	060408 FG	0.7-2.0	0.10-0.25	●	●							●												
	080404 FG	0.5-2.0	0.07-0.20	●	●							●	●	●			●		●					
	080408 FG	0.7-2.0	0.10-0.25	●	●							●	●				●							



A57, A69, A109,
A149, A169,
A198, A207

●: Standard items

Negative 80° trigon inserts



Size	Dimension (mm)		
	IC	S	RE
06	9.52	4.76	0.4-1.2
08	12.7	4.76	0.4-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		CVD coated										PVD coated					K10				
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020		TT9080	TT3010	TT3020	TT9020
 Finishing	WNMG 080408 FLP	0.3-2.0	0.10-0.30									●	●												
 Roughing	WNMG 080408 KT	0.29-5.5	0.17-0.47				●	●	●																
	080412 KT	0.39-5.5	0.23-0.63				●	●	●																
	080416 KT	0.5-5.5	0.25-0.60				●	●																	
 Medium	WNMG 060404 MC	0.5-2.5	0.10-0.30									●					●								
	060408 MC	0.7-3.0	0.12-0.35									●													
	080408 MC	0.7-3.5	0.12-0.35									●	●	●				●							
 Medium	080412 MC	0.7-3.5	0.15-0.40									●	●												
	WNMG 080408 MGP	0.5-4.0	0.15-0.55									●	●												
	080412 MGP	0.6-4.0	0.17-0.55									●	●												
 Medium	080416 MGP	0.8-4.0	0.20-0.60									●	●												
 Medium	WNMG 080408 MGS	1.0-4.0	0.15-0.40			●															●	●		●	
	080412 MGS	1.3-4.0	0.17-0.40			●															●	●		●	
 Medium	WNMG 080408 ML	1.0-3.5	0.12-0.35									●		●	●		●		●	●				●	
	080412 ML	1.3-3.5	0.15-0.35															●							
 Medium	WNMG 080408 MLP	0.5-3.5	0.10-0.40									●	●												
	080412 MLP	0.6-3.5	0.15-0.50									●	●												
 Type B Medium	WNMG 060408 MP	1.0-3.0	0.12-0.35									●				●		●		●	●				
	060412 MP	1.3-3.0	0.15-0.40															●							
	080404 MP ✓	1.0-4.0	0.10-0.35									●													
	080408 MP	1.0-4.0	0.12-0.40									●	●	●	●	●	●		●	●	●				
	080412 MP	1.3-4.0	0.15-0.40									●	●				●	●							

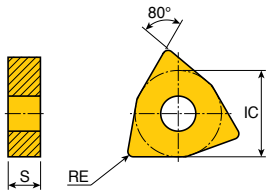


A57, A69, A109,
A149, A169,
A198, A207

▶ ✓: Type B chip breaker

•: Standard items

Negative 80° trigon inserts



Size	Dimension (mm)		
	IC	S	RE
06	9.52	4.76	0.4-1.2
08	12.7	4.76	0.4-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated													PVD coated								
				Germet																					
 Type B Medium	WNMG 060404 MT	1.0-3.0	0.12-0.40				●	●		●	●			●	●		●	●	●	●					
	060408 MT	1.2-3.0	0.15-0.45				●	●		●	●			●	●		●	●	●	●					
	060412 MT	1.5-3.0	0.23-0.50							●															
	080404 MT ✓	1.0-4.0	0.12-0.40	●			●	●		●	●			●		●		●	●	●	●				
	080408 MT	1.2-4.0	0.17-0.55	●		●	●	●		●	●	●	●		●	●		●	●	●	●	●			
	080412 MT	1.5-4.0	0.25-0.55				●	●		●	●			●	●	●			●						
	080416 MT	1.5-4.0	0.25-0.55				●		●	●															
 Medium	WNMG 060408 PC	0.5-4.0	0.15-0.50							●	●														
	060412 PC	0.6-4.0	0.17-0.50							●	●														
	080408 PC	0.5-4.0	0.15-0.50							●	●	●		●	●	●		●		●					
	080412 PC	0.6-4.0	0.17-0.50							●	●	●	●		●						●				
	080416 PC	0.8-4.0	0.20-0.50							●	●														
 Roughing	WNMG 080408 RGP	2.5-4.0	0.25-0.70							●	●														
	080412 RGP	2.5-4.0	0.25-0.70							●	●														
	080416 RGP	2.5-4.0	0.30-0.75							●	●														
 Roughing	WNMG 080408 RT	2.5-4.0	0.25-0.70				●	●		●	●	●		●	●	●	●								
	080412 RT	2.5-4.0	0.25-0.70				●	●	●	●	●					●	●								
	080416 RT	2.5-4.0	0.30-0.75				●			●	●														
 Finishing	WNMG 080408 WS	0.5-2.0	0.07-0.35				●			●	●														
 Medium	WNMG 060408 WT	0.7-3.5	0.15-0.60							●						●									
	060412 WT	0.7-3.5	0.20-0.80				●			●															
	080408 WT	1.0-4.0	0.15-0.60				●			●	●					●									
	080412 WT	1.0-4.0	0.20-0.80				●	●		●	●	●													

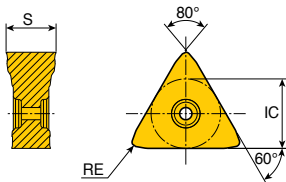


A57, A69, A109,
A149, A169,
A198, A207

▶ ✓: Type B chip breaker

●: Standard items

Negative triangular inserts



Size	Dimension (mm)		
	IC	S	RE
21	12.5	9	0.8

Insert	Designation	BWT		FWT		CVD coated								PVD coated					K10					
		ap (mm)	Feed (mm/rev)	ap (mm)	Feed (mm/rev)	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5080	TT8020		TT9080	TT3010	TT3020	TT9020	
 Medium	TNMV 210908-BM	0.7-2.0	0.60-1.20	0.5-3.5	0.20-0.60						●	●												
 Medium	TNMV 210908-BS	0.7-2.0	0.60-1.20	1.0-3.5	0.20-0.40										●			●						

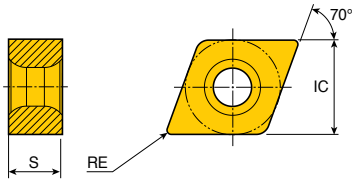


A107, A213

- ▶ BWT: Backward turning
- ▶ FWT: Forward turning

●: Standard items

Negative 70° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
11	11.11	5.56	0.8

Insert	Designation	BWT		FWT		CVD coated								PVD coated				K10						
		ap (mm)	Feed (mm/rev)	ap (mm)	Feed (mm/rev)	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5080		TT8020	TT9080	TT3010	TT3020	TT9020	
 Medium	XNMV 110508L-BM	0.5-1.8	0.50-0.80	0.5-3.5	0.10-0.40						●	●												
	110508R-BM	0.5-1.8	0.50-0.80	0.5-3.5	0.10-0.40						●	●												
 Medium	XNMV 110508L-BS	0.5-1.8	0.40-0.80	1.0-4.0	0.15-0.40						●	●								●	●			
	110508R-BS	0.5-1.8	0.40-0.80	1.0-4.0	0.15-0.40						●	●								●	●			

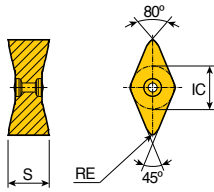


A110, A111,
A190, A199,
A212

- ▶ BWT: Backward turning
- ▶ FWT: Forward turning
- ▶ Apply L insert to L holder and R boring bar
- ▶ Apply R insert to R holder and L boring bar

●: Standard items

Negative rhombic inserts with 80° corner angle



Size	Dimension (mm)		
	IC	S	RE
14	10.5	10	0.8

Insert	Designation	BWT		FWT		CVD coated										PVD coated					K10	
		ap (mm)	Feed (mm/rev)	ap (mm)	Feed (mm/rev)	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5080	TT8020	TT9080	TT3010		TT3020
	ZNMV 141008-BM	0.5-2.5	0.40-1.00	0.5-2.0	0.20-0.60					●	●	●										
Medium																						
	ZNMV 141008-BS	0.5-2.5	0.50-1.00	1.0-2.0	0.20-0.40	●				●	●	●								●	●	
Medium																						

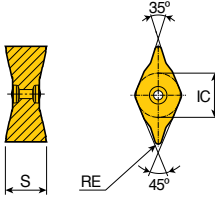
A112, A150

▶ BWT: Backward turning
 ▶ FWT: Forward turning

●: Standard items

ZNMV Y-BF

Negative rhombic inserts with 35° corner angle



Size	Dimension (mm)		
	IC	S	RE
14	10.5	10	0.8

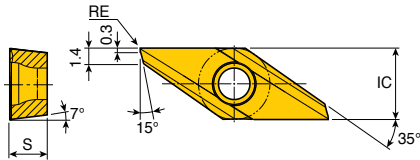
Insert	Designation	BWT		FWT		CVD coated										PVD coated							
		ap (mm)	Feed (mm/rev)	ap (mm)	Feed (mm/rev)	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5080	TT8020	TT9080	TT3010		TT3020	TT9020
 Finishing	ZNMV 141008Y-BF	0.25-1.5	0.20-0.50	0.25-1.0	0.20-0.35	●				●	●	●											

A113, A213

▶ BWT: Backward turning
 ▶ FWT: Forward turning

●: Standard items

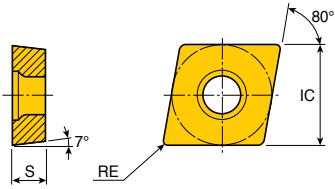
Positive 7° clearance 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
11	6.35	3.18	0-0.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10
 Right hand Back Turn	BTVC 110300R-F	0.03-3.5	0.01-0.12										●		
	110301MR-F	0.05-3.5	0.01-0.15										●		
	110302MR-F	0.10-3.5	0.01-0.15										●		

Positive 7° clearance 80° rhombic inserts



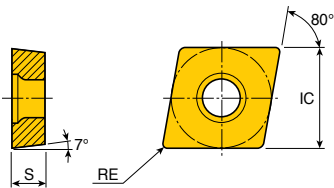
Size	Dimension (mm)		
	IC	S	RE
06	6.35	2.38	0.03-0.8
09	9.52	3.97	0.03-0.8

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10
 Right hand Finishing	CCET 0602003 L-GF	0.1-1.5	0.02-0.15								●				
	0602003 R-GF	0.1-1.5	0.02-0.15								●				
	060201 L-GF	0.2-1.5	0.02-0.15								●				
	060201 R-GF	0.2-1.5	0.02-0.15								●				
	060202 L-GF	0.3-1.5	0.03-0.17								●				
	060202 R-GF	0.3-1.5	0.03-0.17								●				
	060204 L-GF	0.3-1.5	0.05-0.20								●				
	060204 R-GF	0.3-1.5	0.05-0.20								●				
	060208 L-GF	0.4-1.5	0.07-0.22								●				
	060208 R-GF	0.4-1.5	0.07-0.22								●				
	09T3003 L-GF	0.1-2.5	0.02-0.15								●				
	09T3003 R-GF	0.1-2.5	0.02-0.15								●				
	09T301 L-GF	0.2-2.5	0.02-0.15								●				
	09T301 R-GF	0.2-2.5	0.02-0.15								●				
	09T302 L-GF	0.3-2.5	0.03-0.17								●				
	09T302 R-GF	0.3-2.5	0.03-0.17								●				
	09T304 L-GF	0.3-2.5	0.05-0.20								●				
	09T304 R-GF	0.3-2.5	0.05-0.20								●				
	09T308 L-GF	0.4-2.5	0.07-0.22								●				
	09T308 R-GF	0.4-2.5	0.07-0.22								●				
 Right hand Finishing	CCET 0602003 L-GW*	0.1-1.5	0.02-0.15								●				
	0602003 R-GW*	0.1-1.5	0.02-0.15								●				
	09T3003 L-GW*	0.1-2.5	0.02-0.15								●				
	09T3003 R-GW*	0.1-2.5	0.02-0.15								●				

► *: Wiper inserts should be applied to
□ CLCR/L...

●: Standard items

Positive 7° clearance 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
03	3.5	1.4	0.03-0.4
04	4.3	1.8	0.03-0.4
06	6.35	2.38	0.1-0.4
09	9.52	3.97	0.1-0.8
12	12.7	4.76	0.2-0.8

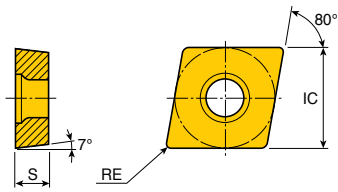
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10
 Right hand Finishing	CCGT 0301003 L-FF	0.05-0.3	0.03-0.10								●				
	0301003 R-FF	0.05-0.3	0.03-0.10								●				
	030101 L-FF	0.08-0.4	0.03-0.12								●				
	030101 R-FF	0.08-0.4	0.03-0.12								●				
	030102 L-FF	0.1-0.4	0.03-0.15								●				
	030102 R-FF	0.1-0.4	0.03-0.15								●				
	030104 L-FF	0.1-0.4	0.05-0.20								●				
	030104 R-FF	0.1-0.4	0.05-0.20								●				
	0401003 L-FF	0.05-0.4	0.03-0.10								●				
	0401003 R-FF	0.05-0.4	0.03-0.10								●				
	040101 L-FF	0.1-0.5	0.03-0.12								●				
	040101 R-FF	0.1-0.5	0.03-0.12								●				
	040102 L-FF	0.1-0.5	0.03-0.15								●				
	040102 R-FF	0.1-0.5	0.03-0.15								●				
	040104 L-FF	0.1-0.5	0.05-0.20								●				
	040104 R-FF	0.1-0.5	0.05-0.20								●				
 Medium For aluminum	CCGT 060202 FL	0.5-2.0	0.10-0.20												●
	060204 FL	0.5-2.0	0.10-0.25												●
	09T301 FL	0.5-2.5	0.10-0.25												●
	09T302 FL	0.5-2.5	0.10-0.25												●
	09T304 FL	0.5-2.5	0.10-0.25												●
	09T308 FL	0.8-3.0	0.10-0.30												●
	120402 FL	0.5-2.5	0.10-0.25												●
	120404 FL	0.5-2.5	0.10-0.25												●
	120408 FL	1.0-3.5	0.10-0.30												●
 Finishing	CCGT 060201 SA	0.1-1.5	0.02-0.15			●					●				
	060202 SA	0.1-1.5	0.02-0.15			●					●				
	060204 SA	0.1-2.4	0.03-0.20			●					●				
	09T301 SA	0.1-2.5	0.02-0.15			●					●				
	09T302 SA	0.1-2.5	0.02-0.15			●					●				
	09T304 SA	0.1-2.5	0.03-0.20			●	●				●				
	09T308 SA	0.1-2.5	0.03-0.25			●					●				



A70-A72, A94,
A151, A174,
A175, A208

●: Standard items

Positive 7° clearance 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
06	6.35	2.38	0.2
09	9.52	3.97	0.1-0.4

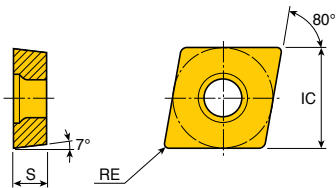
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10
  Roughing For Swiss	CCGT 09T304M SH-F	0.7-3.5	0.07-0.17									●	●		
  Medium For Swiss	CCGT 060202M SM-F	0.2-1.5	0.02-0.12									●	●		
	09T301M SM-F	0.2-1.5	0.02-0.12									●	●		
	09T302M SM-F	0.2-1.5	0.02-0.12									●	●		
	09T304M SM-F	0.3-1.5	0.03-0.12									●	●		
  Finishing For Swiss	CCGT 060202M SL-F	0.02-0.2	0.02-0.10									●	●		
	09T301M SL-F	0.02-0.2	0.015-0.10									●	●		
	09T302M SL-F	0.02-0.2	0.02-0.10									●	●		

 A70-A72, A94,
A151, A174,
A175, A208

► M: Corner radius minus tolerance
► - F: Sharp edge

●: Standard items

Positive 7° clearance 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
06	6.35	2.38	0.2-0.8
09	9.52	3.97	0.2-0.8
12	12.7	4.76	0.4-1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated										PVD coated									
				Cermet																			
				PV3010	CT3000	TT3005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10
 Finishing	CCMT060202 FA	0.1-1.5	0.03-0.15	●	●									●		●	●	●	●				
	060204 FA	0.2-1.5	0.05-0.15	●	●						●					●		●	●				
	09T302 FA	0.1-2.0	0.03-0.15	●	●									●		●		●		●			
	09T304 FA	0.2-2.0	0.05-0.20	●	●						●							●	●				
	09T308 FA	0.3-2.0	0.08-0.25	●	●						●					●		●					
 Type B Finishing	CCMT060204 FG	0.3-1.5	0.05-0.15	●	●		●	●		●	●			●	●	●		●	●	●	●	●	
	09T304 FG	0.4-2.0	0.07-0.20	●	●	●	●	●		●	●			●	●	●		●	●	●	●	●	
	09T308 FG	0.6-2.0	0.10-0.25	●	●	●	●			●	●			●	●	●		●	●		●	●	
	120408 FG ✓	0.6-2.0	0.10-0.25	●							●					●		●					
 Medium	CCMT060202 FM	0.5-1.5	0.07-0.15							●	●					●		●					
	060204 FM	0.5-1.5	0.08-0.15							●	●					●		●	●				
	09T302 FM	0.5-2.0	0.07-0.20							●	●					●		●	●				
	09T304 FM	0.5-2.5	0.08-0.25							●	●					●		●	●				
	09T308 FM	0.8-2.5	0.10-0.25							●	●					●		●	●				
 Type B Medium	CCMT060204 MT ✓	0.5-2.0	0.07-0.20	●	●		●	●	●	●	●	●	●	●	●	●		●	●				●
	060208 MT ✓	0.7-2.0	0.13-0.30	●	●		●	●		●	●	●				●		●		●			
	09T304 MT	0.7-3.5	0.10-0.25	●	●		●	●	●	●	●			●	●	●		●	●				
	09T308 MT	1.0-3.5	0.13-0.30	●			●	●	●	●	●	●	●	●	●	●		●	●				
	120404 MT ✓	1.0-5.0	0.10-0.25	●	●		●	●		●	●					●		●					
	120408 MT	1.3-5.0	0.13-0.30	●			●	●	●	●	●	●	●	●	●	●		●	●				
	120412 MT	1.5-5.0	0.17-0.35				●			●	●					●							
 Medium	CCMT060204 PC	0.3-2.0	0.06-0.18						●	●	●		●	●					●				
	060208 PC	0.4-2.0	0.08-0.25							●	●		●	●					●				
	09T304 PC	0.35-3.0	0.08-0.25							●	●		●	●	●	●			●				
	09T308 PC	0.5-3.0	0.10-0.28						●	●	●		●	●					●				
	120404 PC	0.4-4.0	0.08-0.25							●	●		●	●					●				
	120408 PC	0.7-4.0	0.10-0.30							●	●		●	●					●				
	120412 PC	1.0-4.0	0.12-0.35							●	●		●	●		●			●				
 Wiper Medium	CCMT09T308 WT *	0.7-3.0	0.10-0.40			●			●	●					●		●						



A70-A72, A94,
A151, A154, A174,
A175, A208

▶ ✓: Type B chip breaker
▶ *: Wiper inserts should be applied to
□ CLCR/L...

●: Standard items

Size	Dimension (mm)		
	IC	S	RE
06	6.35	2.38	0.4-0.8
08	7.94	2.38	0.4-0.8
09	9.52	3.18-3.97	0.4-0.8

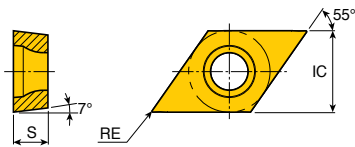
[illegible]

●: Standard items



A176, A177

Positive 7° clearance 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
07	6.35	2.38	0.03-0.8
11	9.52	3.97	0.03-0.8

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10
  Right hand Finishing	DCET 0702003 L-GF	0.2-1.5	0.01-0.15								●				
	0702003 R-GF	0.2-1.5	0.01-0.15								●				
	070201 L-GF	0.2-1.5	0.02-0.15								●				
	070201 R-GF	0.2-1.5	0.02-0.15								●				
	070202 L-GF	0.3-1.5	0.03-0.17								●				
	070202 R-GF	0.3-1.5	0.03-0.17								●				
	070204 L-GF	0.3-1.5	0.05-0.20								●				
	070204 R-GF	0.3-1.5	0.05-0.20								●				
	070208 L-GF	0.3-1.5	0.05-0.20								●				
	070208 R-GF	0.3-1.5	0.05-0.20								●				
	11T3003 L-GF	0.2-2.5	0.02-0.15								●				
	11T3003 R-GF	0.2-2.5	0.02-0.15								●				
	11T301 L-GF	0.2-2.5	0.02-0.15								●				
	11T301 R-GF	0.2-2.5	0.02-0.15					●			●				
	11T302 L-GF	0.3-2.5	0.03-0.17								●				
	11T302 R-GF	0.3-2.5	0.03-0.17					●			●				
	11T304 L-GF	0.3-2.5	0.05-0.20					●			●				
	11T304 R-GF	0.3-2.5	0.05-0.20				●	●			●				
	11T308 L-GF	0.3-2.5	0.05-0.20								●				
	11T308 R-GF	0.3-2.5	0.05-0.20								●				
  Right hand Finishing	DCET 0702003 L-GW *	0.1-1.5	0.02-0.15								●				
	0702003 R-GW *	0.1-1.5	0.02-0.15								●				
	11T3003 L-GW *	0.1-1.5	0.02-0.15								●				
	11T3003 R-GW *	0.1-1.5	0.02-0.15								●				

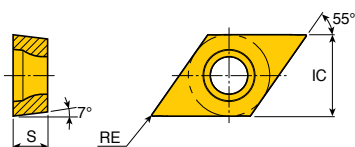


A73-A76, A95, A97, A99,
A137, A141, A151,
A178-A180, A209, A214

► *: FWiper inserts should be applied to
□DJCR/L..., □DUCR/L..., □DZCR/L...

●: Standard items

Positive 7° clearance 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
07	6.35	2.38	0.03-0.4
11	9.52	3.97	0.03-0.8

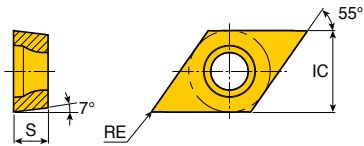
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10
 Right hand Finishing	DCGT 0702003 L-FF	0.05-0.3	0.03-0.10								●				
	0702003 R-FF	0.05-0.3	0.03-0.10								●				
	070201 L-FF	0.08-0.4	0.03-0.12								●				
	070201 R-FF	0.08-0.4	0.03-0.12								●				
	070202 L-FF	0.1-0.4	0.03-0.15								●				
	070202 R-FF	0.1-0.4	0.03-0.15								●				
	070204 L-FF	0.1-0.4	0.05-0.20								●				
	070204 R-FF	0.1-0.4	0.05-0.20								●				
	11T3003 L-FF	0.05-0.4	0.03-0.10								●				
	11T3003 R-FF	0.05-0.4	0.03-0.10								●				
	11T301 L-FF	0.1-0.5	0.03-0.12								●				
	11T301 R-FF	0.1-0.5	0.03-0.12								●				
	11T302 L-FF	0.1-0.5	0.03-0.15								●				
	11T302 R-FF	0.1-0.5	0.03-0.15								●				
	11T304 L-FF	0.1-0.5	0.05-0.20								●				
	11T304 R-FF	0.1-0.5	0.05-0.20								●				
 Medium For aluminum	DCGT 070202 FL	0.5-2.0	0.05-0.20												●
	070204 FL	0.5-2.5	0.05-0.25												●
	11T302 FL	0.5-2.5	0.05-0.25												●
	11T304 FL	0.5-2.5	0.05-0.25												●
	11T308 FL	0.8-3.0	0.08-0.30												●
 Finishing	DCGT 070201 SA	0.1-1.5	0.02-0.15			●					●				
	070202 SA	0.1-1.5	0.02-0.15			●					●				
	070204 SA	0.1-1.5	0.03-0.20			●					●				
	11T301 SA	0.1-2.5	0.01-0.05			●					●				
	11T302 SA	0.1-2.5	0.02-0.15			●					●				
	11T304 SA	0.1-2.5	0.03-0.20			●					●				
	11T308 SA	0.1-2.5	0.03-0.20			●					●				



A73-A76, A95, A97, A99,
A137, A141, A151,
A178-A180, A209, A214

●: Standard items

Positive 7° clearance 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
07	6.35	2.38	0.1-0.4
11	9.52	3.97	0.1-0.4

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT9020	TT9225	TT4410	TT4430	P20	K10
 Roughing For Swiss	DCGT 11T302M SH-E	0.7-3.5	0.05-0.15										●		
	11T302M SH-F	0.7-3.5	0.05-0.15									●	●		
	11T304M SH-F	0.7-3.5	0.07-0.17									●	●		
 Roughing For Swiss	DCGT 11T301M ST-E	0.3-5.0	0.03-0.08										●		
	11T302M ST-E	0.5-5.0	0.03-0.10										●		
	11T304M ST-E	0.7-5.0	0.05-0.12										●		
	11T301M ST-F	0.3-5.0	0.03-0.08							●			●		
	11T302M ST-F	0.5-5.0	0.03-0.10						●				●		
	11T304M ST-F	0.7-5.0	0.05-0.12						●				●		
 Medium For Swiss	DCGT 070201M SM-F	0.2-1.5	0.02-0.12									●	●		
	070202M SM-F	0.2-1.5	0.02-0.12									●	●		
	070204M SM-F	0.2-1.5	0.03-0.12									●	●		
	11T301M SM-F	0.2-1.5	0.02-0.12									●	●		
	11T302M SM-F	0.2-1.5	0.02-0.12									●	●		
	11T304M SM-F	0.2-1.5	0.03-0.12									●	●		
 Finishing For Swiss	DCGT 070201M SL-F	0.02-0.25	0.015-0.10									●	●		
	070202M SL-F	0.02-0.25	0.02-0.10									●	●		
	11T301M SL-F	0.02-0.25	0.015-0.10									●	●		
	11T302M SL-F	0.02-0.25	0.02-0.10									●	●		



A73-A76, A95, A97, A99,
A137, A141, A151,
A178-A180, A209, A214

- ▶ M: Corner radius minus tolerance
- ▶ - F: Sharp edge
- ▶ - E: Micro honing edge

●: Standard items

Size	Dimension (mm)		
	IC	S	RE
07	6.35	2.38	0.2-0.8
11	9.52	3.97	0.2-1.2

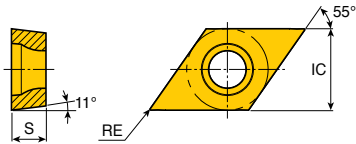
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		CVD coated										PVD coated								
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020
 Finishing	DCMT 070202 FA	0.1-1.5	0.03-0.15	●	●											●		●	●					
	070204 FA	0.2-1.5	0.05-0.20	●	●							●	●					●	●					
	11T302 FA	0.1-2.0	0.03-0.15	●	●									●			●			●				
	11T304 FA	0.2-2.0	0.05-0.20	●	●							●	●				●		●	●				
	11T308 FA	0.3-2.0	0.08-0.25	●	●							●	●				●		●	●				
 Finishing	DCMT 070204 FG	0.4-1.5	0.07-0.20	●	●						●	●	●		●	●	●		●	●	●			
	070208 FG	0.4-2.0	0.07-0.20	●	●							●	●		●	●	●			●				
	11T304 FG	0.6-1.5	0.10-0.25	●	●	●	●	●			●	●	●	●	●	●	●		●	●	●	●	●	●
	11T308 FG	0.6-2.0	0.10-0.25	●	●	●	●	●		●	●	●	●		●	●	●		●	●	●	●	●	
 Medium	DCMT 070202 FM	0.5-1.5	0.07-0.20									●	●				●		●	●				
	070204 FM	0.5-1.5	0.08-0.20									●	●			●	●		●	●	●			
	070208 FM	0.8-1.5	0.10-0.20									●	●				●		●	●				
	11T302 FM	0.5-2.0	0.07-0.20									●	●				●		●	●				
	11T304 FM	0.5-2.0	0.08-0.20									●	●				●		●	●				
	11T308 FM	0.8-2.5	0.10-0.25									●	●				●		●	●				
 Medium	DCMT 11T304 MT	0.7-3.0	0.10-0.25	●	●		●	●		●	●	●	●		●	●	●		●	●				
	11T308 MT	1.0-3.0	0.13-0.30	●		●	●	●	●	●	●	●	●		●	●	●		●	●	●			
	11T312 MT	1.5-3.0	0.17-0.35	●		●	●			●							●		●		●			
 Medium	DCMT 070204 PC	0.3-2.0	0.06-0.18								●	●		●	●						●			
	070208 PC	0.4-2.0	0.08-0.25								●	●		●	●						●			
	11T304 PC	0.35-3.0	0.08-0.25							●	●	●		●	●						●			
	11T308 PC	0.5-3.0	0.10-0.28							●	●	●		●	●						●			
	11T312 PC	0.5-3.0	0.12-0.32								●	●		●	●						●			



A73-A76, A95, A97, A99,
A137, A141, A151, A154,
A178-A180, A209, A214

●: Standard items

Positive 11° clearance 55° rhombic inserts

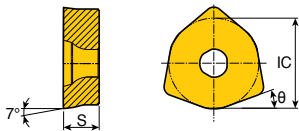


Size	Dimension (mm)		
	IC	S	RE
07	6.35	2.38	0.03-0.2
11	9.52	3.97	0.03-0.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10
 Right hand Finishing	DPET 070201 R-GF	0.2-1.5	0.02-0.15								●				
	070202 L-GF	0.3-1.5	0.03-0.17								●				
	070202 R-GF	0.3-1.5	0.03-0.17								●				
	11T3003 L-GF	0.2-2.5	0.02-0.15								●				
	11T301 L-GF	0.2-2.5	0.02-0.15								●				
	11T301 R-GF	0.2-2.5	0.02-0.15								●				
	11T302 L-GF	0.3-2.5	0.03-0.17								●				
	11T302 R-GF	0.3-2.5	0.03-0.17								●				
 Right hand Finishing	DPGT 0702003 R-FF	0.05-0.3	0.03-0.10								●				
	070202 L-FF	0.1-0.4	0.03-0.15								●				
	070202 R-FF	0.1-0.4	0.03-0.15								●				
	11T3003 R-FF	0.05-0.4	0.03-0.10								●				
	11T301 R-FF	0.1-0.5	0.03-0.12								●				
	11T302 L-FF	0.1-0.5	0.03-0.15								●				
	11T302 R-FF	0.1-0.5	0.03-0.15								●				

●: Standard items

Positive 7° clearance high feed inserts



Size	Dimension (mm)		
	IC	S	θ
10-HFG	15.45	6.5	15°
10-HFP	16.45	6.5	20°

Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated													PVD coated								
				Cermet	TT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10
 High feed For general	FCMX 100616-HFG	0.5-2.0	1.50-3.00								●	●		●											
 High feed For alloy steel	FCMX 100616-HFP	0.5-2.5	1.00-2.50								●	●	●												

●. Standard items

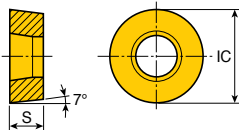


A77

RCGT RCMT RCMX



Positive 7° clearance round inserts



Size	Dimension (mm)		Size	Dimension (mm)	
	IC	S		IC	S
08	8.0	3.18	20	20.0	6.35
10	10.0	3.18-3.97	25	25.0	7.94
12	12.0	4.76	32	32.0	9.52
16	16.0	6.35			

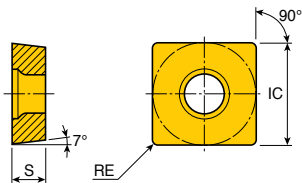
Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated												PVD coated								
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020
 Medium For aluminum	RCGT 0803MO FL	1.0-4.0	0.20-0.40																					●
	1003MO FL	1.0-5.0	0.20-0.40																					●
	10T3MO FL	1.0-5.0	0.20-0.40																					●
 Medium	RCMT 080300 MGS	0.5-2.0	0.15-0.30			●														●	●			●
	120400 MGS	1.0-3.0	0.25-0.50			●														●	●			●
 Medium	RCMT 080300 MT	0.5-3.0	0.15-0.40								●	●				●								
	10T300 MT	1.0-4.0	0.20-0.50				●	●		●	●					●								
	120400 MT	2.0-5.0	0.30-0.60				●	●			●	●												
	160600 MT	3.0-7.0	0.40-0.80									●												
 Medium	RCMT 120400 PC	2.0-5.0	0.30-0.60								●	●	●		●	●	●		●					
 Roughing	RCMX 100300	1.5-4.0	0.25-0.50				●	●			●	●				●								●
	120400	2.5-5.0	0.30-0.60				●	●			●	●				●	●							
	160600	3.0-7.0	0.40-0.75				●	●		●	●	●				●								
	200600	3.5-9.0	0.48-0.90				●	●			●	●	●			●								●
	250700	4.0-12.0	0.55-1.20				●	●	●	●	●	●	●				●		●					●
	320900	5.0-15.0	0.65-1.50				●					●	●	●			●							
 Roughing	RCMX 100300 RA	1.0-4.0	0.20-0.50								●	●	●											
	120400 RA	2.0-5.0	0.25-0.60									●	●	●		●								
	160600 RA	2.5-7.0	0.35-0.75									●	●	●										
	200600 RA	3.0-9.0	0.40-0.90				●			●	●	●							●					
	250700 RA	3.5-12.0	0.50-1.20								●	●	●	●										
	320900 RA	4.0-15.0	0.60-1.50									●	●	●										

A62, A63,
A78, A79, A152

●: Standard items



Positive 7° clearance square inserts



Size	Dimension (mm)		
	IC	S	RE
09	9.52	3.97	0.4-0.8
12	12.7	4.76	0.2-1.2

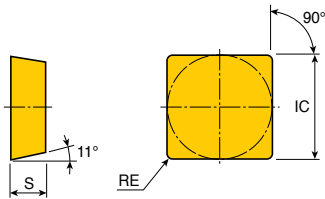
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet	CVD coated										PVD coated						K10	
				PV3010	CT3000	TT3005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080		TT3010
 Medium For aluminum	SCGT 09T308 FL	0.5-3.0	0.10-0.30																			●
	120402 FL	0.5-3.0	0.10-0.30																			●
	120404 FL	0.5-4.0	0.10-0.30																			●
	120408 FL	1.0-4.0	0.10-0.30																			●
 Finishing	SCMT 09T304 FG	0.6-2.0	0.08-0.25							●			●					●	●			
	09T308 FG	0.6-2.0	0.10-0.25							●	●		●		●		●	●				
 Medium	SCMT 09T304 FM	0.5-2.5	0.08-0.25							●	●				●		●	●				
	09T308 FM	0.8-2.5	0.10-0.25							●	●				●		●	●				
 Medium	SCMT 09T304 MT	0.7-3.5	0.10-0.25	●	●		●	●		●	●	●		●		●		●				
	09T308 MT	1.0-3.5	0.13-0.30		●		●	●	●		●	●	●		●		●	●				
	120404 MT	1.0-5.0	0.10-0.25		●		●	●		●	●			●								
	120408 MT	1.0-5.0	0.13-0.30		●		●	●	●		●	●	●		●		●	●				
	120412 MT	1.0-5.0	0.15-0.35				●	●		●	●							●				
 Medium	SCMT 09T304 PC	0.35-3.0	0.08-0.25							●	●		●					●				
	09T308 PC	0.5-3.0	0.10-0.28							●	●		●	●				●				
	120404 PC	0.4-4.0	0.08-0.25							●	●		●					●				
	120408 PC	0.7-4.0	0.10-0.30							●	●		●	●				●				
	120412 PC	1.0-4.0	0.12-0.35							●	●		●	●				●				



A80, A181

• Standard items

Positive 11° clearance square inserts



Size	Dimension (mm)		
	IC	S	RE
09	9.52	3.18	0.4-0.8
12	12.7	3.18-4.76	0.4-1.6
15	15.88	4.76	0.4-1.2
19	19.05	4.76	0.4-1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated										PVD coated											
				Cermet																					
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10
 Finishing	SPGN 090304	0.7-3.5	0.08-0.20								●														●
	090308	0.7-3.5	0.10-0.25								●														●
	120304	1.0-5.0	0.08-0.20				●																		●
	120308	1.0-5.0	0.10-0.25								●	●													●
	120312	1.0-5.0	0.15-0.30																		●				
	120408	1.0-5.0	0.10-0.25																						●
	120416	1.0-5.0	0.18-0.33																						●
	150404	1.5-7.0	0.08-0.20									●													●
	190404	1.5-9.0	0.08-0.20									●													
	190408	1.5-9.0	0.10-0.25																						●

A48, A166

●: Standard items



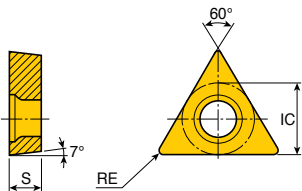
Size	Dimension (mm)		
	IC	S	RE
06	3.97	1.59	0.03-0.4

[illegible]

A185, A186

●: Standard items

Positive 7° clearance triangular inserts



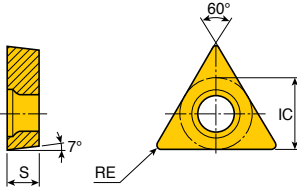
Size	Dimension (mm)		
	IC	S	RE
08	4.76	2.38	0.1-0.2
09	5.56	2.36	0.4
11	6.35	2.38-3.18	0.1-0.4
16	9.52	3.97	0.4-0.8

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10
 Right hand Finishing	TCET 080201 R-GF	0.2-1.5	0.02-0.15								●				
	080202 L-GF	0.3-1.5	0.03-0.17								●				
	080202 R-GF	0.3-1.5	0.03-0.17								●				
	110301 L-GF	0.2-1.5	0.02-0.15								●				
	110301 R-GF	0.2-1.5	0.02-0.15								●				
	110302 L-GF	0.3-1.5	0.03-0.17								●				
	110302 R-GF	0.3-1.5	0.03-0.17								●				
	110304 L-GF	0.5-1.5	0.05-0.20								●				
	110304 R-GF	0.5-1.5	0.05-0.20								●				
 Medium For aluminum	TCGT 090204 FL	0.2-2.5	0.05-0.25												●
	110204 FL	0.2-3.0	0.05-0.30												●
	16T304 FL	0.5-3.0	0.05-0.30												●
	16T308 FL	0.5-3.0	0.10-0.30												●
 Finishing	TCGT 110201 SA	0.1-2.5	0.01-0.05			●					●				
	110202 SA	0.2-2.5	0.02-0.15			●					●				
	110204 SA	0.2-2.5	0.03-0.20			●					●				

 A81-A83,
A152, A155,
A182, A210,

●: Standard items

Positive 7° clearance triangular inserts



Size	Dimension (mm)		
	IC	S	RE
06	3.97	1.98	0.2
09	5.56	2.38	0.2-0.8
11	6.35	2.38	0.2-0.8
16	9.52	3.97	0.4-1.2
22	12.7	4.76	0.8

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		CVD coated										PVD coated					K10		
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020		TT9080	TT3010
 Finishing	TCMT 06T102 FA	0.4-1.2	0.03-0.15	●											●								
	110202 FA	0.1-1.5	0.03-0.15	●								●					●		●				
	110204 FA	0.1-1.5	0.05-0.15	●	●							●				●							
 Finishing	TCMT 090208 FG	0.6-1.5	0.10-0.25	●	●						●	●			●								
	110204 FG	0.4-1.5	0.07-0.20	●	●						●			●	●	●			●	●			
	110208 FG	0.6-1.5	0.10-0.25	●	●		●	●			●	●		●	●	●		●					
	16T304 FG	0.4-2.0	0.07-0.20	●	●		●				●				●				●				
	16T308 FG	0.6-2.0	0.10-0.25	●	●		●	●			●	●		●	●	●		●		●			
 Medium	TCMT 090202 FM	0.5-1.5	0.07-0.20								●	●			●		●	●					
	090204 FM	0.5-1.5	0.08-0.20								●	●			●		●	●					
	110202 FM	0.5-1.5	0.07-0.20								●	●			●		●	●					
	110204 FM	0.5-1.5	0.08-0.20								●	●			●		●	●					
	110208 FM	0.8-1.5	0.10-0.20								●	●			●		●	●					
	16T304 FM	0.5-2.0	0.08-0.20								●	●			●		●	●					
	16T308 FM	0.8-2.0	0.10-0.20								●	●			●		●	●					
	16T312 FM	1.0-2.5	0.10-0.25								●	●			●		●	●					
  Medium	TCMT 090204 MT ✓	0.6-2.0	0.10-0.25	●	●		●	●		●	●		●	●	●		●	●					
	090208 MT ✓	0.8-2.0	0.13-0.30		●		●	●		●	●				●								
	110204 MT ✓	0.6-3.0	0.10-0.25		●		●	●		●	●		●	●	●		●	●					●
	110208 MT ✓	0.8-3.0	0.13-0.30	●	●		●	●		●	●		●	●	●		●	●					
	16T304 MT	0.8-5.0	0.10-0.25		●		●	●		●	●	●		●	●	●		●					
	16T308 MT	1.0-5.0	0.10-0.30	●	●		●	●		●	●	●		●	●	●		●	●				●
	16T312 MT	1.5-5.0	0.10-0.30				●				●												
	220408 MT	2.0-6.0	0.10-0.35								●												
 Medium	TCMT 090204 PC	0.3-2.0	0.06-0.18								●	●		●	●					●			
	090208 PC	0.4-2.0	0.08-0.25								●	●		●	●					●			
	110204 PC	0.3-2.5	0.06-0.20								●	●		●	●					●			
	110208 PC	0.42-2.5	0.09-0.26								●	●		●	●					●			
	16T304 PC	0.35-3.0	0.08-0.25								●	●		●	●					●			
	16T308 PC	0.5-3.0	0.10-0.28								●	●		●	●					●			
	16T312 PC	0.6-3.0	0.12-0.36								●	●		●	●					●			

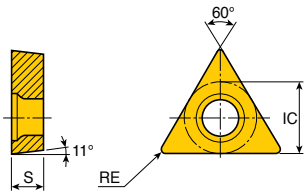


A81-A83, A152,
A182, A210

▶ ✓: Type B chip breaker

●: Standard items

Positive 11° clearance triangular inserts



Size	Dimension (mm)		
	IC	S	RE
08	4.76	2.38	0.03-0.2
11	6.35	3.18	0.03-0.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10
 Right hand Finishing	TPET 080201 L-GF	0.2-1.5	0.02-0.15								●				
	080201 R-GF	0.2-1.5	0.02-0.15								●				
	080202 L-GF	0.3-1.5	0.03-0.17								●				
	080202 R-GF	0.3-1.5	0.03-0.17								●				
	110301 L-GF	0.2-1.5	0.02-0.15								●				
	110302 L-GF	0.3-1.5	0.03-0.17								●				
	110302 R-GF	0.3-1.5	0.03-0.17								●				
 Right hand Finishing	TPGT 0802003 L-FF	0.05-0.3	0.03-0.10								●				
	0802003 R-FF	0.05-0.3	0.03-0.10								●				
	080201 L-FF	0.08-0.4	0.03-0.12								●				
	080201 R-FF	0.08-0.4	0.03-0.12								●				
	080202 L-FF	0.1-0.4	0.03-0.15								●				
	080202 R-FF	0.1-0.4	0.03-0.15								●				
	1103003 L-FF	0.05-0.4	0.03-0.10								●				
	1103003 R-FF	0.05-0.4	0.03-0.10								●				
	110301 L-FF	0.1-0.5	0.03-0.12								●				
	110301 R-FF	0.1-0.5	0.03-0.12								●				
	110302 L-FF	0.1-0.5	0.03-0.15								●				
	110302 R-FF	0.1-0.5	0.03-0.15								●				



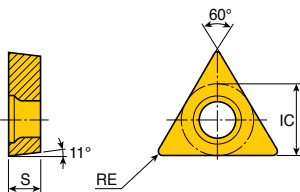
A82, A183, A184

●: Standard items

TPGN TPGT TPGX



Positive 11° clearance triangular inserts



Size	Dimension (mm)		
	IC	S	RE
09	5.56	2.38	0.2-0.4
11	6.35	3.18	0.2-0.8
16	9.52	4.76	0.2-1.2
22	12.7	4.76	0.4-3.0
27	15.88	6.35	0.8

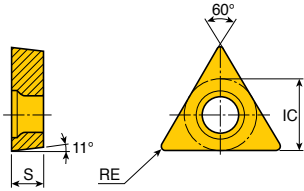
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated										PVD coated										
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	P20	K10
 Finishing	TPGN 090204	0.5-3.0	0.07-0.20																					●	●	
	110304	0.7-3.0	0.07-0.20																					●	●	
	110308	1.0-3.0	0.10-0.25								●													●	●	
	160302	1.0-5.0	0.05-0.18																					●	●	
	160304	1.0-5.0	0.07-0.20								●													●	●	
	160308	1.0-5.0	0.10-0.25					●			●	●												●	●	
	160312	1.0-5.0	0.15-0.30																					●	●	
	220404	1.5-7.0	0.07-0.20																					●	●	
	220408	1.5-7.0	0.10-0.25										●											●	●	
	220412	1.5-7.0	0.15-0.30																					●	●	
	220416	1.5-7.0	0.20-0.35																				●	●	●	
	220425	1.5-7.0	0.25-0.40																					●	●	
	270608	3.0-8.0	0.15-0.25									●													●	●
	 Right hand Finishing	TPGT 090204 L-C	0.3-1.5	0.05-0.20	●																				●	●
110304 L-C		0.5-2.0	0.05-0.20	●																				●	●	
110304 R-C		0.5-2.0	0.05-0.20	●																				●	●	
110308 L-C		0.5-2.0	0.07-0.25	●																				●	●	
160404 L-C		0.7-3.0	0.05-0.20	●																				●	●	
160404 R-C		0.7-3.0	0.05-0.20	●																				●	●	
 Left hand Finishing	TPGX 090202 L	0.4-1.5	0.05-0.15	●																				●	●	
	090204 L	0.6-1.5	0.08-0.20	●																				●	●	
	110302 L	0.5-1.5	0.08-0.20	●																				●	●	
	110302 R	0.5-1.5	0.08-0.20	●																				●	●	
	110304 L	0.6-2.0	0.08-0.20	●																				●	●	
	110304 R	0.6-2.0	0.08-0.20	●																				●	●	



A49, A50, A82,
A167, A183, A184

• Standard items

Positive 11° clearance triangular inserts



Size	Dimension (mm)		
	IC	S	RE
09	5.56	2.38	0.2-0.8
11	6.35	2.38-3.18	0.2-0.8
16	9.52	3.18-3.97	0.2-1.2
22	12.7	4.76	0.4-1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated										PVD coated			
				Germet													
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100
																	TT7100
																	TT5080
																	TT8020
																	TT9080
																	TT3010
																	TT3020
																	TT9020
																	K10
 Type B Medium	TPMR 090204 ✓	0.5-2.0	0.10-0.25							●	●				●		
	090208 ✓	0.7-2.0	0.13-0.30				●			●	●				●		
	110304 ✓	0.7-3.0	0.10-0.25	●		●	●			●	●				●		●
	110308	1.0-3.0	0.13-0.30	●	●		●			●	●				●		
	160304 ✓	1.0-5.0	0.10-0.25	●	●		●			●	●	●			●		●
	160308	1.0-5.0	0.13-0.30	●		●	●			●	●				●		●
	160312	1.0-5.0	0.15-0.35							●	●						
	220404 ✓	1.0-7.0	0.10-0.25								●				●		
	220408 ✓	1.5-7.0	0.13-0.30			●					●				●		
 Finishing	TPMT 090202 FA	0.1-1.2	0.03-0.15	●	●					●	●				●		●
	090204 FA	0.2-1.2	0.05-0.20	●	●					●	●					●	●
	110302 FA	0.1-1.5	0.03-0.15	●	●					●	●				●		●
	110304 FA	0.2-1.5	0.05-0.20	●	●					●	●				●		●
	110308 FA	0.3-1.5	0.08-0.25	●	●					●	●				●		●
	16T304 FA	0.2-2.0	0.05-0.20	●	●					●	●				●		●
	16T308 FA	0.3-2.0	0.08-0.25	●	●					●	●				●		●
 Finishing	TPMT 110304 FG	0.4-1.5	0.07-0.20	●	●	●				●	●					●	
	TPMT 090202 FM	0.5-1.5	0.07-0.20							●	●				●		●
	090204 FM	0.5-1.5	0.08-0.20							●	●				●		●
	110302 FM	0.5-1.5	0.07-0.20							●	●				●		●
	110304 FM	0.5-1.5	0.08-0.20							●	●				●		●
	110308 FM	0.8-1.5	0.10-0.20							●	●				●		●
	160302 FM	0.5-2.0	0.07-0.20							●	●				●		●
	160304 FM	0.5-2.0	0.08-0.20							●	●				●		●
	160308 FM	0.8-2.5	0.10-0.25							●	●				●		●
 Medium	TPMT 090204 PC	0.3-2.0	0.06-0.18							●		●	●		●		●
	110204 PC	0.4-2.5	0.06-0.20									●	●		●		●
	110208 PC	0.5-2.5	0.10-0.26									●	●		●		●
	110304 PC	0.4-2.5	0.06-0.20									●	●		●		●
	110308 PC	0.5-2.5	0.10-0.26									●	●		●		●
	16T304 PC	0.45-3.0	0.08-0.25									●	●		●		●
	16T308 PC	0.5-3.0	0.10-0.30									●	●		●		●

A49, A50, A82, A167, A183, A184

▶ ✓: Type B chip breaker

●: Standard items



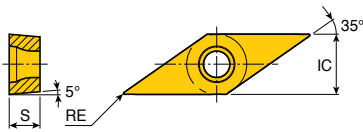
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ADVANCECUTTING
TaeguTec

VBET VBGT



Positive 5° clearance 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
11	6.35	3.18	0.03-0.4
16	9.52	4.76	0.1-0.4

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10
 Right hand Finishing	VBET 110301 L-GF	0.2-1.5	0.02-0.15								●				
	110301 R-GF	0.2-1.5	0.02-0.15								●				
	110302 L-GF	0.3-1.5	0.03-0.17								●				
	110302 R-GF	0.3-1.5	0.03-0.17								●				
	110304 L-GF	0.3-1.5	0.05-0.20								●				
	110304 R-GF	0.3-1.5	0.05-0.20								●				
 Right hand Finishing	VBET 1103003 L-GW *	0.1-1.5	0.02-0.15								●				
	1103003 R-GW *	0.1-1.5	0.02-0.15								●				
 Left hand Finishing	VBGT 1103003 L-FF	0.05-0.4	0.03-0.10								●				
	1103003 R-FF	0.05-0.4	0.03-0.10								●				
	110301 L-FF	0.1-0.5	0.03-0.12								●				
	110301 R-FF	0.1-0.5	0.03-0.12								●				
	110302 L-FF	0.1-0.5	0.03-0.15								●				
	110302 R-FF	0.1-0.5	0.03-0.15								●				
 Finishing	VBGT 110301 SA	0.1-1.5	0.01-0.20			●					●				
	110302 SA	0.2-1.5	0.02-0.20			●					●				
	110304 SA	0.2-1.5	0.05-0.20			●					●				
	160401 SA	0.1-1.5	0.01-0.20			●					●				
	160402 SA	0.2-1.5	0.02-0.20			●					●				
	160404 SA	0.2-2.5	0.03-0.20								●				
 Finishing For Swiss	VBGT 110302M SL-F	0.02-0.25	0.02-0.10									●	●		
 Medium For Swiss	VBGT 110301M SM-F	0.2-1.5	0.02-0.12									●	●		
	110302M SM-F	0.2-1.5	0.02-0.12									●	●		
	110304M SM-F	0.2-1.5	0.03-0.12									●	●		



A84, A85, A88-A90, A96, A98, A99, A138, A153, A187, A189, A191, A192, A211

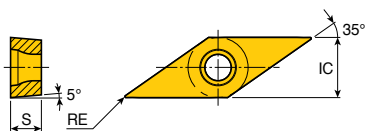
- ▶ *: Wiper inserts should be applied to □VJBR/L...
- ▶ M: Corner radius minus tolerance
- ▶ - F: Sharp edge

●: Standard items

VBGT VBMT VBMX



Positive 5° clearance 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
11	6.35	3.18	0.4-0.8
16	9.52	4.76	0.2-1.2

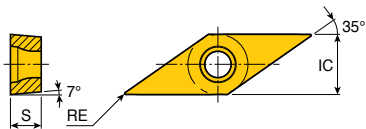
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated										PVD coated					K10			
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020		TT9080	TT3010	TT3020
 Finishing	VBGT 160404 FGS	0.2-2.5	0.03-0.20			●												●		●	●	●	●	●
	160408 FGS	0.3-2.5	0.05-0.20			●												●		●	●	●	●	●
	160412 FGS	0.3-2.5	0.07-0.20			●												●		●	●	●	●	●
 Finishing	VBMT 110304 FA	0.2-1.5	0.05-0.20	●	●							●	●				●		●	●				
	160404 FA	0.2-2.0	0.05-0.20	●	●							●	●				●		●	●				
	160408 FA	0.3-2.0	0.08-0.25	●	●							●	●				●		●					
 Finishing	VBMT 160404 FG	0.5-1.5	0.07-0.20	●	●	●	●					●	●		●	●		●		●	●			
	160408 FG	0.7-2.0	0.10-0.25	●	●	●	●	●				●	●		●	●		●		●	●			
 Medium	VBMT 110304 FM	0.5-1.5	0.08-0.20									●	●				●		●	●				
	110308 FM	0.5-1.5	0.10-0.20									●	●				●		●	●				
	160404 FM	0.5-2.0	0.08-0.20									●	●				●		●	●				
	160408 FM	0.8-2.0	0.10-0.20									●	●				●		●	●				
	160412 FM	1.0-2.5	0.10-0.25									●	●				●		●	●				
 Finishing	VBMT 160404 FX	0.2-2.0	0.05-0.20	●	●							●	●					●		●				
	160408 FX	0.2-2.0	0.07-0.20	●	●							●	●	●						●				
 Medium	VBMT 160404 MT	0.6-3.0	0.10-0.25	●	●		●	●		●	●	●			●		●		●	●				●
	160408 MT	0.9-3.0	0.13-0.30	●	●		●	●		●	●	●			●		●		●	●				
	160412 MT	1.2-3.0	0.15-0.30									●	●				●							
 Medium	VBMT 160404 PC	0.5-2.8	0.07-0.22									●	●			●				●				
	160408 PC	0.5-2.8	0.10-0.27									●	●			●				●				
	160412 PC	0.5-2.8	0.10-0.28				●					●	●				●		●					
 Finishing	VBMX 160402 FG	0.3-1.5	0.05-0.20		●							●							●					
	160404 FG	0.5-1.5	0.07-0.20		●							●							●					
	160408 FG	0.7-2.0	0.10-0.25		●							●							●			●		



A84, A85, A88-A90, A92, A93,
A96, A98, A99, A138, A153,
A187, A189, A191, A192, A211

●: Standard items

Positive 7° clearance 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
11	6.35	3.18	0.08-0.4
16	9.52	4.76	0.2-1.2
22	12.7	5.56	3.0

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10
 Medium For aluminum	VCGT 110302 FL	0.2-2.5	0.05-0.20												●
	110304 FL	0.5-3.0	0.05-0.25												●
	160402 FL	0.5-2.5	0.05-0.25												●
	160404 FL	0.5-3.0	0.05-0.25												●
	160408 FL	0.5-3.0	0.10-0.25												●
	160412 FL	0.5-3.0	0.10-0.25												●
	220530 FL	1.5-4.5	0.15-0.30												●
 Roughing For Swiss	VCGT 1103008 SH-F	0.5-2.5	0.05-0.15								●				
	110301 SH-F	0.5-2.5	0.05-0.15								●				
	110302 SH-F	0.5-2.5	0.05-0.15								●				
 Medium For Swiss	VCGT 110301M SM-F	0.2-1.5	0.02-0.12									●	●		
	110302M SM-F	0.2-1.5	0.02-0.12									●	●		
	110304M SM-F	0.2-1.5	0.03-0.12									●	●		
 Finishing For Swiss	VCGT 110301 SA	0.1-1.5	0.01-0.20			●				●					
	110302 SA	0.2-1.5	0.02-0.20			●				●					
	110304 SA	0.2-1.5	0.05-0.20			●				●					
 Finishing For Swiss	VCGT 110302M SL-F	0.02-0.25	0.02-0.10									●	●		

A86, A87, A96, A139,
A189, A191, A192

- ▶ M: Corner radius minus tolerance
- ▶ - F: Sharp edge

●: Standard items



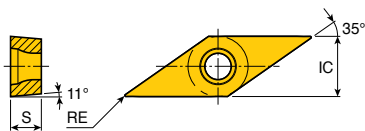
Size	Dimension (mm)		
	IC	S	RE
08	4.76	2.38	0.2-0.4
11	6.35	3.18	0.4
16	9.52	4.76	0.4-0.8

[illegible]

A86, A87, A90,
A139, A189, A191,
A192, A214

●: Standard items

Positive 11° clearance 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
08	4.76	2.38	0.1-0.2
11	6.35	3.18	0.03-0.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10
 Right hand Finishing	VPET 080201 L-GF	0.2-1.5	0.02-0.15								●				
	080201 R-GF	0.2-1.5	0.02-0.15								●				
	080202 L-GF	0.3-1.5	0.03-0.17								●				
	080202 R-GF	0.3-1.5	0.03-0.17								●				
	1103003 L-GF	0.2-1.5	0.02-0.12								●				
	1103003 R-GF	0.2-1.5	0.02-0.12								●				
	110301 L-GF	0.2-1.5	0.02-0.15								●				
	110301 R-GF	0.2-1.5	0.02-0.15								●				
	110302 L-GF	0.3-1.5	0.03-0.17								●				
	110302 R-GF	0.3-1.5	0.03-0.17								●				
 Left hand Finishing	VPGT 080201 L-FF	0.08-0.4	0.03-0.12								●				
	080201 R-FF	0.08-0.4	0.03-0.12								●				
	080202 L-FF	0.1-0.4	0.03-0.15								●				
	080202 R-FF	0.1-0.4	0.03-0.15								●				
	1103003 R-FF	0.05-0.4	0.03-0.10								●				
	110301 R-FF	0.1-0.5	0.03-0.12								●				
	110302 L-FF	0.1-0.5	0.03-0.15								●				
	110302 R-FF	0.1-0.5	0.03-0.15								●				



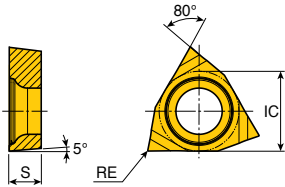
A188

●: Standard items

WBG T WBMT



Positive 5° clearance 80° trigon inserts



Size	Dimension (mm)		
	IC	S	RE
06	3.97	1.59	0.03-0.4

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		PVD coated								Uncoated	
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10
 Left hand Finishing	WBG T 0601003 R-FF	0.05-0.3	0.03-0.10								●				
	0601003 L-FF	0.05-0.3	0.03-0.10								●				
	060101 R-FF	0.08-0.4	0.03-0.12								●				
	060101 L-FF	0.08-0.4	0.03-0.12								●				
	060102 R-FF	0.1-0.4	0.03-0.15								●				
	060102 L-FF	0.1-0.4	0.03-0.15								●				
	060104 R-FF	0.1-0.4	0.05-0.20								●				
	060104 L-FF	0.1-0.4	0.05-0.20			●					●				
	WBMT 060102 R-C	0.1-0.4	0.03-0.15	●											
	060102 L-C	0.1-0.4	0.03-0.15	●											



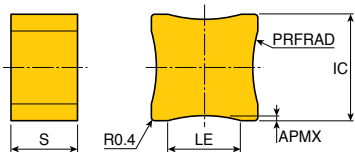
A193

● Standard items

SNG



Negative square inserts for pipe skiving



Size	Dimension (mm)				
	LE	IC	S	PRFRAD	APMX
SNG 452	8.7	12.70	7.94	10-70	0.14-1.0

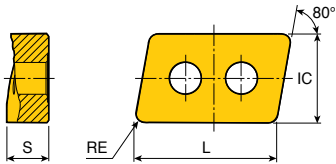
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet	CVD coated										PVD coated									
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080		TT8020	TT9080	TT3010	TT3020
 Pipe skiving	SNG 452 10R	-	-																					
	16R	-	-																					
	20R	-	-																					
	25R	-	-																					
	30R	-	-																					
	40R	-	-																					
	50R	-	-																					
	60R	-	-																					
70R	-	-																						

● Standard items

LNMM



Inserts



Size	Dimension (mm)			
	L	IC	S	RE
40	40.6	25.4	11.65	2.38

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet	CVD coated										PVD coated										
				PV3010 CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020		TT9080	TT3010	TT3020	TT9020	K10
 Roughing	LNMM 401224 R-HX	6.0-32.0	0.70-1.50								●	●	●					●							
	401224 L-HX	6.0-32.0	0.70-1.50									●						●							

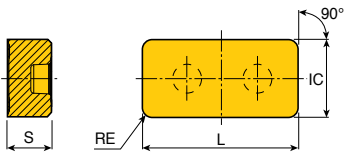


●: Standard items

LNMX



Inserts



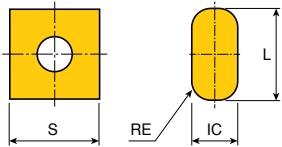
Size	Dimension (mm)			
	L	IC	S	RE
50	50.8	25.4	14.2	3.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet	CVD coated										PVD coated					K10				
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080		TT8020	TT9080	TT3010	TT3020
 Roughing	LNMX 501432 HD	6.0-40.0	0.70-1.60									●	●				●							
 Roughing	LNMX 501432 HY	5.0-40.0	0.65-1.50									●			●		●							



●: Standard items

TOP-RAIL inserts



Size	Dimension (mm)			
	L	IC	S	RE
19	19.05	10	19.05	4.0
30	30	12	19.05	4.0

Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated										PVD coated										
				Cermet													K10							
 Finishing	LNMX 191940 TWF	0.3-5.0	0.30-1.0	PV3010	CT3000	TT3005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	
									•	•	•													
 Medium	LNMX 191940 TWM	1.5-9.0	0.45-1.5						•	•	•													
	301940 TWM	1.5-15.0	0.50-1.5						•	•	•													
 Roughing	LNMX 301940 TWR	2.0-15.0	0.70-1.8						•	•	•													



A134

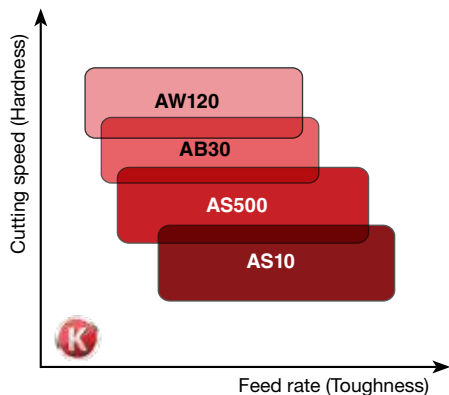
• Standard items

Hard Turning for Ceramic Inserts

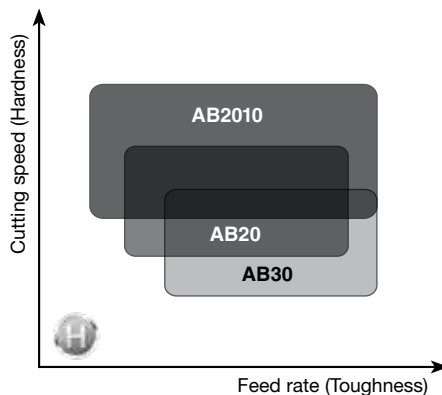


Selection guide for ceramic grades

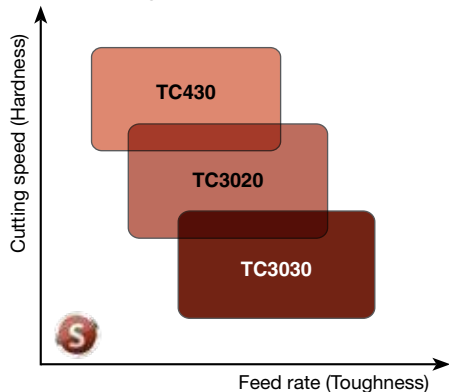
For cast iron



For hardened steel (HRc 40~60)



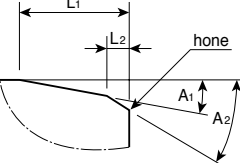
For super alloys



Information of Ceramic type

CE	Pressed type
CH	Dimple type
WZ	Wiper geometry

Edge preparations for ceramic inserts

Single land		Double land			Shape
Symbol	Width(mm) X angle	Symbol	Width(mm) X angle		
			L1 X A1	L2 X A2	
T2	0.10 X 30°	U1	0.7 X 15°	0.15 X 30°	
T3	0.15 X 30°	U2	1.5 X 15°	0.15~0.2 X 30°	
T4	0.20 X 30°	U3	2.0 X 15°	0.2 X 30°	
T5	0.30 X 20°	- All items are honed			
T6	0.10 X 20°				
T7	0.20 X 20°				

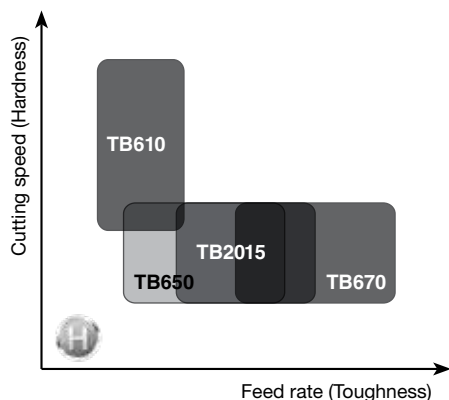
► Edge preparations of non symbol items is 0.2 X 25° with no hone except □NMG-CE 0.25 X 20° with hone

Hard Turning for CBN and PCD Inserts

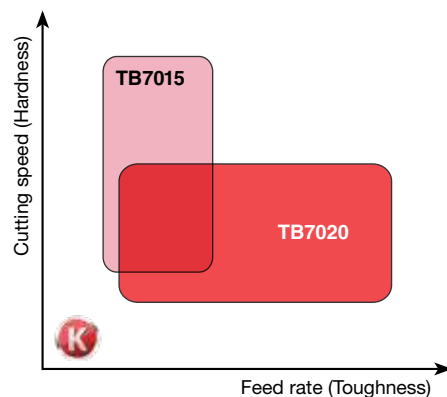


Selection guide for CBN and PCD grades

For hardened steel (HRC ≥ 50 , CBN)

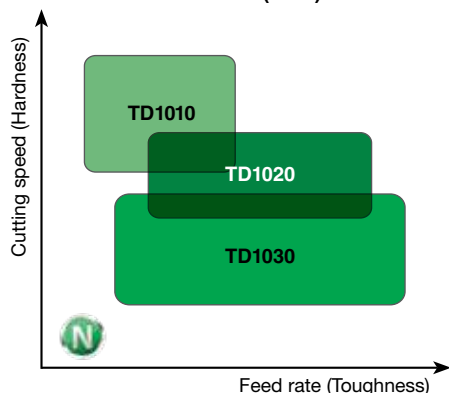


For cast iron (CBN)



► TB730 for General turning of sintered or powder metals

For non-ferrous material (PCD)



Information of CBN/PCD type

CBN	LS	Brazed small size CBN Tip, 1 corner
	LS2	Brazed small size CBN Tip, 2 corners
	LN	Brazed large size CBN Tip, 1 corner
	LN2	Brazed large size CBN Tip, 2 corners
	SD	Solid type
	FT	Full Top type
	DA	Dimple type
PCD	WZ	Wiper geometry
	LN-7	Rake angle 7°
	LN-10	Rake angle 10°
	CB	Chip breaker - Roughing medium
	CF	Chip breaker - Finishing

Edge preparations for CBN inserts

Single land				
Symbol	Width(mm) X angle L X A	Symbol	Width(mm) X angle L X A	Shape
TL	0.13X15°	SL	0.13X15°+ honed	
TM	0.13X25°	SM	0.13X25°+ honed	
TH	0.13X35°	SH	0.13X35°+ honed	

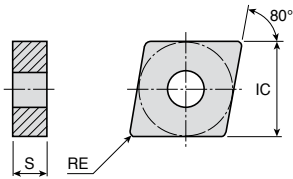
► Edge preparations of non symbol items depends on grades

TB610, TB2015, TB650, TB670: 0.13x20°+honed

TB730, TB7015 : 0.13x20°+no honed

TB7020 : 0.20x20°+honed

Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76	0.4-1.6
16	15.88	4.76-6.35	0.8-1.6
19	19.05	6.35-7.94	0.8-1.2

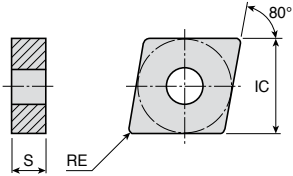
Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
	CNGA 120404	0.1-3.0	0.05-0.15	●	●	●							
	120404 T2	0.1-3.0	0.05-0.15			●							
	120404 T7	0.1-3.0	0.05-0.15					●					
	120404 T7-WZ	0.1-3.0	0.05-0.15	●									
	120408	0.1-3.0	0.05-0.20	●	●	●		●	●	●			
	120408 E	0.1-3.0	0.05-0.20								●	●	●
	120408 S7	0.1-3.0	0.05-0.20	●									
	120408 T2	0.1-3.0	0.05-0.20		●	●							
	120408 T6	0.1-3.0	0.05-0.20		●						●	●	●
	120408 T6-WZ	0.1-3.0	0.05-0.20							●			
	120408 T7	0.1-3.0	0.05-0.20				●	●					
	120408 T7-WZ	0.1-3.0	0.05-0.20	●	●								
	120412	0.1-3.0	0.05-0.25	●	●	●			●	●			
	120412 T2	0.1-3.0	0.05-0.25		●								
	120412 T6-WZ	0.1-3.0	0.05-0.25						●				
	120412 T7	0.1-3.0	0.05-0.25					●					
	120412 T7-WZ	0.1-3.0	0.05-0.25	●	●								
	120416	0.1-3.0	0.05-0.30		●	●			●	●			
	160608	0.1-3.5	0.05-0.20		●								
	160612	0.1-3.5	0.05-0.25			●							
	160616	0.1-3.5	0.05-0.30			●							
						●							
	CNGN 120404	0.1-3.0	0.05-0.15			●							
	120404 T6	0.1-3.0	0.05-0.15								●		
	120408	0.1-3.0	0.05-0.20	●	●	●				●			
	120408 E	0.1-3.0	0.05-0.20								●	●	●
	120408 T6	0.1-3.0	0.05-0.20								●		
	120408 T7	0.1-3.0	0.05-0.20					●					
	120412 E	0.1-3.0	0.05-0.25								●	●	●
	120412 T6	0.1-3.0	0.05-0.25								●		
	120412 T7	0.1-3.0	0.05-0.25				●						
	120416	0.1-3.0	0.05-0.30							●			
	120416 T6	0.1-3.0	0.05-0.30								●		



A58-A59 A119,
A126, A146, A170,
A194, A203, A205

●: Standard items

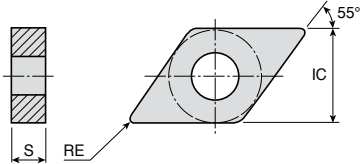
Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76-7.94	0.4-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic											
				AB2010	AB20	AB30	AW120	SC500	AS500	SC10	AS10	TC430	TC3020	TC3030	
	CNGN	120708	0.1-3.0	0.05-0.20	●	●	●								
		120708 E	0.1-3.0	0.05-0.20								●	●	●	
		120708 T6	0.1-3.0	0.05-0.20								●	●	●	
		120712	0.1-3.0	0.05-0.25			●				●				
		120712 E	0.1-3.0	0.05-0.25								●	●	●	
		120712 T6	0.1-3.0	0.05-0.25								●	●	●	
		120712 T7	0.1-3.0	0.05-0.25				●							
		120716	0.1-3.0	0.05-0.30			●			●					
		120716 T6	0.1-3.0	0.05-0.30								●	●	●	
		120716 T7	0.1-3.0	0.05-0.30				●							
 Dimple type	CNGX	120712 CH	0.1-3.5	0.05-0.30							●				
		120712 T7-CH	0.1-3.5	0.05-0.30					●	●	●				
		120716 CH	0.1-3.5	0.05-0.35							●	●			
		120716 T7-CH	0.1-3.5	0.05-0.35						●					
 Pressed type	CNMG	120404 CE	0.1-3.0	0.05-0.15			●								
		120408 CE	0.1-3.0	0.05-0.20		●	●								

Negative 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
12	10	8.0	1.2
15	12.7	4.76-8.0	0.4-1.6

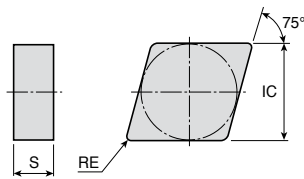
Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
	DNGA 150404	0.1-2.5	0.05-0.15		●	●							
	150408	0.1-2.5	0.05-0.20	●	●	●							
	150412	0.1-2.5	0.05-0.25	●	●	●							
	150604	0.1-2.5	0.05-0.15	●	●	●							
	150608	0.1-2.5	0.05-0.20	●	●	●				●			
	150612	0.1-2.5	0.05-0.25	●	●	●				●			
	150616	0.1-2.5	0.05-0.30		●	●							
	DNGN 150408	0.1-2.5	0.05-0.20		●								
	150704	0.1-2.5	0.05-0.15			●							
	150708	0.1-2.5	0.05-0.20			●							
	150708 T6	0.1-2.5	0.05-0.20									●	
	150708 T7	0.1-2.5	0.05-0.20				●						
	150712 T6	0.1-2.5	0.05-0.25									●	
	150712 T7	0.1-2.5	0.05-0.25				●						
 Dimple type	DNGX 120712 T7-CH	0.1-3.0	0.05-0.30							●			
	150708 T7-CH	0.1-3.0	0.05-0.25							●			
	150712 CH	0.1-3.0	0.05-0.30						●	●			
	150712 T7-CH	0.1-3.0	0.05-0.30					●					
	150716 CH	0.1-3.5	0.05-0.35							●			
	150716 T7-CH	0.1-3.5	0.05-0.35							●			
 Pressed type	DNMG 150608 CE	0.1-2.5	0.05-0.20			●							

A52, A53, A60, A61, A122,
A127, A146, A171, A195,
A203, A206, A215

●: Standard items



Negative 75° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
13	12.7	7.94	0.8-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
	ENGX 130708	0.1-2.5	0.05-0.20	●	●	●							
	130712 T5	0.1-2.5	0.05-0.25			●							
	130716	0.1-2.5	0.05-0.30		●								
	130716 U2	0.1-2.5	0.05-0.30			●							

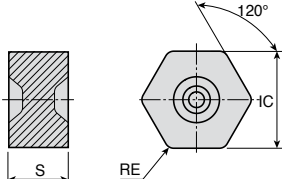


A128

●: Standard items

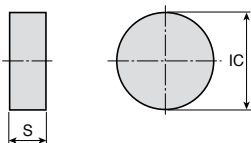
HNGX-CH

Negative 120° hexagonal inserts



Size	Dimension (mm)		
	IC	S	RE
05	12.7	7.94	1.2-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
 Dimple type	HNGX 050712 CH	0.05-0.25	0.10-2.00							●			
	050712 T7-CH	0.05-0.25	0.10-2.00					●					
	050716 CH	0.05-0.3	0.10-2.00							●			



Size	Dimension (mm)		
	IC	S	
09	9.52	3.18-4.76	
12	12.7	4.76-7.94	
15	15.88	7.94	
19	19.05	7.94	
25	25.4	9.52	

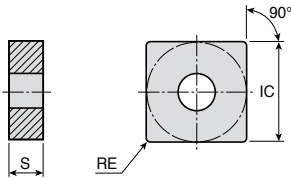
[illegible]

●: Standard items



A129

Negative square inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76-7.94	0.4-1.6
15	15.88	7.94	1.6
19	19.05	6.35-7.94	0.8-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
	SNGA 120404	0.1-3.0	0.05-0.15	●	●	●							
	120408	0.1-3.0	0.05-0.20	●	●	●							
	120408 S7	0.1-3.0	0.05-0.20	●									
	120412	0.1-3.0	0.05-0.25	●	●	●				●			
	120416	0.1-3.0	0.05-0.30						●	●			
	190608	0.1-4.5	0.05-0.20			●							
	190612	0.1-4.5	0.05-0.25			●							
	SNGN 120404	0.1-3.0	0.05-0.15	●	●	●							
	120404 T7	0.1-3.0	0.05-0.15				●						
	120408	0.1-3.0	0.05-0.20	●	●	●				●			
	120408 T6	0.1-3.0	0.05-0.20								●	●	●
	120412	0.1-3.0	0.05-0.25	●	●	●				●			
	120412 T6	0.1-3.0	0.05-0.25								●		●
	120412 T7	0.1-3.0	0.05-0.25				●						
	120416	0.1-3.0	0.05-0.30	●	●	●				●			
	120416 T6	0.1-3.0	0.05-0.30								●		
	120416 T7	0.1-3.0	0.05-0.30				●						
	120708	0.1-3.0	0.05-0.20	●	●	●							
	120708 T6	0.1-3.0	0.05-0.20								●		
	120708 T7	0.1-3.0	0.05-0.20				●						
	120712	0.1-3.0	0.05-0.25	●	●	●			●				
	120712 T6	0.1-3.0	0.05-0.25								●	●	●
	120712 T7	0.1-3.0	0.05-0.25				●						
	120716	0.1-3.0	0.05-0.30	●		●							
	120716 T7	0.1-3.0	0.05-0.30				●						
	150716	0.1-3.5	0.05-0.30			●							
	190716	0.1-4.0	0.05-0.30			●							



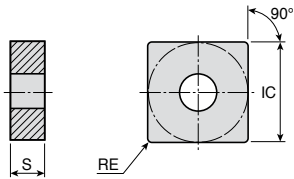
A65, A66, A104,
A105, A130, A131,
A172, A197

●: Standard items

SNGX-CH SNMG-CE



Negative square inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	4.76-7.94	0.8-1.6
15	15.8 8	7.94	1.6

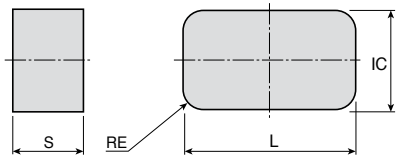
Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic											
				AB2010	AB20	AB30	AW120	SC500	AS500	SC10	AS10	TC430	TC3020	TC3030	
 Dimple type	SNGX 120712 CH	0.1-3.0	0.05-0.30								●	●			
	120716 CH	0.1-3.0	0.05-0.35								●	●			
	120716 T7-CH	0.1-3.0	0.05-0.35					●	●		●				
	150716 T7-CH	0.1-3.5	0.05-0.35								●				
 Pressed type	SNMG 120408 CE	0.1-3.0	0.05-0.20			●									



A65, A66, A104,
A105, A123,
A172, A197

●: Standard items

Negative square inserts

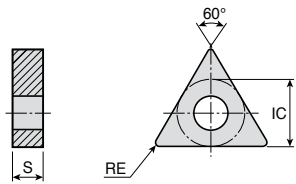


Size	Dimension (mm)			
	L	IC	S	RE
LNU	38.1	19.05	12.77	3.2
T32	31.75	19.05	12.7	2.0

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic										
				AB2010	AB20	AB30	AW120	SC500	AS500	SC10	AS10	TC430	TC3020	TC3030
	LNU 6688 T	1.0-20.0	0.20-1.00		●	●			●					
	T32- 32	1.0-15.0	0.20-0.25		●	●			●					

●: Standard items

Negative triangular inserts



Size	Dimension (mm)		
	IC	S	RE
16	9.52	4.76	0.4-1.6
22	12.7	4.76	0.4-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
	TNGA 160404	0.1-2.5	0.05-0.15	●	●	●							
	160404 T2	0.1-2.5	0.05-0.15			●							
	160408	0.1-2.5	0.05-0.20	●	●	●							
	160408 T2	0.1-2.5	0.05-0.20			●							
	160412	0.1-2.5	0.05-0.25	●	●	●							
	160412 T2	0.1-2.5	0.05-0.25			●							
	160416	0.1-2.5	0.05-0.30		●								
	220404	0.1-3.0	0.05-0.15		●	●							
	220408	0.1-3.0	0.05-0.20	●	●	●							
	220412	0.1-3.0	0.05-0.25		●	●							
	TNGN 160404	0.1-2.5	0.05-0.15		●	●							
	160408	0.1-2.5	0.05-0.20	●	●	●				●			
	160408 T7	0.1-2.5	0.05-0.20				●						
	160412	0.1-2.5	0.05-0.25		●	●							
	160412 T7	0.1-2.5	0.05-0.25				●	●					
	160416 T7	0.1-1.0	0.05-0.20				●						
	TNMG 160408 CE	0.1-2.5	0.05-0.20			●							

Pressed type



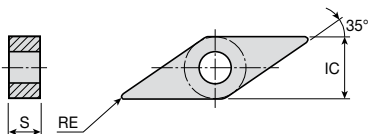
A54, A67, A68, A106,
A114, A115, A148,
A173, A200, A204

●: Standard items

VNGA VNGX-CH



Negative 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
16	9.52	4.76-7.94	0.4-1.2
22	12.7	4.76	1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
	VNGA 160404	0.05-1.0	0.05-0.10	●	●	●							
	160408	0.05-1.0	0.05-0.15	●	●	●							
	160412	0.05-1.5	0.05-0.20		●	●							
	220412	0.05-2.0	0.05-0.20			●							
 Dimple type	VNGX 160712 T7-CH	0.05-1.5	0.05-0.20							●			



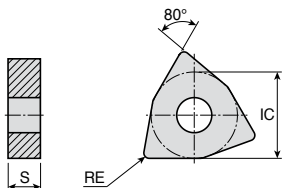
A55, A56, A108,
A148, A206

●: Standard items

WNGA



Negative 80° trigon inserts



Size	Dimension (mm)		
	IC	S	RE
08	12.7	4.76	0.8-1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
	WNGA 080408	0.1-2.5	0.05-0.25	●	●	●			●	●			
	080408 T7-WZ	0.1-2.5	0.05-0.25	●	●								
	080412	0.1-2.5	0.05-0.25	●	●	●			●	●			
	080412 T7	0.1-2.5	0.05-0.25					●					



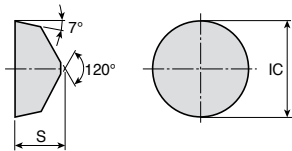
A57, A69, A109,
A149, A169,
A198, A207

●: Standard items

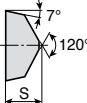
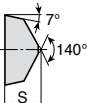
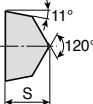
RCGX RPGN RPGX T11-



Positive round inserts



Size	Dimension (mm)		Size	Dimension (mm)	
	IC	S		IC	S
06	6.35	3.18-6.35	19	19.05	10.0
09	9.52	7.94	25	25.4	12.0
12	12.7	4.76-7.94	T11	31.9	19.05
15	15.88	8			

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic										
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030	
  * 	RCGX 060600 T6	0.1-2.0	0.05-0.25									●		
	060600 U1	0.1-2.0	0.05-0.25			●								
	090700 E	0.1-3.0	0.05-0.35										●	●
	090700 E04	0.1-3.0	0.05-0.30										●	●
	090700 T6	0.1-3.0	0.05-0.30									●	●	●
	090700 U1	0.1-3.0	0.05-0.30		●	●								
	120700	0.1-4.0	0.05-0.35			●								
	120700 E	0.1-4.0	0.05-0.35										●	●
	120700 E04	0.1-4.0	0.05-0.35										●	●
	120700 T6	0.1-4.0	0.05-0.35									●	●	●
	120700 U2	0.1-4.0	0.05-0.35		●	●								
	151000 U2	0.1-5.0	0.05-0.35		●	●								
	191000 U2	0.1-5.0	0.05-0.35		●	●								
	251200 U3 *	0.1-5.0	0.05-0.35			●								
 	RPGN 060300 E	0.1-2.0	0.05-0.25											●
	120400 E	0.1-4.0	0.05-0.35										●	●
	120400 T6	0.1-4.0	0.05-0.35									●	●	●
 	RPGX 090700 E	0.1-3.0	0.05-0.35										●	●
	090700 T6	0.1-3.0	0.05-0.35									●	●	●
	120700 E	0.1-4.0	0.05-0.35										●	●
	120700 T6	0.1-4.0	0.05-0.35									●	●	●
 	T11- 3219	0.1-5.0	0.05-0.35		●									

A116, A117, A118

► *: This is the only item with a 140° bottom

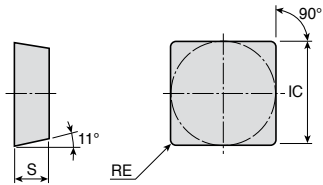
●: Standard items



SPGN



Positive square inserts



Size	Dimension (mm)		
	IC	S	RE
12	12.7	3.18-4.76	0.8-1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
	SPGN 120308	0.1-3.5	0.05-0.20			●				●			
	120412	0.1-3.5	0.05-0.20							●			



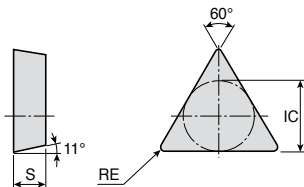
A48, A166

●: Standard items

TPGN



Positive triangular inserts



Size	Dimension (mm)		
	IC	S	RE
11	6.35	3.18	0.4-0.8
16	9.52	3.18	0.4-0.8
22	12.7	4.76	0.8

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
	TPGN 110304	0.1-2.0	0.05-0.10	●	●	●							
	110308	0.1-2.0	0.05-0.10	●	●	●							
	160304	0.1-2.5	0.05-0.15	●	●	●							
	160308	0.1-2.5	0.05-0.20	●	●	●							
	160308 T6	0.1-2.5	0.05-0.20								●		
	220408	0.1-3.0	0.05-0.20			●							



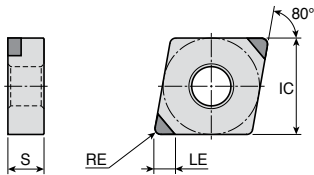
A49, A50, A167

●: Standard items

CNGA CNGN-SD CNGX-DA



Negative 80° rhombic inserts



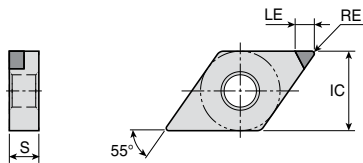
Size	Dimension (mm)		
	IC	S	RE
09	9.52	3.18	0.8
12	12.7	4.76	0.4-1.6

Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD		
					TB610	TB650	TB670	TB730	TB7015	TB7020	TD1010	TD1020	TD1030
	CNGA 120404 WZ-LS2	2.1	0.1-0.5	0.05-0.30	●	●	●						
	120408 WZ-LS2	2.1	0.1-0.5	0.05-0.30	●	●	●	●					
	120408 WZ-LS4	2.1	0.1-0.5	0.05-0.30	●	●	●						
	120412 WZ-LS2	2.5	0.1-0.5	0.05-0.30		●	●	●					
	120412 WZ-LS4	2.5	0.1-0.5	0.05-0.30			●						
	CNGA 120404 LN	4.2	0.1-0.5	0.05-0.30	●		●		●				
	120404 LS2	2.2	0.1-0.5	0.05-0.30	●	●	●	●	●				
	120404 LS4	2.2	0.1-0.5	0.05-0.30		●	●						
	120408 LN	4.0	0.1-0.5	0.05-0.30	●	●		●	●				
	120408 LN4	4.0	0.1-0.5	0.05-0.30		●							
	120408 LS2	2.1	0.1-0.5	0.05-0.30	●	●	●	●	●				
	120408 LS4	2.1	0.1-0.5	0.05-0.30		●	●	●	●				
	120412 LN	3.9	0.1-0.5	0.05-0.30	●		●		●				
	120412 LS2	2.5	0.1-0.5	0.05-0.30		●		●	●				
	120412 LS4	2.5	0.1-0.5	0.05-0.30			●	●					
	CNGA 120404 LN-10	4.0	0.1-3.0	0.05-0.25								●	
	120408 LN-10	3.9	0.1-3.0	0.05-0.25								●	
	120412 LN-10	3.8	0.1-3.0	0.05-0.25								●	
	CNGN 090308 SD	-	0.1-3.0	0.05-0.30					●				
	120412 SD	-	0.1-4.0	0.05-0.30					●				
	120416 SD	-	0.1-4.0	0.05-0.30					●				
	CNGX 120412 DA	-	0.1-4.0	0.05-0.30					●				
	120416 DA	-	0.1-4.0	0.05-0.30					●				

A58-A59, A119,
A126, A146, A170,
A194, A203, A205

●: Standard items

Negative 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
15	12.7	4.76-6.35	0.4-1.2

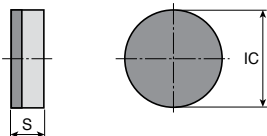
Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD		
					TB610	TB650	TB670	TB730	TB7015	TB7020	TD1010	TD1020	TD1030
	DNGA 150404 LN	4.2	0.1-0.5	0.05-0.30	●	●	●						
	150404 LS2	2.6	0.1-0.5	0.05-0.30	●	●	●						
	150404 LS4	2.6	0.1-0.5	0.05-0.30	●	●							
	150408 LN	3.9	0.1-0.5	0.05-0.30	●	●	●		●				
	150408 LS2	2.3	0.1-0.5	0.05-0.30	●	●	●	●					
	150408 LS4	2.3	0.1-0.5	0.05-0.30			●						
	150412 LN	3.5	0.1-0.5	0.05-0.30		●			●				
	150412 LS2	2.2	0.1-0.5	0.05-0.30			●	●					
	150412 LS4	2.2	0.1-0.5	0.05-0.30			●						
	150604 LN	4.2	0.1-0.5	0.05-0.30		●	●	●	●				
	150604 LS2	2.6	0.1-0.5	0.05-0.30	●	●	●	●					
	150608 LN	3.9	0.1-0.5	0.05-0.30	●	●	●	●					
	150608 LS2	2.3	0.1-0.5	0.05-0.30	●	●	●	●	●				
	150608 LS4	2.3	0.1-0.5	0.05-0.30			●						
	150612 LS2	2.2	0.1-0.5	0.05-0.30			●						
	DNGA 150404 LN-10	4.0	0.1-2.5	0.05-0.20								●	
	150408 LN-10	3.7	0.1-2.5	0.05-0.20								●	
	150604 LN-10	4.0	0.1-2.5	0.05-0.20								●	
	150608 LN-10	3.7	0.1-2.5	0.05-0.20								●	



A52, A53, A60, A61,
A146, A171, A195,
A203, A206

●: Standard items

Negative round inserts



Size	Dimension (mm)		
	IC	S	
09	9.52	3.18	
12	12.7	4.76	

[illegible]

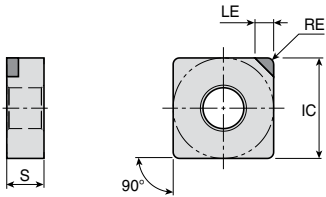
A129

●: Standard items

SNGA SNGN-SD SNGX-DA



Negative square inserts



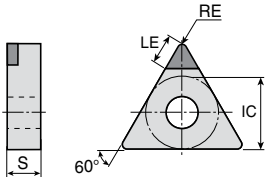
Size	Dimension (mm)		
	IC	S	RE
09	9.52	3.18	1.2
12	12.7	4.76	0.4-1.6

Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD		
					TB610	TB650	TB670	TB730	TB7015	TB7020	TD1010	TD1020	TD1030
	SNGA 120404 LS2	2.5	0.1-0.5	0.05-0.30			●	●					
	120408 LN	4.2	0.1-0.5	0.05-0.30		●			●				
	120408 LS2	2.5	0.1-0.5	0.05-0.30			●		●				
	120408 LS4	2.5	0.1-0.5	0.05-0.30			●						
	120408 LS8	2.5	0.1-0.5	0.05-0.30			●						
 Solid CBN	SNGN 090312 SD	-	0.1-3.0	0.05-0.30						●			
	120416 SD	-	0.1-4.0	0.05-0.30						●			
 Dimple type	SNGX 120416 DA	-	0.1-4.0	0.05-0.30						●			

A65, A66, A104, A105,
A125, A130, A131,
A147, A172, A197

●: Standard items

Negative triangular inserts



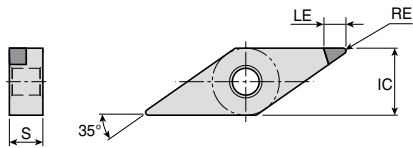
Size	Dimension (mm)		
	IC	S	RE
16	9.52	4.76	0.4-1.2
22	12.7	4.76	0.4-0.8

Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD		
					TB610	TB650	TB670	TB730	TB7015	TB7020	TD1010	TD1020	TD1030
	TNGA 160404 LN	4.3	0.1-0.5	0.05-0.30	●	●			●				
	160404 LS3	2.2	0.1-0.5	0.05-0.30	●		●	●					
	160404 LS6	2.2	0.1-0.5	0.05-0.30		●							
	160408 LN	4.0	0.1-0.5	0.05-0.30		●	●		●				
	160408 LS3	2.1	0.1-0.5	0.05-0.30	●	●	●	●	●				
	160408 LS6	2.1	0.1-0.5	0.05-0.30			●						
	160412 LS3	2.5	0.1-0.5	0.05-0.30			●						
	220404 LN	4.1	0.1-0.5	0.05-0.30		●							
	220408 LS	2.6	0.1-0.5	0.05-0.30		●							
 	TNGA 160404 LN-10	4.3	0.1-3.0	0.05-0.20								●	

 A54, A67, A68, A106,
A114, A115, A148,
A173, A200, A204

●: Standard items

Negative 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
16	9.52	4.76	0.4-0.8

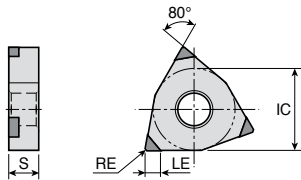
Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD		
					TB610	TB650	TB670	TB730	TB7015	TB7020	TD1010	TD1020	TD1030
	VNGA 160404 LN	5.0	0.1-0.5	0.05-0.30	●								
	160404 LS	3.2	0.1-0.5	0.05-0.30	●								
	160404 LS2	3.2	0.1-0.5	0.05-0.30			●	●					
	160408 LN	4.1	0.1-0.5	0.05-0.30		●							
	160408 LS2	2.4	0.1-0.5	0.05-0.30	●	●	●	●					
	160408 LS4	2.4	0.1-0.5	0.05-0.30					●				
	VNGA 160404 LN-10	5.0	0.1-2.0	0.05-0.20								●	



A55, A56, A108,
A148, A206

●: Standard items

Negative 80° trigon inserts



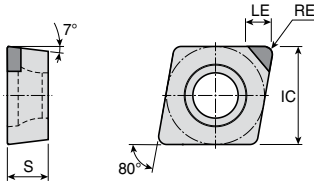
Size	Dimension (mm)		
	IC	S	RE
06	9.52	4.76	0.8
08	12.7	4.76	0.8-1.2

Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD		
					TB610	TB650	TB670	TB730	TB7015	TB7020	TD1010	TD1020	TD1030
	WNGA 060408 WZ-LS6	2.1	0.05-0.5	0.05-0.30			●						
	080408 WZ-LS3	2.1	0.05-0.5	0.05-0.30	●	●	●						
	080408 WZ-LS6	2.1	0.05-0.5	0.05-0.30			●						
	080412 WZ-LS3	2.1	0.05-0.5	0.05-0.30			●						
	WNGA 080408 LS3	2.1	0.1-0.5	0.05-0.20			●						
	080408 LS6	2.1	0.1-0.5	0.05-0.20			●						

CCGW CCGT-CB CCGT-CF



Positive 80° rhombic inserts



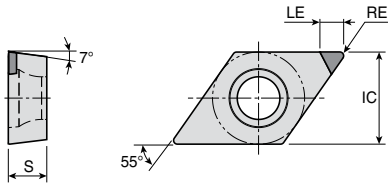
Size	Dimension (mm)		
	IC	S	RE
06	6.35	2.38	0.2-0.8
09	9.52	3.97	0.2-0.8
12	12.7	4.76	0.4-0.8

Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD		
					TB610	TB650	TB670	TB730	TB7015	TB7020	TD1010	TD1020	TD1030
	CCGW 060202 LS	2.4	0.05-0.5	0.05-0.30	●				●				
	060202 LS2	2.2	0.05-0.5	0.05-0.30			●	●					
	060204 LS	2.4	0.05-0.5	0.05-0.30	●				●				
	060204 LS2	2.1	0.05-0.5	0.05-0.30	●		●	●					
	060208 LS2	2.1	0.05-0.5	0.05-0.30	●		●	●					
	09T304 LS	2.4	0.05-0.5	0.05-0.30		●			●				
	09T304 LS2	2.4	0.05-0.5	0.05-0.30	●	●	●	●	●				
	09T304 WZ-LS	2.8	0.05-0.5	0.05-0.30		●							
	09T304 WZ-LS2	2.4	0.05-0.5	0.05-0.30			●	●					
	09T308 LS	2.3	0.05-0.5	0.05-0.30		●			●				
	09T308 LS2	2.3	0.05-0.5	0.05-0.30	●		●	●					
	09T308 WZ-LS	2.3	0.05-0.5	0.05-0.30		●							
	09T308 WZ-LS2	2.3	0.05-0.5	0.05-0.30		●		●					
	120404 LS2	2.1	0.05-0.5	0.05-0.30				●					
	120408 LS	2.5	0.05-0.5	0.05-0.30					●				
	120408 LS2	2.1	0.05-0.5	0.05-0.30				●					
 	CCGW 060202 LN-7	3.1	0.08-3.0	0.05-0.30							●	●	●
	060204 LN-7	3.1	0.08-3.0	0.05-0.30							●	●	●
	09T304 LN-7	4.0	0.1-3.0	0.05-0.30							●	●	●
	09T308 LN-7	3.9	0.1-3.0	0.05-0.30							●	●	
	120404 LN-7	4.0	0.1-3.0	0.05-0.30							●	●	●
	120408 LN-7	3.9	0.1-3.0	0.05-0.30							●	●	
 	CCGT 060204 CB	3.1	0.5-1.5	0.10-0.50								●	
	09T302 CB	4.15	0.5-2.0	0.10-0.50								●	
	09T304 CB	4.1	0.5-2.0	0.10-0.50								●	
	09T308 CB	4.0	0.5-2.0	0.10-0.50								●	
	120404 CB	4.1	0.5-2.0	0.10-0.50								●	
	120408 CB	4.0	0.5-2.0	0.10-0.50								●	
PCD chip breaker													
 	CCGT 09T302 CF	4.15	0.1-1.0	0.05-0.20								●	
	09T304 CF	4.1	0.1-1.0	0.05-0.20								●	
	120404 CF	4.1	0.1-1.0	0.05-0.20								●	
	120408 CF	4.0	0.1-1.0	0.05-0.20								●	

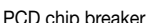
●: Standard items

A70-A72, A94,
A151, A174,
A175, A208

Positive 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
07	6.35	2.38	0.2-0.8
11	9.52	3.97	0.2-0.8

Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD		
					TB610	TB650	TB670	TB730	TB7015	TB7020	TD1010	TD1020	TD1030
	DCGW 070202 LS	2.6	0.05-0.5	0.05-0.30	●								
	070202 LS2	2.6	0.05-0.5	0.05-0.30	●	●	●						
	070204 LS	2.4	0.05-0.5	0.05-0.30	●	●		●					
	070204 LS2	2.4	0.05-0.5	0.05-0.30	●	●	●						
	070208 LS2	2.6	0.05-0.5	0.05-0.30				●					
	11T304 LS	2.6	0.05-0.5	0.05-0.30	●	●		●					
	11T304 LS2	3.4	0.05-0.5	0.05-0.30	●	●	●						
	11T308 LS	2.2	0.05-0.5	0.05-0.30	●	●		●					
	11T308 LS2	2.2	0.05-0.5	0.05-0.30	●	●	●						
 	DCGW 070202 LN-7	3.4	0.1-2.0	0.05-0.30							●	●	
	070204 LN-7	3.3	0.1-2.0	0.05-0.30							●	●	
	11T302 LN-7	3.9	0.1-2.0	0.05-0.30							●	●	●
	11T304 LN-7	3.7	0.1-2.0	0.05-0.30							●	●	●
	11T308 LN-7	3.3	0.1-2.0	0.05-0.30							●	●	●
 	DCGT 070202 CB	3.4	0.5-1.5	0.10-0.50								●	
	070204 CB	3.3	0.5-1.5	0.10-0.50								●	
	11T302 CB	4.9	0.5-2.5	0.10-0.50								●	
	11T304 CB	4.7	0.5-2.5	0.10-0.50								●	
	11T308 CB	4.6	0.5-2.5	0.10-0.50								●	
 	DCGT 070202 CF	3.4	0.1-1.0	0.05-0.20								●	
	070204 CF	3.3	0.1-1.0	0.05-0.20								●	
	11T302 CF	4.9	0.1-1.5	0.05-0.20								●	
	11T304 CF	4.7	0.1-1.5	0.05-0.20								●	
	11T308 CF	4.6	0.1-1.5	0.05-0.20								●	

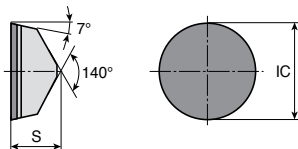
 A73-A76, A95, A97, A99,
A137, A141, A151,
A178-A180, A209, A214

●: Standard items

RCGX-FT



Positive round inserts



Size	Dimension (mm)	
	IC	S
06	6.35	3.18
09	9.52	3.18
12	12.7	4.76

Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD		
					TB610	TB650	TB670	TB730	TB7015	TB7020	TD1010	TD1020	TD1030
 Full Top CBN	RCGX 060300 FT	-	0.1-1.0	0.05-0.30					●				
	090300 FT	-	0.1-1.5	0.05-0.30					●				
	120400 FT	-	0.1-1.5	0.05-0.30					●				



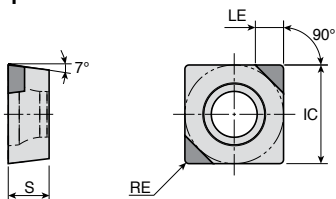
A116-A118

●: Standard items

SCGW



Positive square inserts



Size	Dimension (mm)		
	IC	S	RE
09	9.52	3.18-3.97	0.4-0.8

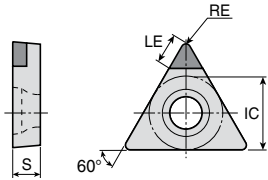
Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD		
					TB610	TB650	TB670	TB730	TB7015	TB7020	TD1010	TD1020	TD1030
	SCGW 09T304 LS2	2.7	0.05-0.5	0.05-0.30				●					
	09T308 LS2	2.7	0.05-0.5	0.05-0.30				●					



A80, A181

●: Standard items

Positive triangular inserts



Size	Dimension (mm)		
	IC	S	RE
08	4.76	2.38	0.4
09	5.56	2.38	0.4-0.8
11	6.35	2.38-3.18	0.2-0.8
16	9.52	3.18-4.76	0.4-0.8

Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD		
					TB610	TB650	TB670	TB730	TB7015	TB7020	TD1010	TD1020	TD1030
	TCGW 090204 LS3	2.3	0.05-0.5	0.05-0.30			●	●					
	110204 LS	2.3	0.05-0.5	0.05-0.30		●			●				
	110204 LS3	2.3	0.05-0.5	0.05-0.30	●		●	●					
	110208 LS	2.1	0.05-0.5	0.05-0.30		●			●				
	110208 LS3	2.1	0.05-0.5	0.05-0.30			●	●					
	16T304 LS	2.8	0.05-0.5	0.05-0.30		●			●				
	16T304 LS3	2.8	0.05-0.5	0.05-0.30			●	●					
	16T308 LS	2.5	0.05-0.5	0.05-0.30		●			●				
	16T308 LS3	2.5	0.05-0.5	0.05-0.30	●		●	●					
	TPGN 090204 LS3	2.3	0.05-0.5	0.05-0.30	●								
	110302 LS3	2.8	0.05-0.5	0.05-0.30				●					
	110304 LS	2.6	0.05-0.5	0.05-0.30		●			●				
	110304 LS3	2.6	0.05-0.5	0.05-0.30				●					
	110308 LS3	2.3	0.05-0.5	0.05-0.30	●		●						
	160304 LS	2.8	0.05-0.5	0.05-0.30		●							
	160304 LS3	2.8	0.05-0.5	0.05-0.30	●		●						
	160308 LS	2.5	0.05-0.5	0.05-0.30		●							
	160308 LS3	2.5	0.05-0.5	0.05-0.30	●		●	●					
	TPGW 080204 LS3	2.1	0.05-0.5	0.05-0.30			●						
	090204 LS3	2.3	0.05-0.5	0.05-0.30			●	●					
	090208 LS3	2.0	0.05-0.5	0.05-0.30			●						
	110302 LS3	2.8	0.05-0.5	0.05-0.30	●								
	110304 LS	2.6	0.05-0.5	0.05-0.30		●	●						
	110304 LS3	2.6	0.05-0.5	0.05-0.30	●			●					
	110308 LS3	2.3	0.05-0.5	0.05-0.30	●		●						
	160404 LS3	2.8	0.05-0.5	0.05-0.30			●						

●: Standard items

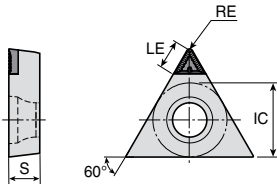


A49, A50,
A81-A83, A152, A155,
A167, A182, A210

TCGW TPGN TCGT-CB



Positive triangular inserts



Size	Dimension (mm)		
	IC	S	RE
09	5.56	2.38	0.4-0.8
11	6.35	2.38-3.18	0.2-0.8
16	9.52	3.18-3.97	0.2-0.8

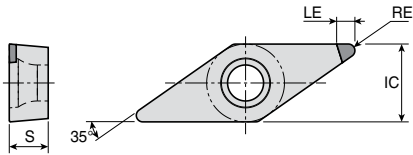
Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD			
					TB610	TB650	TB670	TB730	TB7015	TB7020		TD1010	TD1020	TD1030
 	TCGW 090204 LN-7	3.3	0.1-2.0	0.05-0.30									●	
	090208 LN-7	3.0	0.1-2.0	0.05-0.30									●	
	110204 LN-7	3.8	0.1-2.0	0.05-0.30								●	●	●
	16T304 LN-7	3.8	0.1-2.0	0.05-0.30									●	
	16T308 LN-7	3.5	0.1-2.0	0.05-0.30									●	
 	TPGN 110302 LN-7	3.9	0.1-2.0	0.05-0.30									●	
	110304 LN-7	3.8	0.1-2.0	0.05-0.30									●	
	160302 LN-7	4.4	0.1-2.0	0.05-0.30									●	
	160304 LN-7	4.3	0.1-2.0	0.05-0.30									●	
  PCD chip breaker 	TCGT 090204 CB	2.8	0.5-1.5	0.10-0.50									●	
	110204 CB	3.8	0.5-2.0	0.10-0.50									●	
	16T304 CB	3.9	0.5-2.0	0.10-0.50									●	
	16T308 CB	3.6	0.5-2.0	0.10-0.50									●	

●: Standard items

VBGW VCGW VCGT-CB VCGT-CF



Positive 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
11	6.35	3.18	0.2-0.4
16	9.52	4.76	0.2-1.2
22	12.7	5.56	3.0

Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD		
					TB610	TB650	TB670	TB730	TB7015	TB7020	TD1010	TD1020	TD1030
	VBGW 110304 LS2	3.2	0.05-0.5	0.05-0.30			●						
	160402 LS2	3.6	0.05-0.5	0.05-0.30			●						
	160404 LS	3.2	0.05-0.5	0.05-0.30		●			●				
	160404 LS2	3.2	0.05-0.5	0.05-0.30	●		●	●					
	160408 LS	2.3	0.05-0.5	0.05-0.30		●			●				
	160408 LS2	2.3	0.05-0.5	0.05-0.30	●		●	●					
 	VBGW 160402 LN-7	5.2	0.1-2.0	0.05-0.30								●	
	160404 LN-7	5.0	0.1-2.0	0.05-0.30								●	
	160408 LN-7	4.2	0.1-2.0	0.05-0.30								●	
 	VCGW 160404 LN-7	5.0	0.1-2.0	0.05-0.30							●	●	●
	160408 LN-7	4.1	0.1-2.0	0.05-0.30							●	●	●
  	VCGT 110302 CB	4.7	0.5-2.0	0.10-0.50								●	
	110304 CB	5.0	0.5-2.0	0.10-0.50								●	
	160404 CB	7.3	0.5-3.5	0.10-0.50								●	
	160408 CB	6.4	0.5-3.5	0.10-0.50								●	
	160412 CB	6.2	0.5-3.5	0.10-0.50								●	
 	VCGT 160404 CF	7.3	0.1-2.0	0.05-0.20								●	
	160408 CF	6.4	0.1-2.0	0.05-0.20								●	

A84, A85, A88-A90, A96, A98, A99, A138, A153, A187, A189, A191, A192, A211

●: Standard items



Recommended Cutting Conditions



Machining data for turning grades

ISO	Material	Condition	Tensile strength (N/mm²)	Hardness HB	Material No.
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C Annealed	420	125	1
		>=0.25%C Annealed	650	190	2
		<0.55%C Quenched and tempered	850	250	3
		>=0.55%C Annealed	750	220	4
		Quenched and tempered	1000	300	5
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed	600	200	6
		Quenched and tempered	930	275	7
			1000	300	8
			1200	350	9
	High alloy steel, cast steel and tool steel	Annealed	680	200	10
		Quenched and tempered	1100	325	11
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12
		Martensitic	820	240	13
		Austenitic	600	180	14
K	Gray cast iron (GG)	Ferritic		160	15
		Pearlitic		250	16
	Cast iron nodular (GGG)	Ferritic		180	17
		Pearlitic		260	18
	Malleable cast iron	Ferritic		130	19
		Pearlitic		230	20
N	Aluminum - wrought alloy	Not cureable		60	21
		Cured		100	22
	Aluminum-cast, alloyed	<=12% Si Not cureable		75	23
		Cured		90	24
		>12% Si High temp.		130	25
	Copper alloys	>1% Pb Free cutting		110	26
		Brass		90	27
		Electrolitic copper		100	28
	Non-metallic	Duroplastics, fiber plastics		70 Shore D	29
		Hard rubber		55 Shore D	30
S	High temp. alloys	Fe based Annealed		200	31
				280	32
		Ni or Co based Annealed		250	33
				350	34
				320	35
	Titanium, Ti alloys	Pure	Rm 400	190	36
		Alpha+beta alloys, hardened	Rm 1050	310	37
H	Hardened steel	Hardened		55HRC	38
		Hardened		60HRC	39
	Chilled cast iron	Cast		400	40
	Cast iron nodular	Hardened		55HRC	41

► For more information of material groups, see the materials & grades "material conversion table"

■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ Nonferrous
 ■ High temp. alloys
 ■ Hardened steel

T-TURN

[illegible]

Recommended Cutting Conditions



Machining data for turning grades

ISO	Material		Condition	Tensile strength (N/mm²)	Hardness HB	Material No.
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C	Annealed	420	125	1
		>=0.25%C	Annealed	650	190	2
		<0.55%C	Quenched and tempered	850	250	3
		>=0.55%C	Annealed	750	220	4
			Quenched and tempered	1000	300	5
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	6
			Quenched and tempered	930	275	7
				1000	300	8
				1200	350	9
	High alloy steel, cast steel and tool steel		Annealed	680	200	10
			Quenched and tempered	1100	325	11
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12	
		Martensitic	820	240	13	
		Austenitic	600	180	14	
K	Gray cast iron (GG)	Ferritic		160	15	
		Pearlitic		250	16	
	Cast iron nodular (GGG)	Ferritic		180	17	
		Pearlitic		260	18	
	Malleable cast iron	Ferritic		130	19	
		Pearlitic		230	20	
N	Aluminum - wrought alloy	Not cureable		60	21	
		Cured		100	22	
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23
			Cured		90	24
		>12% Si	High temp.		130	25
	Copper alloys	>1% Pb	Free cutting		110	26
			Brass		90	27
			Electrolitic copper		100	28
Non-metallic		Duroplastics, fiber plastics		70 Shore D	29	
		Hard rubber		55 Shore D	30	
S	High temp. alloys	Fe based	Annealed		200	31
			Cured		280	32
		Ni or Co based	Annealed		250	33
			Cured		350	34
			Cast		320	35
	Titanium, Ti alloys	Pure	Rm 400	190	36	
		Alpha+beta alloys, hardened	Rm 1050	310	37	
H	Hardened steel	Hardened		55HRC	38	
		Hardened		60HRC	39	
	Chilled cast iron	Cast		400	40	
	Cast iron nodular	Hardened		55HRC	41	

► For more information of material groups, see the materials & grades "material conversion table"

■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ Nonferrous
 ■ High temp. alloys
 ■ Hardened steel

T-TURN

[illegible]

Recommended Cutting Conditions



Machining data for turning grades

ISO	Material		Condition	Tensile strength (N/mm²)	Hardness HB	Material No.
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C	Annealed	420	125	1
		>=0.25%C	Annealed	650	190	2
		<0.55%C	Quenched and tempered	850	250	3
		>=0.55%C	Annealed	750	220	4
			Quenched and tempered	1000	300	5
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	6
			Quenched and tempered	930	275	7
		1000		300	8	
		1200		350	9	
	High alloy steel, cast steel and tool steel		Annealed	680	200	10
			Quenched and tempered	1100	325	11
M	Stainless steel and cast steel		Ferritic / martensitic	680	200	12
			Martensitic	820	240	13
			Austenitic	600	180	14
K	Gray cast iron (GG)		Ferritic		160	15
			Pearlitic		250	16
	Cast iron nodular (GGG)		Ferritic		180	17
			Pearlitic		260	18
	Malleable cast iron		Ferritic		130	19
			Pearlitic		230	20
N	Aluminum - wrought alloy		Not cureable		60	21
			Cured		100	22
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23
			Cured		90	24
		>12% Si	High temp.		130	25
	Copper alloys	>1% Pb	Free cutting		110	26
			Brass		90	27
			Electrolitic copper		100	28
	Non-metallic		Duroplastics, fiber plastics		70 Shore D	29
			Hard rubber		55 Shore D	30
S	High temp. alloys	Fe based	Annealed		200	31
			Cured		280	32
		Ni or Co based	Annealed		250	33
			Cured		350	34
			Cast		320	35
	Titanium, Ti alloys		Pure	Rm 400	190	36
			Alpha+beta alloys, hardened	Rm 1050	310	37
H	Hardened steel		Hardened		55HRC	38
			Hardened		60HRC	39
	Chilled cast iron		Cast		400	40
	Cast iron nodular		Hardened		55HRC	41

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Recommended Cutting Conditions



Machining data for turning grades

Cutting speed Vc(m/min)								
Uncoated	Cermet		Ceramic					
K10	PV3010	CT3000	AW120	AB2010	AB20	AB30	TC430	TC3020
	350-650	300-570						
	270-520	250-500						
	240-480	220-460						
	260-500	240-470						
	240-460	220-440						
	240-540	220-520						
	190-330	170-300						
	170-300	150-270						
	140-270	130-250						
	260-405	250-395						
	140-205	130-195						
	200-300	180-270						
	200-270	170-250						
	170-260	150-240						
110-180	230-330	220-320				600-1200		
95-140	215-290	205-280				500-900		
95-135	145-220	135-200	600-1200			450-610		
90-125	105-150	95-140	500-900			350-510		
110-140	170-265	160-255	600-800			600-800		
90-125	180-240	170-230	500-700			500-700		
200-1000								
200-1000								
50-400								
50-500								
40-350								
50-500								
50-500								
30-300								
50-300								
50-150								
55-85								200-350
40-65								200-350
32-55							270-400	200-350
21-40							230-330	200-350
16-26							210-300	200-350
50-75								
45-70								
				95-145	90-140	50-100		
						60-120		
						50-100		

Recommended Cutting Conditions



Machining data for turning grades

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	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed	600	200	6
		Quenched and tempered	930	275	7
			1000	300	8
			1200	350	9
	High alloy steel, cast steel and tool steel	Annealed	680	200	10
		Quenched and tempered	1100	325	11
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12
		Martensitic	820	240	13
		Austenitic	600	180	14
K	Gray cast iron (GG)	Ferritic		160	15
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		Cured		100	22
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		Cured		90	24
		>12% Si High temp.		130	25
	Copper alloys	>1% Pb Free cutting		110	26
		Brass		90	27
		Electrolitic copper		100	28
	Non-metallic	Duroplastics, fiber plastics		70 Shore D	29
		Hard rubber		55 Shore D	30
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			Cured	280	32
		Ni or Co based	Annealed	250	33
			Cured	350	34
			Cast	320	35
		Pure	Rm 400	190	36
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		Hardened		60HRC	39
	Chilled cast iron	Cast		400	40
	Cast iron nodular	Hardened		55HRC	41

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■ Steel
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T-TURN

[illegible]

Recommended Cutting Conditions



Machining data for turning grades

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		Quenched and tempered	1000	300	5
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed	600	200	6
		Quenched and tempered	930	275	7
			1000	300	8
			1200	350	9
	High alloy steel, cast steel and tool steel	Annealed	680	200	10
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	Cast iron nodular (GGG)	Ferritic		180	17
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		Cured		100	22
	Aluminum-cast, alloyed	<=12% Si Not cureable		75	23
		Cured		90	24
		>12% Si High temp.		130	25
	Copper alloys	>1% Pb Free cutting		110	26
		Brass		90	27
		Electrolitic copper		100	28
	Non-metallic	Duroplastics, fiber plastics		70 Shore D	29
		Hard rubber		55 Shore D	30
S	High temp. alloys	Fe based	Annealed	200	31
			Cured	280	32
		Ni or Co based	Annealed	250	33
			Cured	350	34
			Cast	320	35
H	Hardened steel	Hardened	Rm 400	190	36
		Hardened	Rm 1050	310	37
	Chilled cast iron	Cast		55HRC	38
	Cast iron nodular	Cast		400	39
		Hardened		60HRC	40
				55HRC	41

► For more information of material groups, see the materials & grades "material conversion table"

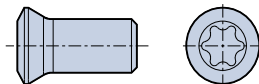
■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ Nonferrous
 ■ High temp. alloys
 ■ Hardened steel

T-TURN

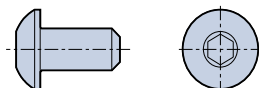
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► Recommended clamping torque for each screw

Designation	Thread	Length	Torx / Hexa	Tightening Torque
TS 16031I	M1.6	3.12	Torx 6	0.6 Nm
TS 20038I	M2	3.8	Torx 6	0.6 Nm
TS 20038I/HG-P	M2	3.8	Torx plus 6	0.6 Nm
TS 20043I/HG-P	M2	4.3	Torx plus 6	0.6 Nm
TS 22046I	M2.2	4.6	Torx 7	0.9 Nm
TS 30080I/HG	M3	8	Torx 9	2 Nm
TS 30120I/HG	M3	12	Torx 9	2 Nm
TS 35070I/HG	M3.5	7	Torx 15	3 Nm
TS 35083I/HG	M3.5	8.3	Torx 10	2 Nm
TS 35110I	M3.5	11	Torx 15	3 Nm
TS 40097I	M4	9.7	Torx 15	3.5 Nm
TS 40G110I	M4	11	Torx 15	3.5 Nm
TS 40140AJ/HG	M4	14	Torx 15	3.5 Nm
TS 50A105I	M5	10.5	Torx 20	5.5 Nm
SO 22050I	M2.2	6	Torx 7	0.9 Nm
SO 25050I	M2.5	5.2	Torx 7	0.9 Nm
SO 25055I-MO	M2.5	6	Torx 8	1.2 Nm
SO 25065I	M2.5	6.5	Torx 7	0.9 Nm
SO 30055I	M3	5.5	Torx 9	2 Nm
SO 30100I	M3	7	Torx 9	2 Nm
SO 30040I	M3	8.3	Torx 9	2 Nm
SO 35080I	M3.5	8.5	Torx 15	3 Nm
SO 35124I	M3.5	11.7	Torx 15	3 Nm
SO 35120I	M3.5	12	Torx 10	2 Nm
SO 40073I	M4	7.3	Torx 15	3.5 Nm
SO 40085I	M4	8.5	Torx 15	3.5 Nm
SO 40090I	M4	8.6	Torx 15	3.5 Nm
SO 40050I	M4	11.3	Torx 15	3.5 Nm
SO 45100I	M4.5	10	Torx 20	5 Nm
SO 45130I	M4.5	14.3	Torx 20	5 Nm
SO 50090I-MO	M5	8	Torx 20	5 Nm
SO 50090I	M5	12.1	Torx 20	5.5 Nm

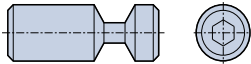


Designation	Thread	Length	Torx / Hexa	Tightening Torque
BH M2.5X0.45X10	M2.5	11.5	Hexa 1.5mm	0.8 Nm
BH M4X0.7X16-TB	M4	19	Hexa 3mm	2.8 Nm
BH M5X0.8X10	M5	13.55	Hexa 3mm	5.5 Nm
BH M5X0.8X21-MO-TB	M5	24.55	Hexa 3mm	5.5 Nm
BH M6X1X25	M6	29.2	Hexa 4mm	9.5 Nm

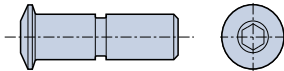


► Recommended clamping torque for each screw

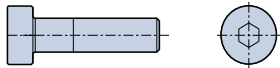
Designation	Thread	Length	Torx / Hexa	Tightening Torque
LCS 2	M5x0.8	14	Hexa 2mm	2.5 Nm
LCS 2B	M5x0.8	10	Hexa 2mm	2.5 Nm
LCS 3	M6x1.0	16.5	Hexa 2.5mm	3 Nm
LCS 3B	M5x0.8	12	Hexa 2mm	2.5 Nm
LCS 4	M8x1.0	21	Hexa 3mm	4 Nm
LCS 4B	M6x1.0	13.5	Hexa 2.5mm	3 Nm
LCS 4S	M8x1.0	18	Hexa 3mm	4 Nm
LCS 5	M8x1.0	23	Hexa 3mm	4 Nm
LCS 6	M10x1.0	27	Hexa 4mm	6 Nm
LCS 8	M12	36	Hexa 5mm	10 Nm
LCS 8-L39	M12	39	Hexa 5mm	10 Nm
LCS 8-L43	M12	43	Hexa 5mm	10 Nm
LCS 16C	M6	21	Hexa 2.5mm	3 Nm
LCS 25C	M10	30	Hexa 4mm	6 Nm



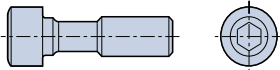
Designation	Thread	Length	Torx / Hexa	Tightening Torque
CLS 1.25	M3	4.7	Hexa 1.5mm	2 Nm
CLS 2C	M4	7.6	Hexa 2.5mm	2.5 Nm
CLS 2	M5	6.3	Hexa 2.5mm	3 Nm
CLS 3C	M5	9.5	Hexa 3mm	3.5 Nm
CLS 3S	M6	4.5	Hexa 3mm	4 Nm
CLS 3	M6	9.8	Hexa 3mm	4 Nm
CLS 4	M8	22	Hexa 4mm	8 Nm
CLS 16K	1/4-20 UNC	12	Hexa 4mm	6 Nm



Designation	Thread	Length	Torx / Hexa	Tightening Torque
CSC 4	1/4-20 UNC	17	Hexa 4mm	6 Nm



Designation	Thread	Length	Torx / Hexa	Tightening Torque
DLS 3	M4	16.8	Hexa 2.5mm	2 Nm
DLS 4	M5	21	Hexa 3mm	4.2 Nm
DLS 5	M6	26.5	Hexa 4mm	6 Nm



Designation	Thread	Length	Torx / Hexa	Tightening Torque
WCS 2.5	M5	20	Hexa 2.5mm	3 Nm
WCS 4	M6	26	Hexa 3mm	4 Nm
WCS 4B	M6	22.5	Hexa 3mm	4 Nm

