

# TURNING



# TURNING

INDUSTRY 4.0

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## Guide to Icons



➤ Toolholder Page



➤ Insert Page



### Inserts

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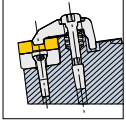
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# Tool Selection Guide

## External holders



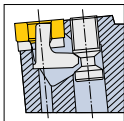
### T-Holder

 	 TCBNR/L A110	 TCKNR/L A110	 TCLNR/L A111 TCLNR/L-TB A112	 TXJNR/L A135 TXJNR/L-TB A136	 TXQNR/L A137
	 TDJNR/L A113	 TDJNR/L-TB A114	 TDNNR/L A115	 TDQNR/L A116	 TDUNR/L A116
	 TTFNR/L A128	 TTGNR/L A128	 TTJNR/L A128		
	 TSDNN A126	 TSKNR/L A127	 TSSNR/L A127		
 	 TVJNR/L A129	 TVJNR/L-TB A130	 TVQNR/L A131	 TVVNN A132	
 	 TZQNR/L A138	 TZQNR/L-TB A138	 TZXNN A139	 TZXNN-TB A139	
	 TWLNR/L A133	 TWLNR/L-TB A134			 THSNR/L A117



























# Tool Selection Guide

## External holders

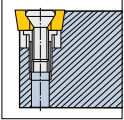


**P** Lever lock

	 PCBNR/L A67	 PCKNR/L A68	 PCLNR/L A69	 PCLNR/L-TB A69
	 PDJNR/L A70	 PDJNR/L-TB A70	 PDNNR/L A71	
	 PTFNR/L A77	 PTGNR/L A78	 PTTNR/L A78	
	 PSBNR/L A75	 PSDNN A75	 PSKNR/L A76	 PSSNR/L A76
	 PWLNR/L-TB A79			
	 PRDCN A72	 PRGCR/L A73	 PRGNR/L A74	

# Tool Selection Guide

## External holders

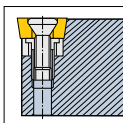


**S** Screw clamp

80°				
	SCACR/L-SH A80	SCACR/L-SH-TB A80	SCLCR/L-SH A81	SCLCR/L-SH-TB A81
80°				
	SCLCR/L A82	SCLNR/L-RS A83 (0703)	SCLNR/L A83	SCLNR-RS (-TB) A84 (0904)
55°				
	SDJCR/L-SH A85	SDJCR/L-SH-TB A85	SDJCR/L A86	SDJNR/L-RS A87
SDJNR/L A87	SDJNR-RS A88 (1305)	SDJNR-RS-TB A88 (1305)	SDNCN-SH A89	
55°				
	SDNCN-SH-TB A89	SDNCN A90	SDQNR/L A91	
STFGR/L A96	STGCR/L-SH A97	STGCR/L-SH-TB A97	STGCR/L A98	
60°				
	STGNR-RS A99			

# Tool Selection Guide

## External holders



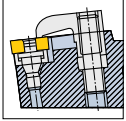
**S** Screw clamp

	SVJBR/L-SH A100	SVJBR/L-SH-TB A100	SVJBR/L A101	SVJBR/L-TB A101
	SVJCR/L-SH A102	SVJCR/L-SH-TB A102	SVJCR/L A103	SVJNR-RS A104
	SVJNR-RS-TB A104	SVJNR/L A105	SVPBR/L A106	SVVBN-SH A107
	SVVBN-SH-TB A107	SVVBN A108	SVVCN A108	
	SSDCN A95	SSSCR/L A95		
	SRDCN A93	SRGCR/L A94	SRGCR/L-TB A94	
	SFXCN A92		SWLNR/L-RS A109	SWLNR/L A109













• Please refer to A118-A125 pages for miniature tool holders (TMB, TMS, TMY, TMZ...)

# Tool Selection Guide

## External holders

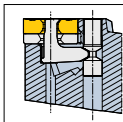


**M** Multi lock

























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	<div style="text-align: center;">   <b>MTJNR/L A63</b> </div>
	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">   <b>MVJNR/L A64</b> </div> <div style="text-align: center;">   <b>MVQNR/L A64</b> </div> <div style="text-align: center;">   <b>MNVNN A65</b> </div> </div>
	<div style="text-align: center;">   <b>MWLNR/L A66</b> </div>

# Tool Selection Guide

## External holders

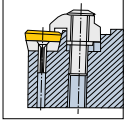


### H Hook lever holder










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	  <p>HTFNR/L A57      HTGNR/L A57</p>
	  <p>HSBNR/L A56      HSDNN A56</p>
	   <p>HVJNR/L A58      HVQNR/L A58      HVVNN A59</p>
	   <p>HVJNR/L A58      HVQNR/L A58      HVVNN A59</p>
	 <p>HwLNR/L A60</p>

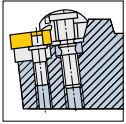
# Tool Selection Guide

## External holders








### C Top clamp

	 <p>CTCPN A51</p>	 <p>CTFPR/L A51</p>	 <p>CTGPR/L A52</p>
	 <p>CSDPN A50</p>		
	 <p>CKJNR/L A49</p>	 <p>CKNNR/L A49</p>	

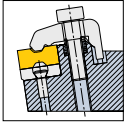


### W Wedge clamp










	 <p>WTENN A140</p>	 <p>WTGNR/L A140</p>	 <p>WTJNR/L A141</p>	 <p>WTQNR/L A141</p>

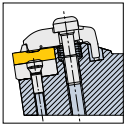
# Tool Selection Guide

## External holders








### T-CH CH dimple holder

	 TCBNR/L-CH A145	 TCKNR/L-CH A145	 TCLNR/L-CH A146
	 TDJNR/L-CH A147	 TDNNN-CH A147	
	 TSSNR/L-CH A148		

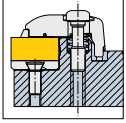


### T-DA DA dimple holder




















	 TCLNR-DA A149		
	 TSDNN-DA A150	 TSKNR-DA A150	

# Tool Selection Guide

## External holders



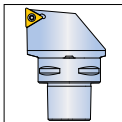
### T-F Flat T-Holder

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	<div style="text-align: center;">             TDJNR/L-F A152         </div>
	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">             TSDNN-F A155         </div> <div style="text-align: center;">             TSKNR/L-F A155         </div> <div style="text-align: center;">             TSRNR/L-F A156         </div> <div style="text-align: center;">             TSSNR/L-F A156         </div> </div>
	<div style="text-align: center;">             TTJNR/L-F A157         </div>
	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">             TRDNN-F A154         </div> <div style="text-align: center;">             TRGNR/L-F A154         </div> <div style="text-align: center;">             CRDCN-120 A142            CRDCN-140 A142         </div> <div style="text-align: center;">             CRGCR/L-120 A143            CRGCR/L-140 A143         </div> </div>
	<div style="text-align: center;">             TEG NR/L-F A153         </div>






























# Tool Selection Guide

## External holders

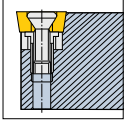


### C C-Adapter





























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	 C...HDJNR/L A164	 C...TDJNR/L A166	 C...SDJCR/L A170
	 C...HTGNR/L A165  C...HTJNR/L A165	 C...TTGNR/L A168  C...TTJNR/L A168	 C...STGCR/L A171  C...STJCR/L A171
	 C...HSSNR/L A165	 C...TSDNN A167	 C...TSSNR/L A167
	 C...TVJNR/L A168	 C...SVJBR/L A172	 C...SVVBN A172
	 C...TWLNR/L A169		
	 C...SRDCN A171		

# Tool Selection Guide

## Internal boring bars

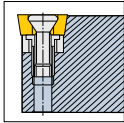


### S Screw clamp




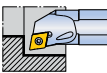
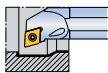






				
	S-SCLCR/L A198 C-SCLCR/L A199	S-SCLNR/L A200 A-SCLNR/L A200	S-SCLPR/L A201 A-SCLPR/L A201	E-SCLPR/L A202
				
	A-SDLNR/L A202	S-SDQCR/L A203	A-SDQNR/L A203	S-SDUCR/L A204
				
A-SDUNR/L A204	S-SDZCR/L A205			
				
	S-STFCR/L A207 C-STFCR/L A207	S-STFNR/L A208 A-STFNR/L A208	S-STFPR/L A209 A-STFPR/L A209	C-STFPR/L A210 E-STFPR/L A210
				
	S-STUBR/L A211 C-STUBR/L A211	S-STUNR/L A212 A-STUNR/L A212	C-STZBR/L A213	
				
	S-SVJBR/L A214 S-SVJCR/L A214	S-SVJPR/L A215	A-SVLNR/L A215	S-SVPBR/L A216 S-SVPCR/L A216
				
	A-SVPCR/L A217	S-SVQBR/L A218 S-SVQCR/L A218	S-SVUBR/L A219 S-SVUCR/L A219	

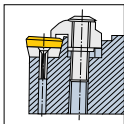
# Tool Selection Guide

## Internal boring bars









### S Screw clamp

				
	S-SSKCR/L A206		A-SXQNR/L A222	A-SXUNR/L A222
				
	A-SVLNR/L A215	A-SVPCR/L A216		
				
	S-SWLN/L A220 A-SWLN/L A220	S-SWUBR/L A221 C-SWUBR/L A221		

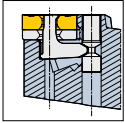


### C Top clamp














				
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	S-CTFCR/L A184 S-CTFPR/L A184			
				
	S-CKUNR/L A182			

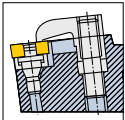
# Tool Selection Guide

## Internal boring bars





### H Hook lever holder

	 <p>S-HCLNR/L A185 A-HCLNR/L A185</p>
	 <p>A-HXUNR/L A192</p>
	   <p>S-HDQNR/L A186      S-HDUNR/L A187      S-HDZNR/L A188 A-HDUNR/L A187      A-HDZNR/L A188</p>
	  <p>S-HTFNR/L A189      S-HTUNR/L A190 A-HTFNR/L A189      A-HTUNR/L A190</p>
	 <p>S-HWLNRL A191 A-HWLNRL A191</p>

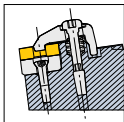


### M Multi lock








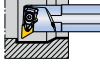







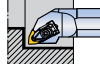


	 <p>S-MWLNRL A193</p>
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# Tool Selection Guide

## Internal boring bars

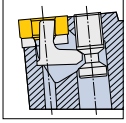


### T-Holder










	 S-TCLNR/L A223 A-TCLNR/L A224	 A-TCLNR/L-TB A225
	 A-TXQNR/L A233	 A-TXUNR/L A233
	 S-TDUNR/L A226 A-TDUNR/L A226	 S-TDZNR/L A227 A-TDZNR/L A227
	 S-TSKNR/L A229 A-TSKNR/L A229	
	 S-TTFNR/L A230 A-TTFNR/L A230	 S-TTUNR/L A231 A-TTUNR/L A231
	 S-TWLNRL A232 A-TWLNRL A232	
	 A-THSNR/L A228	

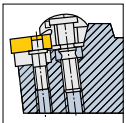
# Tool Selection Guide

## Internal boring bars





### P Lever lock

	 <p>S-PCLNR/L A194</p>
	 <p>S-PSKNR/L A196</p>
	  <p>S-PDUNR/L A195      S-PDZNR/L A195</p>
	 <p>S-PTFNR/L A197</p>

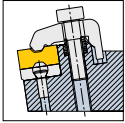


### W Wedge clamp

	 <p>S-WTFNR/L A234</p>

# Tool Selection Guide

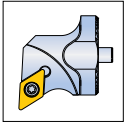
## Internal boring bars



**T-CH** CH dimple holder



S-TCLNR/L-CH A235



**QH** Modular head



QH-SCLCR/L A239



QH-SCLNR/L A240



QH-SXUNR/L A245



QH-HDUNR/L A238



QH-SDUCR/L A241



QH-SDUNR/L A242



QH-HVUNR/L A238




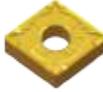

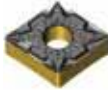
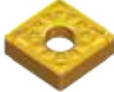








QH-SVUBR/L A243





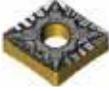










QH-SWLNRL A244

# Tool Selection Guide

## Negative inserts














		<i>T-TURN</i>				
Application	Super finishing			Finishing		
Chip breaker	FA	EA	FS	FLP	FG	
Insert						
Material	P	M S	P	P	P	
C 	• A253	• A252	• A254	• A254	• A254	
D 	• A261	• A261	• A262	• A262	• A262	
R 						
S 		• A270			• A271	
T 		• A276	• A277	• A277	• A277	
V 	• A281	• A281	• A283	• A282	• A282 A283	
W 		• A284	• A287	• A285	• A284 A287	
Y 			• A289			














		<i>T-TURN</i>				
Application	Finishing				Medium	
Chip breaker	SF	FX	FC	FM	MLP	
Insert						
Material	P M	P	P M	P	P	
C 	• A257		• A253	• A254	• A255	
D 			• A261	• A262	• A263	
R 						
S 			• A271	• A271		
T 	• A280		• A277	• A277	• A279	
V 		• A282 A283	• A281	• A283		
W 			• A284	• A287	• A285	
Y 						



# Tool Selection Guide














## Negative inserts














<b>T-TURN</b>					
Application	Medium				
Chip breaker	MC	FT	VF	MGS	ML
Insert					
Material	<b>P</b>	<b>P</b>	<b>P M</b>	<b>S</b>	<b>P M S</b>
C 	• A255	• A254		• A255	• A250 A255
D 	• A263	• A262	• A265	• A263	• A260 A263
R 					
S 	• A272			• A272	• A272
T 	• A278	• A278	• A280		• A278
V 					• A281 A282
W 	• A285			• A285	• A285
Y 					

<b>T-TURN</b>					
Application	Medium				
Chip breaker	MP	EM	MK	MM	MGP
Insert					
Material	<b>M S</b>	<b>M S</b>	<b>M S</b>	<b>P M</b>	<b>P</b>
C 	• A255	• A253	• A255	• A255	• A255
D 	• A264	• A261	• A263	• A263	• A263
R 					
S 	• A272	• A270 A271	• A272	• A272	• A272
T 	• A279	• A276	• A278	• A279	• A278
V 		• A281	• A283		• A282
W 	• A285	• A284 A287	• A288	• A288	• A285
Y 					

# Tool Selection Guide




























## Negative inserts

















		<i>T-TURN</i>				
Application	Medium			Roughing		
Chip breaker	PC	MT	MG-	ET	RGP	
Insert						
Material	P	P M K	P K	M S	P	
<b>C</b> 	• A256	• A256	• A252	• A253	• A256	
<b>D</b> 	• A264	• A264	• A260	• A261		
<b>R</b> 			• A267			
<b>S</b> 	• A273	• A272 A273	• A270	• A271		
<b>T</b> 	• A279 A280	• A279	• A275 A276	• A277		
<b>V</b> 	• A282 A283	• A282 A283	• A281			
<b>W</b> 	• A286 A288	• A286 A288		• A284	• A286	
<b>Y</b> 						

		<i>T-TURN</i>				
Application	Roughing					
Chip breaker	RT	KT	RX	RH	EH	
Insert						
Material	P M K	K	P	P	M	
<b>C</b> 	• A257	• A254	• A259	• A259	• A258	
<b>D</b> 	• A264	• A262				
<b>R</b> 						
<b>S</b> 	• A273	• A271	• A274	• A274	• A273	
<b>T</b> 	• A280	• A278	• A280	• A280		
<b>V</b> 						
<b>W</b> 	• A286	• A285				
<b>Y</b> 						

# Tool Selection Guide














## Negative inserts














<i>T-TURN</i>						
Application	Roughing				Finishing wiper	
Chip breaker	HT	HD	HY	HZ	WS	WA
Insert						
Material	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P M K</b>	<b>P K</b>
C	 A251 A258	 A251	 A251 A258	 A251 A258	 A257	 A257
D					 A265	 A265
H						
S	 A269 A273	 A268	 A269 A274	 A269 A274		
T						 A280
V						
W					 A286	 A288
Y						

<i>T-TURN</i>					<i>POSTTURN</i>	
Application	Medium wiper	Medium		Roughing	Medium	Finishing/Medium
Chip breaker	WT	GU	SU	KNUX	DNUX	ZNMV
Insert						
Material	<b>P M K S</b>	<b>P K</b>	<b>P M</b>	<b>S P M</b>	<b>P M</b>	<b>P S</b>
C	 A250 A257					
D	 A265				 A265	
H		 A266	 A266			
K				 A266		
T						
V						
W	 A287					
Z						 A290

# Tool Selection Guide














## Positive inserts














		<i>T-TURN</i>											
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		•		•					•			•	
		A295		A295	A296				A295	A296		A295	A296
D		•		•					•			•	
		A300		A300					A300			A300	
R									•				
									A303				
S				•					•			•	
				A304					A304			A304	
T		•		•					•			•	
		A308	A311	A308	A311				A308	A311		A308	A311
V		•		•					•			•	
		A314		A314					A314	A316		A314	A316
W													
Y													

		<i>T-TURN</i>													
Application		Medium			Medium wiper			Roughing							
Chip breaker		MT			MGS			WT			PMR-		RA		
Insert															
Material		P	M	K	M		S	P	M	K	P	M	K	S	P
C		•						•							
		A295						A295							
D		•													
		A300													
R		•			•									•	
		A303			A303									A303	
S		•									•				
		A304									A305				
T		•									•				
		A308									A311				
V		•													
		A314													
W															
Y															

# Tool Selection Guide

## Positive inserts

<i>T-TURN</i>					
Application	Roughing	Finishing			
Chip breaker	CMX-	FF	GF	GW	FGS
Insert					
Material	P	P M S	P M S	P M S	S
C		• A293	• A292	• A292	
D		• A298 A301	• A297 A301	• A297	
R		• A303			
S					
T		• A306 A309	• A307 A309		
V		• A313 A317	• A313 A317	• A313	• A314
W		• A318			
Y					

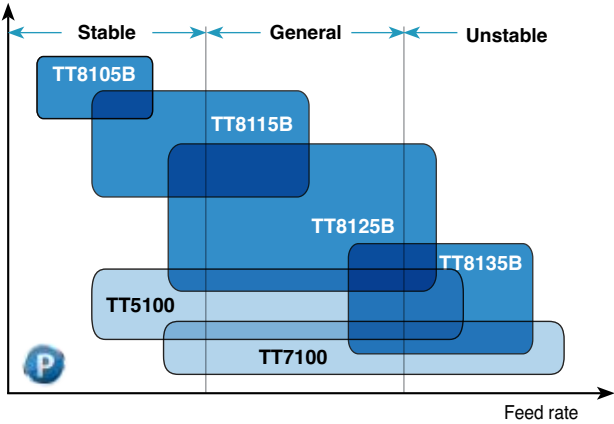
<i>T-TURN</i>						
Application	Finishing					
Chip breaker	SL	SA	SM	SH	FL	
Insert						
Material	P M S	P M S	P M S	P M S	M N S	
C		• A294	• A293	• A294	• A294	• A293
D		• A299	• A298	• A299	• A299	• A298
R						• A303
S						• A304
T			• A307			• A307
V		• A313	• A313 A315	• A313 A315		• A315
W						
Y						

# Grades

## Selection guide for turning grades

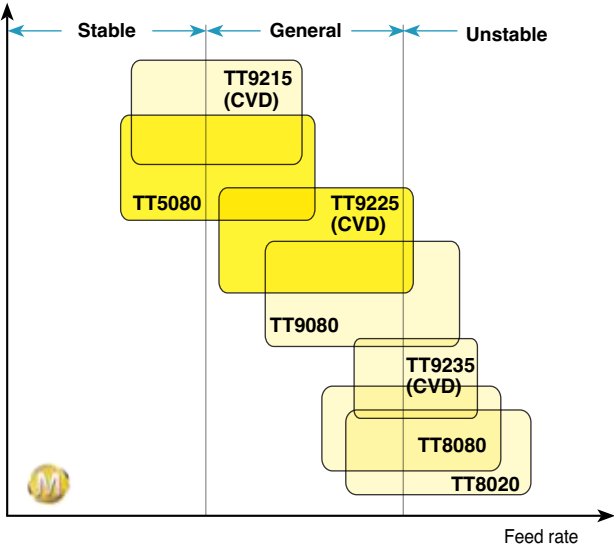
For steel ( *SPEEDRUSH* - CVD coated)

Cutting speed



For stainless steel (CVD coated & PVD coated)

Cutting speed

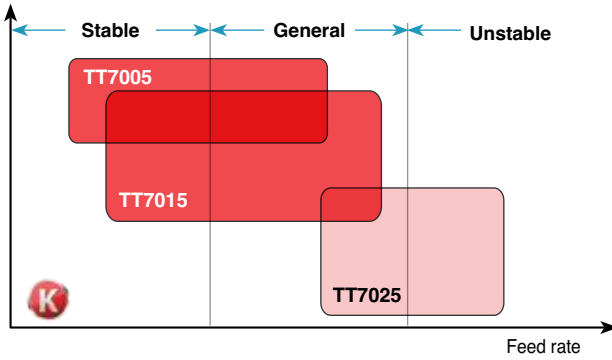


# Grades

## Selection guide for turning grades

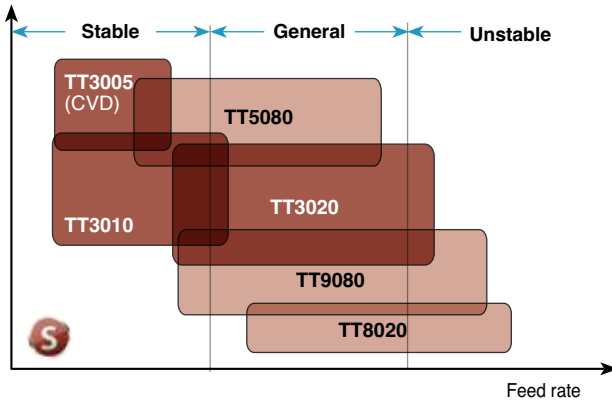
### For cast iron (CVD coated)

Cutting speed



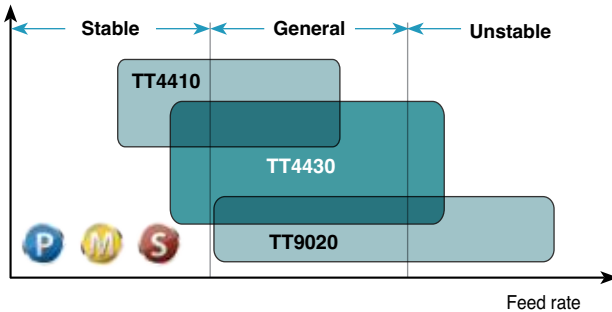
### For super alloys (CVD & PVD coated)

Cutting speed



### For small parts machining (PVD coated)

Cutting speed



# Grades

## Carbide grades

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



# Grades

## Carbide grades

Grades	ISO	Characteristics & applications
<b>TT4430</b> PVD coated	M20 – M40 P20 – P40 S20 – S40	• General turning of small parts for stainless steel, steel and titanium alloy
<b>TT9080</b> PVD coated	M20 – M40 P20 – P40 S20 – S40	• General turning of stainless steel, steel and heat resistant super alloy
<b>TT8135B</b> CVD coated	P25 – P40	• Interrupted turning of steel in low speed conditions
<b>TT7100</b> CVD coated	P30 – P45	• Heavy interrupted turning of steel
<b>TT9235</b> CVD coated	M25 – M40 S25 – S40	• Interrupted turning of stainless steel and heat resistant super alloy in low speed conditions
<b>TT8080</b> 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
<b>TT8020</b> PVD coated	M30 – M50 P30 – P50 S30 – S50	• Low speed turning of stainless steel, heat resistant super alloys and low carbon steel
<b>PV3010</b> Cermet PVD coated	P05 – P20 M05 – M20 K05 – K20	• Good surface finish turning of steel, stainless steel and cast iron in high speed conditions
<b>CT3000</b> Cermet uncoated	P10 – P20 M10 – M20 K10 – K20	• Excellent surface finish turning of steel, stainless steel and cast iron
<b>K10</b> 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
<b>TB610</b> CBN	H05 – H10	• High speed continuous turning of hardened steel
<b>TB2015</b> CBN	H10 – H20	• Light interrupted turning of hardened steel
<b>TB650</b> CBN	H10 – H20	• General turning of hardened steel
<b>TB670</b> CBN	H20 – H30	• Medium interrupted turning of hardened steel
<b>TB7015</b> CBN	H25 – H35 K10 – K20	• High speed turning of cast iron and general turning of carbide roll
<b>TB7020</b> Solid CBN	K10 – K25	• High speed and light interrupted turning of cast iron. Solid CBN insert
<b>KB90A</b> Solid CBN	K15 – K35	• High speed turning of cast iron. Solid CBN insert
<b>TB730</b> CBN	K05 – K10 P10 – P20	• General turning of sintered or powder metals
<b>AW120</b> Ceramic, Al <sub>2</sub> O <sub>3</sub> +ZrO <sub>2</sub>	K05 – K15	• High speed continuous turning of white cast iron
<b>AB2010</b> Ceramic, PVD coated	H05 – H10	• High speed finish turning of hardened steel
<b>AB20</b> Ceramic, Al <sub>2</sub> O <sub>3</sub>	H05 – H15	• Continuous and finish turning of hardened steel
<b>AB30</b> Ceramic, Al <sub>2</sub> O <sub>3</sub>	H10 – H15 K05 – K15	• General turning of hardened steel under HRC 55 and cast iron
<b>TC430</b> Ceramic, Whisker	S05 – S15	• High speed turning of super alloys especially for Ni-based super alloy
<b>TC3020</b> Ceramic, SiAlON	S15 – S25	• General turning and milling of super alloy
<b>TC3030</b> Ceramic, SiAlON	S25 – S35	• Rough turning and milling of super alloy
<b>AS500</b> Ceramic, SiAlON	K15 – K25	• General and light interrupted turning of gray cast iron
<b>SC10</b> Ceramic CVD coated	K25 – K35	• General turning of ductile cast iron
<b>AS10</b> Ceramic, Si <sub>3</sub> N <sub>4</sub>	K25 – K35	• Interrupted turning of gray cast iron
<b>TD810</b> PCD	N05 – N15	• Bi-modal composition for high speed turning of non-ferrous materials, high Si aluminum alloy, ceramic and sintered tungsten carbide
<b>KP300</b> PCD	N10 – N25	• General turning of non-ferrous materials and finish turning of carbide roll
<b>TD830</b> PCD	N20 – N35	• Low Si aluminum alloys and composite plastics (CFRP, GFRP)








# Recommendations for Chip Breakers

## ISO Negative inserts








### For steel

	← Stable  Unstable →
Finishing	   
Medium	   
Roughing	 






### For stainless steel

	← Stable  Unstable →
Finishing	
Medium	   
Roughing	




### For super alloys

	← Stable  Unstable →
Finishing	
Medium	   
Roughing	

### For cast iron

	← Stable  Unstable →
Finishing	
Medium	 
Roughing	 

### For aluminum

	← Stable  Unstable →
Finishing	
Medium	 
Roughing	

# Recommendations for Chip Breakers

## RHINO-TURN Negative inserts

### For steel

Finishing	
Medium	
Roughing	

### For stainless steel

Finishing	
Medium	
Roughing	

### For super alloys

Finishing	
Medium	
Roughing	

### For cast iron

Finishing	
Medium	
Roughing	







### For aluminum

Finishing	
Medium	
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)

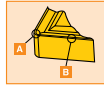
## RHINO-TURN Negative inserts




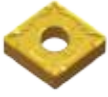




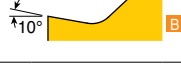







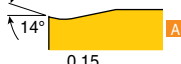




	← Stable	P	M	S	→ Unstable
Finishing					
Finishing-Medium					
Roughing					

## ISO Positive inserts

	← Stable	P	M	S	→ Unstable
Finishing					
Finishing-Medium					
Roughing					

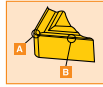
## Negative inserts


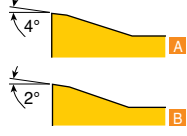

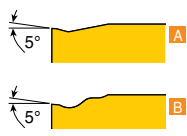
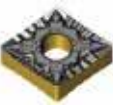
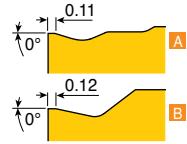

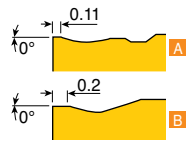

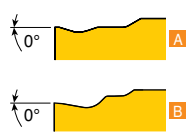

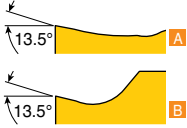

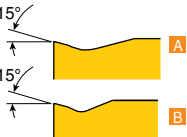


Chip breaker name and geometry		Applications and features
FA	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For super finish applications</li> <li>• Steel, stainless steel and heat resistant alloy machining</li> <li>• Excellent chip control</li> </ul>
EA	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For finishing applications</li> <li>• Exotic materials</li> <li>• Excellent chip control at low feeds and depths of cut</li> </ul>
FS	 <p>CNMG 0904</p>   <p><i>RHINO TURN</i></p>	<ul style="list-style-type: none"> <li>• Super finishing chip breaker for steel machining</li> <li>• Excellent chip control and chip evacuation</li> <li>• Minimal vibration due to less machining load</li> </ul>
FLP	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For finishing applications for steel machining</li> <li>• Wide supporting area</li> </ul>
FG	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For finish and semi finish applications</li> <li>• Steel, stainless steel and cast iron machining</li> <li>• Low cutting forces</li> </ul>
SF	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For finishing applications</li> <li>• Stainless steel and heat resistant alloy machining</li> <li>• Low cutting forces</li> </ul>
FX	 <p>VNMG 1604</p>  	<ul style="list-style-type: none"> <li>• For finishing applications on mild steels</li> <li>• Narrow chip breaker design for optimal chip control</li> </ul>

# Chip Breakers

## Negative inserts

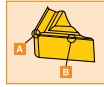






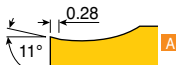
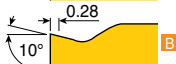









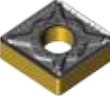

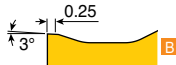

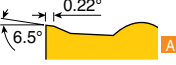

Chip breaker name and geometry		Applications and features
FC	 <p>CNMG 1204</p> 	<ul style="list-style-type: none"> <li>• Ideal for finishing applications</li> <li>• Low carbon steel &amp; low carbon alloy steel</li> <li>• Effective chip breaking in both turning and facing operations</li> </ul>
FM	 <p>CNMG 0904</p> 	<ul style="list-style-type: none"> <li>• For steel machining</li> <li>• Improved chip breaking due to 3dimension chipbreaker</li> <li>• Solution for a wide range from semi-finishing to semi-medium machining</li> </ul>
MLP	 <p>CNMG 1204</p> 	<ul style="list-style-type: none"> <li>• For semi-finishing and medium applications on steels</li> <li>• Wave cutting edge</li> </ul>
MC	 <p>CNMG 1204</p> 	<ul style="list-style-type: none"> <li>• For medium applications</li> <li>• Steel and cast iron machining</li> <li>• Strong rake geometry</li> <li>• Excellent chip control on medium turning applications</li> </ul>
FT	 <p>CNMG 0904</p> 	<ul style="list-style-type: none"> <li>• For steel machining</li> <li>• Strong, serrated cutting edge for excellent chip evacuation</li> <li>• Semi-finishing and medium machining</li> <li>• Excellent chip breaking for automotive components</li> </ul>
VF	 <p>DNMG 1504</p> 	<ul style="list-style-type: none"> <li>• For slender workpiece applications</li> <li>• Vibration free</li> <li>• Steel and stainless steel machining</li> <li>• High positive rake geometry to minimize cutting forces</li> </ul>
MGS	 <p>CNMG 1204</p> 	<ul style="list-style-type: none"> <li>• Low cutting resistance and heat generation in high-temperature alloy machining</li> <li>• High rake angle for smooth chip formation</li> </ul>



# Chip Breakers

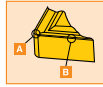
## Negative inserts





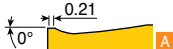
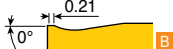










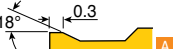






Chip breaker name and geometry		Applications and features
ML	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For medium light applications</li> <li>• Stainless steel, steel and aluminum</li> <li>• Very high positive rake geometry to minimize built-up-edge and cutting forces</li> </ul>
MP	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For medium machining applications</li> <li>• Steel and stainless steel</li> <li>• High positive rake geometry to optimize machining and provide stable machining conditions</li> </ul>
EM	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For medium applications</li> <li>• Stainless steel machining</li> <li>• Sharp land design for low cutting force</li> </ul>
MK	 <p>CNMG 0904</p>  	<ul style="list-style-type: none"> <li>• For medium applications</li> <li>• Stainless steel and heat resistant material machining</li> <li>• Sharp cutting edge to reduce built-up-edge</li> </ul>
MM	 <p>CNMG 0904</p>  	<ul style="list-style-type: none"> <li>• For general machining on stainless steel and steel</li> <li>• Positive rake angle provides excellent chip evacuation</li> </ul>
MGP	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• Wide range for medium application on steels</li> <li>• Wide groove and several dimples</li> </ul>
PC	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For medium to semi-finishing applications</li> <li>• Steel &amp; Automotive component</li> <li>• Positive geometry</li> <li>• Excellent chip control on medium applications</li> </ul>

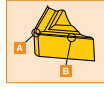
# Chip Breakers


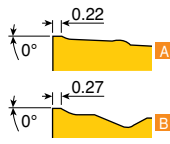

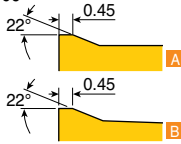

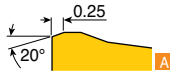

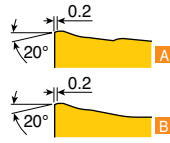

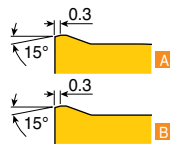

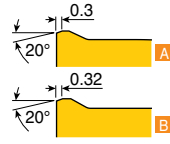

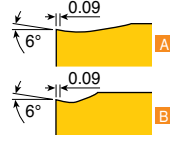
## Negative inserts



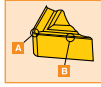
Chip breaker name and geometry		Applications and features
MT	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For medium rough applications</li> <li>• Steel, cast iron and stainless steel</li> <li>• Tough rake angle for general use</li> </ul>
MG-	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For medium rough applications</li> <li>• Steel and cast iron machining</li> <li>• Strong rake geometry</li> <li>• Suitable for manual lathes</li> </ul>
ET	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For roughing applications on exotic materials</li> <li>• Low cutting force</li> <li>• Wide chip control range when roughing</li> </ul>
RGP	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For roughing applications on steels</li> <li>• Reliable cutting edge with low cutting force</li> </ul>
RT	 <p>CNMG 1906</p>  	<ul style="list-style-type: none"> <li>• For roughing applications</li> <li>• Steel and cast iron machining</li> <li>• Very strong rake geometry</li> </ul>
KT	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For roughing applications on cast iron</li> <li>• Stable broad supporting area</li> <li>• Reliable, uniform performance</li> </ul>
RX	 <p>CNMM 1906</p>  	<ul style="list-style-type: none"> <li>• For semi heavy roughing applications</li> <li>• Steel, stainless steel and cast iron machining</li> <li>• Strong cutting edge with flat land</li> <li>• Low cutting force</li> </ul>


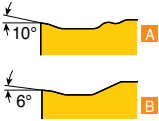

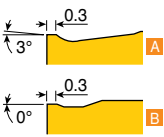
## Negative inserts



Chip breaker name and geometry		Applications and features
RH	 <p>CNMM 1906</p> 	<ul style="list-style-type: none"> <li>• For roughing applications</li> <li>• Steel, stainless steel and cast iron machining</li> <li>• Very strong rake geometry</li> </ul>
EH	 <p>CNMM 2509</p> 	<ul style="list-style-type: none"> <li>• Heavy turning for stainless and mild steel</li> <li>• Low cutting force in stainless steel machining</li> <li>• Reliable &amp; uniform performance</li> <li>• Excellent chip control due to the specially designed chip breaker geometry</li> <li>• Single sided insert</li> </ul>
HT	 <p>CNMM 1906</p> 	<ul style="list-style-type: none"> <li>• For heavy roughing applications</li> <li>• Low cutting force for low horse power machines</li> <li>• Excellent chip control due to changeable land and a flexible chip breaker</li> </ul>
HD	 <p>CNMD 2509</p> 	<ul style="list-style-type: none"> <li>• For heavy roughing applications</li> <li>• For all kinds of shafts, connecting-rods and ship building components</li> <li>• Flexible chip breaker offers excellent chip evacuation</li> </ul>
HY	 <p>CNMM 2509</p> 	<ul style="list-style-type: none"> <li>• For heavy roughing applications</li> <li>• For large depth of cut and high feed</li> <li>• Strong cutting edge credit to a wide land and large land angle</li> </ul>
HZ	 <p>CNMM 2509</p> 	<ul style="list-style-type: none"> <li>• For heavy roughing applications</li> <li>• For large depth of cut and high feed</li> <li>• Extremely strong cutting edge credit to a wide land and large land angle</li> <li>• Suitable for high cutting conditions</li> </ul>
WS	 <p>CNMG 1204</p> 	<ul style="list-style-type: none"> <li>• For super finish applications</li> <li>• Steel, cast iron and stainless steel machining</li> <li>• Excellent chip control and low cutting forces</li> </ul>

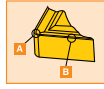
## Negative inserts




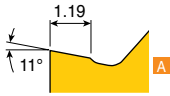
Chip breaker name and geometry		Applications and features
<p><b>WA</b></p>  <p><b>wiper</b></p> <p><i>RHINO TURN</i></p>	<p>CNMG 0904</p> 	<ul style="list-style-type: none"> <li>• For super finish applications</li> <li>• Steel, cast iron and stainless steel machining</li> <li>• Excellent surface roughness after machining</li> </ul>
<p><b>WT</b></p>  <p><b>wiper</b></p>	<p>CNMG 1204</p> 	<ul style="list-style-type: none"> <li>• For medium to rough machining applications</li> <li>• Steel, cast iron and stainless steel machining</li> <li>• Stable cutting and low cutting forces at high feed rates</li> </ul>

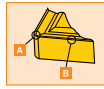
# Chip Breakers

## Negative inserts


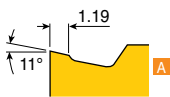

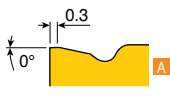


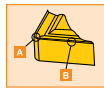
### DNUX type

Chip breaker name and geometry		Applications and features
11	 <p>DNUX 1304</p> 	<ul style="list-style-type: none"> <li>• For medium applications less than 5mm depth of cut</li> <li>• Steel and stainless steel machining</li> <li>• Positive rake geometry to decrease cutting forces</li> <li>• Suitable for turning slender bar, thin-wall components</li> </ul>


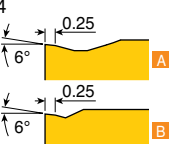

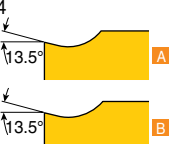


### KNUX type

Chip breaker name and geometry		Applications and features
11	 <p>KNUX 1604</p> 	<ul style="list-style-type: none"> <li>• For medium light to medium applications</li> <li>• Steel and stainless steel machining</li> <li>• Positive rake geometry to minimize cutting forces</li> <li>• Excellent chip control</li> </ul>
12	 <p>KNUX 1604</p> 	<ul style="list-style-type: none"> <li>• For medium to medium rough applications</li> <li>• Steel and stainless steel</li> <li>• Strong rake geometry</li> <li>• Wide chip control range</li> </ul>

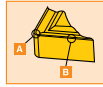



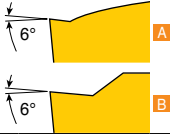

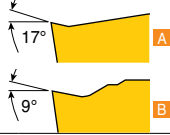

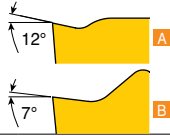

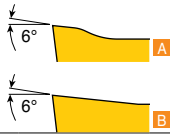

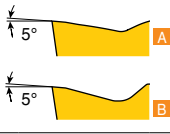

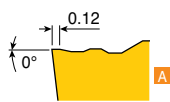

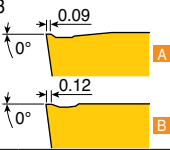


### HNMG type

Chip breaker name and geometry		Applications and features
GU	 <p>HNMG 0504</p> 	<ul style="list-style-type: none"> <li>• For medium applications</li> <li>• For general turning of steels and cast irons</li> <li>• Strong rake geometry</li> </ul>
SU	 <p>HNMG 0504</p> 	<ul style="list-style-type: none"> <li>• For exotic materials</li> <li>• Stainless steels, super alloys, low carbon steels, low carbon alloy steel machining</li> <li>• Sharp geometry to minimize built-up edge</li> </ul>

# Chip Breakers

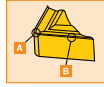
## Positive inserts-pressed


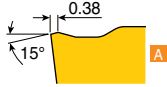

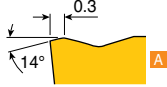


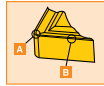
Chip breaker name and geometry		Applications and features
FA	 <p>DCMT 11T3</p> 	<ul style="list-style-type: none"> <li>• For super finish applications</li> <li>• Very tight chipbreaker</li> <li>• Excellent chip control</li> </ul>
FG	 <p>CCMT 09T3</p> 	<ul style="list-style-type: none"> <li>• For finish to medium light applications</li> <li>• Steel and stainless steel machining</li> <li>• Low cutting forces</li> <li>• Excellent chip control</li> </ul>
FX	 <p>VBMT 1604</p> 	<ul style="list-style-type: none"> <li>• For finishing applications on mild steels</li> <li>• Narrow chip breaker design for optimal chip control</li> </ul>
PC	 <p>CCMT 09T3</p> 	<ul style="list-style-type: none"> <li>• For medium applications</li> <li>• Suitable for a wide variety of materials</li> <li>• Low cutting force</li> </ul>
FM	 <p>CCMT 09T3</p> 	<ul style="list-style-type: none"> <li>• Medium and semi-finishing machining for steel and stainless steel</li> <li>• Precision machining</li> <li>• Low cutting force chip breaker geometry</li> </ul>
MT	 <p>CCMT 09T3</p> 	<ul style="list-style-type: none"> <li>• For medium to medium rough applications</li> <li>• Steel, stainless steel and cast iron machining</li> <li>• Negative rake geometry for general use</li> </ul>
WT	 <p>CCMT 09T3</p> 	<ul style="list-style-type: none"> <li>• For medium to rough machining applications</li> <li>• Steel, cast iron and stainless steel machining</li> <li>• Stable cutting and low cutting forces at high feed rates</li> </ul>
PMR-	 <p>TPMR 1103</p> 	<ul style="list-style-type: none"> <li>• For medium to medium rough applications</li> <li>• Steel, stainless steel and cast iron</li> <li>• Positive rake geometry</li> </ul>

# Chip Breakers

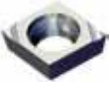




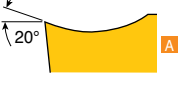

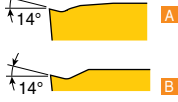

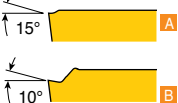
## Positive inserts-pressed



Chip breaker name and geometry		Applications and features
RA	 <p>RCMX 3209</p> 	<ul style="list-style-type: none"> <li>• For heavy and interrupted machining applications</li> <li>• Steel, stainless steel and cast iron machining</li> <li>• Optimized chip groove geometry</li> </ul>
CMX-	 <p>RCMX 1204</p> 	<ul style="list-style-type: none"> <li>• For high feed roughing applications</li> <li>• Steel, stainless steel and cast iron machining</li> <li>• Strong rake geometry</li> </ul>

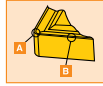



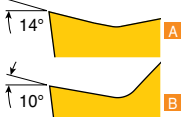

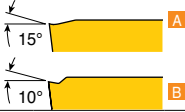

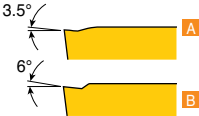


## Positive inserts-ground

Chip breaker name and geometry		Applications and features
FF	 <p>CCGT 0301</p> 	<ul style="list-style-type: none"> <li>• For finish to medium applications</li> <li>• For small component machining</li> <li>• Excellent surface finish</li> </ul>
GF	 <p>CCET 0602</p> 	<ul style="list-style-type: none"> <li>• For super finish applications</li> <li>• Steel, stainless steel and alloy steel machining</li> </ul>
GW	 <p>CCET 0602</p> 	<ul style="list-style-type: none"> <li>• For super finish applications</li> <li>• Wiper geometry for good surface finish</li> <li>• Steel, stainless steel and alloy steel machining</li> </ul>
FGS	 <p>VBGT 1604</p> 	<ul style="list-style-type: none"> <li>• Lower cutting resistance and heat generation in heat resistant super alloys machining</li> <li>• High rake angle for smooth chip formation</li> </ul>
SL	 <p>CCGT 09T3</p> 	<ul style="list-style-type: none"> <li>• High performance in low depth of cut and low feed machining</li> <li>• Excellent chip segmentation due to wave geometry edge and special inclined design</li> </ul>

# Chip Breakers

## Positive inserts-ground



Chip breaker name and geometry		Applications and features
SA	 <p>CCGT 09T3</p> 	<ul style="list-style-type: none"> <li>• For finish to medium applications</li> <li>• Steel &amp; aluminum machining</li> <li>• Low cutting force</li> </ul>
SM	 <p>CCGT 09T3</p> 	<ul style="list-style-type: none"> <li>• 1st recommended chip breaker for Swiss type automatic lathe</li> <li>• Stable cutting edge and low cutting resistance</li> </ul>
SH	 <p>CCGT 09T3</p> 	<ul style="list-style-type: none"> <li>• Suitable for deep depth of cut machining</li> <li>• Excellent chip control in a wide machining range</li> </ul>
FL	 <p>CCGT 1204</p> 	<ul style="list-style-type: none"> <li>• For finish to medium applications</li> <li>• Aluminum machining</li> <li>• Very high positive rake geometry to minimize built-up-edge</li> </ul>



# Turning Toolholders



**P**   **C**   **L**   **N**   **R**

**1**   **2**   **3**   **4**   **5**

## 1 Clamping system

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		o	V		x
			K		o	W		o
B		x	L		o	X	Special angle	
			M		x	C*		x
D		x	N		x	H*		o
E		x	R		o	Q*		o
F		o	S		o			
G		o	T		o			
			U		o			

\* TaeguTec standard

## 5 Hand of tool

<b>R: Right hand</b>
<b>N: Neutral</b>
<b>L: Left hand</b>

## 4 Insert clearance angle

<b>N</b>	<b>B</b>	<b>C</b>	<b>P</b>

**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 A249

## 10 Qualified tool

## 11 Manufacturer's type designation

Unique to manufacturer

**T-holder type** **T**

- ① Insert
- ② Shim screw
- ③ Shim
- ④ Clamp screw
- ⑤ Clamp
- ⑥ Spring

**Top clamp type** **C**

- ① Insert
- ② Shim
- ③ Shim pin
- ④ Clamp set

**Top clamp type** **C**

- ① Insert
- ② Shim
- ③ Shim screw
- ④ Clamp
- ⑤ Clamp screw
- ⑥ Pin and spring
- ⑦ Clamp spring

**Multi lock type** **M**

- ① Insert
- ② Shim
- ③ Lock pin
- ④ Clamp
- ⑤ Clamp screw

**Lever lock type** **P**

- ① Insert
- ② Shim
- ③ Lever
- ④ Shim pin
- ⑤ Screw

**Screw clamp type** **S**

- ① Insert
- ② Shim
- ③ Screw
- ④ Shim screw

**Wedge clamp type** **W**

- ① Insert
- ② Shim
- ③ Pin screw
- ④ Wedge set

**Ceramic T-holder** **T**

- ① Insert
- ② Shim screw
- ③ Shim
- ④ Clamp screw
- ⑤ Clamp
- ⑥ Spring

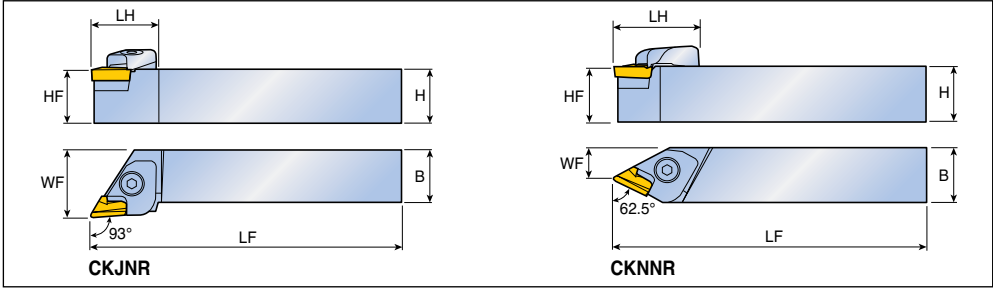
**Ceramic dimple holder** **T**

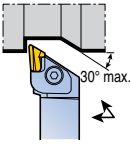

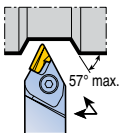
- ① Insert
- ② Shim screw
- ③ Shim
- ④ Clamp screw
- ⑤ Clamp
- ⑥ Spring

**Hook lever type** **H**

- ① Insert
- ② Shim pin
- ③ Shim
- ④ Hook lever
- ⑤ Screw

## Top clamp type holders

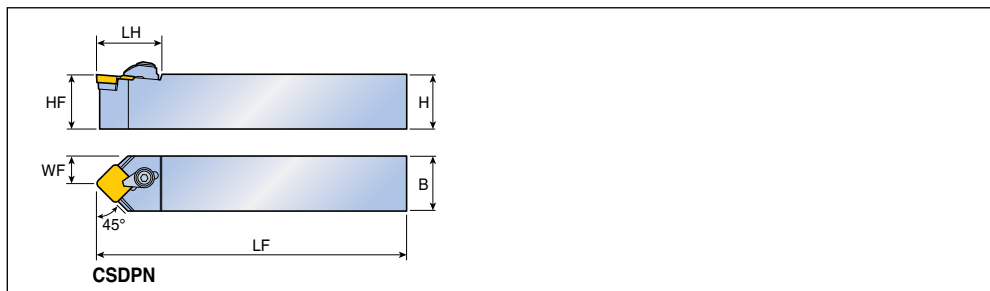


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>93°</b> 	<b>CKJNR/L 2020 K16</b>	20	20	20	125	35	25	KNUX 1604...R/L 11 KNUX 1604...R/L 12  A266
	<b>2020 M16</b>	20	20	20	150	35	25	
	<b>2525 M16</b>	25	25	25	150	32	32	
	<b>3225 P16</b>	32	32	25	170	33.3	32	
	<b>3232 M16</b>	32	32	32	150	33.3	40	
	<b>3232 P16</b>	32	32	32	170	33.3	40	
	<b>4040 R16</b>	40	40	40	200	33.3	50	
<b>62.5°</b> 	<b>CKNNR/L 2525 M16</b>	25	25	25	150	44.7	14.4	
	<b>3225 M16</b>	32	32	25	150	44.7	14.4	

## Spare parts

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

## Top clamp type holders

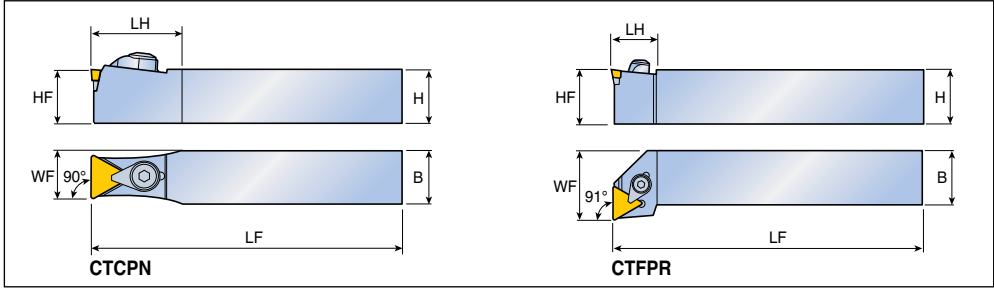


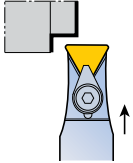
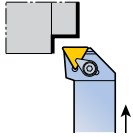
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>45°</b>	<b>CSDPN 1616 H09</b>	16	16	16	100	24	8.0	SPMR,SP...N 0903...
	<b>2020 K12</b>	20	20	20	125	29	10	SPMR,SP...N 1203...
	<b>2525 M12</b>	25	25	25	150	29	12.5	

## Spare parts










Designation	Clamp	Screw	Shim	Shim pin	Snap ring	Wrench		
<b>...09</b>	CL 2	CLS 2	CSS 32	CSP 3	CSR 2	L-W 2.5		
<b>...12</b>	CL 3	CLS 3	CSS 42	CSP 3	WSR 4	L-W 3		

## Top clamp type holders

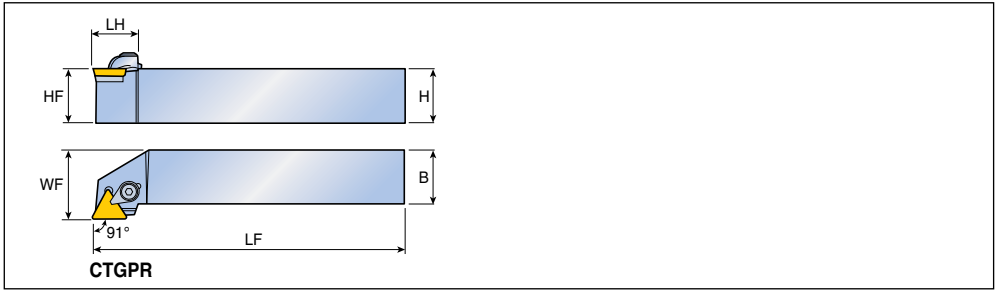


Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
<b>90°</b> 	<b>CTCPN 2009 K11</b>	20	20	9	125	20	9.4	TPMR,TP...N 1103...	
	<b>2513 Q16</b>	25	25	13	180	30	14.1	TPMR,TP...N 1603...	
	<b>2525 M22</b>	25	25	25	150	50	19.4	TPMR,TP...N 2204...	
<b>91°</b> 	<b>CTFPR/L 1616 H11</b>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

## Spare parts

Designation	Clamp			Screw		Shim	Shim pin	Snap ring	Wrench
									
<b>CTCPN ...11</b>	CL 2C	-	-	CLS 2C	-	-	-	CSR 2C	L-W 2.5
<b>CTCPN ...16</b>	CL 3C	-	-	CLS 3C	-	CST 32	CSP 3	CSR 2	L-W 3
<b>CTCPN ...22</b>	-	CLM 12	-	-	XNSM 0825	CST 43	CSP 16K	CSR 4	L-W 4
<b>CTFPR/L...11</b>	-	-	CL 2	CLS 2	-	-	-	CSR 2	L-W 2.5
<b>CTFPR/L...16</b>	-	-	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		
 91°	<b>CTGPR/L 1212 F11</b>	12	12	12	80	19	16	TPMR,TP...N 1103...  A310-A312, A335, A347, A348	
	<b>1616 H11</b>	16	16	16	100	18	20		
	<b>2020 K11</b>	20	20	20	125	19	25		
		<b>2020 K16</b>	20	20	20	125	25	25	TPMR,TP...N 1603...
		<b>2525 M16</b>	25	25	25	150	25	32	
		<b>2525 M22</b>	25	25	25	150	30	32	TPMR,TP...N 2204...
		<b>3232 P22</b>	32	32	32	170	30	40	

## Spare parts

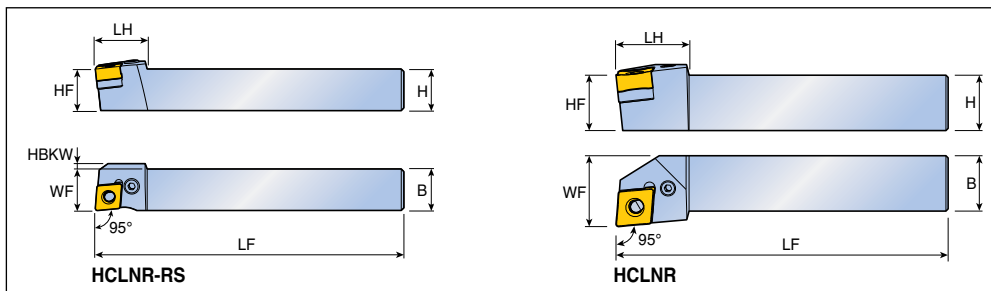
Designation	Clamp	Screw	Shim	Shim pin	Snap ring	Wrench		
...11	CL 2	CLS 2	-	-	CSR 2	L-W 2.5		
...16	CL 3	CLS 3	CST 32	CSP 3	WSR 4	L-W 3		
...22	CL 4	CLS 4	CST 43	CSP 16K	CSR 4	L-W 4		



# HCLNR/L-RS HCLNR/L



## Hook lever type holders

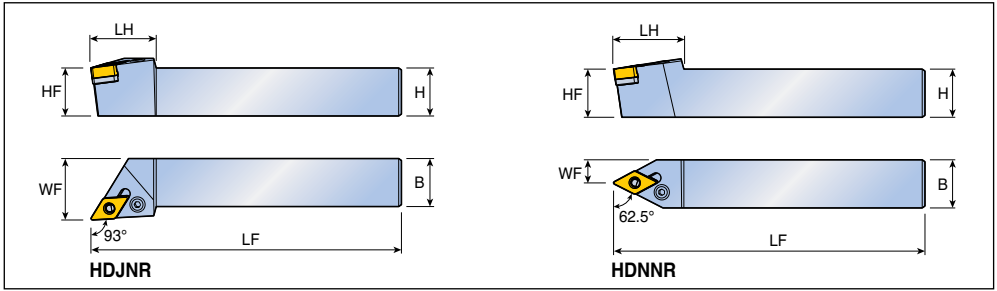


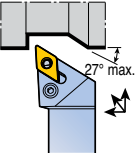

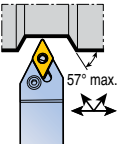
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBKW	
95°	<b>HCLNR/L 1212 K0904-RS</b>	12	12	16	125	18	12	2	CN... 0904... RHINO TURN A250-A257
	<b>1616 K0904-RS</b>	16	16	16	125	20	16	-	
95°	<b>HCLNR/L 1616 H0904</b>	16	16	16	100	22	20	-	CN... 0904... RHINO TURN
	<b>2020 H0904</b>	20	20	20	100	22	25	-	
	<b>2020 K0904</b>	20	20	20	125	22	25	-	
	<b>2525 M0904</b>	25	25	25	150	22	32	-	

## Spare parts






Designation	Lever	Screw	Snap ring	Shim	Shim pin	Wrench	
<b>...1212...0904</b>	LCL 09B-NX	LCS 3B	LSR 3B	-	-	L-W 2	
<b>...0904</b>	LCL 09-NX	LCS 3	-	LSC 32A	LSP 3A	L-W 2.5	

## Hook lever type holders

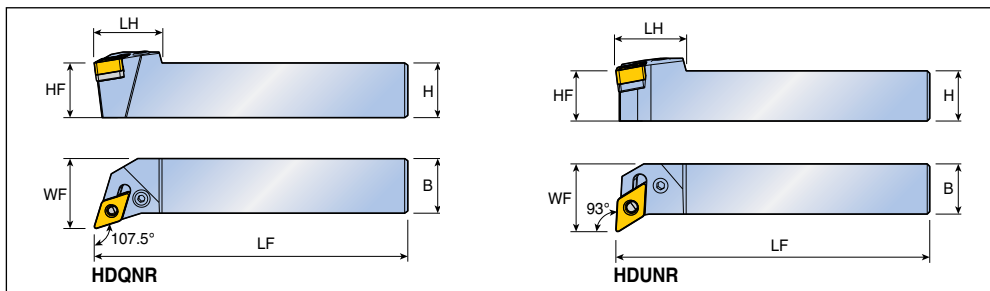




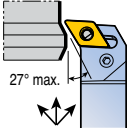
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>93°</b> 	<b>HDJNR/L 2020 H1305</b>	20	20	20	100	34	25	DN... 1305...  A260-A265
	<b>2020 K1305</b>	20	20	20	125	34	25	
	<b>2525 M1305</b>	25	25	25	150	34	32	
<b>62.5°</b> 	<b>HDNNR/L 2020 K1305</b>	20	20	20	125	36.5	10	
	<b>2525 M1305</b>	25	25	25	150	36.5	12	

## Spare parts






Designation	Lever	Screw	Shim	Shim pin	Wrench		
...1305	 LCL 11-NX	 LCS 4	 LSD 3.52	 LSP 4	 L-W 3		

## Hook lever type holders

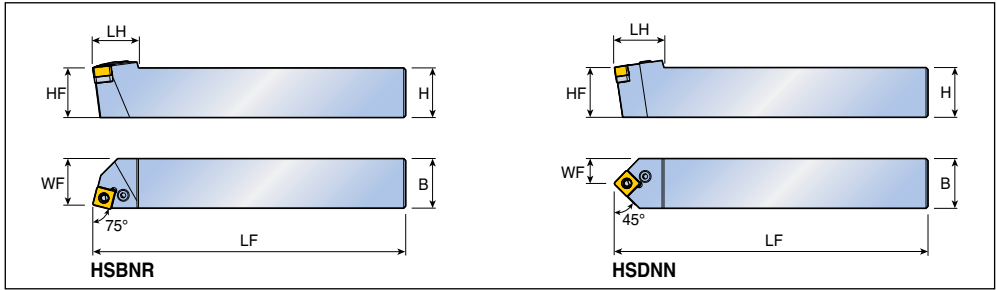


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>107.5°</b> 	<b>HDQNR/L 2020 K1305</b>	20	20	20	125	31	25	DN... 1305...  A260-A265
	<b>2525 M1305</b>	25	25	25	150	31	32	
<b>93°</b> 	<b>HDUNR/L 2020 K1305</b>	20	20	20	125	28	27	

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench		
	...1305	 LCL 11-NX	 LCS 4	 LSD 3.52	 LSP 4	 L-W 3	

## Hook lever type holders

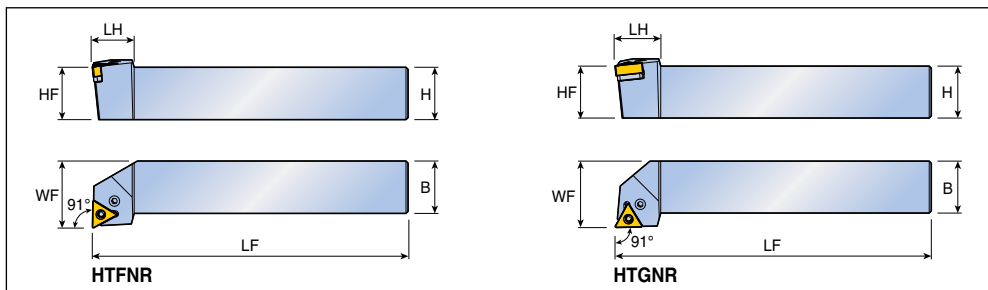


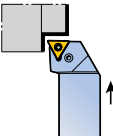

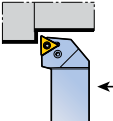
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
75°	<b>HSBNR/L 4040 S3109</b>	40	40	40	250	55	35	SNMD 3109... A268, A269
	<b>5050 T3109</b>	50	50	50	300	55	43	
45°	<b>HSDNN 4040 S3109</b>	40	40	40	250	60	20	SNMD 3109...
	<b>5050 T3109</b>	50	50	50	300	60	25	

## Spare parts






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

## Hook lever type holders

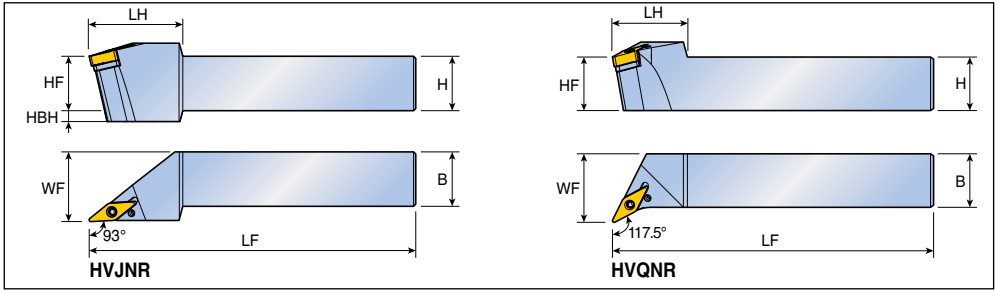


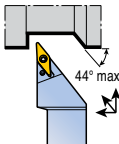
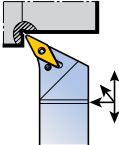
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>91°</b> 	<b>HTFNR/L 2020 K1304</b>	20	20	20	125	20	25	TN... 1304...  A275-A280
	<b>2525 M1304</b>	25	25	25	150	20	32	
<b>91°</b> 	<b>HTGNR/L 1616 H1304</b>	16	16	16	100	22	20	
	<b>2020 H1304</b>	20	20	20	100	22	25	
	<b>2020 K1304</b>	20	20	20	125	22	25	
	<b>2525 M1304</b>	25	25	25	150	22	32	

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench		
	...						
<b>...1304</b>	LCL 08-NX	LCS 3-NX	LST 2.51.8	LSP 3B	L-W 2.5		

## Hook lever type holders

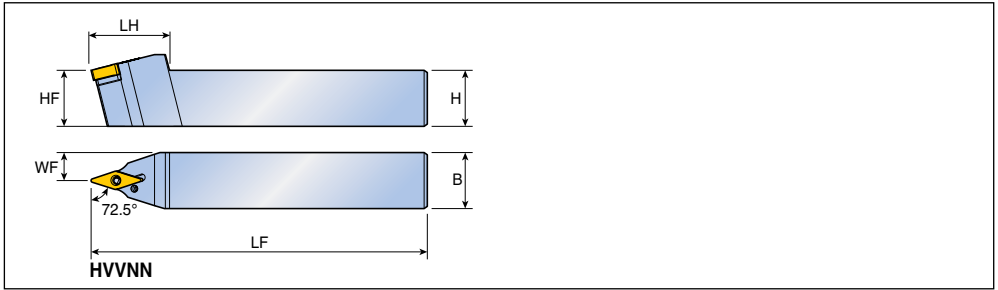


Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBH	
<b>93°</b> 	<b>HVJNR/L 1616 H1304</b>	16	16	16	100	30	20	5	VN...X 1304... YNMG 1304... A281, A283, RHINO TURN A289
	<b>2020 K1304</b>	20	20	20	125	35	25	-	
	<b>2525 M1304</b>	25	25	25	150	43	32	-	
<b>117.5°</b> 	<b>HVQNR/L 2020 K1304</b>	20	20	20	125	35	25	-	
	<b>2525 M1304</b>	25	25	25	150	35	32	-	

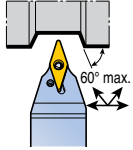
## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
<b>...1304</b>	LCL 08-NX	LCS 4-DH	LSV 2.51.8H	LSP 3B	L-W 2.5			

## Hook lever type holders



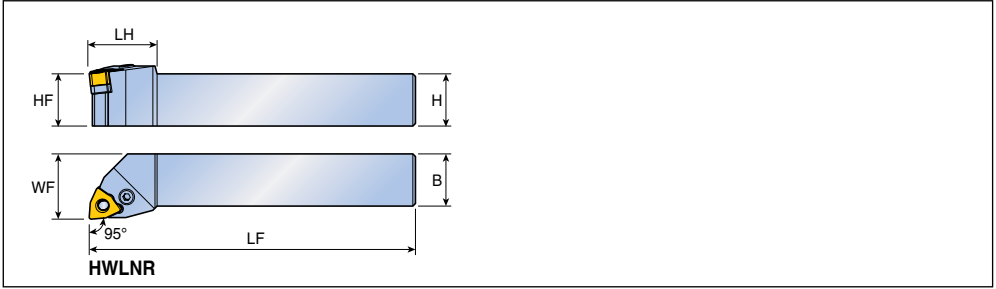
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>72.5°</b>	<b>HVVNN 2020 K1304</b>	20	20	20	125	35	10	VN...X 1304...
	<b>2525 M1304</b>	25	25	25	150	35	12.5	YNMG 1304...  A281, A283, A289



## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
<b>...1304</b>	LCL 08-NX	LCS 4-DH	LSV 2.51.8H	LSP 3B	L-W 2.5			

## Hook lever type holders



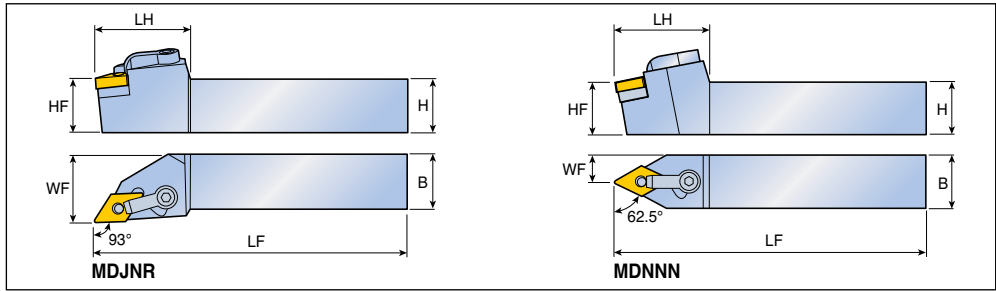
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
95°	<b>HWLNLR/L 1616 H0604</b>	16	16	16	100	26	20	WN...X 0604... A287, A288
	<b>2020 K0604</b>	20	20	20	125	26	25	
	<b>2525 M0604</b>	25	25	25	150	26	32	

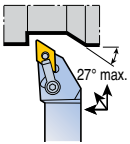



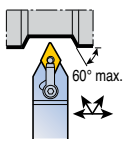
## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
...0604	LCL 09-NX	LCS 3	LSW 32A	LSP 3A	L-W 2.5			













## Multi lock type holders

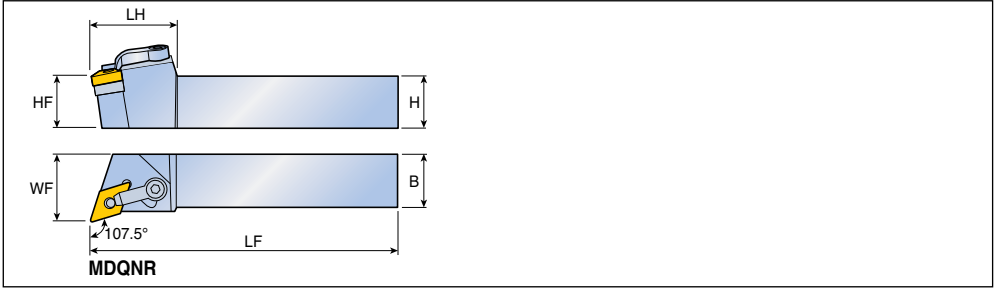


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>93°</b> 	<b>MDJNR/L 2020 K15</b>	20	20	20	125	45	25	DN... 1504... 
	<b>2525 M15</b>	25	25	25	150	45	32	DN... 1506...  A260-A265,  A326, A337
	<b>2020 K15A</b>	20	20	20	125	45	25	
	<b>2525 M15A</b>	25	25	25	150	45	32	
	<b>3232 P15A</b>	32	32	32	170	45	40	
<b>62.5°</b> 	<b>MDNNN 2525 M15</b>	25	25	25	150	45	12.5	DN... 1504...
	<b>3225 P15</b>	32	32	25	170	45	12.5	DN... 1506...
	<b>2525 M15A</b>	25	25	25	150	45	12.5	

## Spare parts

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

## Multi lock type holders

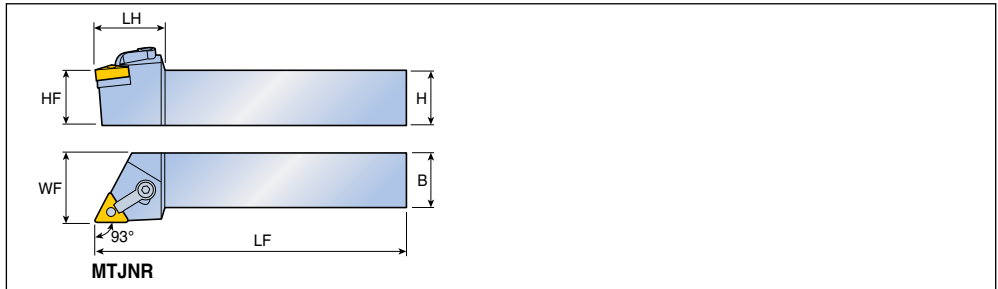


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>107.5°</b> 	<b>MDQNR/L 2020 K15</b>	20	20	20	125	40	25	DN... 1504... 
	<b>2525 M15</b>	25	25	25	150	40	32	A260-A265,
	<b>2525 M15A</b>	25	25	25	150	40	32	DN... 1506... A326, A337

## Spare parts

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

## Multi lock type holders

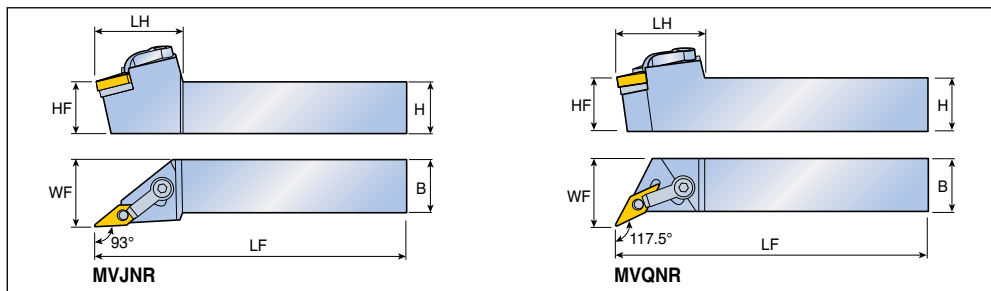


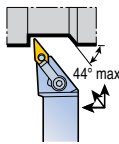

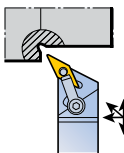
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>93°</b>	<b>MTJNR/L 2020 K16</b>	20	20	20	125	28	25	TN... 1603...
	<b>2525 M16</b>	25	25	25	150	28	32	A275-A280,
	<b>2525 M1604</b>	25	25	25	150	28	32	TN... 1604... A332, A340

## Spare parts






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

## Multi lock type holders

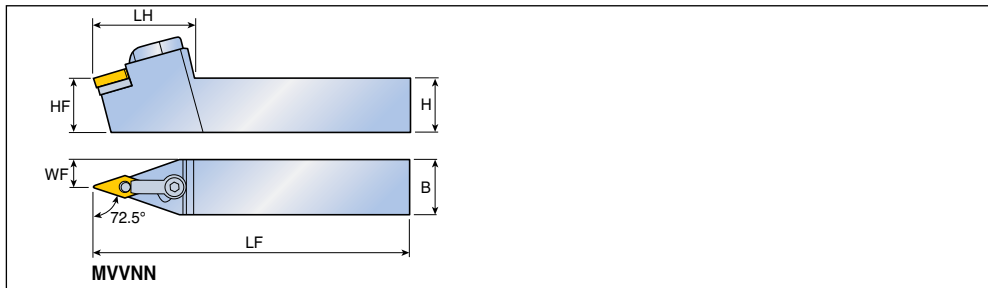


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>93°</b> 	<b>MVJNR/L 2020 K16</b>	20	20	20	125	42	25	VN... 1604...  A281, A282, A333, A341
	<b>2525 M16</b>	25	25	25	150	42	32	
	<b>3225 P16</b>	32	32	25	170	42	32	
	<b>3232 P16</b>	32	32	32	170	42	40	
<b>117.5°</b> 	<b>MVQNR/L 2020 K16</b>	20	20	20	125	42	25	
	<b>2525 M16</b>	25	25	25	150	42	32	
	<b>3232 P16</b>	32	32	32	170	42	40	

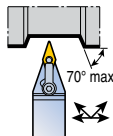
## Spare parts

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



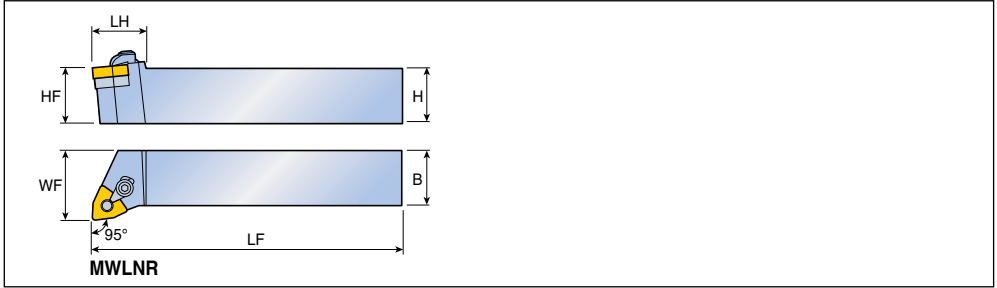
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>72.5°</b>	<b>MVVNN 2020 K16</b>	20	20	20	125	46	10.0	VN... 1604...  A281, A282, A333, A341
	<b>2525 M16</b>	25	25	25	150	46	12.5	



## 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

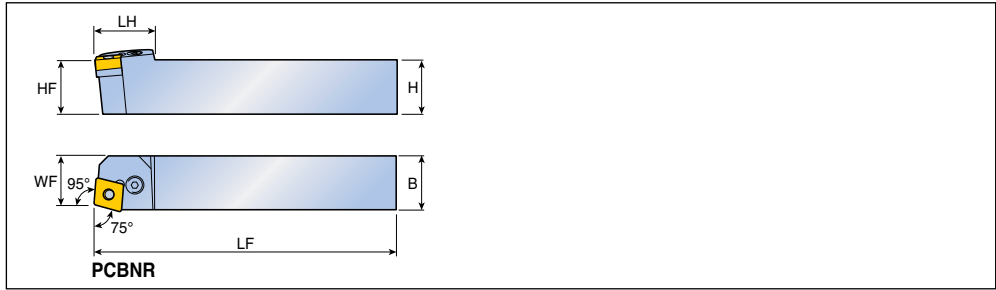


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>95°</b>	<b>MWLNR/L 1616 H06</b>	16	16	16	100	19.4	16	WN... 0604...
	<b>2020 K08</b>	20	20	20	125	25	25	WN... 0804...
	<b>2525 M08</b>	25	25	25	150	25	32	A284-A287, A333-A342

### Spare parts

Designation	Clamp	Screw	Shim	Lock pin	Snap ring	Wrench		
<b>...06</b>	CL 2	CLS 2	MSW 32	MLP 3	CSR 2	L-W 2, L-W 2.5		
<b>...08</b>	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°	<b>PCBNR/L 2020 K12</b>	20	20	20	125	28	17.5	CN... 1204...  A250-A259, A324, A325, A336
	<b>2525 M12</b>	25	25	25	150	28	22.5	
	<b>3225 P12</b>	32	32	25	170	28	22.5	
	<b>2525 M16</b>	25	25	25	150	32	22	CN... 1606...
	<b>3232 P16</b>	32	32	32	170	32	27	
	<b>3232 P1906D</b>	32	32	32	170	37	27	CN... 1906...
	<b>4040 S1906D</b>	40	40	40	250	37	37	
	<b>4040 S2509D</b>	40	40	40	250	50	37	CN... 2509...
	<b>5050 T2509D</b>	50	50	50	300	50	47	

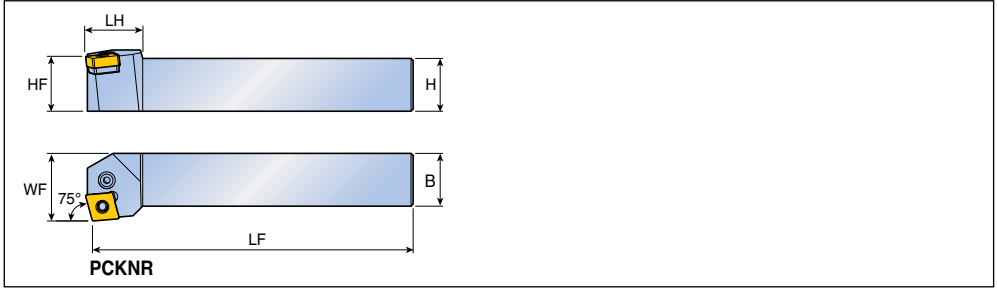
• CNMD, CNMM, CNMG type insert can be mounted on "-D" holder

## Spare parts

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

• LSC 85D Shim can be used for CN...2507... insert

## Lever lock type holders



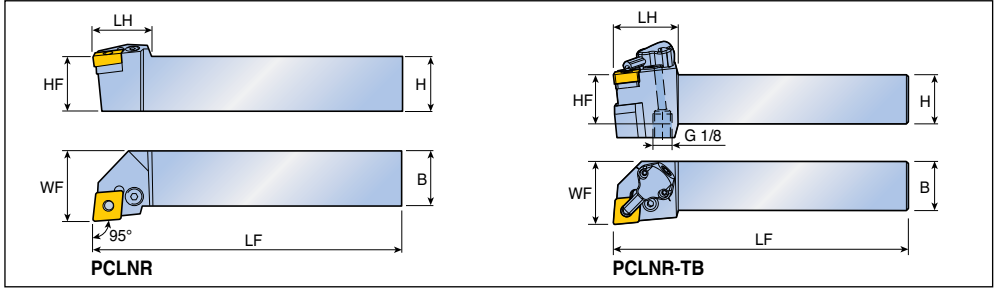
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>75°</b>	<b>PCKNR/L 2020 K12</b>	20	20	20	125	27	25	CN... 1204...  A250-A259, A324, A325, A336
	<b>2525 M12</b>	25	25	25	150	24	32	

## Spare parts

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



## Lever lock type holders



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
	<b>PCLNR/L 1616 H12</b>	16	16	16	100	27	20	CN... 1204...  A250-A259, A324, A325, A336
	<b>2020 K12</b>	20	20	20	125	27	25	
	<b>2525 M12</b>	25	25	25	150	27	32	
	<b>3225 P12</b>	32	32	25	170	27	32	
	<b>3232 P12</b>	32	32	32	170	27	40	
	<b>2525 M16</b>	25	25	25	150	33	32	
	<b>3225 P16</b>	32	32	25	170	33	32	CN... 1906...
	<b>3232 P16</b>	32	32	32	170	33	40	
	<b>2525 M1906D</b>	25	25	25	150	38	32	
	<b>3225 P1906D</b>	32	32	25	170	38	32	
	<b>3232 P1906D</b>	32	32	32	170	38	40	CN... 2509...
	<b>4040 S1906D</b>	40	40	40	250	38	50	
	<b>4040 S2509D</b>	40	40	40	250	47	50	
<b>5050 T2509D</b>	50	50	50	300	47	60	CN... 1204...	
<b>PCLNR/L 2525 M12-TB</b>	25	25	25	150	33	32		
<b>3232 P12-TB</b>	32	32	32	170	33	40		

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

## Spare parts

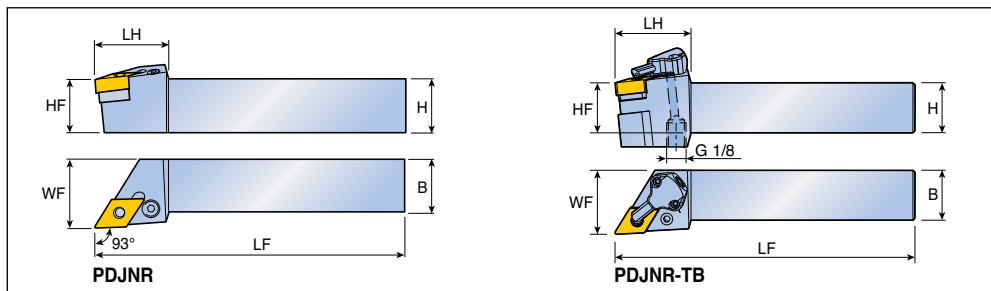
Designation	Lever	Screw	Shim	Shim pin	Cooling unit	O-ring	Plug	Wrench	
<b>1616...12</b>	LCL 4	LCS 4S	LSC 42	LSP 4	-	-	-	-	L-W 3
<b>...12</b>	LCL 4	LCS 4	LSC 42	LSP 4	-	-	-	-	L-W 3
<b>...16</b>	LCL 5	LCS 5	LSC 53	LSP 5	-	-	-	-	L-W 3
<b>...1906</b>	LCL 6D	LCS 25C	LSC 64D	LSP 6	-	-	-	-	L-W 4
<b>...2509</b>	LCL 8	LCS 8	LSC 84D	LSP 8	-	-	-	-	L-W 5
<b>PCLNR/L...TB</b>	LCS 4	LCS 4	LSC 42	LSP 4	CU-CW-TB	ID 6.4x0.9	SS M4x0.7x4-NL	T 8	L-W 2, L-W 3

- LSC 85D Shim can be used for CN...2507... insert
- Please refer to A160 page for COOL-BURST accessories

# PDJNR/L PDJNR/L-TB



## Lever lock type holders



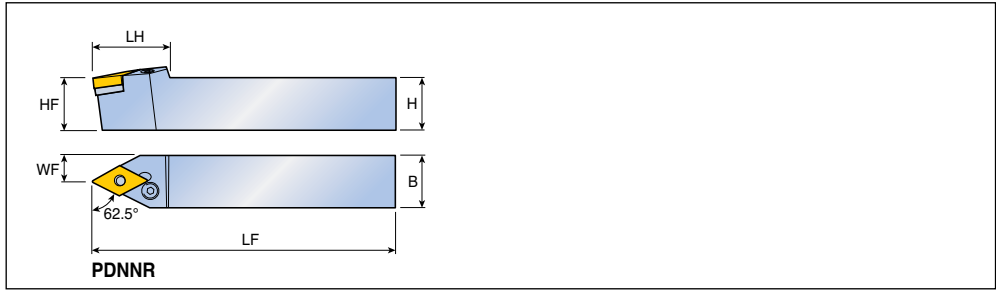
Approach angle	Designation	Dimension (mm)						Insert	
		H	HF	B	LF	LH	WF		
<p>93°</p>	<b>PDJNR/L 1616 H11</b>	16	16	16	100	30	20	DN... 1104...	
	<b>2020 K11</b>	20	20	20	125	30	25		
	<b>2525 M11</b>	25	25	25	150	30	32		
	<b>2020 K15</b>	20	20	20	125	34	25	DN... 1506...	
	<b>2525 M15</b>	25	25	25	150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

## Spare parts

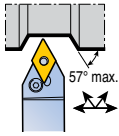
Designation	Lever	Screw	Shim	Shim pin	Cooling unit	O-ring	Plug	Wrench	
...11	LCL 12C	LCS 3	LSD 32	LSP 3A	-	-	-	-	L-W 2.5
...15	LCL 4A	LCS 4	LSD 42	LSP 4	-	-	-	-	L-W 3
...M1504-TB	LCL 4A	LCS 4	LSD 43	LSP 4	CU-D-TB	ID 6.4x0.9	SS M4x0.7x4-NL	T 8	L-W 2, L-W 3
...M1506-TB	LCL 4A	LCS 4	LSD 42	LSP 4	CU-D-TB	ID 6.4x0.9	SS M4x0.7x4-NL	T 8	L-W 2, L-W 3

• Please refer to A160 page for COOL-BURST accessories

## Lever lock type holders



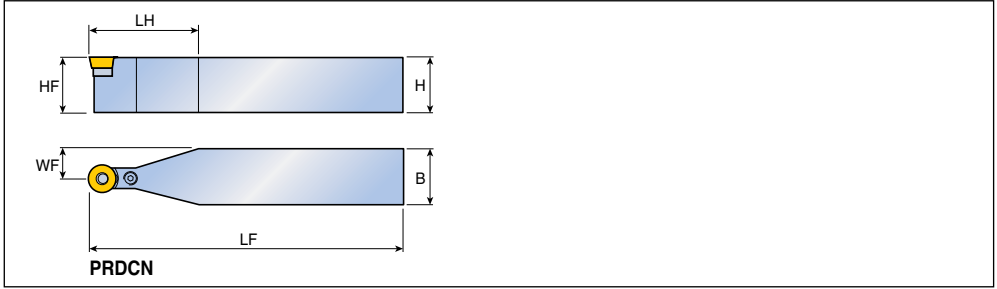
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>62.5°</b>	<b>PDNNR/L 2020 K15</b>	20	20	20	125	36.5	10	DN... 1506...  A260-A265, A326, A337
	<b>2525 M15</b>	25	25	25	150	36.5	12	
	<b>3232 P15</b>	32	32	32	170	36.5	16.8	



## Spare parts

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

## Lever lock type holders

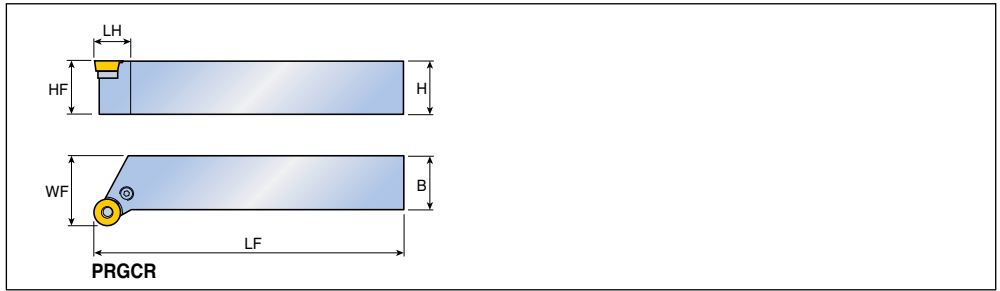


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>45°</b> 	<b>PRDCN 2020 M10</b>	20	20	20	150	50	10.0	RC...X 1003... A303
	<b>2525 M10</b>	25	25	25	150	50	12.5	
	<b>2020 K12</b>	20	20	20	125	50	10.0	
	<b>2525 M12</b>	25	25	25	150	50	12.5	RC...X 1204...
	<b>3225 Q12</b>	32	32	25	180	50	12.5	
	<b>2525 Q16</b>	25	25	25	180	50	12.5	RC...X 1606...
	<b>3225 Q16</b>	32	32	25	180	50	12.5	
	<b>3232 Q16</b>	32	32	32	180	50	16.0	RC...X 2006...
	<b>3232 S20</b>	32	32	32	250	60	16.0	
	<b>4040 S20</b>	40	40	40	250	70	20.0	RC...X 2507...
	<b>4040 S25</b>	40	40	40	250	80	20.0	
	<b>4040 T25</b>	40	40	40	300	80	20.0	RC...X 3209...
	<b>5050 U32</b>	50	50	50	350	90	25.0	

## Spare parts

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

## Lever lock type holders

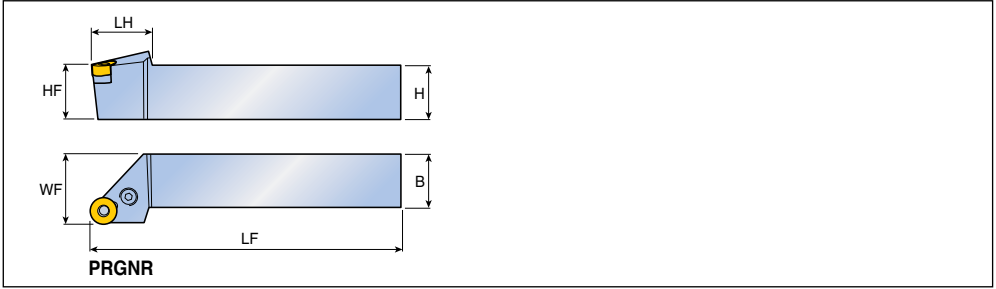


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<p>27° max.</p>	<b>PRGCR/L 2020 K10</b>	20	20	20	125	14.5	25	RC...X 1003... A303
	<b>2525 M10</b>	25	25	25	150	17.5	32	
	<b>3225 P10</b>	32	32	25	170	17	32	
	<b>2020 K12</b>	20	20	20	125	18	25	RC...X 1204...
	<b>2525 M12</b>	25	25	25	150	18	32	
	<b>3225 P12</b>	32	32	25	170	18	32	
	<b>2525 M16</b>	25	25	25	150	23	32	RC...X 1606...
	<b>3225 P16</b>	32	32	25	170	23	32	
	<b>3232 P16</b>	32	32	32	170	23	40	
	<b>4040 P16</b>	40	40	40	170	23	50	RC...X 2006...
	<b>3232 P20</b>	32	32	32	170	27.5	40	
	<b>4040 S25</b>	40	40	40	250	33.5	50	
	<b>4040 S32</b>	40	40	40	250	41	50	RC...X 2507...
								RC...X 3209...

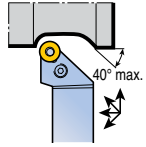
## Spare parts

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

## Lever lock type holders



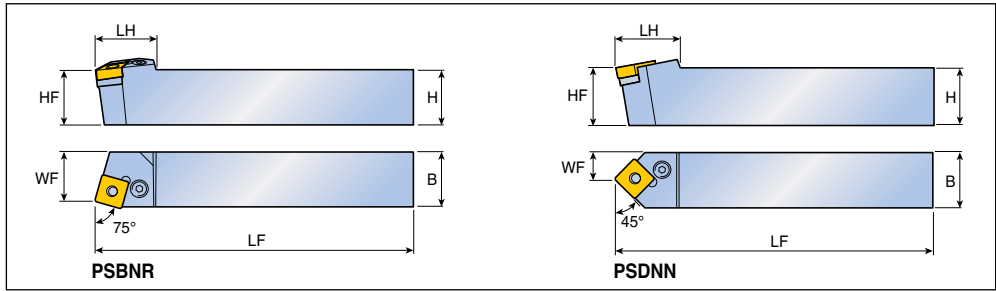
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>90°</b>	<b>PRGNR/L 2525 M12</b>	25	25	25	150	28	32	RNMG 120400
	<b>3225 P15</b>	32	32	25	170	35	32	RNMG 150600
	<b>3232 P19</b>	32	32	32	170	38	40	RNMG 190600



## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
...09	LCL 3	LCS 3	LSR 32	LSP 3A	L-W 2.5			
...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		
<b>75°</b> 	<b>PSBNR/L 2020 K12</b>	20	20	20	125	28	17	SN... 1204...  A268-A274, A329, A330, A339	
	<b>2525 M12</b>	25	25	25	150	28	22		
	<b>3225 P12</b>	32	32	25	170	28	22		
	<b>2525 M15</b>	25	25	25	150	34	22		
	<b>3232 P1906D</b>	32	32	32	170	39	27		SN... 1506...
	<b>4040 S1906D</b>	40	40	40	250	39	35		SN... 1906...
	<b>4040 S2509D</b>	40	40	40	250	48	35		SN... 2509...
	<b>5050 T2509D</b>	50	50	50	300	48	43		
<b>45°</b> 	<b>PSDNN 2020 K12</b>	20	20	20	125	28	10.0	SN... 1204...	
	<b>2525 M12</b>	25	25	25	150	28	12.5		
	<b>3225 P12</b>	32	32	25	170	28	12.5		
	<b>2020 K15</b>	20	20	20	125	34	10.0	SN... 1506...	
	<b>2525 M15</b>	25	25	25	150	34	12.5		
	<b>3225 P1906D</b>	32	32	25	170	40.5	12.5	SN... 1906...	
	<b>3232 P1906D</b>	32	32	32	170	40.5	16.0		
	<b>4040 S1906D</b>	40	40	40	250	40.5	20.0		
	<b>5050 S1906D</b>	50	50	50	250	40.5	25.0		
	<b>4040 S2509D</b>	40	40	40	250	49	20.0	SN... 2509...	
<b>5050 T2509D</b>	50	50	50	300	49	25.0			

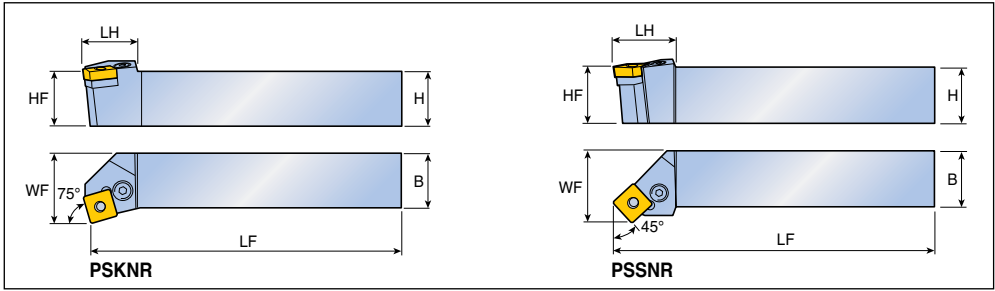
• SNMD, SNMM, SNMG type insert can be mounted on "-D" holder

## Spare parts

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

• LSS 85D Shim can be used for SN... 2507... insert

## Lever lock type holders



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
	<b>PSKNR/L 2020 K12</b>	20	20	20	125	25	25	SN... 1204...
	<b>2525 M12</b>	25	25	25	150	25	32	SN... 1506... A268-A274, A329, A330, A339
	<b>2525 M15</b>	25	25	25	150	32	32	
	<b>3232 P15</b>	32	32	32	170	32	40	SN... 1906...
	<b>3232 P1906D</b>	32	32	32	170	38	40	SN... 1906...
	<b>4040 S1906D</b>	40	40	40	250	38	50	SN... 2509...
	<b>4040 S2509D</b>	40	40	40	250	42	50	SN... 2509...
	<b>5050 T2509D</b>	50	50	50	300	42	60	SN... 2509...
	<b>PSSNR/L 2020 K12</b>	20	20	20	125	30	25	SN... 1204...
	<b>2525 K12</b>	25	25	25	125	30	32	SN... 1506... SN... 1906... SN... 2509...
	<b>2525 M12</b>	25	25	25	150	30	32	
	<b>3225 P12</b>	32	32	25	170	30	32	SN... 1506...
	<b>3232 P12</b>	32	32	32	170	32	40	SN... 1906...
	<b>3232 P15</b>	32	32	32	170	37	40	SN... 2509...
	<b>3232 P1906D</b>	32	32	32	170	42	40	SN... 2509...
	<b>4040 S1906D</b>	40	40	40	250	42	50	SN... 2509...
<b>4040 S2509D</b>	40	40	40	250	53	50	SN... 2509...	

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

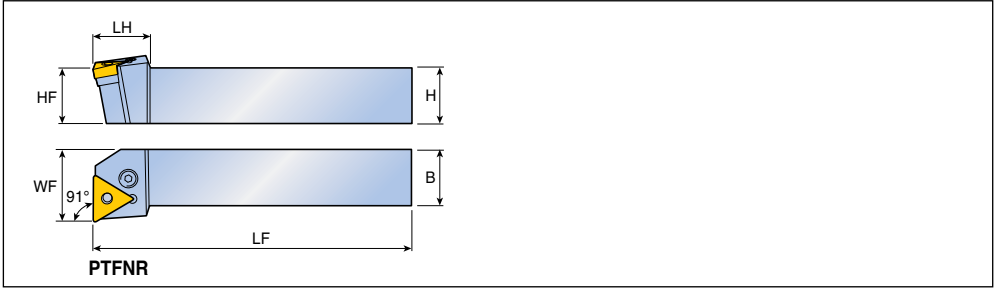
## Spare parts

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

• LSS 85D Shim can be used for SN... 2507... insert



## Lever lock type holders

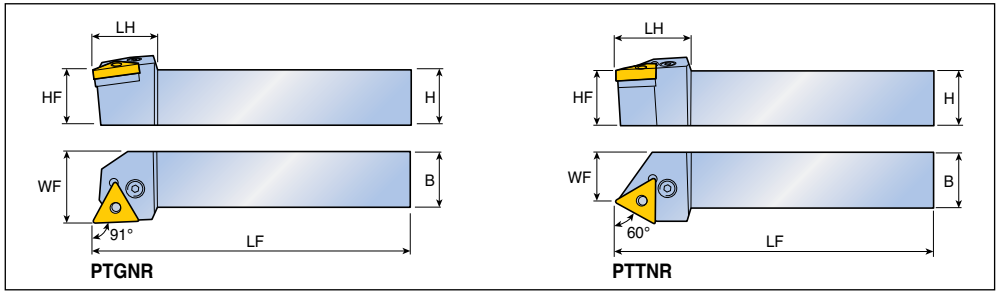


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
91°	<b>PTFNR/L 2020 K16</b>	20	20	20	125	20	25	TN... 1604...  A275-A280, A332, A340
	<b>2525 M16</b>	25	25	25	150	20	32	

## Spare parts

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

## Lever lock type holders

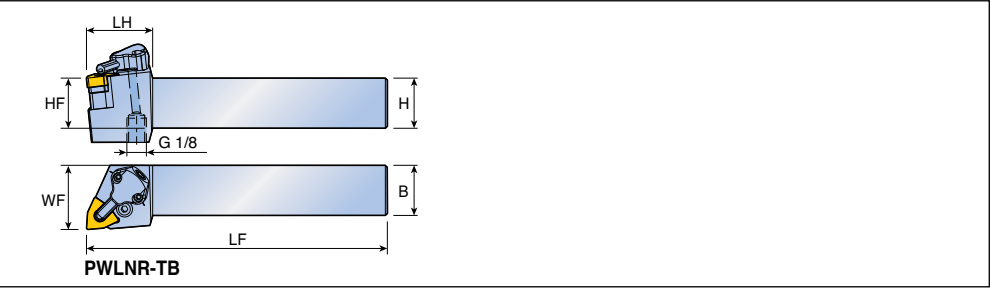


Approach angle	Designation	Dimension (mm)						Insert	
		H	HF	B	LF	LH	WF		
<b>91°</b> 	<b>PTGNR/L 1010 E11</b>	10	10	10	70	15	12	TN... 1103...  A275-A280, A332, A340	
	<b>1212 F11</b>	12	12	12	80	15	16		
	<b>2525 M11</b>	25	25	25	150	30	32		
		<b>1616 H16</b>	16	16	16	100	22	20	TN... 1604...
		<b>2020 K16</b>	20	20	20	125	22	25	
		<b>2525 M16</b>	25	25	25	150	22	32	
		<b>3232 P16</b>	32	32	32	170	22	40	
		<b>2525 M22</b>	25	25	25	150	29	32	
		<b>3232 P22</b>	32	32	32	170	29	40	
								TN... 2204...	
<b>60°</b> 	<b>PTTNR/L 1616 H16</b>	16	16	16	100	24	13	TN... 1604...	
	<b>2020 K16</b>	20	20	20	125	24	17		
	<b>2525 M16</b>	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°	<b>PWLNR/L 2525 M08-TB</b>	25	25	25	150	33	32	WN... 0804...  A284-A287, A333, A342
	<b>3232 P08-TB</b>	32	32	32	170	33	40	

## Spare parts

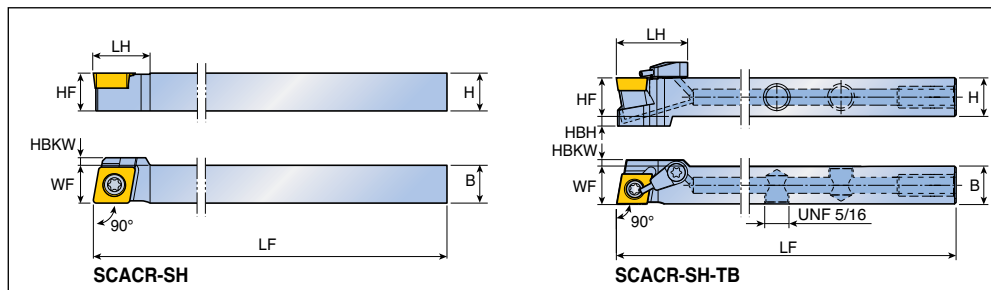
Designation	Lever	Screw	Shim	Shim pin	Cooling unit	O-ring	Plug	Wrench	
<b>PWLNR/L...TB</b>	LCL 4	LCS 4	TWN 423(T)	LSP 4	CU-CW-TB	ID 6.4x0.9	SS M4x0.7x4-NL	T 8	L-W 2, L-W 3

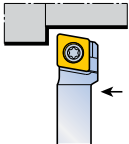
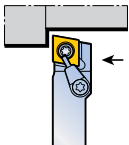
• Please refer to A160 page for COOL-BURST accessories

# 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 <b>1010 K06-SH</b>	10	10	-	10	125	10	10	-	CC...T 0602...
	<b>1010 K09-SH</b>	10	10	-	10	125	15	10	2	CC...T 09T3...
	<b>1212 K09-SH</b>	12	12	-	12	125	15	12	-	
	<b>1616 K09-SH</b>	16	16	-	16	125	16	16	-	
 90°	# SCACR/L <b>1212 K09-SH-TB</b>	12	12	3	12	125	23	12	2	
	<b>1616 K09-SH-TB</b>	16	16	-	16	125	23	16	-	

  
 A292-A295,  
 A343

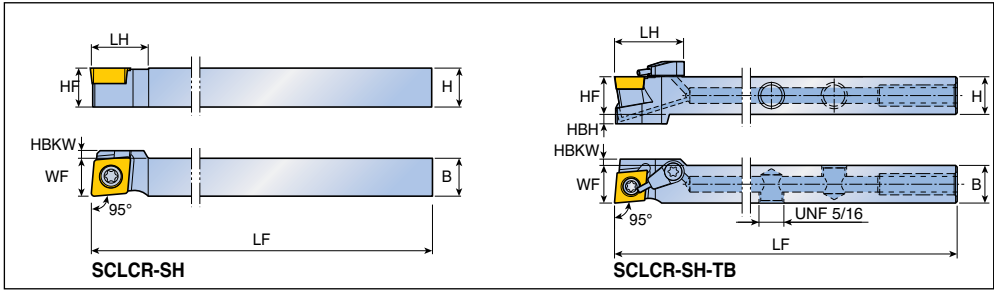
• # Marked: TOP-MINI holders

## Spare parts

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

• Please refer to A160 page for COOL-BURST accessories

## Screw type holders



Approach angle	Designation	Dimension (mm)								Insert
		H	HF	HBH	B	LF	LH	WF	HBKW	
	# SCLCR/L 0808 K06-SH	8	8	-	8	125	8	8	-	CC... 0602...  CC... 09T3...   A292-A295, A343
	1010 K06-SH	10	10	-	10	125	10	10	-	
	1010 K09-SH	10	10	-	10	125	15	10	2	
	1212 K09-SH	12	12	-	12	125	15	12	-	
	1616 K09-SH	16	16	-	16	125	16	16	-	
	# SCLCR/L 1212 K09-SH-TB	12	12	3	12	125	23	12	2	
	1616 K09-SH-TB	16	16	-	16	125	23	16	-	

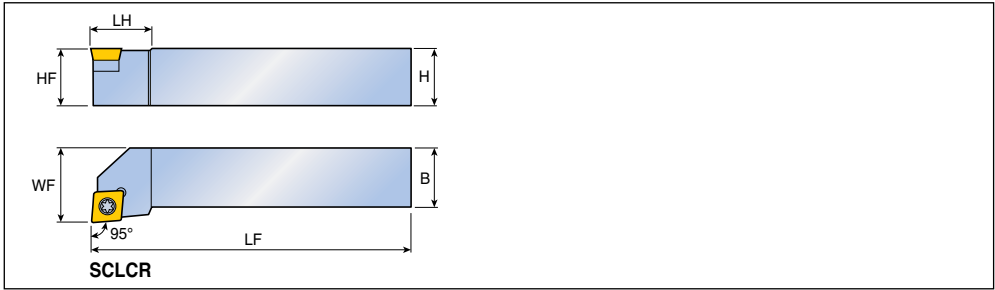
• # Marked: TOP-MINI holders

## Spare parts

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

• Please refer to A160 page for COOL-BURST accessories

## Screw type holders

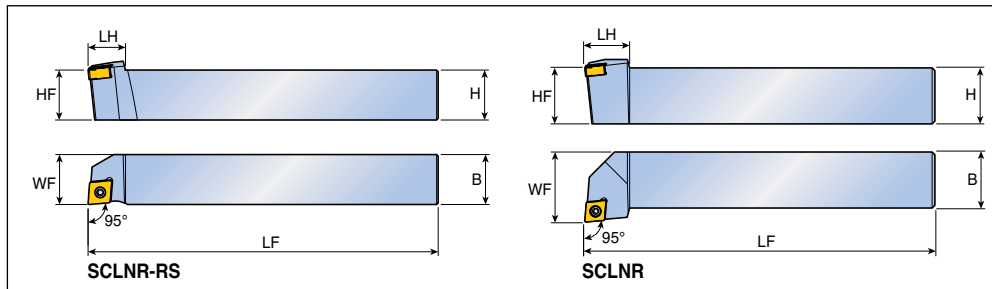


Approach angle	Designation	Dimension (mm)						Insert	
		H	HF	B	LF	LH	WF		
 95°	<b>SCLCR/L 0808 F06</b>	8	8	8	80	10	10	CC... 0602... 	
	<b>1010 F06</b>	10	10	10	80	10	12		A292-A295, A343
	<b>1212 F09</b>	12	12	12	80	16	16		
	<b>1616 H09</b>	16	16	16	100	16	20		
	<b>2020 K09</b>	20	20	20	125	20	25		
	<b>2525 M09</b>	25	25	25	150	20	32		
	<b>2020 K12</b>	20	20	20	125	25	25	CC... 1204...	
	<b>2525 M12</b>	25	25	25	150	26	32		

## 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			

## Screw type holders

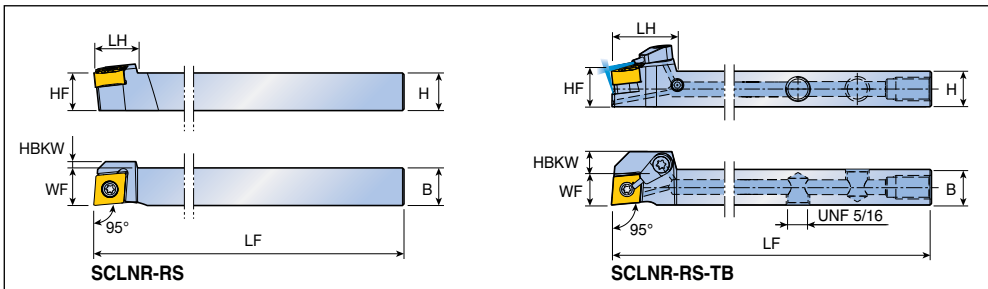


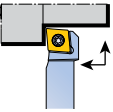

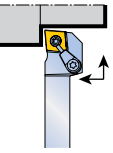
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
95°	<b>SCLNR/L 1212 K0703-RS</b>	12	12	12	125	12	12	CNMX 0703... A259
	<b>1616 K0703-RS</b>	16	16	16	125	12	16	
95°	<b>SCLNR/L 1616 H0703</b>	16	16	16	100	12	20	
	<b>2020 K0703</b>	20	20	20	125	16	25	

## Spare parts






Designation	Screw	Wrench					
...0703...	TS 25D060/HG-P	T 7P					

## Screw type holders



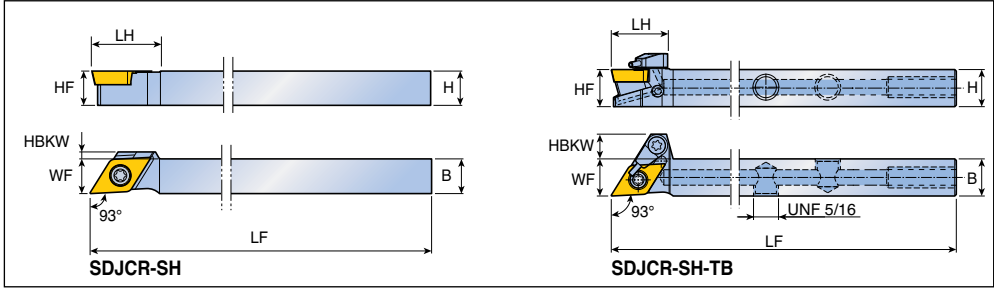
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBKW	
<b>95°</b> 	<b>SCLNR 1212 K0904-RS</b>	12	12	12	125	14	12	2	CN... 0904  RHINOTURN A250-A257
	<b>1616 K0904-RS</b>	16	16	16	125	14	16	-	
	<b>2020 K0904-RS</b>	20	20	20	125	14	20	-	
<b>95°</b>  COOLBURST	<b>SCLNR 1212 K0904-RS-TB</b>	12	12	12	125	22	12	19	
	<b>1616 K0904-RS-TB</b>	16	16	16	125	22	16	18	
	<b>2020 K0904-RS-TB</b>	20	20	20	125	22	20	-	

## Spare parts

Designation	Screw	Cooling unit	Plug	Wrench			
							
<b>SCLNR-RS</b>	TS 35083I/HG	-	-	T 10	-		
<b>SCLNR-RS-TB</b>	TS 35083I/HG	S-CU-TB	PLG 5/16 UNF	T 10	L-W 5/32		



## Screw type holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBKW	
<b>93°</b> 	# <b>SDJCR/L 0808 K07-SH</b>	8	8	8	125	12.7	8	-	DC... 0702... DC... 11T3... A297-A300, A344
	<b>1010 K07-SH</b>	10	10	10	125	15	10	-	
	<b>1010 K11-SH</b>	10	10	10	125	20	10	2	
	<b>1212 K11-SH</b>	12	12	12	125	20	12	-	
	<b>1616 K11-SH</b>	16	16	16	125	20	16	-	
	<b>2020 K11-SH</b>	20	20	20	125	20	20	-	
<b>93°</b>  COOLBURST	# <b>SDJCR/L 1212 K11-SH-TB</b>	12	12	12	125	19	12	8	
	<b>1616 K11-SH-TB</b>	16	16	16	125	19	16	4	
	<b>2020 K11-SH-TB</b>	20	20	20	125	20	20	-	

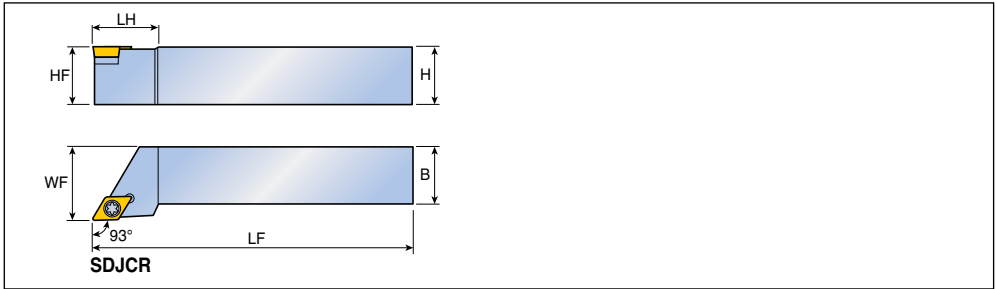
• # Marked: TOP-MINI holders

## Spare parts

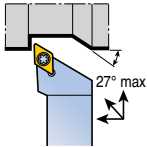
Designation	Screw	Cooling unit	Plug	Wrench		
<b>...07</b>	SO 25065I	-	-	T 7	-	
<b>...11-SH</b>	SO 35080I	-	-	T 15	-	
<b>SDJCR/L-SH-TB</b>	SO 35080I	S-CU-TB	PLG 5/16 UNF	T 15	L-W 5/32	

• Please refer to A160 page for COOL-BURST accessories

## Screw type holders



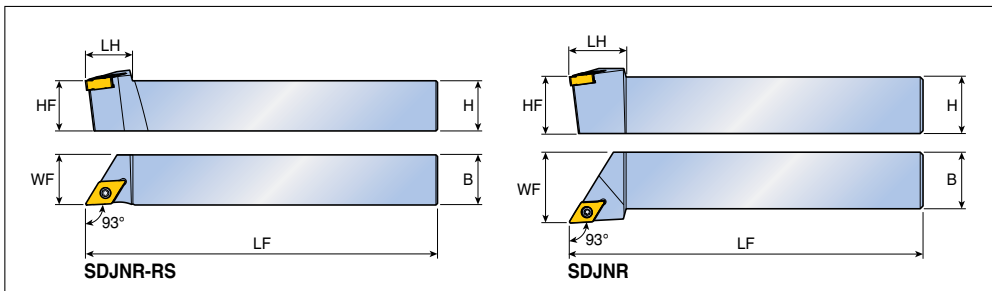
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
93°	<b>SDJCR/L 1212 F07</b>	12	12	12	80	15	16	DC... 0702... A297-A300, A344 DC... 11T3...
	<b>1616 H07</b>	16	16	16	100	15	20	
	<b>2020 K07</b>	20	20	20	125	20	25	
	<b>1616 H11</b>	16	16	16	100	24	20	
	<b>2020 K11</b>	20	20	20	125	24	25	
	<b>2525 M11</b>	25	25	25	150	28	32	



## Spare parts

Designation	Screw	Shim	Shim screw	Wrench				
...07	SO 250651	-	-	T 7				
...11	SO 351241	SSD 32	SO 50090S	T 15				

## Screw type holders

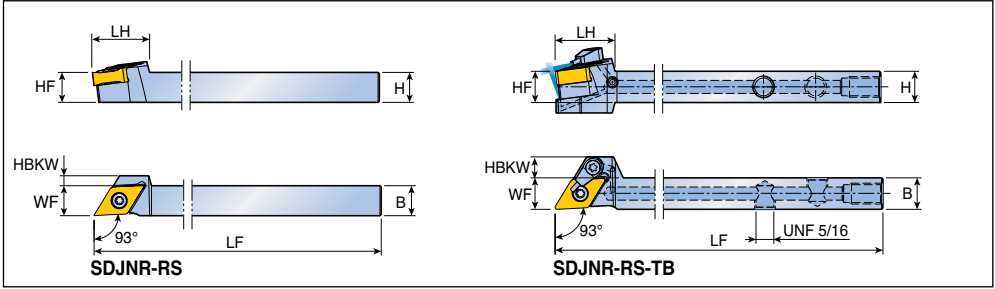


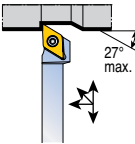


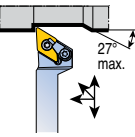
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>93°</b> 	<b>SDJNR/L 1212 K0803-RS</b>	12	12	12	125	15	12	DN...X 0803...   A265
	<b>1616 K0803-RS</b>	16	16	16	125	15	16	
<b>93°</b> 	<b>SDJNR/L 1616 H0803</b>	16	16	16	100	16	20	DN... 1104...  A260-A265
	<b>2020 K0803</b>	20	20	20	125	20	25	
	<b>SDJNR/L 1616 H11</b>	16	16	16	100	25	20	
	<b>2020 K11</b>	20	20	20	125	25	25	
	<b>2525 M11</b>	25	25	25	150	25	32	

## Spare parts






Designation	Screw	Shim	Shim screw	Wrench			
...0803...	TS 25D060/HG-P	-	-	T 7P			
...1104...	SO 35120I	SSD 32	SO 50090S	T 10			

## Screw type holders



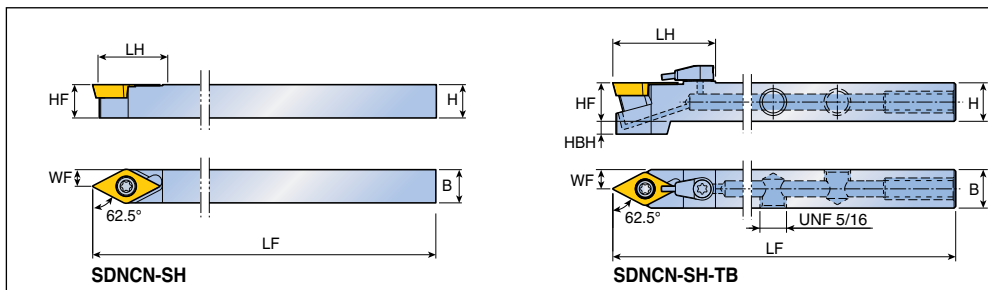
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBKW	
<b>93°</b> 	<b>SDJNR 1212 K1305-RS</b>	12	12	12	125	23	12	4	DN... 1305...   A260-A265
	<b>1616 K1305-RS</b>	16	16	16	125	23	16	-	
	<b>2020 K1305-RS</b>	20	20	20	125	23	20	-	
<b>93°</b>  COOLBURST	<b>SDJNR 1212 K1305-RS-TB</b>	12	12	12	125	23	12	8	
	<b>1616 K1305-RS-TB</b>	16	16	16	125	23	16	4	

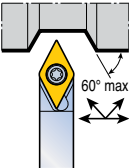

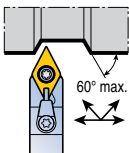
## Spare parts

Designation	Screw	Cooling unit	Plug	Wrench				
								
<b>SDJNR-RS</b>	TS 40G110I	-	-	T 15	-			
<b>SDJNR-RS-TB</b>	TS 40G110I	S-CU-TB	PLG 5/16 UNF	T 15	L-W 5/32			

• Please refer to A160 page for COOL-BURST accessories






## Screw type holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	HBH	B	LF	LH	WF	
<b>62.5°</b> 	# SDNCN 0808 K07-SH	8	8	-	8	125	15	4	DC... 0702...  A297-A300, DC... 11T3... A344
	1010 K07-SH	10	10	-	10	125	15	5	
	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	
<b>62.5°</b>  COOLBURST	# SDNCN 1212 K11-SH-TB	12	12	4	12	125	32	6	
	1616 K11-SH-TB	16	16	-	16	125	32	8	

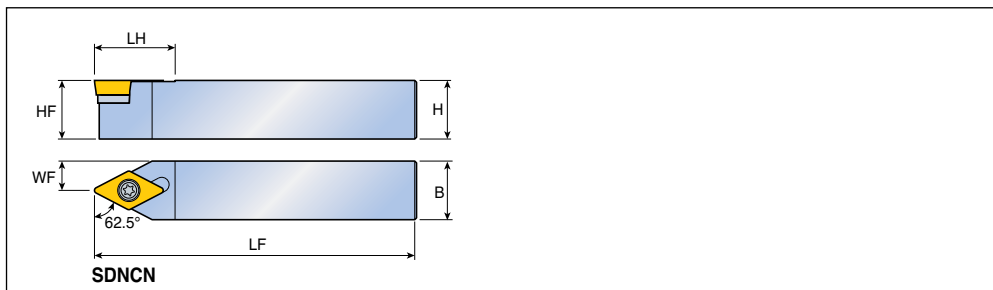
• # Marked: TOP-MINI holders

## Spare parts

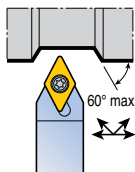
Designation	Screw	Cooling unit	Plug	Wrench			
							
...07	SO 25065I	-	-	T 7	-		
...11-SH	SO 35080I	-	-	T 7	-		
SDNCN-SH-TB	SO 35080I	S-CU-TB	PLG 5/16 UNF	T 15	L-W 5/32		

• Please refer to A160 page for COOL-BURST accessories

## Screw type holders



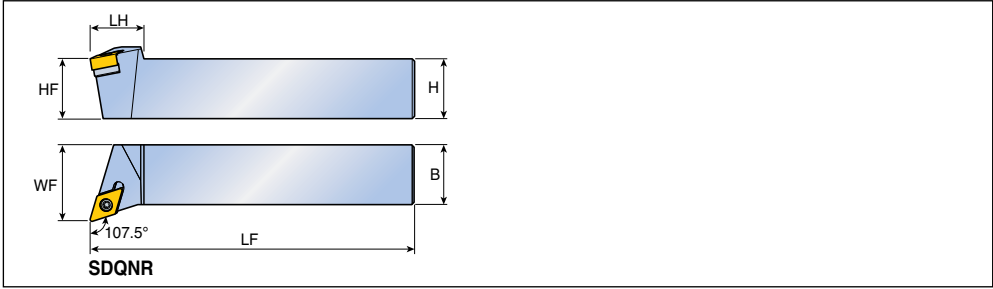
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>62.5°</b>	<b>SDNCN 0808 F07</b>	8	8	8	80	15	4	DC... 0702... 
	<b>1010 F07</b>	10	10	10	80	15	5	
	<b>1616 H11</b>	16	16	16	100	22	8	A344
	<b>2525 M11</b>	25	25	25	150	22	12.5	



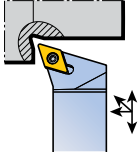
## Spare parts

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

## Screw type holders



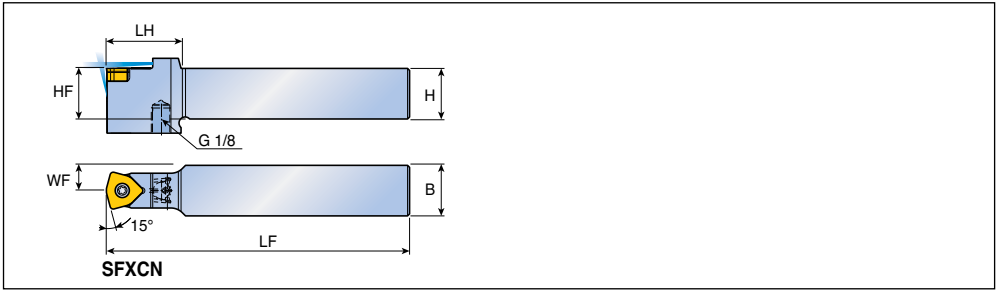
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>107.5°</b>	<b>SDQNR/L 1616 H11</b>	16	16	16	100	22	20	DN... 1104... A260-A265
	<b>2020 K11</b>	20	20	20	125	22	25	
	<b>2525 M11</b>	25	25	25	150	22	32	



## Spare parts

Designation	Screw	Shim	Shim screw	Wrench				
<b>...11</b>	SO 35120I	SSD 32	SO 50090S	T 10				

## Screw type holders for FCMX high feed inserts



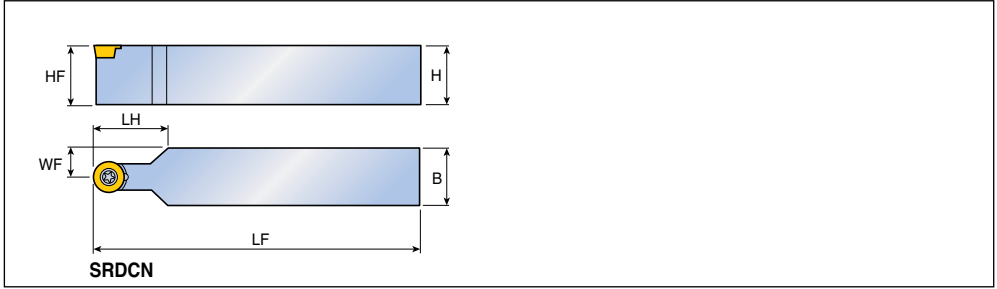
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
15°	<b>SFXCN 2525 M1006</b>	25	25	25	150	37	12.5	FCMX 1006...  A302
	<b>3232 P1006</b>	32	32	32	170	37	16	

### Spare parts

Designation	Screw	Wrench					
<b>...1006</b>	SO 45130I	T 20					



## Screw type holders



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
45°	<b>SRDCN 1616 H10</b>	16	16	16	100	17.2	8	RC...T 10T3... A303
	<b>2020 K10</b>	20	20	20	125	22.5	10	
	<b>2525 M10</b>	25	25	25	150	27.5	12.5	
	<b>2525 M12</b>	25	25	25	150	27.5	12.5	
								RC...T 1204...

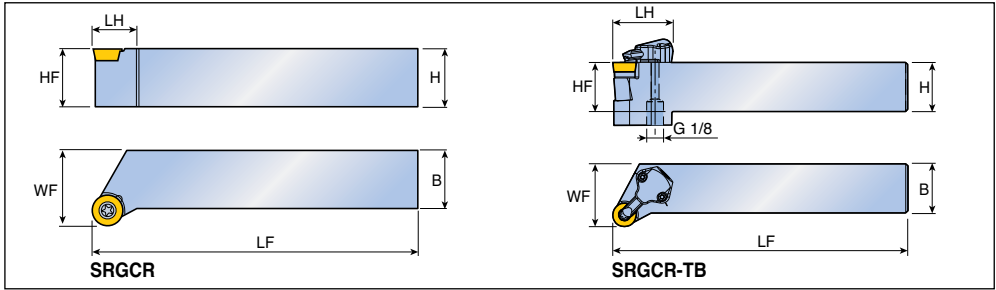
## Spare parts

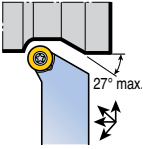

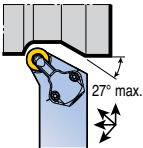
Designation	Screw	Wrench					
	...10	TS 40097I	T 15				
...12	SO 40050I	T 15					

# SRGCR/L SRGCR/L-TB



















## Screw type holders



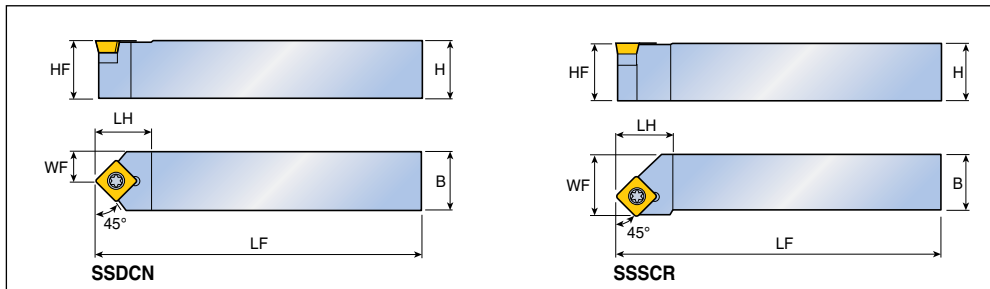
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
90° 	<b>SRGCR/L 1616 H10</b>	16	16	16	100	16.7	20	RC...T 10T3... 
	<b>2020 K10</b>	20	20	20	125	15	25	
	<b>2525 M10</b>	25	25	25	150	15	32	
90°  COOLBURST	<b>SRGCR/L 2525 M12-TB</b>	25	25	25	150	30	32	RC...T 1204...

## Spare parts

Designation	Screw	Shim	Shim screw	Cooling unit	O-ring	Plug	Wrench	
...10	 TS 400971	 -	 -	 -	 -	 -	 T 15	 -
<b>SRGCR/L...TB</b>	 TS 351101	 SSR 32	 TS 5035062S	 CU-R-TB	 ID 6.4x0.9	 SS M4x0.7x4-NL	 T 8, T 15	 L-W 2, L-W 3.5

• Please refer to A160 page for COOL-BURST accessories

## Screw type holders

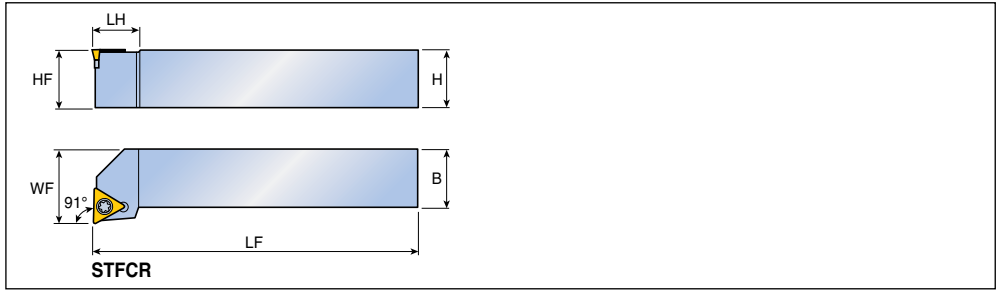


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>45°</b> 	<b>SSDCN 1212 F09</b>	12	12	12	80	15.5	6	SC... 09T3...  A304, A346
	<b>1616 H09</b>	16	16	16	100	15.5	8	
<b>45°</b> 	<b>SSSCR/L 1212 F09</b>	12	12	12	80	15.5	14	SC... 09T3...
	<b>1616 H09</b>	16	16	16	100	15.5	17	
	<b>2020 K12</b>	20	20	20	125	24	22	SC...T 1204...  A304
	<b>2525 M12</b>	25	25	25	150	24	27	

## Spare parts

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

## Screw type holders



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>91°</b> 	<b>STFCR/L 1212 F11</b>	12	12	12	80	14	16	TC... 1102... 
	<b>1616 H11</b>	16	16	16	100	14	20	
	<b>1616 H16</b>	16	16	16	100	19	20	TC... 16T3... A347, A348
	<b>2020 K16</b>	20	20	20	125	19	25	
	<b>2525 M16</b>	25	25	25	150	20	32	

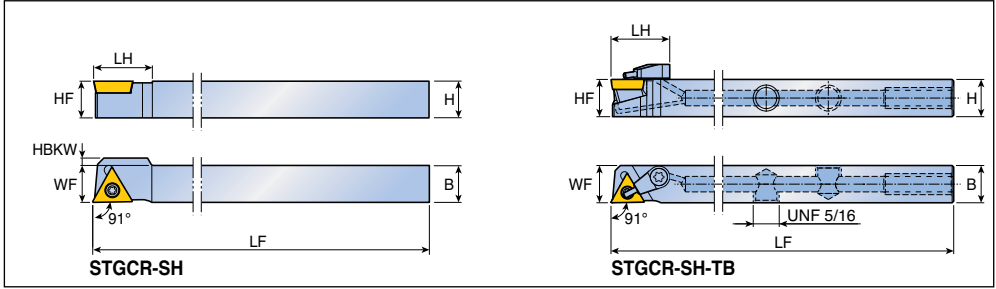
## Spare parts

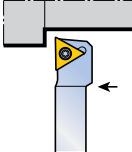


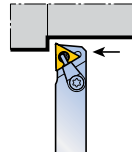
Designation	Screw	Shim	Shim screw	Wrench			
...11	SO 25065I	-	-	T 7			
...16	SO 35124I	SST 32	SO 50090S	T 15			

# STGCR/L-SH STGCR/L-SH-TB








## Screw type holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBKW	
 91°	# <b>STGCR/L 0808 E08-SH</b>	8	8	8	70	11	8	2	TC...T 0802...  TC... 1103...  A307, A308, A347, A348
	<b>1010 F08-SH</b>	10	10	10	80	11	10	-	
	<b>1010 K11-SH</b>	10	10	10	125	16	10	2	
	<b>1212 K11-SH</b>	12	12	12	125	16	12	-	
	<b>1616 K11-SH</b>	16	16	16	125	16	16	-	
 91°	# <b>STGCR/L 1212 K11-SH-TB</b>	12	12	12	125	20	12	-	
	<b>1616 K11-SH-TB</b>	16	16	16	125	20	16	-	

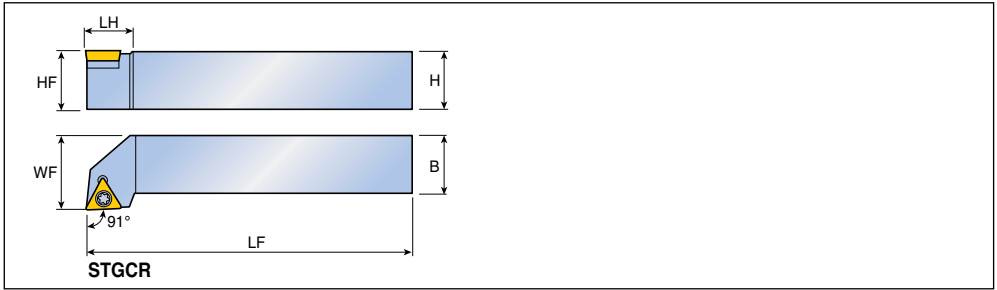
• # Marked: TOP-MINI holders

## Spare parts

Designation	Screw	Cooling unit	Plug	Wrench			
							
<b>...08-SH</b>	TS 20043I/HG-P	-	-	T 6P	-		
<b>...11-SH</b>	SO 25065I	-	-	T 7	-		
<b>STGCR/L-SH-TB</b>	SO 25065I	S-CU-TB	PLG 5/16 UNF	T 7	L-W 5/32		

• Please refer to A160 page for COOL-BURST accessories

## Screw type holders

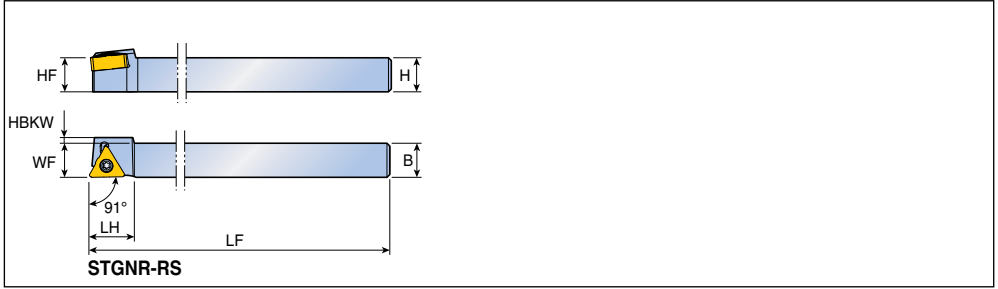


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
	<b>STGCR/L 0808 E08</b>	8	8	8	70	10	10	TC...T 0802...
	<b>1010 F08</b>	10	10	10	80	10	12	A307, A308, A347, A348
	<b>1010 E09</b>	10	10	10	70	11	12	
	<b>1212 F11</b>	12	12	12	80	14.3	16	TC...T 0902...
	<b>1616 H11</b>	16	16	16	100	14.3	20	TC...T 1102...
	<b>1616 H16</b>	16	16	16	100	21	20	TC...T 16T3...
	<b>2020 K16</b>	20	20	20	125	21	25	
	<b>2525 M16</b>	25	25	25	150	21	32	

## Spare parts

Designation	Screw	Shim	Shim screw	Wrench			
<b>...09</b>	SO 22050I	-	-	T 7			
<b>...11</b>	SO 25065I	-	-	T 7			
<b>...16</b>	SO 35124I	SST 32	SO 50090S	T 15			

## Screw type holders

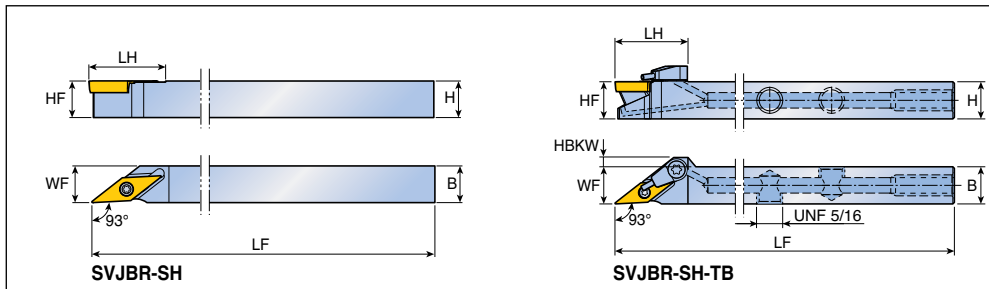


Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBKW	
91°	<b>STGNR 1212 K1304-RS</b>	12	12	12	125	16	12	2	TN... 1304... A275-A280
	<b>1616 K1304-RS</b>	16	16	16	125	16	16	-	
	<b>2020 K1304-RS</b>	20	20	20	125	16	20	-	

## Spare parts

Designation	Screw	Wrench					
<b>STGNR-RS</b>	TS 30080I/HG	T 9					

## Screw type holders



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBKW	
<b>93°</b> 	# SVJBR/L <b>1010 K11-SH</b>	10	10	10	125	21	10	-	VB... 1103...  A313, A314, A349
	<b>1212 K11-SH</b>	12	12	12	125	21	12	-	
	<b>1616 K11-SH</b>	16	16	16	125	21	16	-	
<b>93°</b>  COOLBURST	# SVJBR/L <b>1212 K11-SH-TB</b>	12	12	12	125	23.6	12	3	
	<b>1616 K11-SH-TB</b>	16	16	16	125	23.6	16	-	

• # Marked: TOP-MINI holders

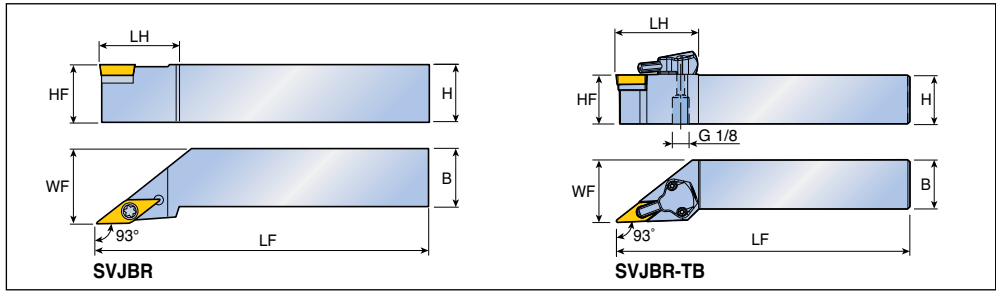
## Spare parts

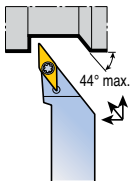

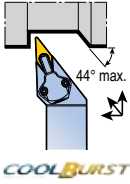
Designation	Screw	Cooling unit	Plug	Wrench	
...11	SO 25065I	-	-	T 7	-
<b>SVJBR/L-SH-TB</b>	SO 25065I	S-CU-TB	PLG 5/16 UNF	T 7	L-W 5/32

• Please refer to A160 page for COOL-BURST accessories



## Screw type holders



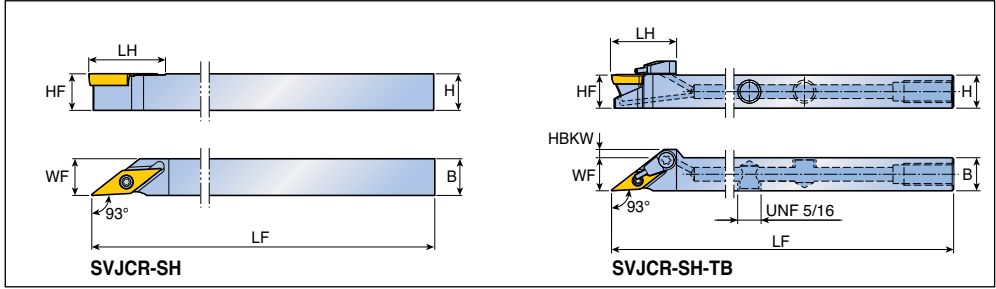
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>93°</b> 	<b>SVJBR/L 2020 K16</b>	20	20	20	125	35	25	VB... 1604...  A313, A314, A349
	<b>2525 M16</b>	25	25	25	150	35	32	
	<b>3225 P16</b>	32	32	25	170	35	32	
	<b>3232 P16</b>	32	32	32	170	35	40	
<b>93°</b>  COOLBURST	<b>SVJBR/L 2525 M16-TB</b>	25	25	25	150	42	32	

## Spare parts

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

• Please refer to A160 page for COOL-BURST accessories

## 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... A315, A316, A349
	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	-	

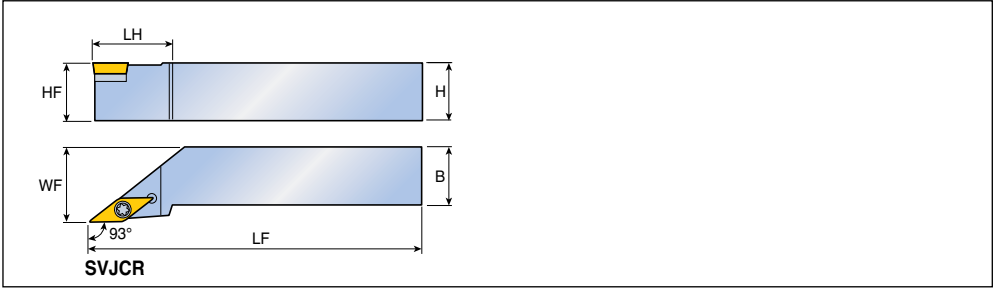
• # Marked: TOP-MINI holders

## Spare parts

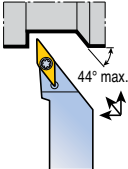
Designation	Screw	Cooling unit	Plug	Wrench			
...11-SH	SO 25065I	-	-	T 7	-		
SVJCR/L-SH-TB	SO 25065I	S-CU-TB	PLG 5/16 UNF	T 7	L-W 5/32		

• Please refer to A160 page for COOL-BURST accessories

## Screw type holders



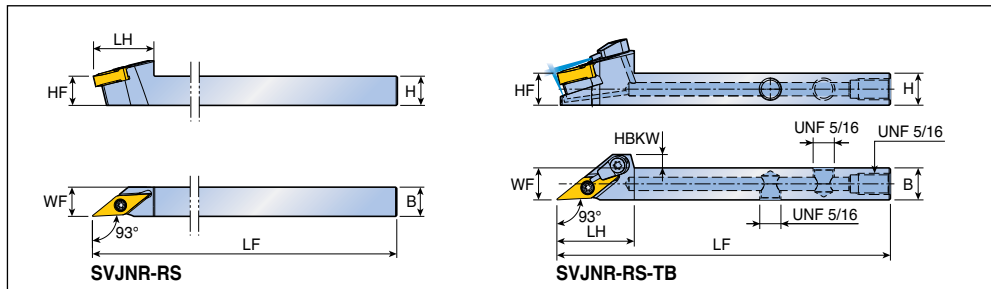
Approach angle	Designation	Dimension (mm)						Inserts
		H	HF	B	LF	LH	WF	
<b>93°</b>	<b>SVJCR/L 2020 K16</b>	20	20	20	125	35	25	VC... 1604...  A315, A316, A349
	<b>2525 M16</b>	25	25	25	150	35	32	
	<b>3225 P16</b>	32	32	25	170	35	32	
	<b>3232 P16</b>	32	32	32	170	47	40	

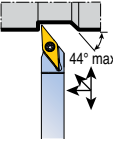

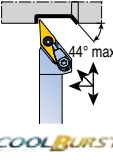


## Spare parts






Designation	Screw	Shim	Shim screw	Wrench			
<b>...16</b>	SO 35124I	SSV 32	SO 50090S	T 10			

## Screw type holders



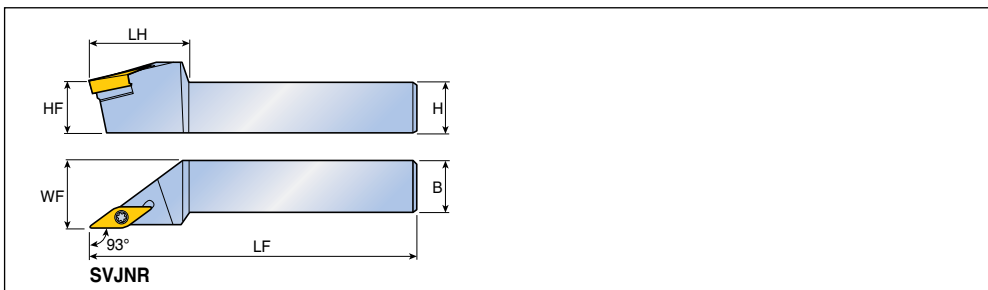
Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBKW	
<b>93°</b> 	<b>SVJNR 1212 K1304-RS</b>	12	12	12	125	25	12	-	VN...X 1304... YNMG 1304...  A281, A283, A289
	<b>1616 K1304-RS</b>	16	16	16	125	25	16	-	
	<b>2020 K1304-RS</b>	20	20	20	125	25	20	-	
<b>93°</b> 	<b>SVJNR 1212 K1305-RS-TB</b>	12	12	12	125	29	12	5	
	<b>1616 K1305-RS-TB</b>	16	16	16	125	29	16	1	

## Spare parts

Designation	Screw	Cooling unit	Plug	Wrench			
							
<b>SVJNR-RS</b>	TS 300801/HG	-	-	T 9	-		
<b>SVJNR-RS-TB</b>	TS 300801/HG	S-CU-TB	PLG 5/16 UNF	T 9	L-W 5/32		

• Please refer to A160 page for COOL-BURST accessories

## Screw type holders

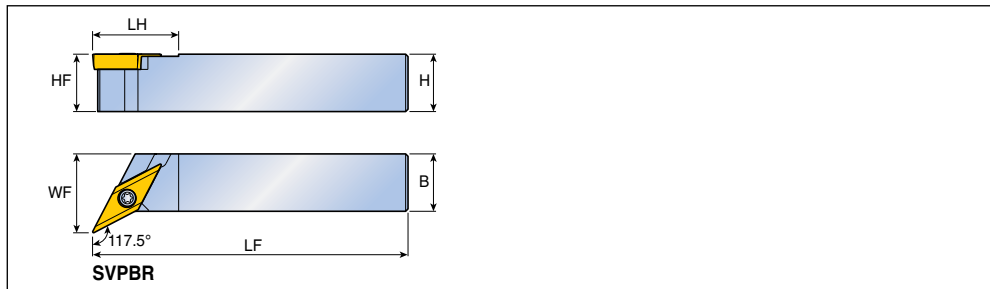


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>93°</b>	<b>SVJNR/L 1616 H13</b>	16	16	16	100	30	20	VN... 1304...  A281, A282, A333, A341
	<b>2020 K13</b>	20	20	20	125	35	25	
	<b>2525 M13</b>	25	25	25	150	43	32	

## Spare parts

Designation	Screw	Shim	Shim screw	Wrench				
<b>...13</b>	SO 35120I	SSVN 2.522	SO 50090S	T 10				

## Screw type holders

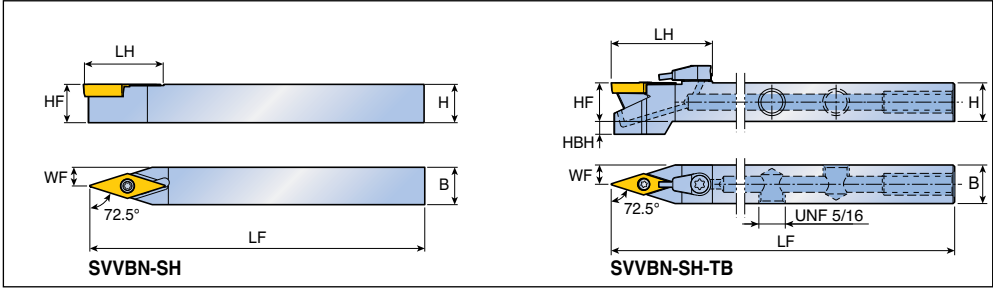


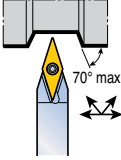

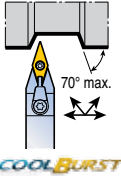
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>117.5</b> 	<b>SVPBR/L 1010 E11</b>	10	10	10	70	18	14.5	VB... 1103...  A313, A314, A349
	<b>1212 F11</b>	12	12	12	80	18	16.5	
	<b>1616 F11</b>	16	16	16	80	18	20.5	
	<b>2020 K11</b>	20	20	20	125	18	25	
	<b>2525 M11</b>	25	25	25	150	18	32	VB... 1604...
	<b>2020 K16</b>	20	20	20	125	25	25	
	<b>2525 M16</b>	25	25	25	150	25	32	

## Spare parts

Designation	Screw	Shim	Shim screw	Wrench				
<b>...11</b>	SO 25065I	-	-	T 7	-			
<b>...16</b>	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° 	# <b>SVVBN 1010 K11-SH</b>	10	10	-	10	125	22	5	VB... 1103...  A313, A314, A349
	<b>1212 K11-SH</b>	12	12	-	12	125	22	6	
	<b>1616 K11-SH</b>	16	16	-	16	125	22	8	
72.5° 	# <b>SVVBN 1212 K11-SH-TB</b>	12	12	2	12	125	31.5	6	
	<b>1616 K11-SH-TB</b>	16	16	-	16	125	31.5	8	

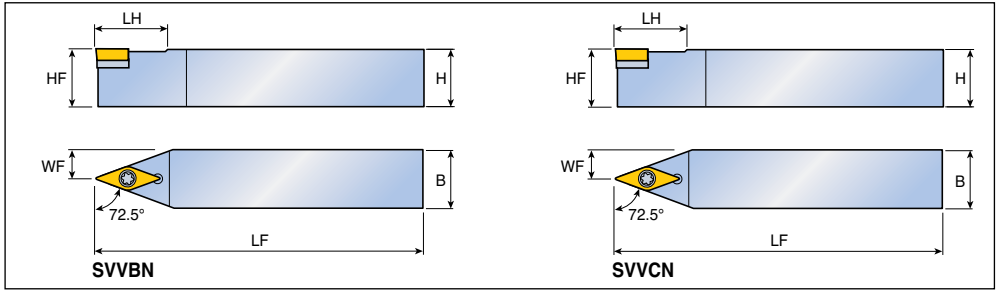
• # Marked: TOP-MINI holders

## Spare parts

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

• Please refer to A160 page for COOL-BURST accessories

## Screw type holders



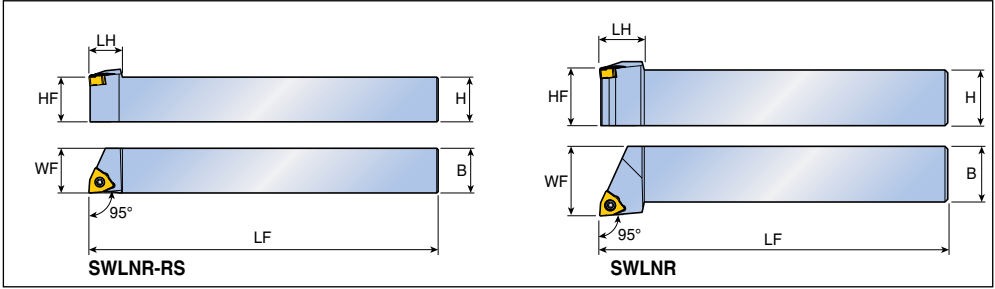
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>72.5°</b> 	<b>SVBNC 2020 K16</b>	20	20	20	125	31.5	10.0	VB... 1604...  A313, A314, A349
	<b>2525 M16</b>	25	25	25	150	31.5	12.5	
	<b>3225 P16</b>	32	32	25	170	31.5	12.5	
<b>72.5°</b> 	<b>SVVCN 2020 K16</b>	20	20	20	125	31.5	10.0	VC...T 1604...
	<b>2525 M16</b>	25	25	25	150	31.5	12.5	
	<b>3225 P16</b>	32	32	25	170	31.5	12.5	
	<b>3232 P16</b>	32	32	32	170	32	16.0	

## Spare parts

Designation	Screw	Shim	Shim screw	Wrench			
<b>...16</b>	SO 35124I	SSV 32	SO 50090S	T 15			



## Screw type holders

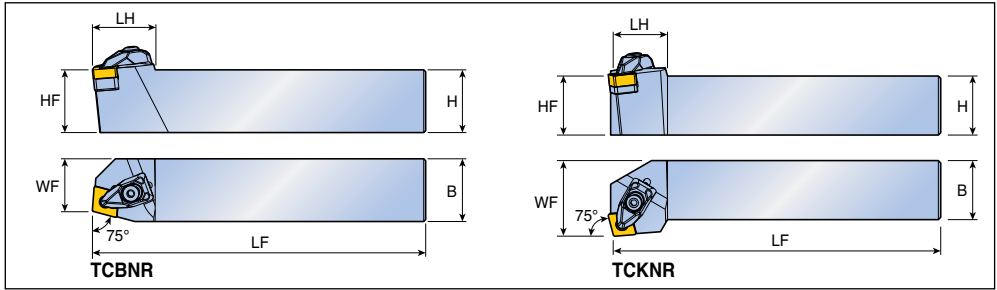


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
95°	<b>SWLNR/L 1212 K0403-RS</b>	12	12	12	125	12	12	WNMX 0403... RHINO TURN A287, A288
	<b>1616 K0403-RS</b>	16	16	16	125	12	16	
95°	<b>SWLNR/L 1616 H0403</b>	16	16	16	100	16	20	
	<b>2020 K0403</b>	20	20	20	125	16	25	

## Spare parts

Designation	Screw	Wrench					
	...0403...	TS 25D060/HG-P	T 7P				

## T-holders

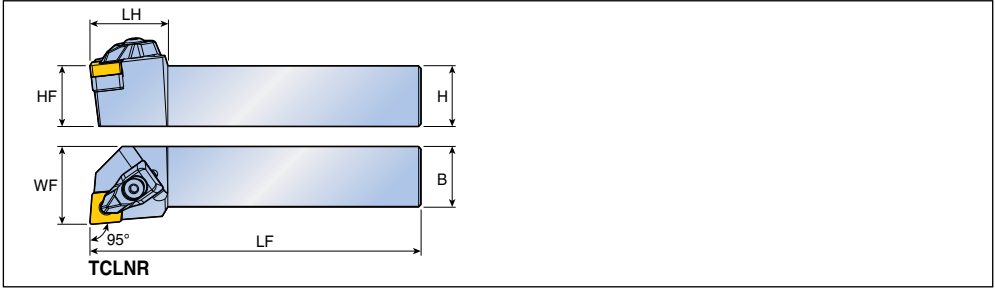


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>75°</b> 	<b>TCBNR/L 2525 M12</b>	25	25	25	150	32	22.5	CN... 1204...
	<b>3232 P19</b>	32	32	32	170	42	27	CN... 1906... A250-A257, A324, A325, A336
<b>75°</b> 	<b>TCKNR/L 2525 M12</b>	25	25	25	150	25	32	CN... 1204...

## Spare parts

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

## T-holders

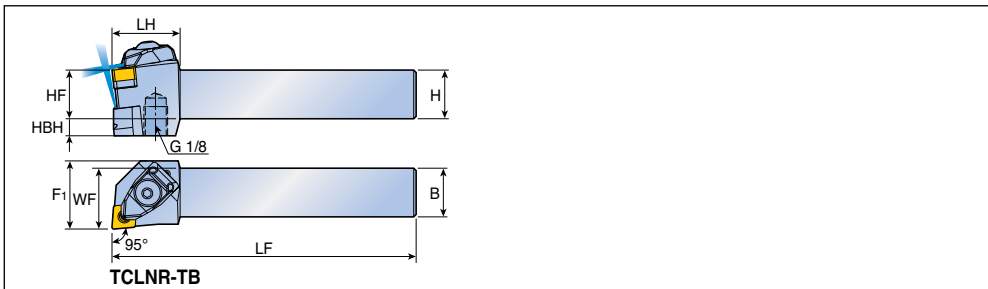


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
	<b>TCLNR/L 2020 H0904</b>	20	20	20	100	25	25	CN... 0904...
	<b>2020 K0904</b>	20	20	20	125	25	25	A250-A257, A324, A325, A336
	<b>2525 M0904</b>	25	25	25	150	25	32	
	<b>TCLNR/L 2020 K12</b>	20	20	20	125	32	25	CN... 1204...
	<b>2525 M12</b>	25	25	25	150	32	32	
	<b>3225 P12</b>	32	32	25	170	32	32	
	<b>3232 P12</b>	32	32	32	170	32	40	
	<b>2525 M16</b>	25	25	25	150	36	32	CN... 1606...
	<b>3232 P16</b>	32	32	32	170	36	40	
	<b>3232 P19</b>	32	32	32	170	42	40	CN... 1906...
	<b>4040 S19</b>	40	40	40	250	42	50	

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw		Wrench	
<b>...0904</b>	DLM 3-NX	DLS 3	DSP 3	LSC 32A	SO 40085I	-	L-W 2.5	T 15
<b>...12</b>	DLM 4	DLS 4	DSP 4	TSC 44	SO 40050I	-	L-W 3	T 15
<b>...16</b>	DLM 5	DLS 5	DSP 5	TSC 54	SO 50090I	-	L-W 4	T 20
<b>...19</b>	DLM 6	DLS 5	DSP 5	LSC 63	-	SO 80180I	L-W 4	-

## T-holders with high pressure coolant



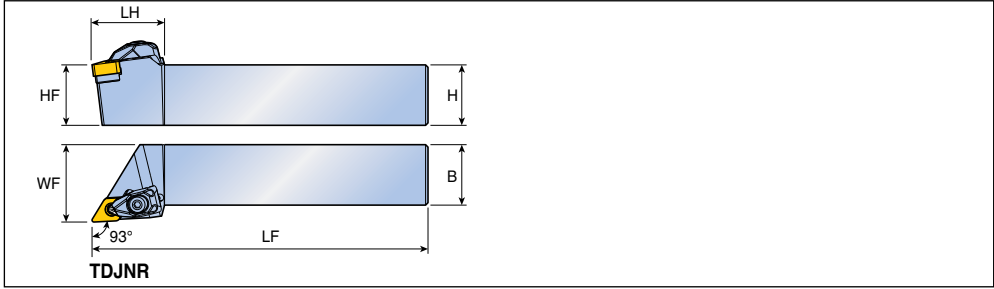
Approach angle	Designation	Dimension (mm)									Insert
		H	HF	B	LF	LH	WF	HBH	F1		
<b>95°</b>	<b>TCLNR/L 2020 K0904-TB</b>	20	20	20	125	28	25	7	28	CN... 0904... RHINO TURN A250-A257	
	<b>2525 M0904-TB</b>	25	25	25	150	28	32	7	32		

### Spare parts

Designation	Clamp	Clamp screw	Spring	Upper O-ring	Lower O-ring	Shim	Shim screw	Wrench	
<b>TCLNR/L-TB</b>	DLM 3-NX-TB	BH M4x0.7x16-TB	DSP 3	O-RING ID4.47x1.78	O-RING ID6.07x1.78	LSC 32A	SO 40085I	L-W 3	T 15

• Please refer to A160 page for COOL-BURST accessories

## T-holders

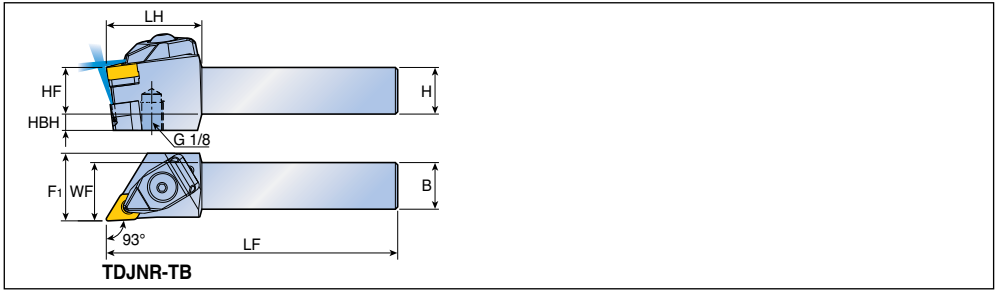


Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
 27° max.	<b>TDJNR/L 2020 K11</b>	20	20	20	125	30	25	DN... 1104...	
	<b>2525 M11</b>	25	25	25	150	30	32		
	<b>TDJNR/L 2020 H1305</b>	20	20	20	100	33	25	DN... 1305... <i>RHINO TURN</i>	
	<b>2020 K1305</b>	20	20	20	125	33	25		
	<b>2525 M1305</b>	25	25	25	150	36	32		
	<b>TDJNR/L 2020 K15</b>	20	20	20	125	39	25	DN... 1506...	
	<b>2525 M15</b>	25	25	25	150	39	32		
	<b>3232 P15</b>	32	32	32	170	39	40		
	<b>2020 K1504</b>	20	20	20	125	39	25	DN... 1504...	
	<b>2525 M1504</b>	25	25	25	150	39	32		

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim		Shim screw	Wrench	
<b>...11</b>	DLM 3	DLS 3	DSP 3	LSD 32	-	SO 40085I	L-W 2.5	T 15
<b>...1305</b>	DLM 3.5-NX	DLS 4	DSP 4	LSD 3.52	-	SO 50090I	L-W 3	T 20
<b>...15</b>	DLM 4	DLS 4	DSP 4	-	TSD 43	SO 40050I	L-W 3	T 15
<b>...1504</b>	DLM 4	DLS 4	DSP 4	-	TSD 44	SO 40050I	L-W 3	T 15

## T-holders with high pressure coolant



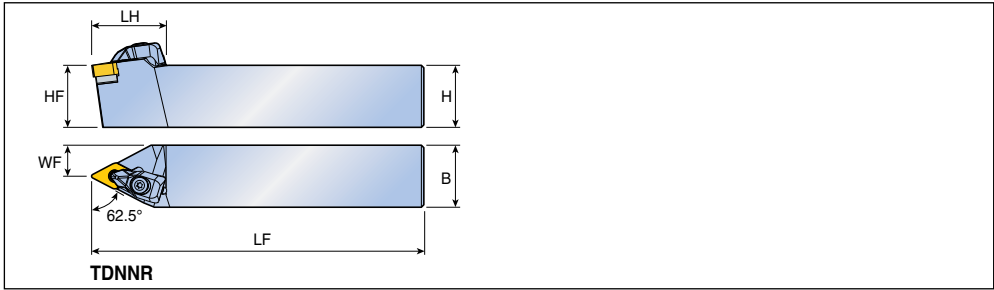
Approach angle	Designation	Dimension (mm)									Insert
		H	HF	B	LF	LH	WF	HBH	F1		
<b>93°</b> 	<b>TDJNR/L 2020 K1305-TB</b>	20	20	20	125	41	25	7	29	DN... 1305...	
	<b>2525 M1305-TB</b>	25	25	25	150	41	32	7	32	 	

## Spare parts

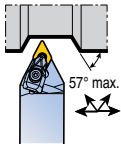
Designation	Clamp	Clamp screw	Spring	Upper O-ring	Lower O-ring	Shim	Shim screw	Wrench	
<b>...2020-TB</b>	DLM 3.5-NX-TB	BH M5x0.8x 21-MO-TB	DSP 4	O-RING ID5.28x 1.78	O-RING ID7.59x 2.62	LSD 3.52	SO 50090I-MO	L-W 3	T 20
<b>...2525-TB</b>	DLM 3.5-NX-TB	BH M5x0.8x 21-MO-TB	DSP 4	O-RING ID5.28x 1.78	O-RING ID7.59x 2.62	LSD 3.52	SO 50090I	L-W 3	T 20

• Please refer to A160 page for COOL-BURST accessories

## T-holders



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
62.5°	TDNNR/L <b>2525 M11</b>	25	25	25	150	30	12.5	DN... 1104...
	TDNNR/L <b>2020 K1305</b>	20	20	20	125	34	10	DN... 1305...
	TDNNR/L <b>2525 M1305</b>	25	25	25	150	34	12.5	RHINO TURN

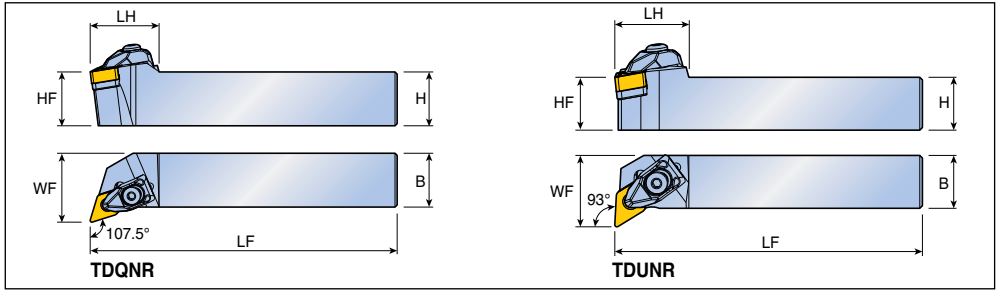


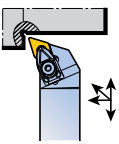

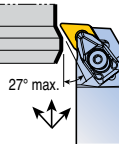
A260-A265

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
...11	DLM 3	DLS 3	DSP 3	LSD 32	SO 400851	L-W 2.5	T 15
...1305	DLM 3.5-NX	DLS 4	DSP 4	LSD 3.52	SO 500901	L-W 3	T 20

## T-holders



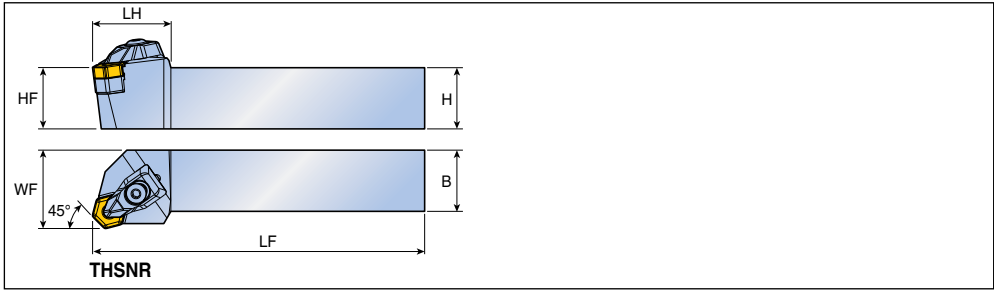
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>107.5°</b> 	<b>TDQNR/L 2020 K1305</b>	20	20	20	125	32	25	DN... 1305...  A260-A265
	<b>2525 M1305</b>	25	25	25	150	32	32	
<b>93°</b> 	<b>TDUNR/L 2020 K1305</b>	20	20	20	125	28	27	
	<b>2525 M1305</b>	25	25	25	150	28	32	

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
...1305	 DLM 3.5-NX	 DLS 4	 DSP 4	 LSD 3.52	 SO 50090I	 L-W 3	 T 20



## T-holders

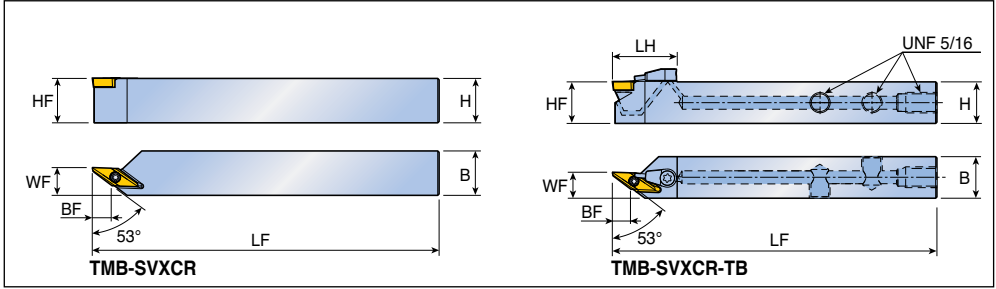


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>45°</b> 	<b>THSNR/L 2525 M05</b>	25	25	25	150	32	32	HN... 0504... HN... 1006... A266
	<b>3232 P05</b>	32	32	32	170	32	40	
	<b>2525 M10</b>	25	25	25	150	42	32	
	<b>3232 P10</b>	32	32	32	170	42	40	

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
<b>...05</b>	DLM 4	DLS 4	DSP 4	TSH 44	SO 40050I	L-W 3	T 15
<b>...10</b>	DLM 6	DLS 5	DSP 5	TSH 64	SO 50090I	L-W 4	T 20

## 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... A291
	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	

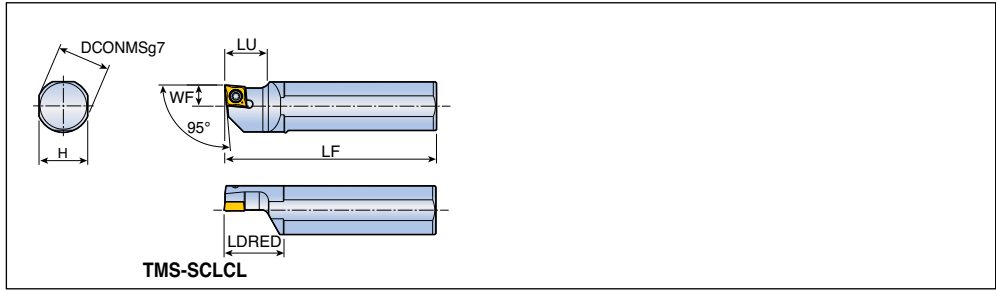
• # Marked: TOP-MINI holders

## 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 A160 page for COOL-BURST accessories

## Sleeve holders



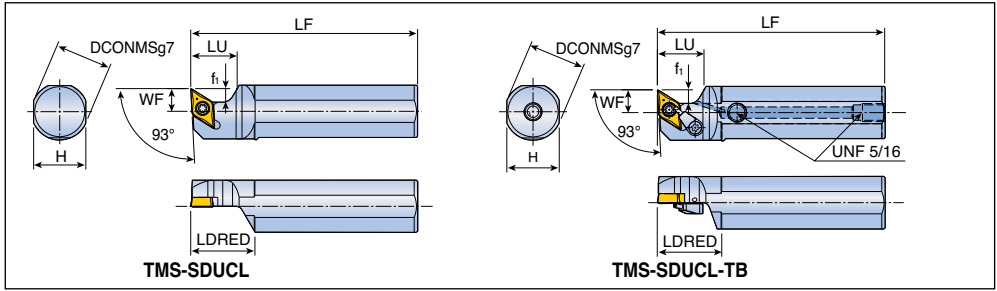
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LU	LDRED	WF	
95°	# TMS-19.05H SCLCL 09	19.05	17	100	20	28	10	CC... 09T3...  A292-A295 A343
	20H SCLCL 09	20	18	100	20	28	10	
	22H SCLCL 09	22	20	100	20	28	10	
	25H SCLCL 09	25	23	100	20	28	10	

# Marked: TOP-MINI holders

## Spare parts

Designation	Screw	Wrench				
	TMS-SCLCL	SO 35080I	T 15			

## Sleeve holders



Approach angle	Designation	Dimension (mm)							Insert
		DCONMS	H	LF	f <sub>1</sub>	LU	LDRED	WF	
 93°	# TMS- 16X SDUCL 11	16	15	85	6	20	28	10	DC... 11T3...  A297-A300, A344
	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	
 93°	# 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	

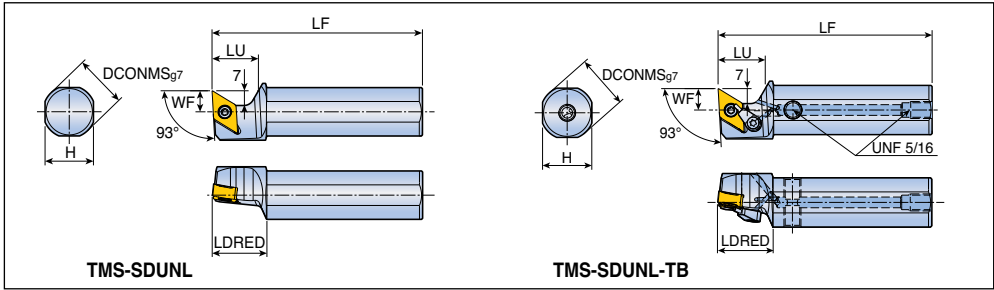
• # Marked: TOP-MINI holders

## 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 A160 page for COOL-BURST accessories

## Sleeve holders



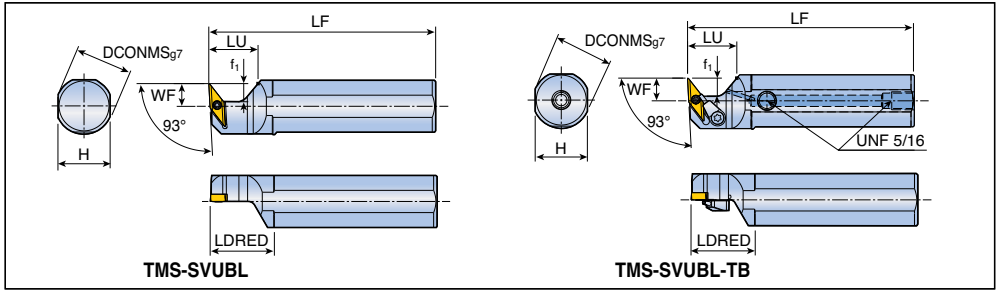
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	WF	LU	LDRED	
 93°	<b>TMS- 16X SDUNL 1305</b>	16	15	85	10	22	26	DN...1305...   A260-A265
	<b>19.05H SDUNL 1305</b>	19.05	17	100	10	22	26	
	<b>20H SDUNL 1305</b>	20	18	100	10	22	26	
	<b>22H SDUNL 1305</b>	22	20	100	10	22	26	
	<b>25H SDUNL 1305</b>	25	23	100	10	22	26	
 93°	<b>TMS- 25H SDUNL 1305-TB</b>	25	23	100	10	22	26	

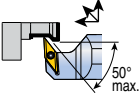

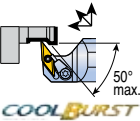
## Spare parts

Designation	Screw	Cooling unit	Plug	Wrench	
<b>TMS-SDUNL</b>	TS 40G110I	-	-	T 15	-
<b>TMS-SDUNL-TB</b>	TS 40G110I	S-CU-TB	PLG 5/16 UNF	T 15	L-W 5/32

• Please refer to A160 page for COOL-BURST accessories






## Sleeve holders



Approach angle	Designation	Dimension (mm)							Insert
		DCONMS	H	LF	f <sub>1</sub>	LU	LDRED	WF	
 93°	# <b>TMS- 19.05H SVUBL 11</b>	19.05	17	100	8	21	25	10	VB... 1103...  A313, A314, A349
	<b>20H SVUBL 11</b>	20	18	100	8	21	25	10	
	<b>22H SVUBL 11</b>	22	20	100	8	21	25	10	
	<b>25H SVUBL 11</b>	25	23	100	8	21	28	10	
 93°	# <b>TMS- 16X SVUBR 11-TB</b>	16	15	85	8	21	25	10	
	<b>19.05H SVUBL 11-TB</b>	19.05	17	100	8	21	25	10	
	<b>20H SVUBL 11-TB</b>	20	18	100	8	21	25	10	
	<b>22H SVUBL 11-TB</b>	22	20	100	8	21	25	10	
	<b>25H SVUBL 11-TB</b>	25	23	100	8	21	28	10	

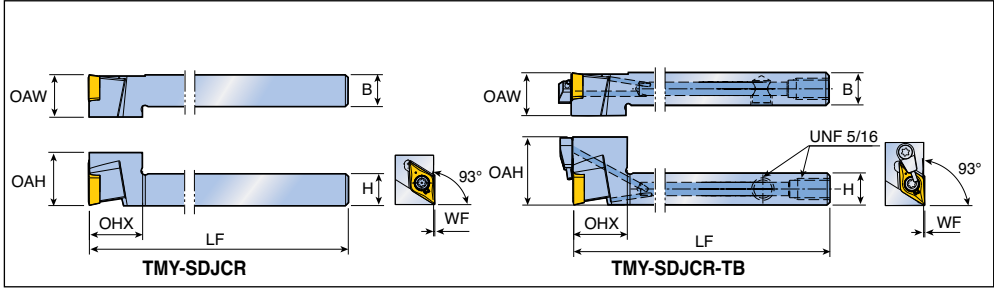
• # Marked: TOP-MINI holders

## Spare parts

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

• Please refer to A160 page for COOL-BURST accessories

## Y-axis holders



Approach angle	Designation	Dimension (mm)							Insert
		H	B	LF	OHX	OAH	OAW	WF	
<b>93°</b>  27° max. 	# TMY- SDJCR 1212 K11	12	12	125	20	20	16	0	DC... 11T3...  A297-A300, A344
	SDJCR 1616 K11	16	16	125	20	20	16	0	
<b>93°</b>  27° max. COOLBURST 	# TMY- SDJCR 1212 K11-TB	12	12	125	20	25.5	16	0	
	SDJCR 1616 K11-TB	16	16	125	20	25.5	16	0	

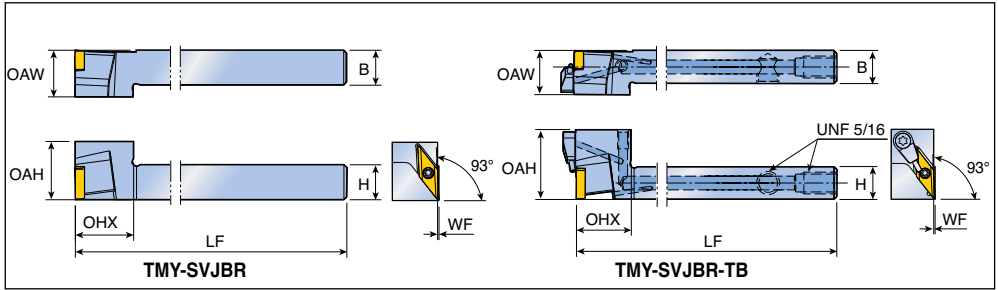
• # Marked: TOP-MINI holders

## 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 A160 page for COOL-BURST accessories

## Y-axis holders



Approach angle	Designation	Dimension (mm)							Insert
		H	B	LF	OHX	OAH	OAW	WF	
<b>93°</b>  	# <b>TMY-SVJBR 1212 K11</b>	12	12	125	20	20	16	0	VB... 1103...  A313, A314, A349
	<b>SVJBR 1616 K11</b>	16	16	125	20	20	16	0	
<b>93°</b>  	# <b>TMY-SVJBR 1212 K11-TB</b>	12	12	125	20	25.5	16	0	VB... 1103...  A313, A314, A349
	<b>SVJBR 1616 K11-TB</b>	16	16	125	20	25.5	16	0	

• # Marked: TOP-MINI holders

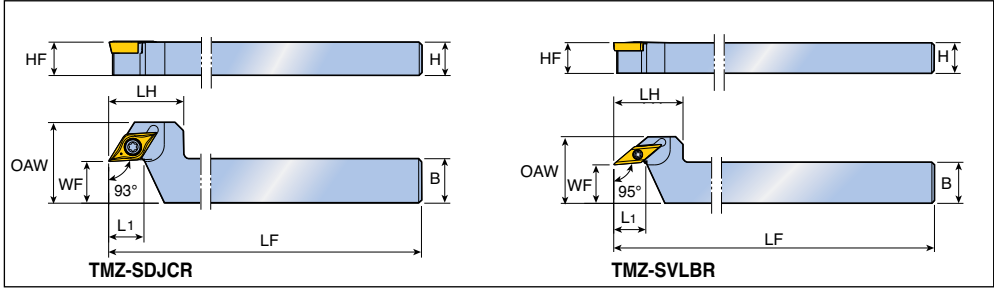
## Spare parts

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

• Please refer to A160 page for COOL-BURST accessories



## Shift holders



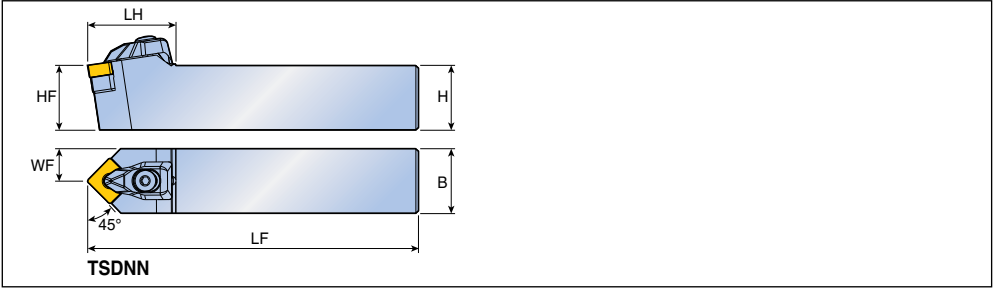
Approach angle	Designation	Dimension (mm)								Insert
		H	HF	B	LF	L1	OAW	LH	WF	
<b>93°</b> 	# TMZ- SDJCR 1216 K11-F15	12	12	16	125	12.5	29	27	15	DC... 11T3...  A297-A300, A344
	SDJCR 1620 K11-F15	16	16	20	125	16.3	29	30	15	
<b>95°</b> 	# TMZ- SVLBR 1216 K11-F15	12	12	16	125	12.3	26	27	15	VB... 1103...  A313, A314, A349
	SVLBR 1620 K11-F15	16	16	20	125	16.2	26	30	15	

• # Marked: TOP-MINI holders

## Spare parts

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

## T-holders

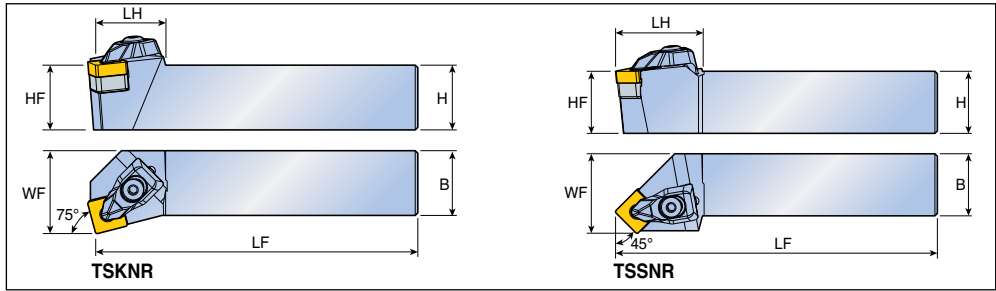


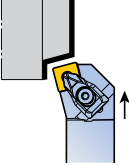

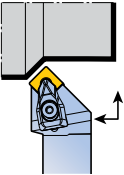

Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
45°	<b>TSDNN 2020 K0904</b>	20	20	20	125	28	10	SN... 0904...
	<b>2525 M0904</b>	25	25	25	150	28	12.5	<b>RHINOTURN</b> A268,
	<b>TSDNN 2525 M12</b>	25	25	25	150	34	12.5	SN... 1204... A270-A274
	<b>3232 P19</b>	32	32	32	170	44	16	SN... 1906... A329, A330, A339

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw		Wrench	
<b>...0904</b>	DLM 3-NX	DLS 3	DSP 3	LSS 32A	SO 40085I	-	L-W 2.5	T 15
<b>...12</b>	DLM 4	DLS 4	DSP 4	TSS 44	SO 40050I	-	L-W 3	T 15
<b>...19</b>	DLM 6	DLS 5	DSP 5	LSS 63	-	SO 80180I	L-W 4	-

## T-holders

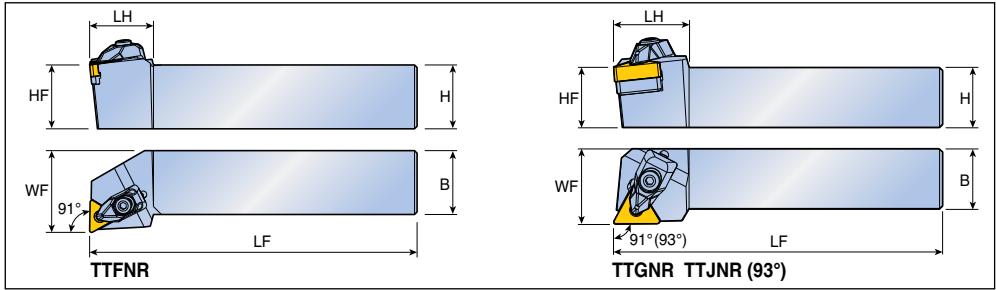


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
75° 	<b>TSKNR/L 2525 M12</b>	25	25	25	150	27	32	SN... 1204...  A268, A270-A274 A329, A330, A339
45° 	<b>TSSNR/L 2020 K0904</b>	20	20	20	125	23	25	SN... 0904...
	<b>2525 M0904</b>	25	25	25	150	23	32	
	<b>TSSNR/L 2525 M12</b>	25	25	25	150	35	32	SN... 1204...

## Spare parts

Designation	Clamp 	Clamp screw 	Spring 	Shim 	Shim screw 	Wrench 	
<b>...0904</b>	DLM 3-NX	DLS 3	DSP 3	LSS 32A	SO 40085I	L-W 2.5	T 15
<b>...12</b>	DLM 4	DLS 4	DSP 4	TSS 44	SO 40050I	L-W 3	T 15

## T-holders

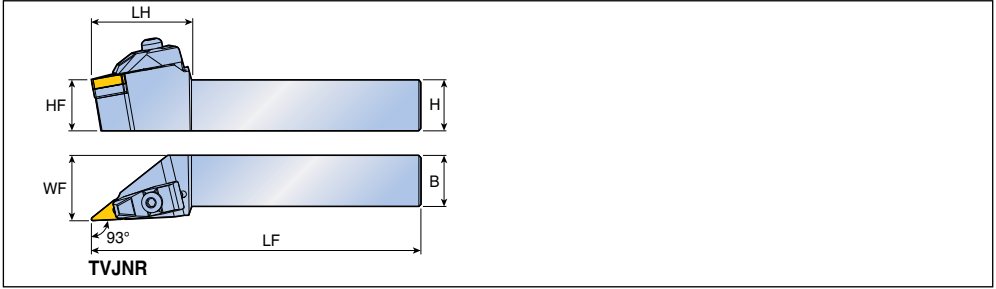


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>91°</b> 	<b>TTFNR/L 2020 K1304</b>	20	20	20	125	25	25	TN... 1304... A275-A280, A332, A340
	<b>2525 M1304</b>	25	25	25	150	25	32	
<b>91°(93°)</b> 	<b>TTGNR/L 2020 H1304</b>	20	20	20	100	25	25	TN... 1304... 
	<b>2020 K1304</b>	20	20	20	125	25	25	
	<b>2525 M1304</b>	25	25	25	150	25	32	
	<b>TTJNR/L 2525 M1304</b>	25	25	25	150	25	32	TN... 1604...
	<b>TTGNR/L 2525 M16</b>	25	25	25	150	25	32	
	<b>TTJNR/L 2020 K16</b>	20	20	20	125	25	25	
	<b>2525 M16</b>	25	25	25	150	25	32	

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
<b>...1304</b>	DLM 2.5-NX	DLS 3	DSP 3	LST 2.52	SO 400851	L-W 2.5	T 15
<b>...16</b>	DLM 3	DLS 3	DSP 3	TST 33	SO 350801	L-W 2.5	T 15

## T-holders

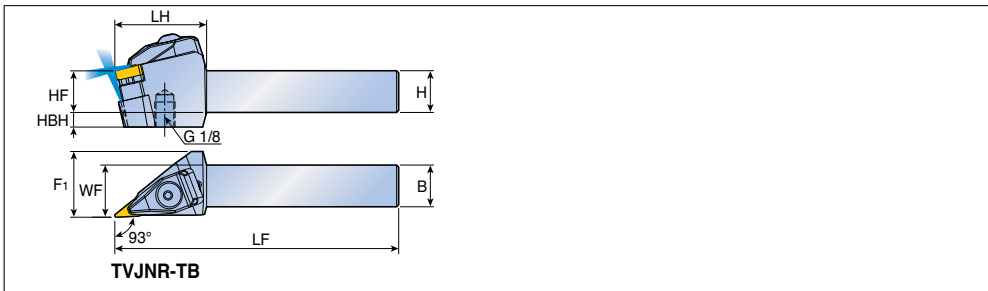


Approach angle	Designation	Dimension (mm)						Insert	
		H	HF	B	LF	LH	WF		
 <b>93°</b>	<b>TVJNR/L 2020 K13</b>	20	20	20	125	49	25	VN... 1304...	
	<b>2525 M13</b>	25	25	25	150	49	32	 A281-A283, A289, A333, A341	
	<b>2020 K16</b>	20	20	20	125	49	25		VN... 1604...
	<b>2525 M16</b>	25	25	25	150	49	32		
	<b>TVJNR/L 2020 K1304</b>	20	20	20	125	42	25	VN...X 1304...	
	<b>2525 M1304</b>	25	25	25	150	42	32	YNMG 1304...	
								<i>RHINO TURN</i>	

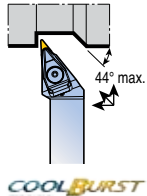
## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw		Wrench	
<b>...13</b>	DLM 3V	DLS 5	DSP 5	MSV 2.522	SC 4-SH	-	L-W 4	T 15
<b>...16</b>	DLM 3V	DLS 5	DSP 5	TSV 33	-	SO 350801	L-W 4	T 15
<b>...1304</b>	DLM 2.5V-NX	DLS 4	DSP 4	MSVI 2.522	-	SO 400851	L-W 3	T 15

## T-Holders with high pressure coolant



Approach angle	Designation	Dimension (mm)								Insert
		H	HF	B	LF	LH	WF	HBH	F1	
<b>93°</b>	<b>TVJNR/L 2020 K1304-TB</b>	20	20	20	125	44	25	7	31.5	VN...X 1304... YNMG 1304... A281, A283, A289
	<b>2525 M1304-TB</b>	25	25	25	150	44	32	7	32.0	

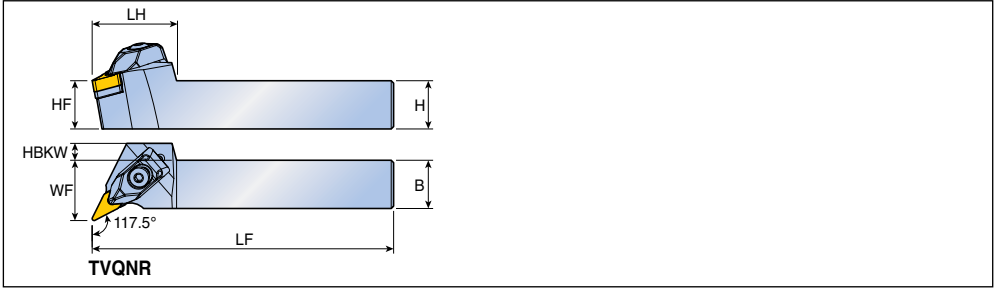


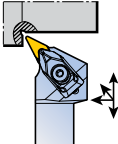

### Spare parts

Designation	Clamp	Clamp screw	Spring	Upper O-ring	Lower O-ring	Shim	Shim screw	Wrench	
<b>TVJNR/L-TB</b>	DLM 2.5V-NX-TB	BH M5X-0.8X21-MO-TB	DSP 4	O-RING ID5.28x 1.78	O-RING ID7.59x 2.62	MSVI 2.522	SO 40085I	L-W 3	T 15















• Please refer to A160 page for COOL-BURST accessories

## T-holders

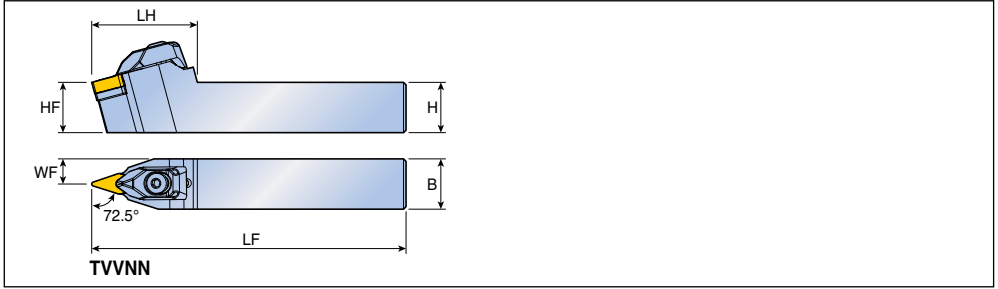


Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBKW	
<b>117.5°</b> 	<b>TVQNR/L 2020 K16</b>	20	20	20	125	42	25	8	VN... 1604... 
	<b>2525 M16</b>	25	25	25	150	42	32	2	A281, A282,
	<b>TVQNR/L 2020 K1304</b>	20	20	20	125	35	25	7	VN...X 1304... A283, A289,
	<b>2525 M1304</b>	25	25	25	150	35	32	-	YNMG 1304... A333, A341
									<b>RHINO TURN</b>

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
<b>...16</b>	 DLM 3V	 DLS 5	 DSP 5	 TSV 33	 SO 350801	 L-W 4	 T 15
<b>...1304</b>	 DLM 2.5V-NX	 DLS 4	 DSP 4	 MSVI 2.522	 SO 400851	 L-W 3	 T 15

## T-holders



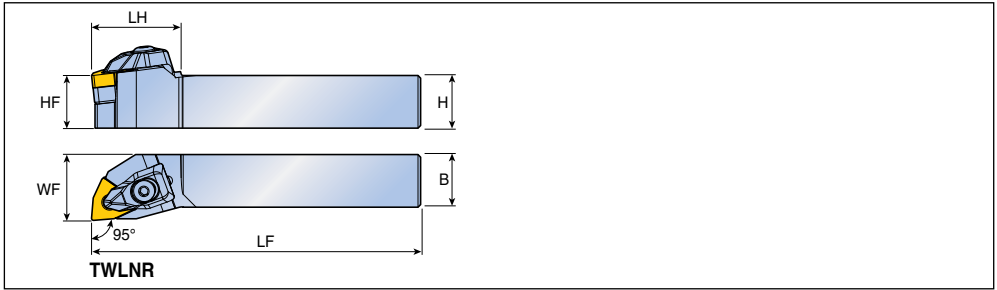
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>72.5°</b>	<b>TVVNN 2020 K1304</b>	20	20	20	125	42	10	VN...X 1304...
	<b>2525 M1304</b>	25	25	25	150	42	12.5	YNMG 1304... <i>RHINO TURN</i>
								A281, A283, A289

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
...1304	DLM 2.5V-NX	DLS 4	DSP 4	MSVI 2.522	SO 40085I	L-W 3	T 15



## T-holders

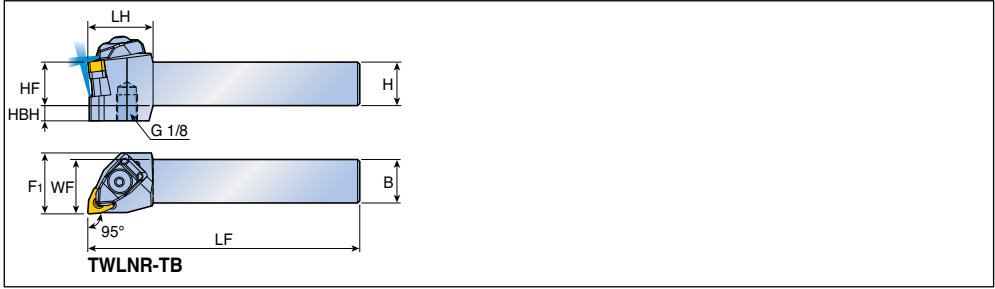


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
 95°	<b>TWLNR/L 2020 K0604</b>	20	20	20	125	26	25	WN...X 0604...
	<b>2525 M0604</b>	25	25	25	150	26	32	A284-A288,
	<b>TWLNR/L 2020 K06</b>	20	20	20	125	26	25	WN...G 0604... A333, A342
	<b>2525 M06</b>	25	25	25	150	26	32	
	<b>2020 K08</b>	20	20	20	125	34.2	25	WN... 0804...
	<b>2525 M08</b>	25	25	25	150	34.2	32	
	<b>3232 P08</b>	32	32	32	170	34.2	40	

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench		
<b>...0604</b>	DLM 3-NX	DLS 3	DSP 3	LSW 32A	SO 40085I	L-W 2.5	T 15	
<b>...06</b>	DLM 3	DLS 3	DSP 3	PSW 32	SO 40090I	L-W 2.5	T 15	
<b>...08</b>	DLM 4	DLS 4	DSP 4	TSW 44	SO 40050I	L-W 3	T 15	

## T-holders with high pressure coolant



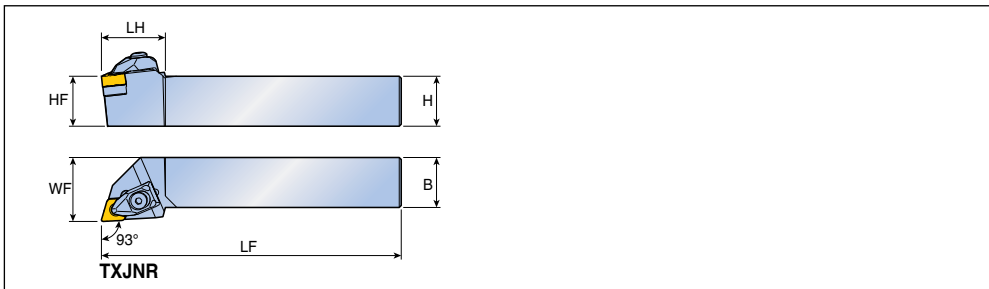
Approach angle	Designation	Dimension (mm)									Insert
		H	HF	B	LF	LH	WF	HBH	F1		
	<b>TWLNR/L 2020 K0604-TB</b>	20	20	20	125	30	25	7	28	WN...X 0604...  A287, A288	
	<b>2525 M0604-TB</b>	25	25	25	150	30	32	7	32		

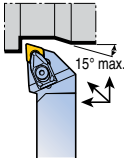
## Spare parts

Designation	Clamp	Clamp screw	Spring	Upper O-ring	Lower O-ring	Shim	Shim screw	Wrench	
<b>TWLNR/L-TB</b>	DLM 3-NX-TB	BH M4x0.7x16-TB	DSP 3	O-RING ID4.47x1.78	O-RING ID6.07x1.78	LSW 32A	SO 40085I	L-W 3	T 15

• Please refer to A160 page for COOL-BURST accessories

## T-holders

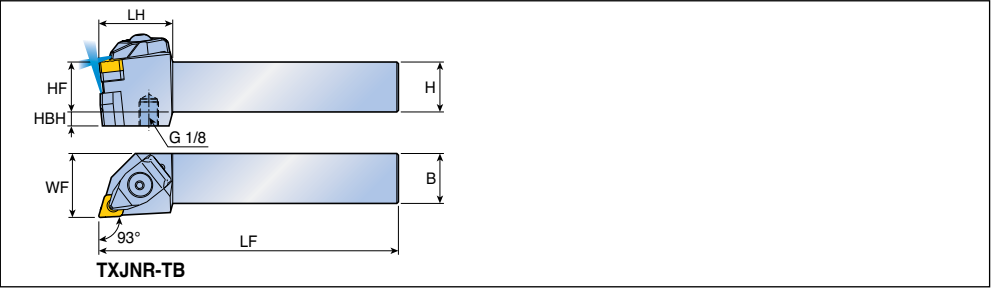


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>93°</b> 	<b>TXJNR/L 2020 K0904</b>	20	20	20	125	25	25	XNMG 0904... <i>RHINOXTURN</i>
	<b>2525 M0904</b>	25	25	25	150	25	32	<i>RHINOXTURN</i> A289
	<b>2020 K1105</b>	20	20	20	125	32	25	XNMG 1105... <i>RHINOXTURN</i>
	<b>2525 M1105</b>	25	25	25	150	32	32	<i>RHINOXTURN</i>

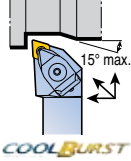
## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
<b>...0904</b>	DLM 2.5-NX	DLS 3	DSP 3	TSX 2.73	SO 400851	L-W 2.5	T 15
<b>...1105</b>	DLM 3.5-NX	DLS 4	DSP 4	TSX 3.53	SO 500901	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°	<b>TXJNR/L 2525 M0904-TB</b>	25	25	25	150	30	32	7	XNMG 0904...
	<b>2525 M1105-TB</b>	25	25	25	150	37	32	7	XNMG 1105...

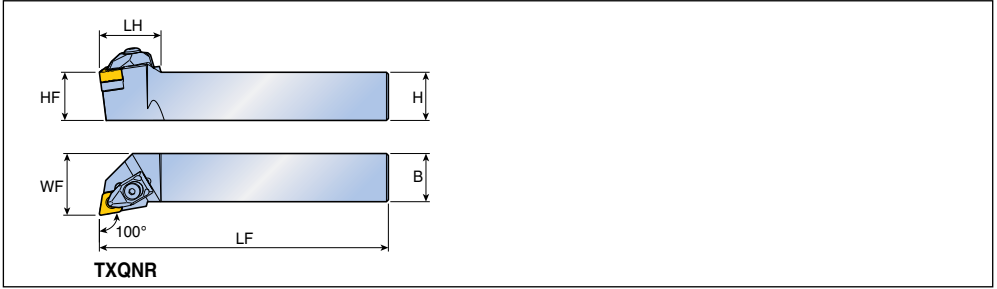


### Spare parts

Designation	Clamp	Clamp screw	Spring	Upper O-ring	Lower O-ring	Shim	Shim screw	Wrench	
	...0904								
...1105									

Please refer to A160 page for COOL-BURST accessories

## T-holders

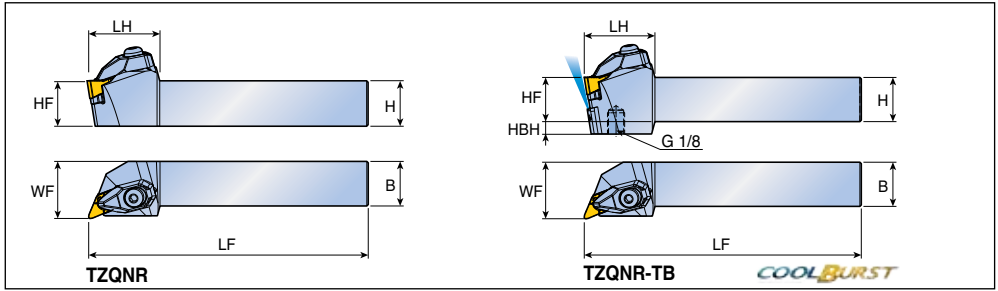


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>100°</b> 	<b>TXQNR/L 2020 K0904</b>	20	20	20	125	25	25	XNMG 0904... <i>RHINOXTURN</i>
	<b>2525 M0904</b>	25	25	25	150	25	32	<i>RHINOXTURN</i> A289
	<b>2020 K1105</b>	20	20	20	125	30	25	XNMG 1105... <i>RHINOXTURN</i>
	<b>2525 M1105</b>	25	25	25	150	32	32	<i>RHINOXTURN</i>

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
<b>...0904</b>	DLM 2.5-NX	DLS 3	DSP 3	TSX 2.73	SO 40085I	L-W 2.5	T 15
<b>...1105</b>	DLM 3.5-NX	DLS 4	DSP 4	TSX 3.53	SO 50090I	L-W 3	T 20

## T-holders for ZNMV Inserts



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

- BWT: Backward turning
- FWT: Forward turning

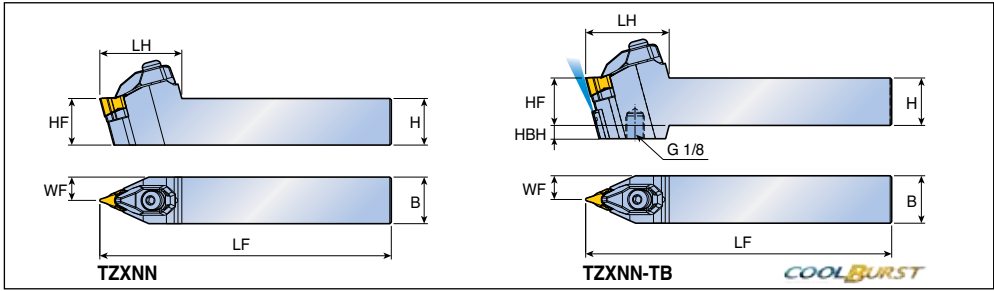
## Spare parts

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

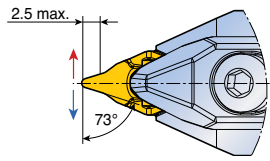
• Please refer to A160 page for COOL-BURST accessories

# TZXNN TZXNN-TB

## T-holders for ZNMV Y-BF Inserts



Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF	HBH	
<b>73°</b> 	<b>TZXNN 2525 M1410</b>	25	25	25	150	44	12.5	-	ZNMV 1410...Y-BF A290
	<b>3232 P1410</b>	32	32	32	170	44	16	-	
	<b>TZXNN 2525 M1410-TB</b>	25	25	25	150	44	12.5	7	
	<b>3232 P1410-TB</b>	32	32	32	170	44	16	-	

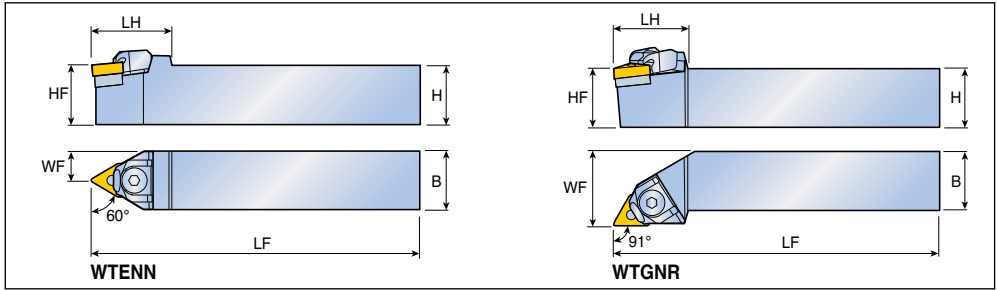


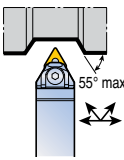
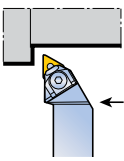
### Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
<b>...1410</b>	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083I/HG	L-W 4	T 10
<b>...1410-TB</b>	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083I/HG	L-W 4	T 10

• Please refer to A160 page for COOL-BURST accessories

## Wedge clamp type holders



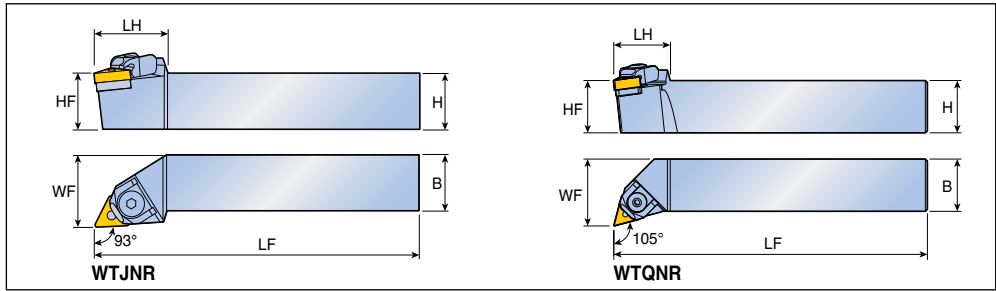
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>60°</b> 	<b>WTENN</b> <b>2020 K1304</b>	20	20	20	125	28	10.0	TN... 1304...
	<b>2525 M1304</b>	25	25	25	150	28	12.5	<b>RHINOTURN</b>
	<b>WTENN</b> <b>2020 K16</b>	20	20	20	125	35	10.0	TN... 1604...
	<b>2525 M16</b>	25	25	25	150	35	12.5	A275-A280, A332, A340
	<b>2525 M22</b>	25	25	25	150	38	12.5	TN... 2204...
	<b>3225 P22</b>	32	32	25	170	38	12.5	
	<b>3232 P22</b>	32	32	32	170	38	16.0	
<b>91°</b> 	<b>WTGNR/L</b> <b>2020 K1304</b>	20	20	20	125	27	25	TN... 1304...
	<b>2525 M1304</b>	25	25	25	150	27	32	<b>RHINOTURN</b>
	<b>WTGNR/L</b> <b>2020 K16</b>	20	20	20	125	32	25	TN... 1604...
	<b>2525 M16</b>	25	25	25	150	32	32	
	<b>2525 M22</b>	25	25	25	150	38	32	TN... 2204...
	<b>3232 P22</b>	32	32	32	170	38	40	

## Spare parts

Designation	Wedge clamp	Screw	Snap ring	Shim	Pin screw	Wrench	
<b>...1304</b>	WC 2.53	WCS 2.5	CSR 2	WST 2.52	WSS 2.52	L-W 2.5	
<b>...16</b>	WC 33	WCS 4	WSR 4	WST 33	WSS 33	L-W 3, L-W 2.5	
<b>...22</b>	WC 43	WCS 4	WSR 4	WST 43	WSS 43	L-W 3	



## Wedge clamp type holders

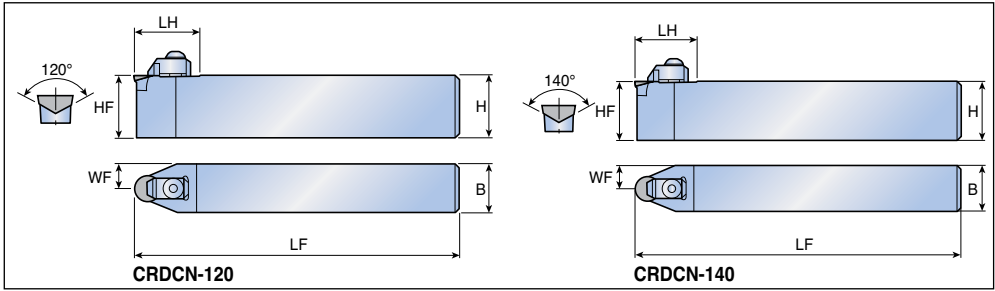


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>93°</b> 	<b>WTJNR/L 2020 K1304</b>	20	20	20	125	27	25	TN... 1304... <i>RHINOTURN</i>
	<b>2525 M1304</b>	25	25	25	150	27	32	TN... 1604... A275-A280, A332, A340
	<b>WTJNR/L 2020 K16</b>	20	20	20	125	32	25	
	<b>2525 M16</b>	25	25	25	150	32	32	
	<b>3225 P16</b>	32	32	25	170	32	32	
	<b>3232 P16</b>	32	32	32	170	38	40	
	<b>2525 M22</b>	25	25	25	150	38	32	
	<b>3232 P22</b>	32	32	32	170	38	40	TN... 2204...
<b>105°</b> 	<b>WTQNR/L 2020 K1304</b>	20	20	20	125	27	25	TN... 1304... <i>RHINOTURN</i>
	<b>2525 M1304</b>	25	25	25	150	27	32	

## Spare parts

Designation	Wedge clamp	Screw	Snap ring	Shim	Pin screw	Wrench	
<b>...1304</b>	WC 2.53	WCS 2.5	CSR 2	WST 2.52	WSS 2.52	L-W 2.5	
<b>...16</b>	WC 33	WCS 4	WSR 4	WST 33	WSS 33	L-W 3, L-W 2.5	
<b>...22</b>	WC 43	WCS 4	WSR 4	WST 43	WSS 43	L-W 3	

## Top clamp type holders for V bottom insert

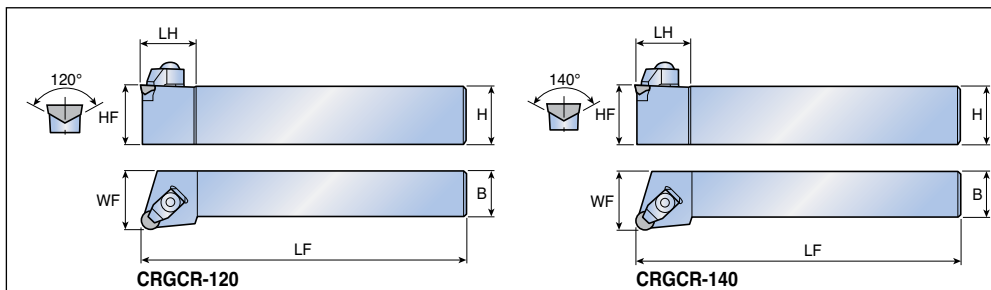


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>45°</b> 	<b>CRDCN 2525 M06-120</b>	25	25	25	150	28	12.5	RCGX 0606...
	<b>3225 P06-120</b>	32	32	25	170	28	12.5	RCGX 0907...
	<b>3225 P09-120</b>	32	32	25	170	30	12.5	RCGX 1207...
	<b>3225 P12-120</b>	32	32	25	170	32	12.5	
<b>45°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

## Spare parts

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

## Top clamp type holders for V bottom insert

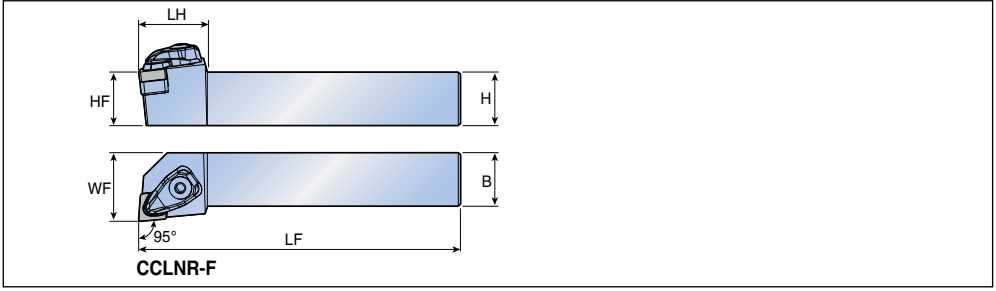


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>90°</b> 	<b>CRGCR/L 2525 M06-120</b>	25	25	25	150	28	32	RCGX 0606...
	<b>3225 P06-120</b>	32	32	25	170	28	32	RCGX 0907...
	<b>3225 P09-120</b>	32	32	25	170	30	32	RCGX 1207...
	<b>3225 P12-120</b>	32	32	25	170	32	32	
<b>90°</b> 	<b>CRGCR/L 3225 P06-140</b>	32	32	25	170	28	32	RCGX 0603...FT
	<b>3225 P09-140</b>	32	32	25	170	30	32	RCGX 0903...FT
	<b>3225 P12-140</b>	32	32	25	170	32	32	RCGX 1204...FT

## Spare parts

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

## Top clamp type holders for Flat type insert



Approach angle	Designation	Dimension (mm)						Insert	
		H	HF	B	LF	LH	WF		
<p>95°</p>	<b>CCLNR/L 2525 M1204-F</b>	25	25	25	150	32	32	CNGN 1204... A324, A325	

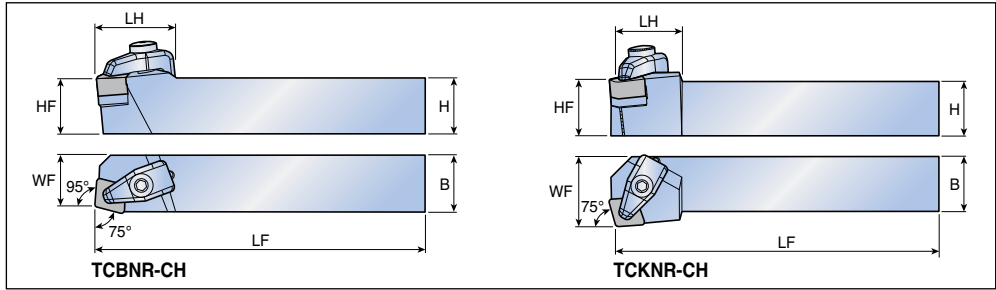
### Spare parts


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

# TCBNR/L-CH TCKNR/L-CH







T-holders for CH dimple insert

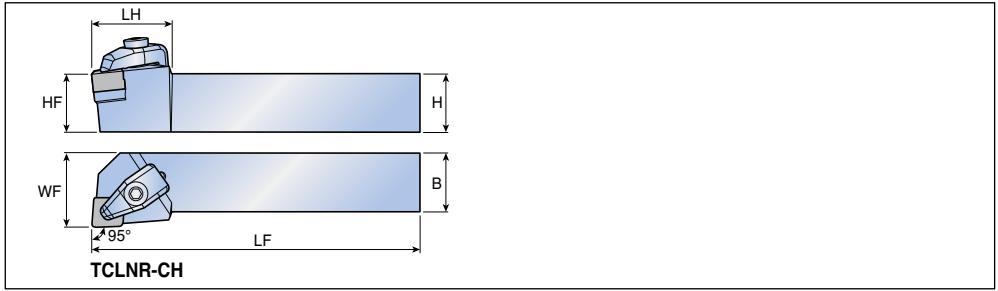


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
75°	<b>TCBNR/L 2525 M12-CH</b>	25	25	25	150	34.7	23	CNGX 1207...CH  A325
	<b>3225 P12-CH</b>	32	32	25	170	34	24	
75°	<b>TCKNR/L 2525 M12-CH</b>	25	25	25	150	28	32	

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
							
...12	CCL-4	CSC 4	DSP 5	TSC 43	SO 400501	L-W 4	T 15

## T-holders for CH dimple insert



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>95°</b>	<b>TCLNR/L 2525 M12-CH</b>	25	25	25	150	33	32	CNGX 1207...CH A325
	<b>3225 P12-CH</b>	32	32	25	170	33	32	

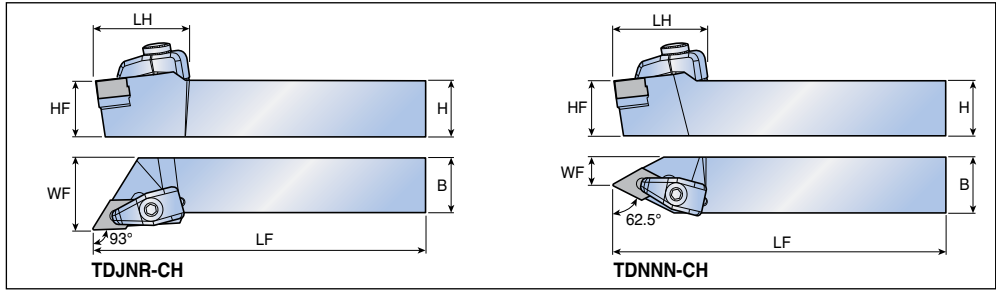
## Spare parts



Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
	...	CCL-4	CSC 4	DSP 5	TSC 43	SO 400501	L-W 4

# TDJNR/L-CH TDNNN-CH







## T-holders for CH dimple insert

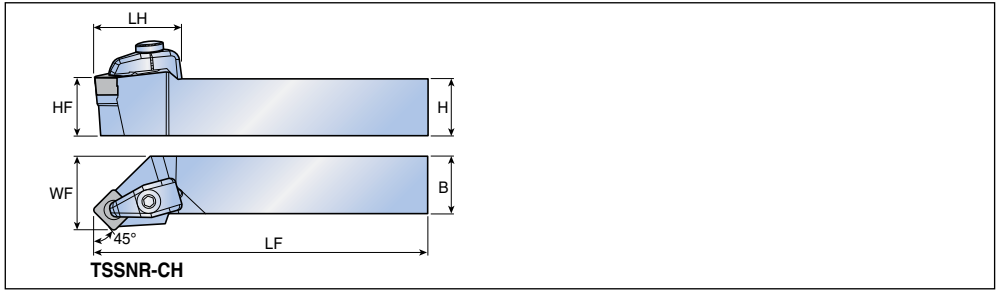


Approach angle	Designation	Dimension (mm)							Insert
		H	HF	B	LF	LH	WF		
<b>93°</b>	<b>TDJNR/L 2525 M15-CH</b>	25	25	25	150	38	32	DNGX 1507...CH 	
	<b>3225 P15-CH</b>	32	32	25	170	38	32		
<b>62.5°</b>	<b>TDNNN 2525 M15-CH</b>	25	25	25	150	40	12.5	A326 	

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
							
<b>...15</b>	CCL-4	CSC 4	DSP 5	TSD 43	SO 400501	L-W 4	T 15

## T-holders for CH dimple insert



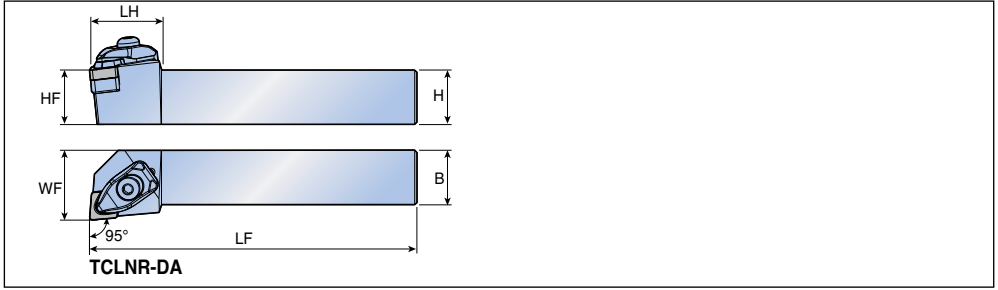
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>45°</b>	<b>TSSNR/L 2525 M12-CH</b>	25	25	25	150	35	32	SNGX 1207...CH SNGX 1507...CH
	<b>3232 P12-CH</b>	32	32	32	170	35	40	
	<b>3225 P15-CH</b>	32	32	25	170	35	32	


## Spare parts

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



T-holders for DA dimple insert



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
95°	<b>TCLNR/L 2525 M1204-DA</b>	25	25	25	150	33	32	CNGX 1204...DA  A336

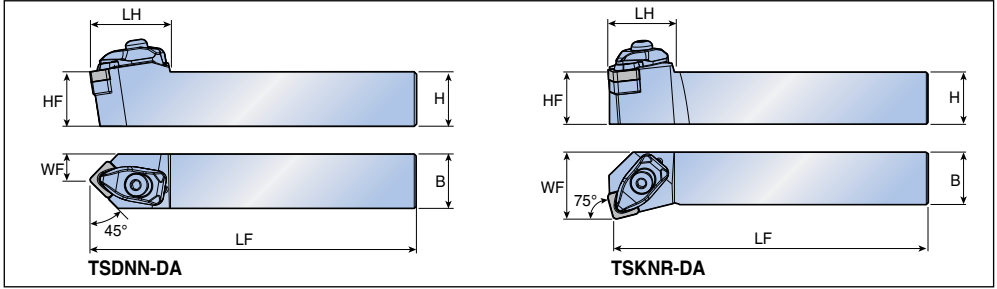
Spare parts

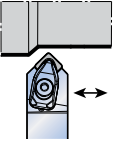

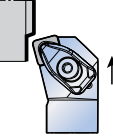
Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
							
<b>TCLNR/L</b>	DCL S-4DA	DLS 5	DSP 5	TSC 44	SO 40050I	L-W 4	T 15

# TSDNN-DA TSKNR-DA



T-holders for DA dimple insert

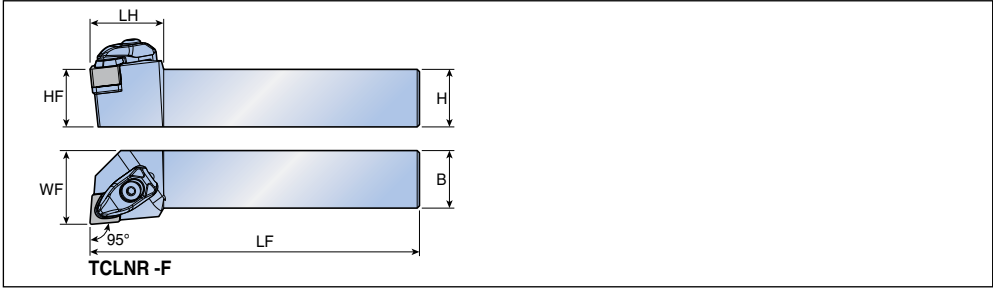


Approach angle	Designation	Dimension (mm)						Insert	
		H	HF	B	LF	LH	WF		
<b>45°</b> 	<b>TSDNN</b> <b>2525 M1204-DA</b>	25	25	25	150	37	12.5	SNGX 1204...DA  A339	
<b>75°</b> 	<b>TSKNR/L</b> <b>2525 M1204-DA</b>	25	25	25	150	29	32		

## Spare parts

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

## T-holders for Flat type insert

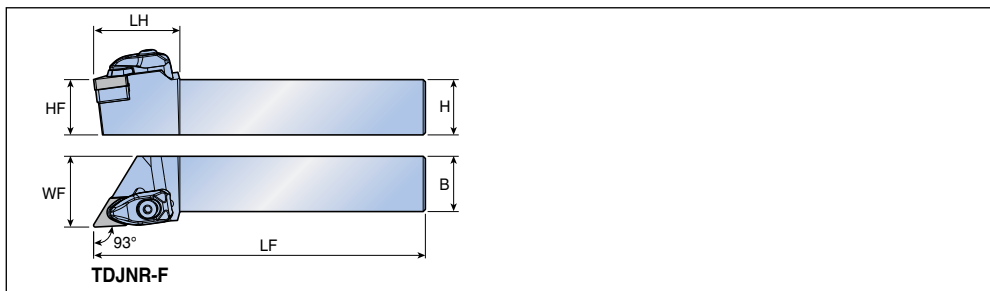


Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>95°</b> 	<b>TCLNR/L 2525 M0903-F</b>	25	25	25	150	25	32	CN...N 0903...
	<b>2020 K1204-F</b>	20	20	20	125	32	25	CN...N 1204...  A324, A325
	<b>2525 M1204-F</b>	25	25	25	150	32	32	
	<b>2020 K1207-F</b>	20	20	20	125	32	25	CN...N 1207...
	<b>2525 M1207-F</b>	25	25	25	150	32	32	
	<b>3232 P1207-F</b>	32	32	32	170	32	40	

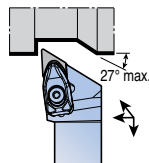
## Spare parts

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

## T-holders for Flat type insert



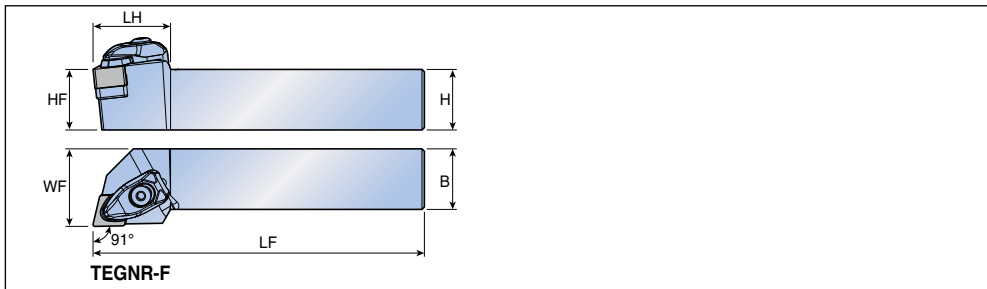
Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>93°</b>	<b>TDJNR/L 2525 M1504-F</b>	25	25	25	150	39	32	DN...N 1504...
	<b>2525 M1507-F</b>	25	25	25	150	39	32	DN...N 1507...
	<b>3232 P1507-F</b>	32	32	32	170	39	40	



## Spare parts

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

## T-holders for Flat type insert



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
<b>91°</b>	<b>TEGnr/L 2525 M1307-F</b>	25	25	25	150	32	32	EN...N 1307... A327

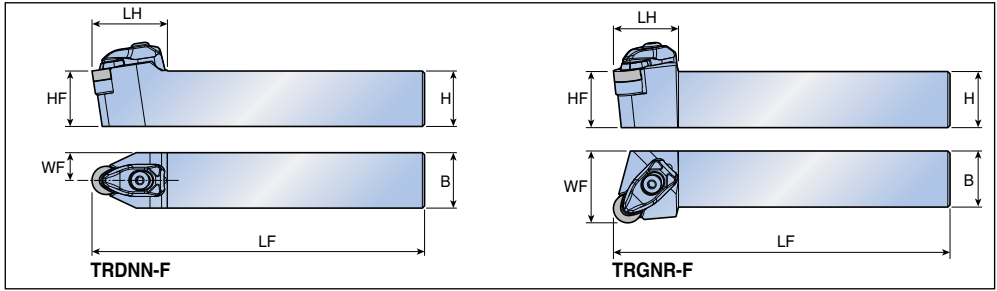
## Spare parts

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

# TRDNN-F TRGNR/L-F



## T-holders for Flat type insert



Approach angle	Designation	Dimension (mm)						Insert	
		H	HF	B	LF	LH	WF		
<b>45°</b> 	<b>TRDNN</b>	<b>2525 M0903-F</b>	25	25	25	150	27	12.5	RN...N 0903... A328, A338
		<b>2020 K1204-F</b>	20	20	20	125	34	10	RN...N 1204...
		<b>2525 M1204-F</b>	25	25	25	150	34	12.5	RN...N 1207...
		<b>2020 K1207-F</b>	20	20	20	125	34	10	
		<b>2525 M1207-F</b>	25	25	25	150	34	12.5	
		<b>3225 P1207-F</b>	32	32	25	170	34	12.5	
		<b>3232 P1207-F</b>	32	32	32	170	34	16	
<b>90°</b> 	<b>TRGNR/L</b>	<b>2525 M0903-F</b>	25	25	25	150	29	32	RN...N 0903...
		<b>2020 K1204-F</b>	20	20	20	125	29	25	RN...N 1204...
		<b>2525 M1204-F</b>	25	25	25	150	29	32	RN...N 1207...
		<b>2020 K1207-F</b>	20	20	20	125	29	25	
		<b>2525 M1207-F</b>	25	25	25	150	29	32	
		<b>3225 P1207-F</b>	32	32	25	170	29	32	
		<b>3232 P1207-F</b>	32	32	32	170	29	40	

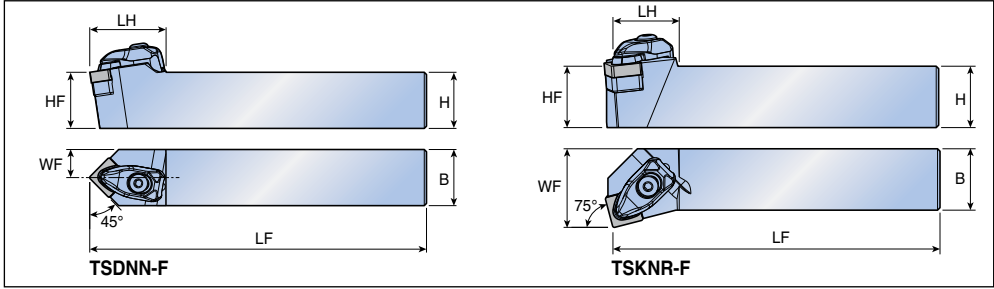
• RN...N 1204/1207 are exchangeable, RN...N 1203 is not exchangeable on same holder

## Spare parts

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

# TSDNN-F TSKNR/L-F

## T-holders for Flat type insert



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

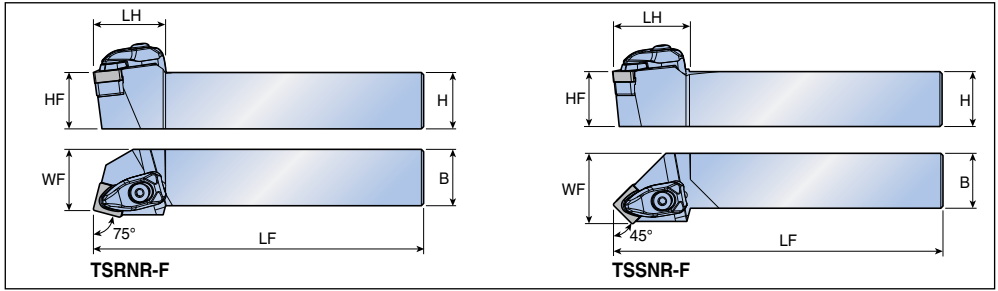
## Spare parts

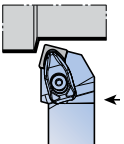

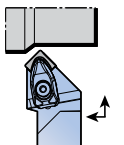
Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
<b>...1204</b>	DCL S-4F	DLS 4	DSP 4	TSS 44	SO 40050I	L-W 3	T 15
<b>...1207</b>	DCL S-4F	DLS 4	DSP 4	TSS 42	SO 40050I	L-W 3	T 15

# TSRNR/L-F TSSNR/L-F



## T-holders for Flat type insert



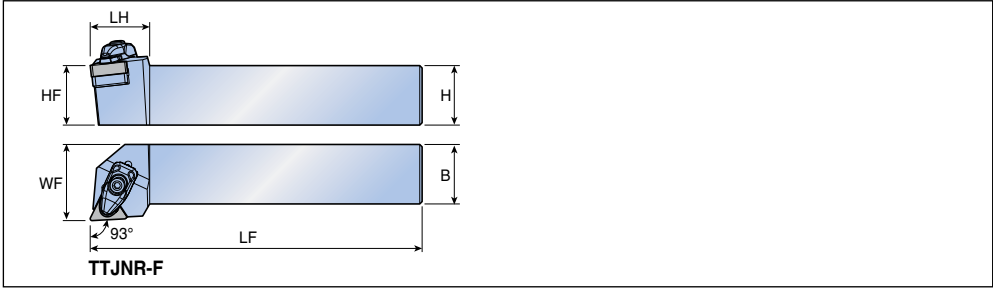
Approach angle	Designation	Dimension (mm)						Insert	
		H	HF	B	LF	LH	WF		
<b>75°</b> 	<b>TSRNR/L 2525 M1204-F</b>	25	25	25	150	32	27	SN...N 1204... SN...N 1207...  A339	
	<b>3232 P1204-F</b>	32	32	32	170	32	35		
	<b>2525 M1207-F</b>	25	25	25	150	32	27		
	<b>3225 P1207-F</b>	32	32	25	170	32	27		
	<b>3232 P1207-F</b>	32	32	32	170	32	35		
<b>45°</b> 	<b>TSSNR/L 2525 M1204-F</b>	25	25	25	150	35	32	SN...N 1204... SN...N 1207...	
	<b>3232 P1204-F</b>	32	32	32	170	35	40		
	<b>2525 M1207-F</b>	25	25	25	150	35	32		
	<b>3232 P1207-F</b>	32	32	32	170	35	40		

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
...1204	DCL S-4F	DLS 4	DSP 4	TSS 44	SO 400501	L-W 3	T 15
...1207	DCL S-4F	DLS 4	DSP 4	TSS 42	SO 400501	L-W 3	T 15



## T-holders for Flat type insert



Approach angle	Designation	Dimension (mm)						Insert
		H	HF	B	LF	LH	WF	
93°	<b>TTJNR/L 2020 K1604-F</b>	20	20	20	125	25	25	TN...N 1604...
	<b>2525 M1604-F</b>	25	25	25	150	25	32	
	<b>2020 K1607-F</b>	20	20	20	125	25	25	TN...N 1607...
	<b>2525 M1607-F</b>	25	25	25	150	25	32	

• TNGN 1604/1607 Inserts are not exchangeable on same holder

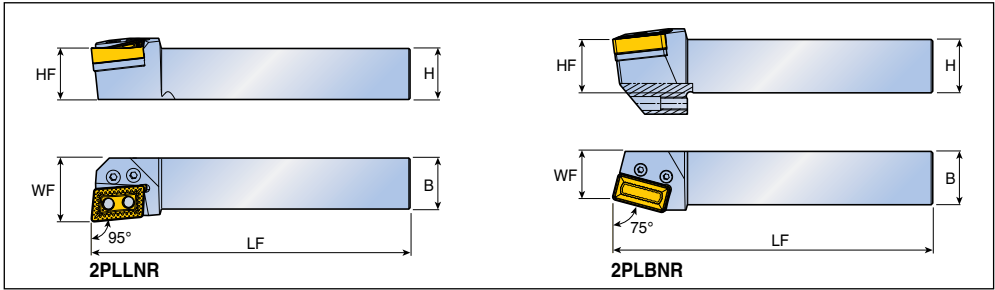
## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
...16	DCL S-3F	DLS 3	DSP 3	TST 33	SO 400501	L-W 3	T 15

# 2PLLNR/L 2PLBNR/L



Lever lock type holders with two pins

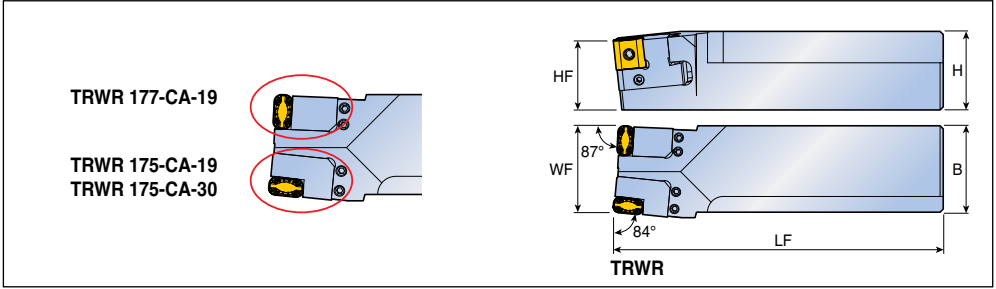


Approach angle	Designation	Dimension (mm)					Insert
		H	HF	B	LF	WF	
95°	<b>2PLLNR/L 4040 S4012</b>	40	40	40	250	50	LNMM 4012...HX  A320
	<b>5050 T4012</b>	50	50	50	300	60	
75°	<b>2PLBNR/L 5050 T5014</b>	50	50	50	300	45	LNMX 5014...  A320

## Spare parts

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

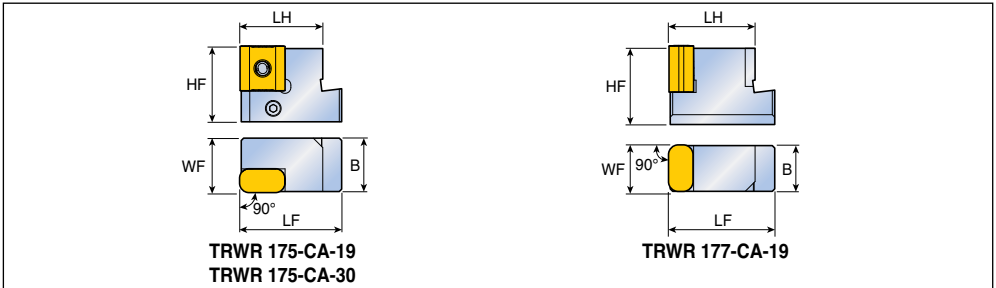
## TOP-RAIL holders



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

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

## TOP-RAIL cartridges

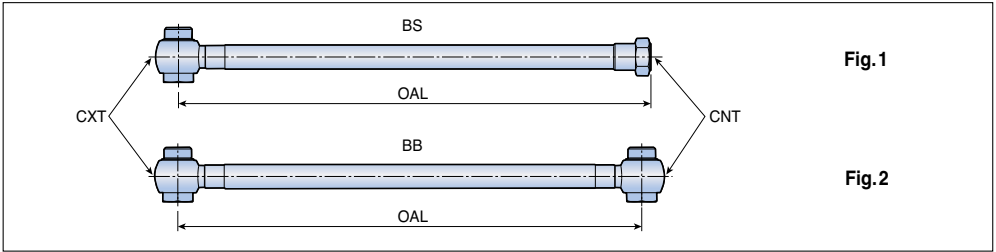


Designation	Dimension (mm)					Insert
	HF	B	LF	LH	WF	
<b>TRWR/L 175-CA-19</b>	32	22.6	43	35	23	LNMX 1919...
<b>175-CA-30</b>	32	22.6	43	35	23	LNMX 3019... <b>A321</b>
<b>177-CA-19</b>	32	18.6	43	35	19	LNMX 1919...

## Spare parts

Designation	Screw	Pin	Lever	Screw	Wrench			
...50-55 TG	SS M6x1x16	PIN D5x13	-	-	L-W 3			
...CA...	-	-	LCL 5	LCS 5	L-W 3			

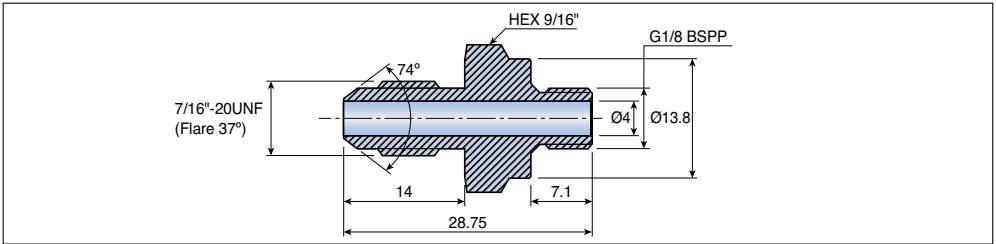
## Hose



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

• Hose is ordered separately

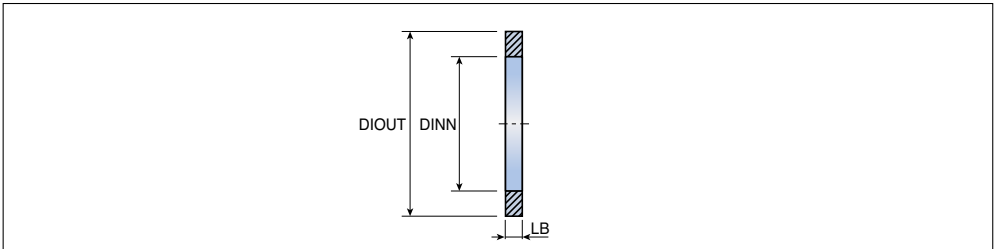
## Adapter



Designation
<b>TB NIPPLE G1/8-7/16 UNF</b>

• Adapter is ordered separately

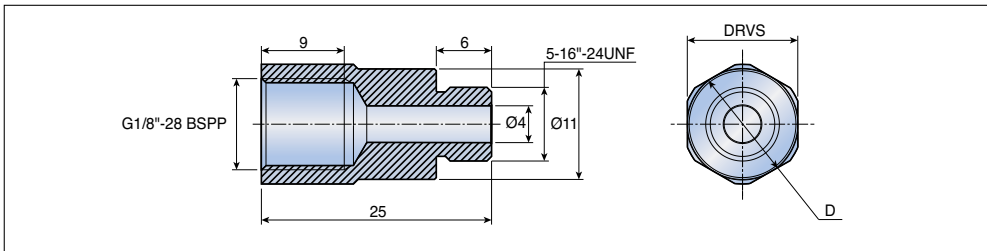
## Seal washer



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

• Seal washer is ordered separately

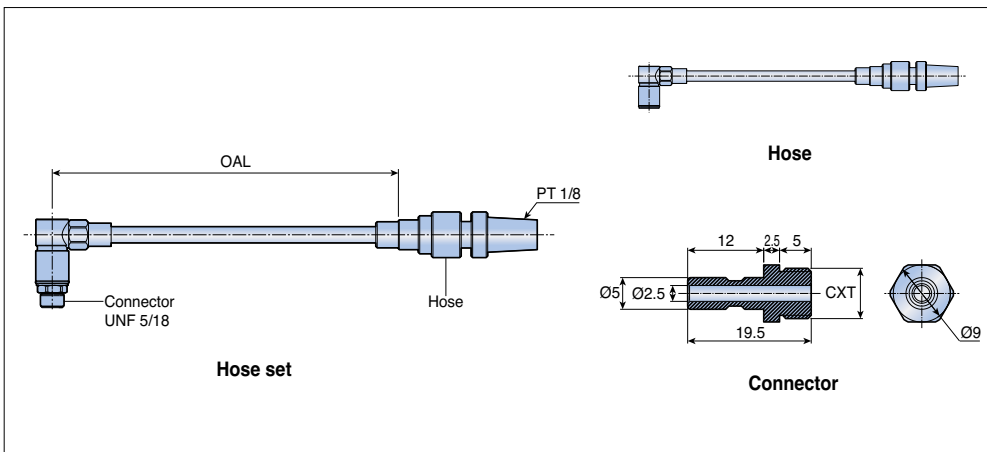
## Connector



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

- Connector is ordered separately

## Coupling system



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

- Hose set, hose and connector are ordered separately

## C4-T C L N R

1
2
3
4
5
6

### 1 Coupling size

	Symbol	DCONMS(mm)
	C4	40
	C5	50
	C6	63

### 2 Clamping system

<b>P</b>	<b>C</b>	<b>S</b>	<b>M</b>	<b>T</b>	<b>W</b>	<b>H</b>
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		o	V		x
			K		o	W		o
B		x	L		o	X	Special angle	
			M		x	C*		x
D		x	N		x	H*		o
E		x	R		o	Q*		o
F		o	S		o			
G		o	T		o			
			U		o			

\* TaeguTec standard

# 27 055 - 09

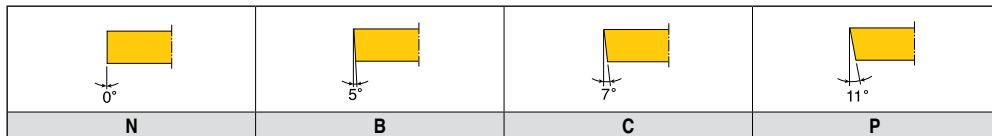
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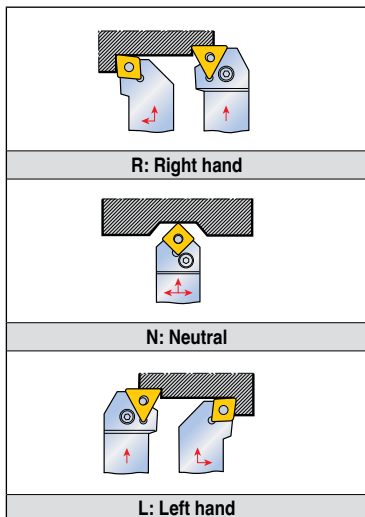
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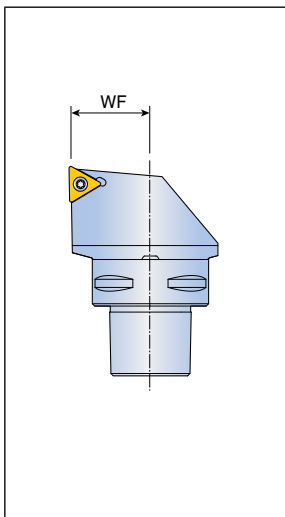
## 5 Insert clearance angle



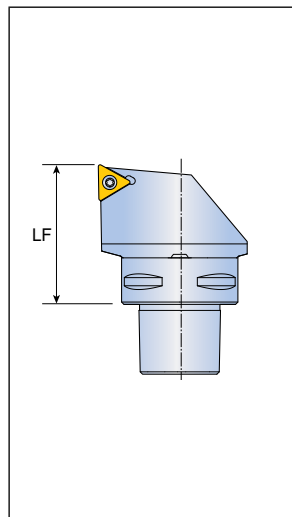
## 6 Hand of tool



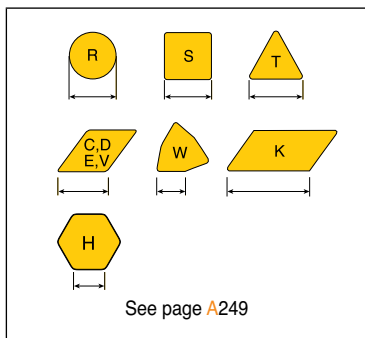
## 7 WF dimension (mm)



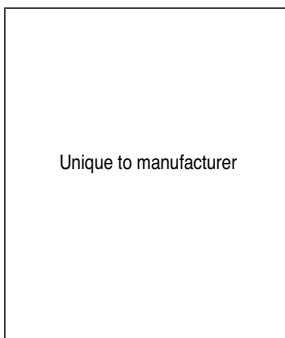
## 8 Tool length (mm)



## 9 Cutting edge length



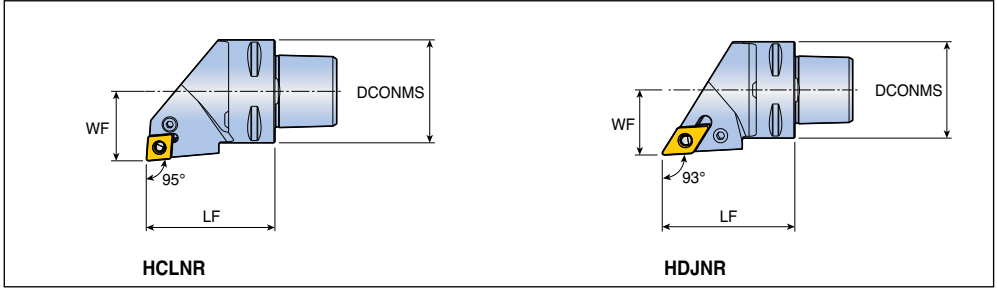
## 10 Manufacturer's type designation



# HCLNR/L HDJNR/L



Hook lever type holders with C-ADAPTER



Approach angle	Designation	Dimension (mm)			Insert
		DCONMS	WF	LF	
95°	<b>C4-HCLNR/L 27050-0904</b>	40	27	50	CN... 0904... A250-A257
93°	<b>C4-HDJNR/L 27055-1305</b>	40	27	55	DN... 1305... A260-A265

## Spare parts

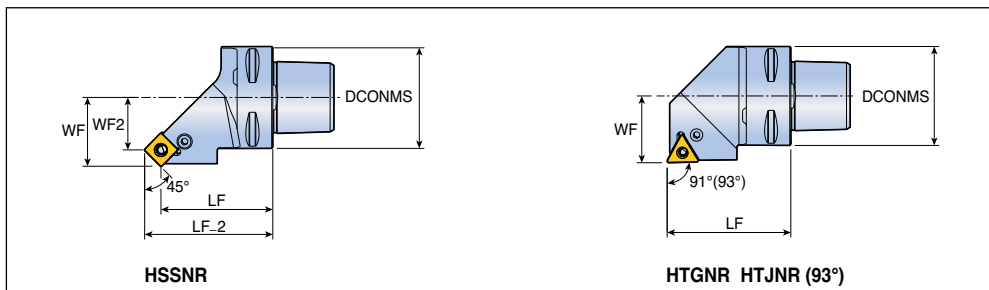
Designation	Lever	Screw	Shim		Shim pin	Shim pin punch	Nozzle	Wrench
<b>C4...HCLNR/L</b>	LCL 09-NX	LCS 3	LSC 32	-	LSP 3A	SPP 3-4	NZ 83	L-W 2.5
<b>C4...HDJNR/L</b>	LCL 11-NX	LCS 4	-	LSD 3.52	LSP 4	SPP 3-4	NZ 83	L-W 3

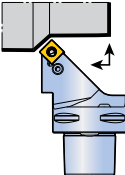
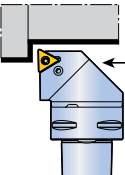


# HSSNR/L HTGNR/L HTJNR/L











Hook lever type holders with C-ADAPTER

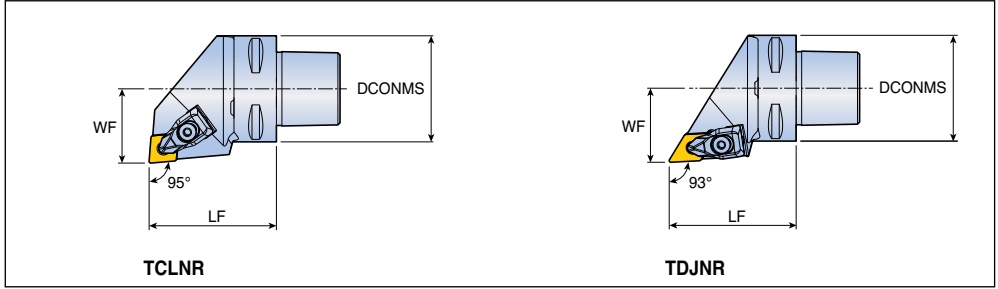


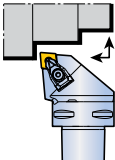

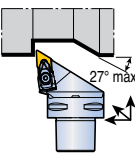

Approach angle	Designation	Dimension (mm)					Insert	
		DCONMS	WF	WF2	LF	LF_2		
 45°	<b>C4-HSSNR/L 27042-0904</b>	40	27	20.6	44	50.3	SN... 0904... RHINO TURN A270-A273	
 91°(93°)	<b>C4-HTGNR/L 27050-1304</b>	40	27	-	50	-	TN... 1304... RHINO TURN A275-A280	
	<b>C4-HTJNR/L 27050-1304</b>	40	27	-	50	-		

## Spare parts










Designation	Lever	Screw	Shim		Shim pin	Shim pin punch	Nozzle	Wrench
								
<b>C4...0904</b>	LCL 09-NX	LCS 3	LSS 32A	-	LSP 3A	SPP 3-4	NZ 83	L-W 2.5
<b>C4...1304</b>	LCL 08-NX	LCS 3-NX	-	LST 2.51.8	LSP 3B	SPP 3-3L	NZ 83	L-W 2.5

## T-holders with C-ADAPTER

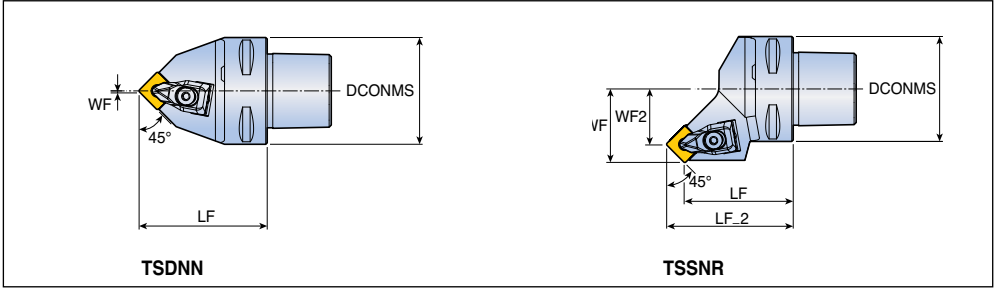


Approach angle	Designation	Dimension (mm)			Insert
		DCONMS	WF	LF	
 95°	<b>C4-TCLNR/L 27050-12</b>	40	27	50	CN...1204...  A250-A257, A324, A325, A336
	<b>C5-TCLNR/L 35060-12</b>	50	35	60	
	<b>C6-TCLNR/L 45065-12</b>	63	45	65	
	<b>C4-TCLNR/L 27055-16</b>	40	27	55	
	<b>C5-TCLNR/L 35060-19</b>	50	35	60	
	<b>C6-TCLNR/L 45065-19</b>	63	45	65	
 93°	<b>C4-TDJNR/L 27055-1504</b>	40	27	55	DN...1504...  DN...1506... A260-A265, A326, A337
	<b>C4-TDJNR/L 27055-1506</b>	40	27	55	
	<b>C5-TDJNR/L 35060-1504</b>	50	35	60	
	<b>C5-TDJNR/L 35060-1506</b>	50	35	60	
	<b>C6-TDJNR/L 45065-1504</b>	63	45	65	
	<b>C6-TDJNR/L 45065-1506</b>	63	45	65	

## Spare parts

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

## T-holders with C-ADAPTER

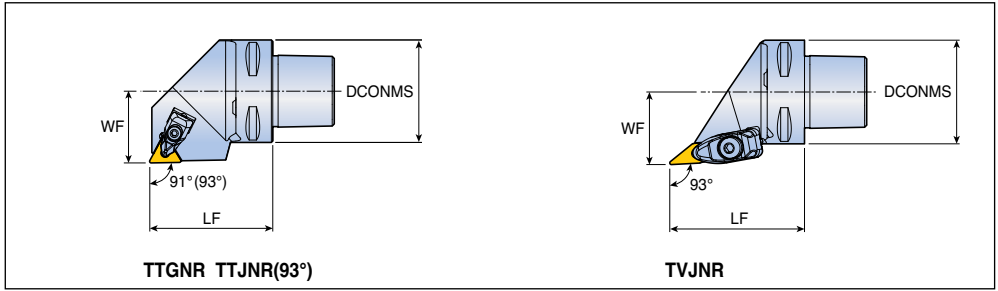


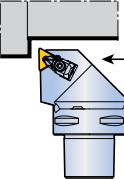

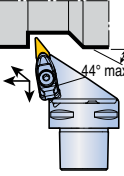

Approach angle	Designation	Dimension (mm)					Insert
		DCONMS	WF	WF2	LF	LF_2	
45°	<b>C4-TSDNN 00050-12</b>	40	0.3	-	50	-	SN...1204...  A268 A270-A274, A329, A330, A339
	<b>C5-TSDNN 00060-12</b>	50	0.3	-	60	-	
	<b>C6-TSDNN 00065-12</b>	63	0.3	-	65	-	
45°	<b>C4-TSSNR/L 27042-12</b>	40	27	18.7	42	50.3	
	<b>C5-TSSNR/L 35052-12</b>	50	35	26.7	52	60.3	
	<b>C6-TSSNR/L 45056-12</b>	63	45	36.7	56	64.3	

## Spare parts










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

## T-holders with C-ADAPTER

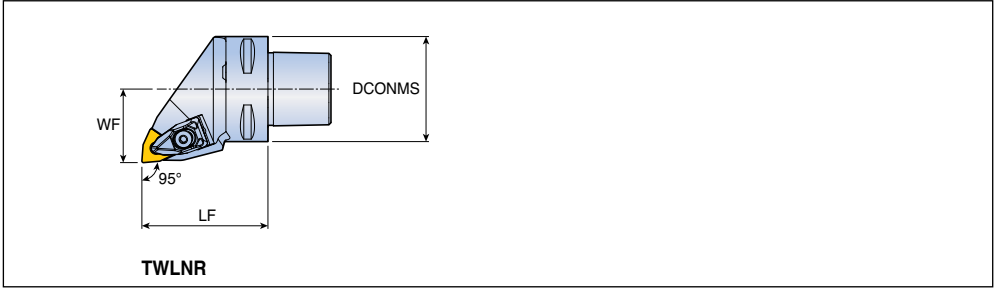


Approach angle	Designation	Dimension (mm)			Insert
		DCONMS	WF	LF	
<b>91°(93°)</b> 	<b>C4-TTGNR/L 27050-16</b>	40	27	50	TN...1604...  A275-A280, A332, A340
	<b>C5-TTGNR/L 35060-16</b>	50	35	60	
	<b>C6-TTGNR/L 45065-16</b>	63	45	65	
	<b>C4-TTJNR/L 27050-16</b>	40	27	50	
	<b>C5-TTJNR/L 35060-16</b>	50	35	60	
	<b>C6-TTJNR/L 45065-16</b>	63	45	65	
<b>93°</b> 	<b>C4-TVJNR/L 27062-16</b>	40	27	62	VN...1604...  A281, A282, A333, A341
	<b>C5-TVJNR/L 35065-16</b>	50	35	65	
	<b>C6-TVJNR/L 45068-16</b>	63	45	68	

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim		Shim screw	Nozzle	Wrench	
<b>C4...TT...16</b>									
<b>...TT...16</b>	DLM 3	DLS 3	DSP 3	TST 33	-	SO 35080I	NZ 83	L-W 2.5	T 15
<b>C4...TV...16</b>	DLM 3V	DLS 5	DSP 5	-	TSV 33	SO 35080I	NZ 83	L-W 4	T 15
<b>...TV...16</b>	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°	<b>C4-TWLNR/L 27050-06</b>	40	27	50	WN...G 0604...
	<b>C4-TWLNR/L 27050-08</b>	40	27	50	WN... 0804...
	<b>C5-TWLNR/L 35060-08</b>	50	35	60	A284-A287, A333, A342
	<b>C6-TWLNR/L 45065-08</b>	63	45	65	

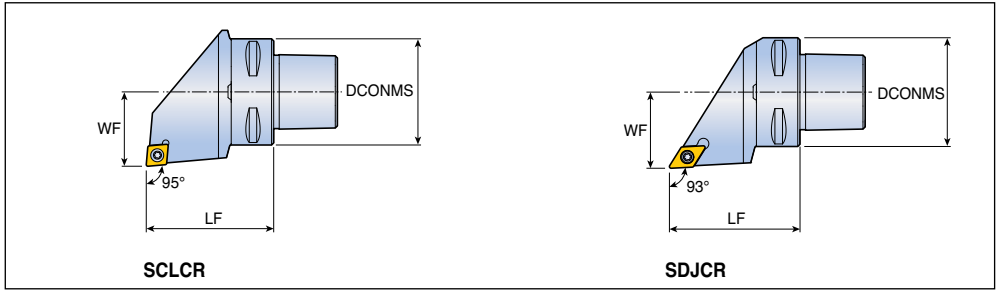
## Spare parts

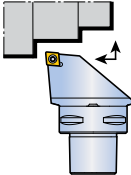

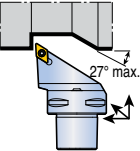

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
...06								
<b>C4...08</b>	DLM 3	DLS 3	DSP 3	PSW 32	SO 40090I	NZ 83	L-W 2.5	T 15
<b>...08</b>	DLM 4	DLS 4	DSP 4	TSW 44	SO 40050I	NZ 83	L-W 3	T 15
	DLM 4	DLS 4	DSP 4	TSW 44	SO 40050I	NZ 104	L-W 3	T 15

# SCLCR/L SDJCR/L



## Screw type holders with C-ADAPTER



Approach angle	Designation	Dimension (mm)			Insert
		DCONMS	WF	LF	
<b>95°</b> 	<b>C4-SCLCR/L 27050-09</b>	40	27	50	CC... 09T3...  A292-A295, A343
	<b>C5-SCLCR/L 35060-09</b>	50	35	60	
	<b>C6-SCLCR/L 45065-09</b>	63	45	65	
	<b>C4-SCLCR/L 27050-12</b>	40	27	50	
	<b>C5-SCLCR/L 35060-12</b>	50	35	60	
	<b>C6-SCLCR/L 45065-12</b>	63	45	65	
<b>93°</b> 	<b>C4-SDJCR/L 27050-11</b>	40	27	50	DC... 11T3...  A297-A300, A344
	<b>C5-SDJCR/L 35060-11</b>	50	35	60	
	<b>C6-SDJCR/L 45065-11</b>	63	45	65	

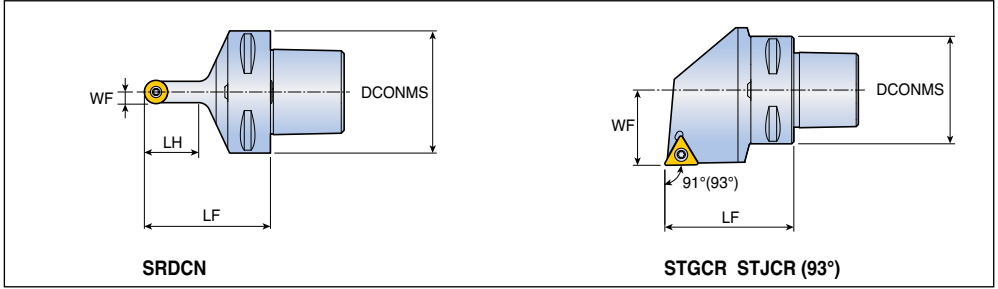
## Spare parts

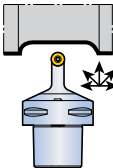

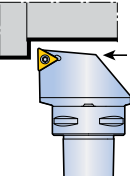

Designation	Screw	Shim		Shim screw	Nozzle	Wrench	
<b>C4...09</b>	SO 35124I	SSC 32	-	SO 50090S	NZ 83	T 15	L-W 3.5
<b>...09</b>	SO 35124I	SSC 32	-	SO 50090S	NZ 104	T 15	L-W 3.5
<b>C4...11</b>	SO 35124I	-	SSD 32	SO 50090S	NZ 83	T 15	L-W 3.5
<b>...11</b>	SO 35124I	-	SSD 32	SO 50090S	NZ 104	T 15	L-W 3.5
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

# SRDCN STGCR/L STJCR/L










Screw type holders with C-ADAPTER



Approach angle	Designation	Dimension (mm)				Insert
		DCONMS	WF	LF	LH	
<b>45°</b> 	<b>C4-SRDCN 00050-10A</b>	40	5	50	25	RC...T 10T300 
	<b>C5-SRDCN 00060-10A</b>	50	5	60	25	
	<b>C6-SRDCN 00065-10A</b>	63	5	65	25	
	<b>C4-SRDCN 00050-12A</b>	40	6	50	28	RC...T 120400
	<b>C5-SRDCN 00060-12A</b>	50	6	60	28	
	<b>C6-SRDCN 00065-12A</b>	63	6	65	28	
<b>91°(93°)</b> 	<b>C4-STGCR/L 27050-16</b>	40	27	50	-	TC... 16T3... 
	<b>C5-STGCR/L 35060-16</b>	50	35	60	-	
	<b>C4-STJCR/L 27050-16</b>	40	27	50	-	
	<b>C5-STJCR/L 35060-16</b>	50	35	60	-	

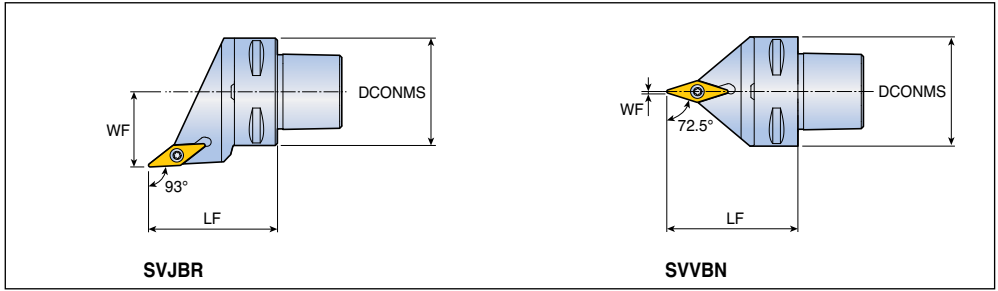
## Spare parts

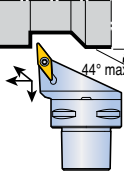

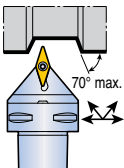
Designation	Screw	Shim		Shim screw	Nozzle	Wrench	
							
<b>C4...10A</b>	TS 40097I	TRC 3-0	-	SR TC-3	NZ 62	T 15	-
<b>...10A</b>	TS 40097I	TRC 3-0	-	SR TC-3	NZ 62	T 15	-
<b>C4...12A</b>	SO 40050I	TRC 4-0	-	SR TC-4S	NZ 62	T 15	-
<b>...12A</b>	SO 40050I	TRC 4-0	-	SR TC-4S	NZ 62	T 15	-
<b>C4...16</b>	SO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

# SVJBR/L SVVBN



Screw type holders with C-ADAPTER

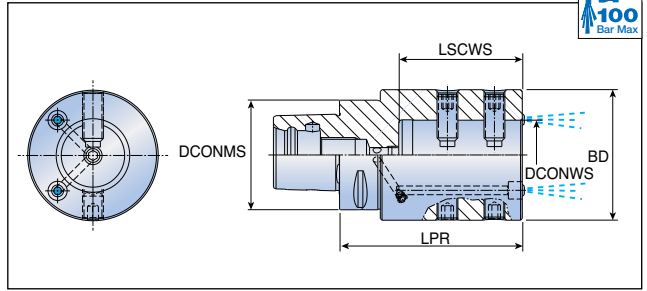


Approach angle	Designation	Dimension (mm)			Insert
		DCONMS	WF	LF	
<b>93°</b> 	<b>C4-SVJBR/L 27050-16</b>	40	27	50	VB...T 1604...  A313, A314, A349
	<b>C5-SVJBR/L 35060-16</b>	50	35	60	
	<b>C6-SVJBR/L 45065-16</b>	63	45	65	
<b>72.5°</b> 	<b>C4-SVVBN 00050-16</b>	40	0.6	50	
	<b>C5-SVVBN 00060-16</b>	50	0.6	60	
	<b>C6-SVVBN 00065-16</b>	63	0.6	65	

## Spare parts

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





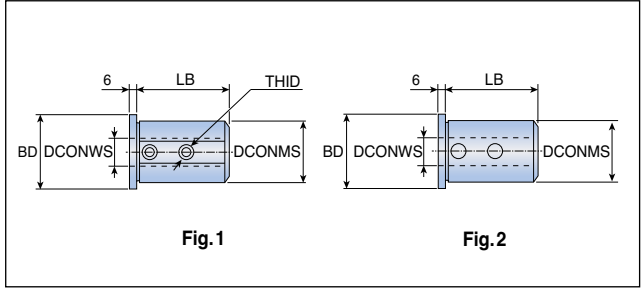
Designation	Dimension (mm)				
	DCONMS	DCONWS	BD	LPR	LSCWS
<b>C4 ABB 25-60</b>	40	25	63	100	60
<b>C5 ABB 25-60</b>	50	25	63	100	60
<b>C6 ABB 25-60</b>	63	25	63	100	60
<b>ABB 40-70</b>	63	40	75	105	71
<b>C8 ABB 25-60</b>	80	25	63	100	60
<b>ABB 40-72</b>	80	40	75	105	71

### Spare parts

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

- \*Marked: Optional, should be ordered separately
- <sup>(1)</sup> Rear stopper screw <sup>(2)</sup> Used on A-type sleeves <sup>(3)</sup> Used on B-type sleeves

## Reduction sleeves for bars, used in holders with exchangeable adaptation



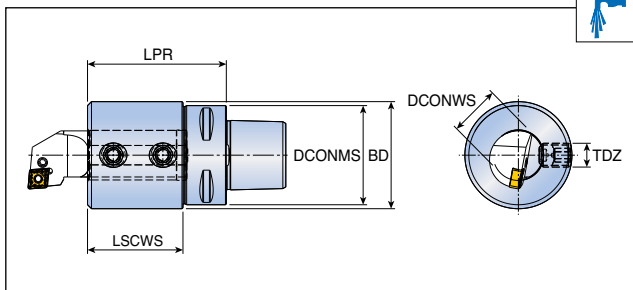
Designation	Dimension (mm)					Fig.
	DCONMS	DCONWS	BD	LB	THID	
<b>SC 25T6A</b>	25	6	31	56	M6	1
<b>25T8A</b>	25	8	31	56	M8	1
<b>25T10A</b>	25	10	31	56	M8	1
<b>25T12A</b>	25	12	31	56	M8	1
<b>25T16B</b>	25	16	31	56	-	2
<b>25T20B</b>	25	20	31	56	-	2
<b>SC 40T6A</b>	40	6	46	60	M6	1
<b>40T8A</b>	40	8	46	60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

## Spare parts

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

\*Marked: Optional, should be ordered separately

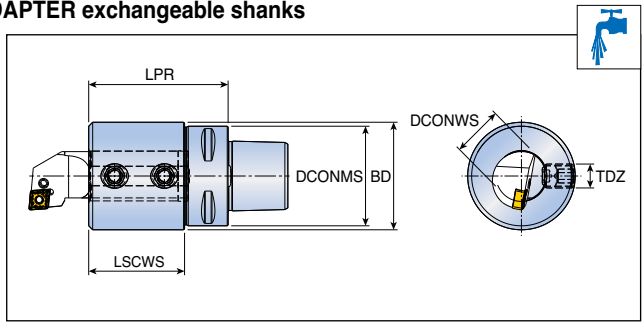
## Holders for boring bars with C-ADAPTER exchangeable shanks



Designation	Dimension (mm)					
	DCONMS	LPR	LSCWS	DCONWS	BD	TDZ
<b>C3 ADI 10</b>	32	50	20	10	36	M6
<b>ADI 12</b>	32	50	21.5	12	36	M8
<b>ADI 16</b>	32	50	29.5	16	36	M8
<b>C4 ADI 10</b>	40	50	20	10	36	M6
<b>ADI 12</b>	40	50	24	12	36	M8
<b>ADI 16</b>	40	50	32	16	36	M8
<b>ADI 20</b>	40	70	49	20	55	M12
<b>ADI 25</b>	40	70	45	25	54	M12
<b>C5 ADI 10</b>	50	60	26	10	36	M6
<b>ADI 12</b>	50	60	26	12	36	M8
<b>ADI 16</b>	50	60	32	16	36	M8
<b>ADI 20</b>	50	75	49	20	55	M12
<b>ADI 25</b>	50	85	60	25	60	M12
<b>ADI 32</b>	50	100	76	32	68	M12
<b>C6 ADI 12</b>	63	65	36	12	36	M8
<b>ADI 16</b>	63	65	36	16	36	M8
<b>ADI 20</b>	63	65	40	20	36	M10
<b>ADI 25</b>	63	76	51	25	54	M12
<b>ADI 32</b>	63	100	76	32	68	M12
<b>ADI 40</b>	63	100	76	40	98	M12
<b>ADI 50</b>	63	115	76	50	98	M12

• Use the tools with "AD" suffix. Regular tools should be shortened.

## Holders for boring bars with C-ADAPTER exchangeable shanks



Designation	Dimension (mm)					
	DCONMS	LPR	LSCWS	DCONWS	BD	TDZ
<b>C8 ADI 12</b>	80	70	36	12	36	M8
<b>ADI 16</b>	80	70	36	16	36	M8
<b>ADI 20</b>	80	70	40	20	36	M10
<b>ADI 25</b>	80	80	51	25	54	M12
<b>ADI 32</b>	80	110	86	32	68	M12
<b>ADI 40</b>	80	115	86	40	98	M12
<b>ADI 50</b>	80	115	86	50	98	M12

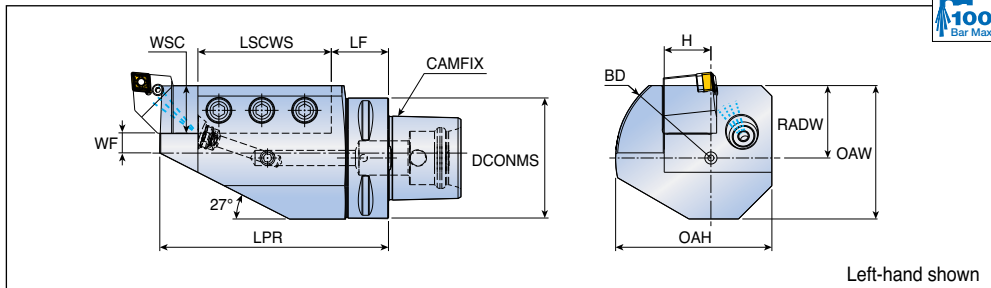
• Use the tools with "AD" suffix. Regular tools should be shortened.

### Spare parts

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

• \*Marked: Optional, should be ordered separately

## Holders with C-ADAPTER exchangeable shanks for external square-shank tools



Designation	Dimension (mm)											
	DCONMS	LPR	LSCWS	LF	WF	H	WSC	OAH	RADW	OAW	BD	
<b>C4 ASHR/L 16-1</b>	40	104	70	34	16	16	16	50	23	43.5	60	
<b>C5 ASHR/L 20-1</b>	50	98	63.5	24.5	10	20	20	78	30	59	90	
<b>C6 ASHR/L 20-1</b>	63	100	63.5	36.5	20	20	20	78	30	59	90	
<b>ASHR/L 25-1</b>	63	120	70	30	13	25	25	82	38	70	100	
<b>C8 ASHR/L 32-1</b>	80	140	95	35	8	32	32	87	40	80	110	

### Spare parts

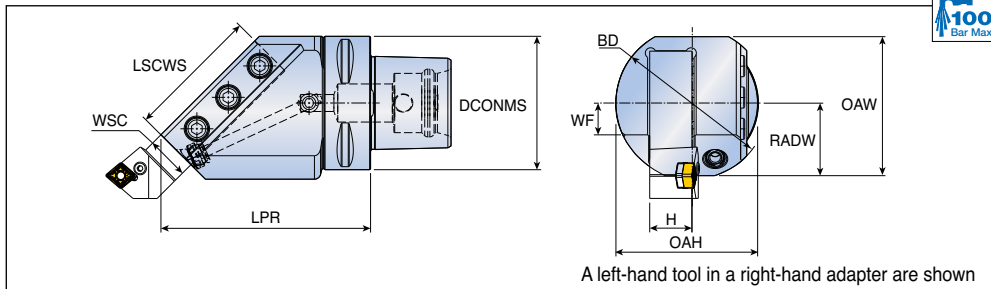
Designation	Screw	Nozzle	Wrench	
<b>...16-1</b>	SR M8x16 DIN915	SATZ-M10x1-M5	HP M10*	L-W 5*
<b>...20-1</b>	SR M10x25 DIN915	SATZ-M10x1-M5	HP M10*	L-W 5*
<b>...25-1/32-1</b>	SR M12x30 DIN915	SATZ-M12x1-M6	HP M12*	L-W 6*

\*Marked: Optional, should be ordered separately

# C...ASHR/L-45



Holders with C-ADAPTER shanks carrying square shank tools for 45° mounting on turn-mill machines



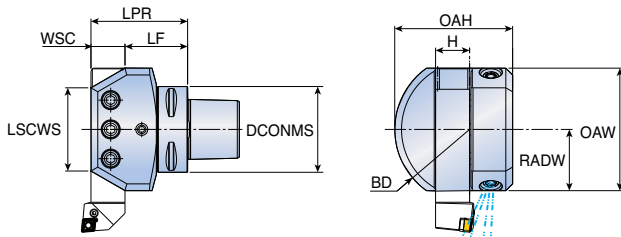
Designation	Dimension (mm)								
	DCONMS	H	WSC	LSCWS	LPR	OAH	RADW	OAW	WF
<b>C5 ASHR/L 20-45</b>	50	20	20	-	127	62	36	67.5	15
<b>C6 ASHR/L 20-45</b>	63	20	20	70	102	62	41.6	67.5	15
<b>ASHR/L 25-45</b>	63	25	25	70	102	83	41.6	79.6	15
<b>C8 ASHR/L 32-45</b>	80	32	32	100	140	110	50	110	17

## Spare parts

Designation	Screw	Nozzle	Wrench	
<b>...20-45</b>	SR M10x25 DIN915	SATZ-M10x1-M5	HP M10*	L-W 5*
<b>...25-45</b>	SR M12x30 DIN915	SATZ-M10x1-M5	HP M10*	L-W 6*
<b>...32-45</b>	SR M12x30 DIN915	SATZ-M12x1-M6	HP M12*	L-W 6*

\*Marked: Optional, should be ordered separately

## Perpendicular holders with C-ADAPTER shanks for external square-shank tools



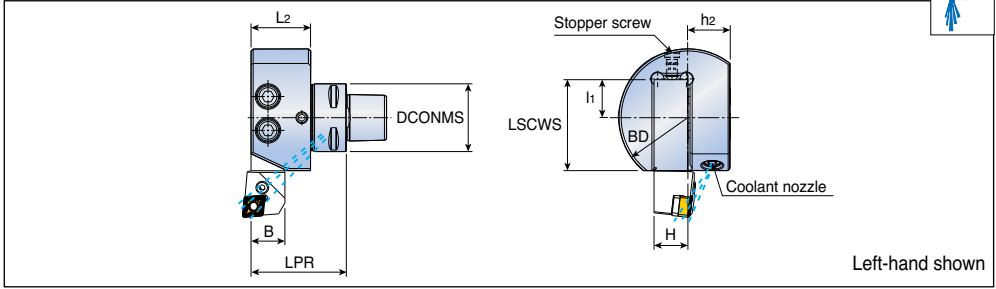
Designation	Dimension (mm)									
	DCONMS	H	WSC	LPR	LSCWS	LF	RADW	OAW	OAH	BD
<b>C5 ASHA 20</b>	50	20	20	58	46	38	38	76	76.5	90
<b>C6 ASHA 20</b>	63	20	20	60	46	40	38	76	76.5	90
<b>ASHA 25</b>	63	25	25	71	61	46	45	90	86.6	110
<b>C8 ASHA 32</b>	80	32	32	85	80	53	55	100	95	142

## Spare parts

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

\*Marked: Optional, should be ordered separately

## Holders with C-ADAPTER exchangeable shanks for external square-shank tools



Designation	Dimension (mm)								
	DCONMS	LPR	L2	B	BD	LSCWS	I1	H	h2
<b>C3 ADE-16R/L</b>	32	45	28.1	16	65	45	20	16	20
<b>C4 ADE-20R/L</b>	40	49.2	29.1	20	87	57	32	20	26
<b>C5 ADE-20R/L</b>	50	55.2	35.1	20	87	57	32	20	26

### Spare parts

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

\*Marked: Optional, should be ordered separately (1)Marked: Stopper screw



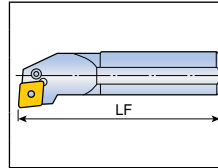
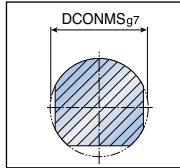
## S 32 S - C T F P R - 16 -

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

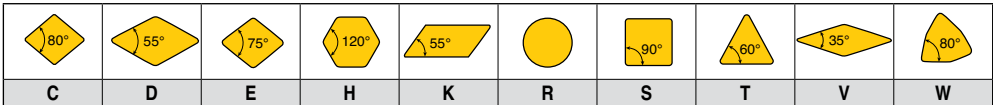


K	125	U	350
M	150	V	400
Q	180	W	450
R	200	Y	500
S	250	X	Special
T	300		

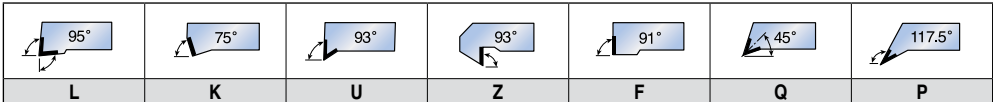
### 4 Clamping system



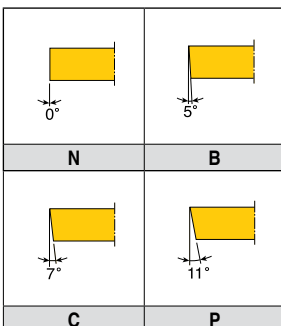
### 5 Insert shape



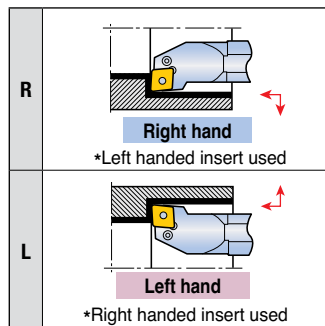
### 6 Approach angle



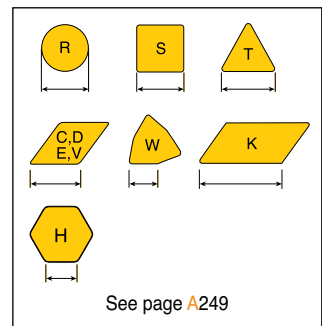
### 7 Insert clearance angle



### 8 Hand of tool



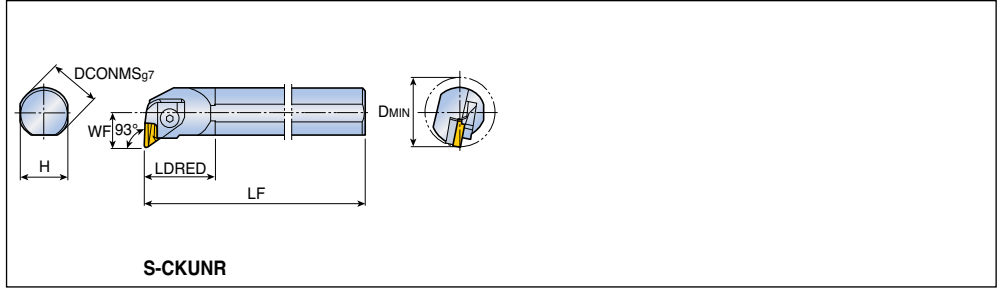
### 9 Cutting edge length



### 10 Manufacturer's type designation

Unique to manufacturer

## Top clamp type boring bars

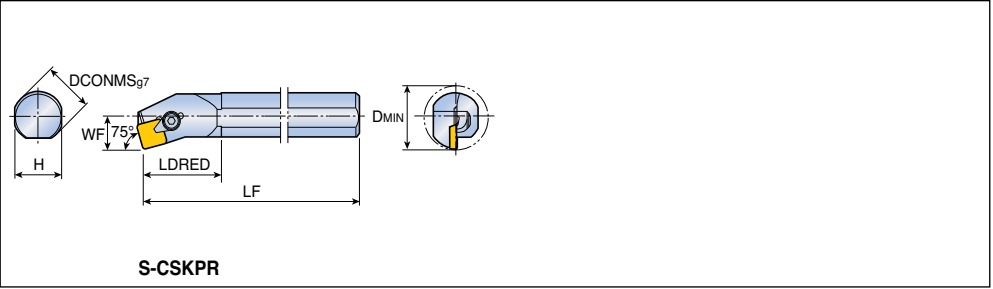


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
<b>93°</b>	<b>S32T CKUNR/L 16</b>	32	30	300	45	22	44	KNUX 1604...R/L  A266
	<b>S40T CKUNR/L 16</b>	40	37	300	55	27	54	
	<b>S40V CKUNR/L 16</b>	40	37	400	55	27	54	
	<b>S50U CKUNR/L 16</b>	50	47	350	60	35	67.2	

## Spare parts

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

## Top clamp type boring bars

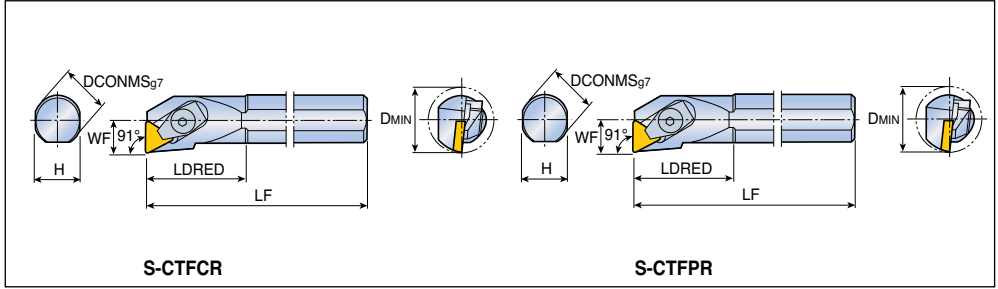


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
<b>75°</b>	<b>S16R CSKPR/L09</b>	16	15	200	30	11	20	SPMR, SP...N 0903... SPMR, SP...N 1203... A305, A335
	<b>S20S CSKPR/L09</b>	20	18	250	32	13	25	
	<b>S20R CSKPR/L12</b>	20	18	200	34	13	25	
	<b>S25T CSKPR/L12</b>	25	23	300	42	17	32	
	<b>S32U CSKPR/L12</b>	32	30	350	45	22	40	

## Spare parts

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

## Top clamp type boring bars

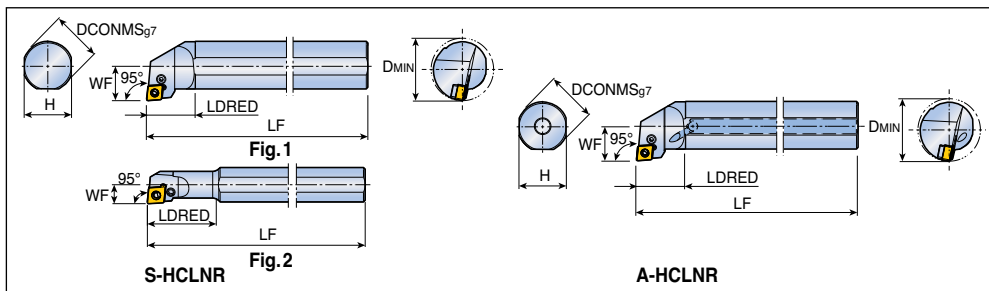


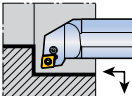

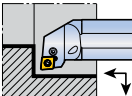

Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
91°	<b>S10K CTFCR/L 06</b>	10	9	125	25	6.5	12	TCGR 0601...
91°	<b>S10K CTFPR/L 06</b>	10	9	125	25	6.5	12	TPGR 0601...
	<b>S12M CTFPR/L 06</b>	12	11	150	30	9	16	TPGN, TP...R 0902...  A310-A312, A335, A347, A348
	<b>S12M CTFPR/L 09</b>	12	11	150	25	9	16	
	<b>S16R CTFPR/L 09</b>	16	15	200	25	11	20	TPMR, TP...N 1103...
	<b>S12M CTFPR/L 11</b>	12	11	150	30	9	16	TPMR, TP...N 1603...
	<b>S16R CTFPR/L 11</b>	16	15	200	30	11	20	
	<b>S20S CTFPR/L 11</b>	20	18	250	35	13	25	TPMR, TP...N 2204...
	<b>S16R CTFPR/L 16</b>	16	15	200	40	11	20	
	<b>S20S CTFPR/L 16</b>	20	18	250	50	13	25	
	<b>S25T CTFPR/L 16</b>	25	23	300	40	17	32	TPMR, TP...N 2204...
	<b>S32T CTFPR/L 16</b>	32	30	300	45	22	40	
	<b>S40T CTFPR/L 16</b>	40	37	300	41.5	27	50	
	<b>S50U CTFPR/L 16</b>	50	47	350	56	35	63	TPMR, TP...N 2204...
	<b>S40T CTFPR/L 22</b>	40	37	300	41.5	27	50	
	<b>S50U CTFPR/L 22</b>	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
<b>S16R...16</b>	-	CL 3C	-	CLS 3C	CSR 2	-	-	L-W 3
<b>S20S...16</b>	-	CL 3C	-	CLS 3C	CSR 2	-	-	L-W 3
<b>S25T...16</b>	-	-	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

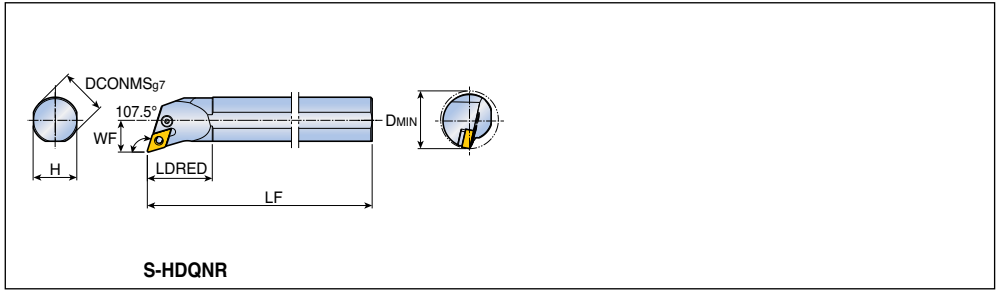


Approach angle	Designation	Dimension (mm)						Fig.	Insert
		DCONMS	H	LF	LDRED	WF	DMIN		
 95°	<b>S16Q HCLNR/L 0904</b>	16	15	180	25	11	20	1	CN... 0904...  A250-A257
	<b>S20Q HCLNR/L 0904</b>	20	18	180	28	13	25	1	
	<b>S20Q HCLNR/L 0904-D20</b>	20	18	180	40	11	20	2	
	<b>S25R HCLNR/L 0904</b>	25	23	200	31	17	32	1	
	<b>S32S HCLNR/L 0904</b>	32	30	250	31	22	40	1	
	<b>S40T HCLNR/L 0904</b>	40	37	300	55	27	50	1	
 95°	<b>A16Q HCLNR/L 0904</b>	16	15	180	25	11	20	CN... 0904... 	
	<b>A20Q HCLNR/L 0904</b>	20	18	180	28	13	25		
	<b>A25R HCLNR/L 0904</b>	25	23	200	31	17	32		
	<b>A32S HCLNR/L 0904</b>	32	30	250	31	22	40		

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Snap ring	Wrench		
<b>S ...0904</b>	LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2		
<b>S ...0904...D</b>	LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2		
<b>S32S...0904</b>	LCL 09-NX	LCS 3	LSC 32	LSP 3A	-	L-W 2.5		
<b>S40T ...0904</b>	LCL 09-NX	LCS 3	LSC 32	LSP 3A	-	L-W 2.5		
<b>A ...0904</b>	LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2		
<b>A32S...0904</b>	LCL 09-NX	LCS 3	LSC 32	LSP 3A	-	L-W 2.5		

## Hook lever type boring bars



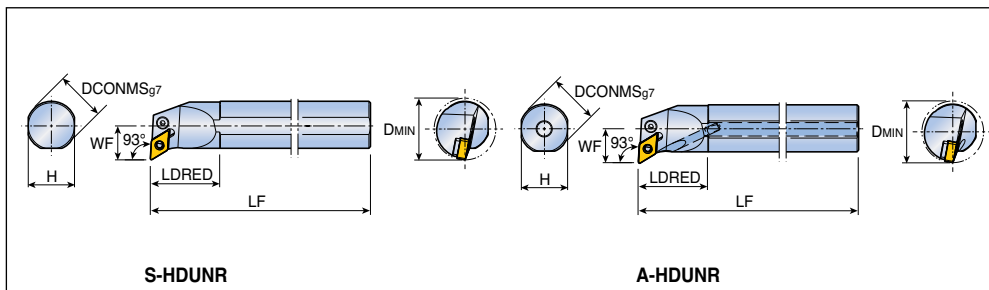
Approach angle	Designation	Dimension (mm)							Insert
		DCONMS	H	LF	LDRED	WF	DMIN		
<b>107.5°</b>	<b>S32S HDQNR/L1305</b>	32	30	250	45	22	40	DN... 1305... A260-A265	

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench		
<b>...1305</b>	LCL 11-NX	LSC 4S	LSD 3.52B	LSP 4	L-W 3		

# S-HDUNR/L A-HDUNR/L

## Hook lever type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
93°	<b>S32S HDUNR/L1305</b>	32	30	250	45	22	40	DN... 1305... A260-A265
	<b>S40T HDUNR/L1305</b>	40	37	300	55	27	50	
93°	<b>A32S HDUNR/L1305</b>	32	30	250	45	22	40	
	<b>A40T HDUNR/L1305</b>	40	37	300	55	27	50	

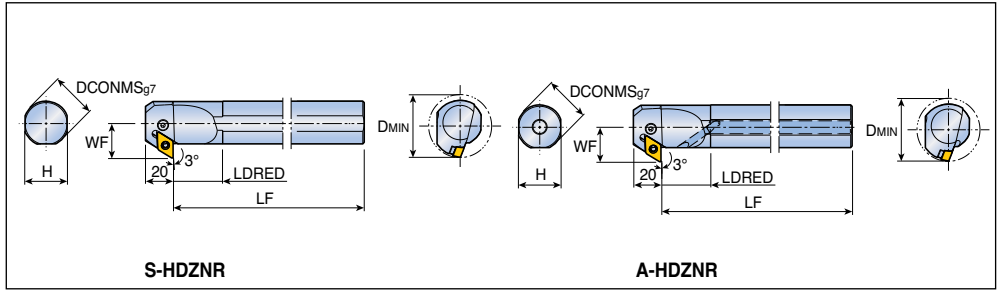
## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
...1305	LCL 11-NX	LCS 4S	LSD 3.52B	LSP 4	L-W 3			

# S-HDZNR/L A-HDZNR/L



## Hook lever type boring bars



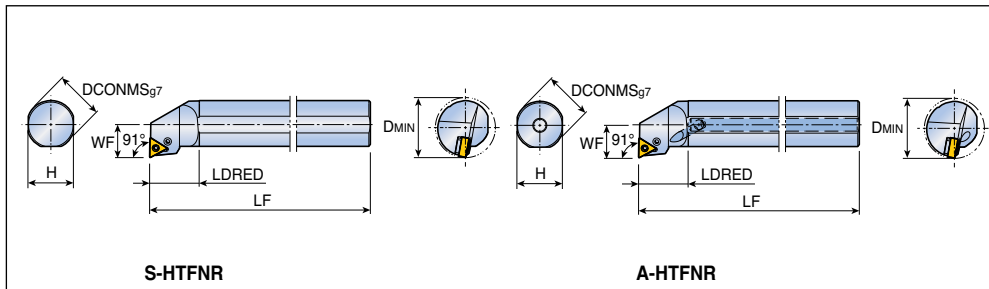
Approach angle	Designation	Dimension (mm)							Insert
		DCONMS	H	LF	LDRED	WF	DMIN		
93°	<b>S32S HDZNR/L1305</b>	32	30	250	35	25	45	DN... 1305... A260-A265	
	<b>S40T HDZNR/L1305</b>	40	37	300	40	29	50		
93°	<b>A32S HDZNR/L1305</b>	32	30	250	35	25	45		
	<b>A40T HDZNR/L1305</b>	40	37	300	40	29	50		

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench		
...1305	LCL 11-NX	LCS 4S	LSD 3.52B	LSP 4	L-W 3		



## Hook lever type boring bars

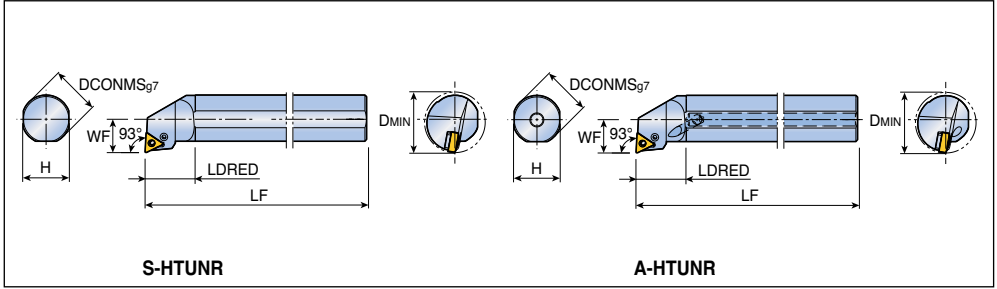


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
91°	<b>S16Q HTFNR/L 1304</b>	16	15	180	25	11	20	TN... 1304... A275-A280
	<b>S20Q HTFNR/L 1304</b>	20	18	180	28	13	25	
	<b>S25R HTFNR/L 1304</b>	25	23	200	33	17	32	
	<b>S32S HTFNR/L 1304</b>	32	30	250	33	22	40	
91°	<b>A16Q HTFNR/L 1304</b>	16	15	180	25	11	20	
	<b>A20Q HTFNR/L 1304</b>	20	18	180	28	13	25	
	<b>A25R HTFNR/L 1304</b>	25	23	200	33	17	32	
	<b>A32S HTFNR/L 1304</b>	32	30	250	33	22	40	

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Snap ring	Wrench		
<b>...1304</b>	LCL 08B-NX	LCS 3B	-	-	LSR 3B	L-W 2		
<b>...32S...1304</b>	LCL 08-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	L-W 2.5		

## Hook lever type boring bars

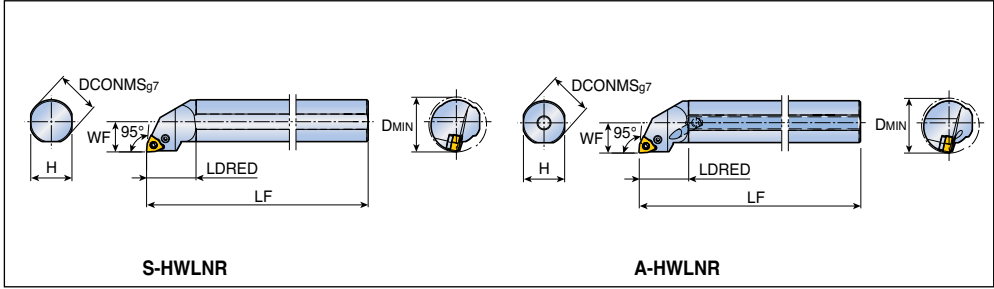


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
93°	<b>S16Q HTUNR/L 1304</b>	16	15	180	25	11	20	TN... 1304... A275-A280
	<b>S20Q HTUNR/L 1304</b>	20	18	180	28	13	25	
	<b>S25R HTUNR/L 1304</b>	25	23	200	33	17	32	
	<b>S32S HTUNR/L 1304</b>	32	30	250	33	22	40	
93°	<b>A16Q HTUNR/L 1304</b>	16	15	180	25	11	20	
	<b>A20Q HTUNR/L 1304</b>	20	18	180	28	13	25	
	<b>A25R HTUNR/L 1304</b>	25	23	200	33	17	32	
	<b>A32S HTUNR/L 1304</b>	32	30	250	33	22	40	

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Snap ring	Wrench		
...1304	LCL 08B-NX	LCS 3B	-	-	LSR 3B	L-W 2		
...32S...1304	LCL 08-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	L-W 2.5		

## Hook lever type boring bars

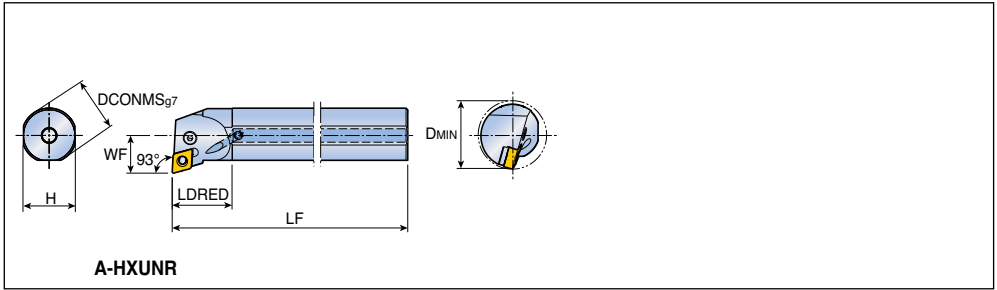


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95°	<b>S16Q HWLN/L 0604</b>	16	15	180	30	11	20	WN...X 0604... A287, A288
	<b>S20Q HWLN/L 0604</b>	20	18	180	33	13	25	
	<b>S25R HWLN/L 0604</b>	25	23	200	36	17	32	
	<b>S32S HWLN/L 0604</b>	32	30	250	36	22	40	
95°	<b>A16Q HWLN/L 0604</b>	16	15	180	30	11	20	
	<b>A20Q HWLN/L 0604</b>	20	18	180	33	13	25	
	<b>A25R HWLN/L 0604</b>	25	23	200	36	17	32	
	<b>A32S HWLN/L 0604</b>	32	30	250	36	22	40	

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Snap ring	Wrench		
<b>...0604</b>	LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2		
<b>...32S ...0604</b>	LCL 09-NX	LCS 3	LSW 32	LSP 3A	-	L-W 2.5		

## Hook lever type boring bars

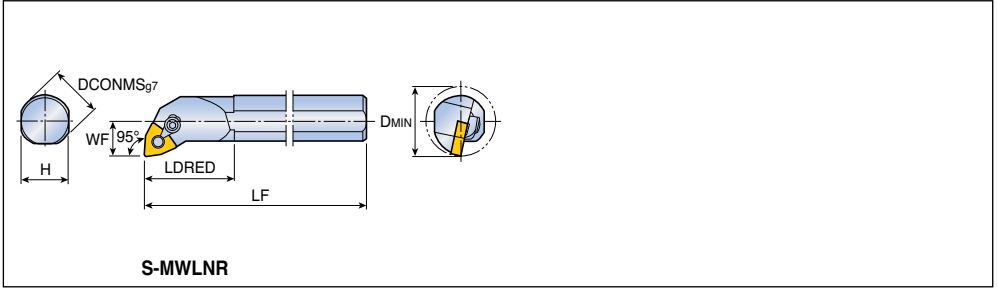


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
93°	A32S HXUNR/L 1105	32	30	250	35	22	40	XNMG 1105... <i>RHINO X TURN</i> A289

## 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

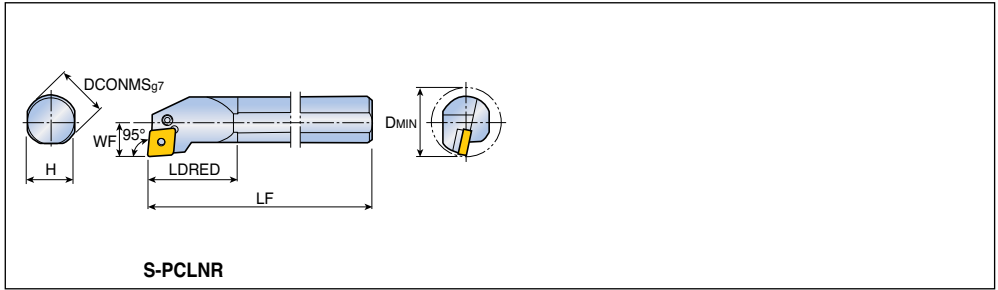


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95°	<b>S25R MWLN/R/L 08</b>	25	23	200	42	17	32	WN... 0804...  A284-A287, A333, A342
	<b>S32S MWLN/R/L 08</b>	32	30	250	45	22	40	

### Spare parts

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

## Lever lock type boring bars



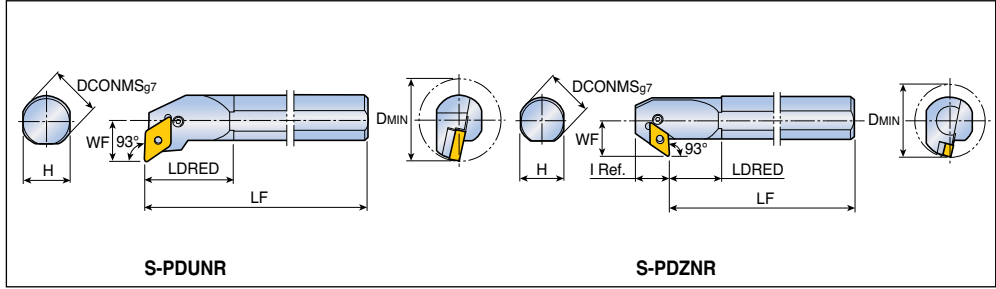
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95°	<b>S25T PCLNR/L12</b>	25	23	300	40	17	32	CN...1204... A250-A259, A324, A325, A336
	<b>S32T PCLNR/L12</b>	32	30	300	45	22	40	
	<b>S40T PCLNR/L12</b>	40	37	300	55	27	50	
	<b>S50U PCLNR/L12</b>	50	47	350	70	35	63	CN...1606... CN...1906...
	<b>S50U PCLNR/L16</b>	50	47	350	70	35	63	
	<b>S50U PCLNR/L19</b>	50	47	350	70	35	63	

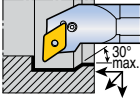

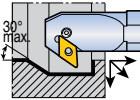
## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Snap ring	Wrench		
<b>S25T...12</b>	LCL 4B	LCS 4B	-	-	LSR 4B	L-W 2.5		
<b>S32 ...12</b>	LCL 4	LCS 4S	LSC 42	LSP 4	-	L-W 3		
<b>...12</b>	LCL 4	LCS 4	LSC 42	LSP 4	-	L-W 3		
<b>...16</b>	LCL 5	LCS 5	LSC 53	LSP 5	-	L-W 3		
<b>...19</b>	LCL 6D	LCS 6	LSC 63	LSP 6	-	L-W 4		




# S-PDUNR/L S-PDZNR/L

## Lever lock type boring bars

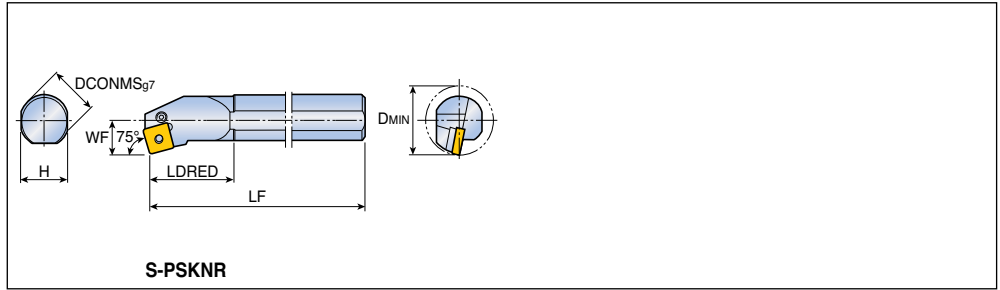


Approach angle	Designation	Dimension (mm)							Insert	
		DCONMS	H	LF	LDRED	WF	I	DMIN		
<b>93°</b> 	<b>S32T PDUNR/L 15</b>	32	30	300	45	22	-	40	DN...1506...  A260-A265, A326, A337	
	<b>S40T PDUNR/L 15</b>	40	37	300	55	27	-	50		
	<b>S50U PDUNR/L 15</b>	50	47	350	70	35	-	63		
	<b>S32T PDUNR/L 15-A</b>	32	30	300	45	22	-	40		
										DN...1504...
<b>93°</b>  For back boring	<b>S32T PDZNR/L 15</b>	32	30	300	30	25	26	45	DN...1506...	
	<b>S40T PDZNR/L 15</b>	40	37	300	35	29	26	50		
	<b>S50U PDZNR/L 15</b>	50	47	350	45	35	27	63		

## Spare parts

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

## Lever lock type boring bars



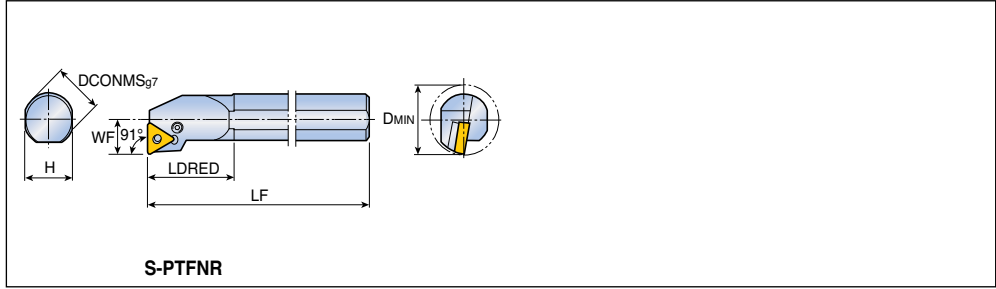
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
<b>75°</b>	<b>S25T PSKNR/L 12</b>	25	23	300	33	17	32	SN...1204... A268-A274, A329, A330, A339
	<b>S32T PSKNR/L 12</b>	32	30	300	45	22	40	
	<b>S40T PSKNR/L 12</b>	40	37	300	41.5	27	50	
	<b>S50U PSKNR/L 19</b>	50	47	350	56	35	63	

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Snap ring	Wrench		
<b>S25T...12</b>	LCL 4B	LCS 4B	-	-	LSR 4B	L-W 2.5		
<b>S32T...12</b>	LCL 4	LCS 4S	LSS 42	LSP 4	-	L-W 3		
<b>S40T...12</b>	LCL 4	LCS 4	LSS 42	LSP 4	-	L-W 3		
<b>...19</b>	LCL 6D	LCS 6	LSS 63	LSP 6	-	L-W 4		



## Lever lock type boring bars

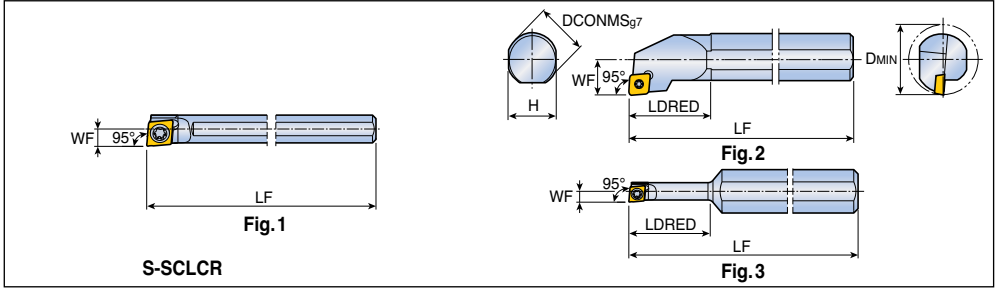


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
91°	<b>S20Q PTFNR/L11</b>	20	18	180	40	13	25	TN... 1103...
	<b>S25T PTFNR/L16</b>	25	23	300	40	17	32	TN... 1604... A275-A280, A332, A340
	<b>S32T PTFNR/L16</b>	32	30	300	45	22	40	
	<b>S40T PTFNR/L16</b>	40	37	300	60	27	50	
	<b>S50U PTFNR/L16</b>	50	47	350	56	35	63	
	<b>S40T PTFNR/L22</b>	40	37	300	56	27	50	TN... 2204...
	<b>S50U PTFNR/L22</b>	50	47	350	56	35	63	

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Snap ring	Wrench		
...11	LCL 2B	LCS 2B	-	-	LSR 2B	L-W 2		
<b>S25T ...16</b>	LCL 3BH	LCS 3B	-	-	LSR 3B	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		

## Screw type boring bars



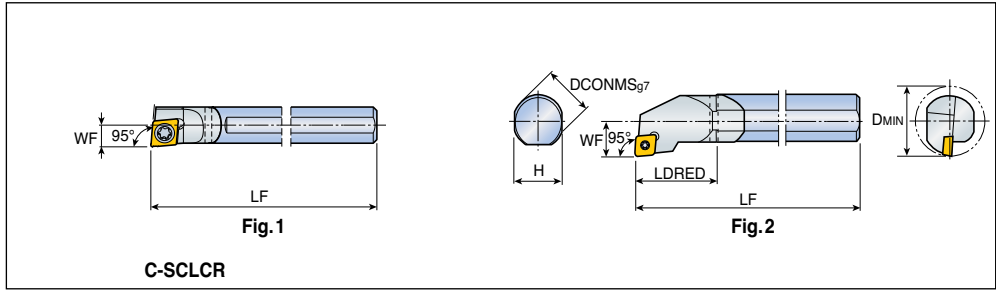
Approach angle	Designation	Dimension (mm)							Fig.	Insert
		DCONMS	H	LF	LDRED	WF	DMIN			
	<b>S04F SCLCR/L 03-D05</b>	4	3.75	80	-	2.5	5	1	CC...T 0301... A292-A295, A343	
	<b>S05G SCLCR/L 03-D06</b>	5	4.75	90	-	3	6	1		
	<b>S10H SCLCR/L 03-D05</b>	10	9	100	15	2.5	5	3		
	<b>S06H SCLCR/L 04-D07</b>	6	5.5	100	-	3.5	7	1	CC...T 0401...	
	<b>S07J SCLCR/L 04-D08</b>	7	6.5	110	-	4	8	1		
	<b>S08K SCLCR/L 06</b>	8	7	125	18	6	11	2	CC... 0602...	
	<b>S10K SCLCR/L 06</b>	10	9	125	20	7	13	2		
	<b>S12M SCLCR/L 06</b>	12	11	150	25	9	16	2		
	<b>S16R SCLCR/L 06</b>	16	15	200	30	11	20	2		
	<b>S12M SCLCR/L 09</b>	12	11	150	23	9	16	2	CC... 09T3...	
	<b>S16R SCLCR/L 09</b>	16	15	200	30	11	20	2		
	<b>S20S SCLCR/L 09</b>	20	18	250	32	13	25	2		
	<b>S25T SCLCR/L 12</b>	25	23	300	42	17	32	2	CC... 1204...	
	<b>S32T SCLCR/L 12</b>	32	30	300	45	22	40	2		
	<b>S40T SCLCR/L 12</b>	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			
<b>...03</b>	TS 160311	-	-	T 6	-		
<b>...04</b>	TS 200381/HG-P	-	-	T 6P	-		
<b>S...K ...06</b>	SO 25050I	-	-	T 7	-		
<b>...06</b>	SO 25065I	-	-	T 7	-		
<b>...09</b>	SO 35080I	-	-	T 15	-		
<b>S25T...12</b>	SO 45100I	-	-	T 20	-		
<b>...12</b>	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...	
	✓ C05H SCLCR/L 03-D06	5	4.75	100	-	3	6	1	A292-A295, A343	
	✓ 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		
	✓ 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	20	9	16	2		
	✓ C12M SCLCR/L 09	12	11	150	18	9	16	2	CC... 09T3...	
	✓ C16R SCLCR/L 09	16	15	200	25	11	20	2		
✓ C20S SCLCR/L 09	20	18	250	25	13	25	2			

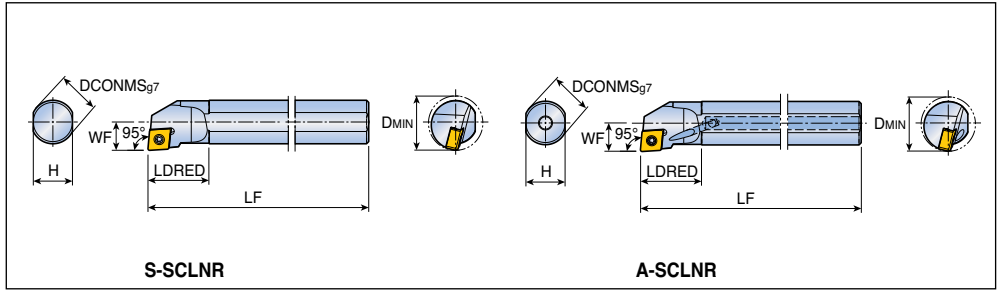
• ✓ Marked: Designates carbide shank • L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

## 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-SCLNR/L A-SCLNR/L

## Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95°	<b>S16Q SCLNR/L 0904</b>	16	15	180	25	11	20	CN... 0904... A250-A257
	<b>S20Q SCLNR/L 0904</b>	20	18	180	28	13	25	
	<b>S20Q SCLNR/L 0904-D20</b>	20	18	180	40	11	20	
95°	<b>A12M SCLNR/L 0703</b>	12	11	150	21.5	9	16	CNMX 0703... A259
	<b>A16Q SCLNR/L 0703</b>	16	15	180	24.5	11	20	
	<b>A16Q SCLNR/L 0904</b>	16	15	180	25	11	20	CN... 0904... A250-A257
	<b>A20Q SCLNR/L 0904</b>	20	18	180	28	13	25	

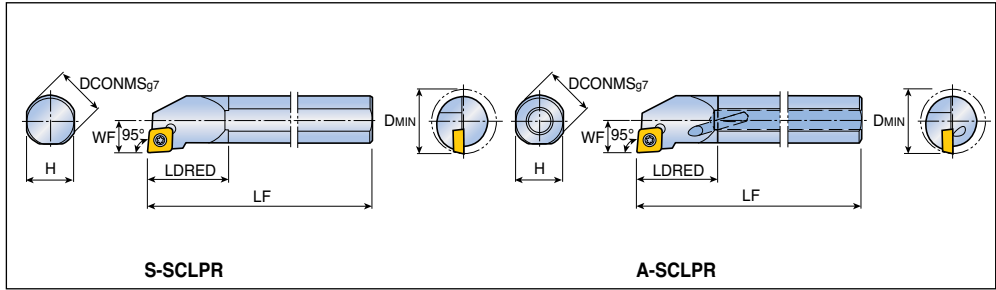
## Spare parts

Designation	Screw	Wrench				
...0904	TS 350831/HG	T 10				
...0703	TS 25D060/HG-P	T 7P				

# S-SCLPR/L A-SCLPR/L



## Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
 95°	<b>S10K SCLPR/L 08</b>	10	9	125	20	6	12	CP...T 0802... CP...T 0903... A296
	<b>S12M SCLPR/L 08</b>	12	11	150	23	8	16	
	<b>S16R SCLPR/L 09</b>	16	15	200	30	10	20	
	<b>S20S SCLPR/L 09</b>	20	18	250	32	12.5	25	
 95°	<b>A08H SCLPR/L 06</b>	8	7	100	15	6	11	CP...T 0602...
	<b>A10K SCLPR/L 06</b>	10	9	125	15	7	13	
	<b>A12M SCLPR/L 0903</b>	12	11	150	19	9	16	CP...T 0903...
	<b>A16Q SCLPR/L 0903</b>	16	15	180	20	11	20	
	<b>A20R SCLPR/L 0903</b>	20	18	200	22	13	25	CP...T 09T3...
	<b>A12M SCLPR/L 09T3</b>	12	11	150	19	9	16	
	<b>A16Q SCLPR/L 09T3</b>	16	15	180	24.5	11	20	
	<b>A20R SCLPR/L 09T3</b>	20	18	200	22	13	25	

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

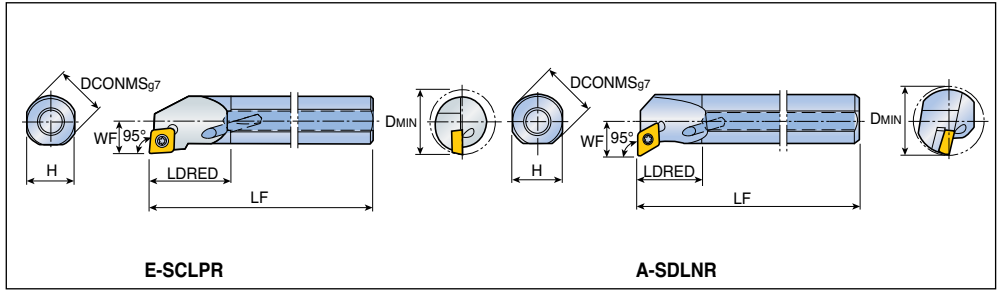
## Spare parts

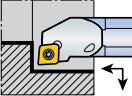
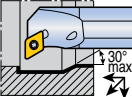
Designation	Screw	Wrench					
<b>...06</b>	SO 25050I	T 7					
<b>...08</b>	SO 30055I	T 9					
<b>...09</b>	SO 35080I	T 15					
<b>...0903, 09T3</b>	TS 35070I/HG	T 15					

# E-SCLPR/L A-SDLNR/L







## Screw type boring bars



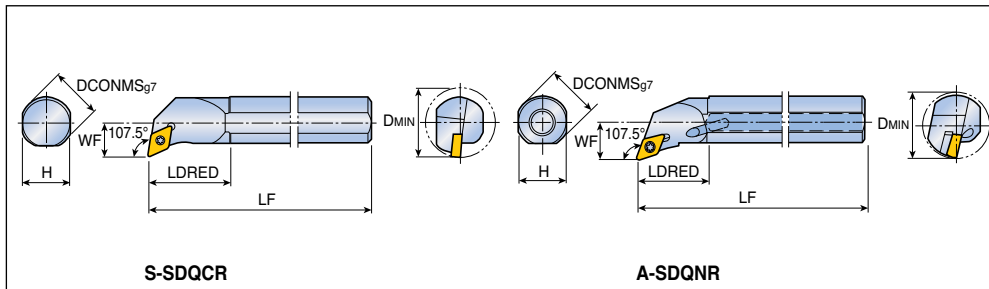
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
<b>95°</b> 	✓ <b>E08K SCLPR/L 06</b>	8	7	125	15	6	11	CP...T 0602... A296
	✓ <b>E10K SCLPR/L 06</b>	10	9	125	15	7	13	
	✓ <b>E12M SCLPR/L 0903</b>	12	11	150	19	9	16	CP...T 0903...
	✓ <b>E16R SCLPR/L 0903</b>	16	15	200	22	11	20	
	✓ <b>E12M SCLPR/L 09T3</b>	12	11	150	19	9	16	CP...T 09T3...
	✓ <b>E16R SCLPR/L 09T3</b>	16	15	200	22	11	20	
<b>95°</b> 	<b>A20S SDLNR/L 11</b>	20	18	250	28	13	24	DN...1104... A260-A265
	<b>A25T SDLNR/L 11</b>	25	23	300	42	17	31	

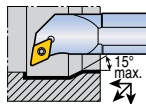

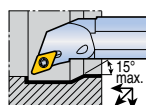

• ✓ Marked: Designates carbide shank • L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

## Spare parts

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







## Screw type boring bars



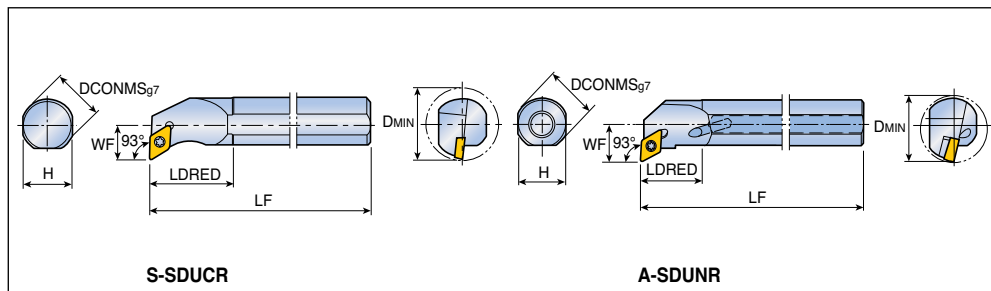
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
107.5° 	<b>S10K SDQCR/L 07</b>	10	9	125	20	7	13	DC... 0702...  A297-A300, A344
	<b>S12M SDQCR/L 07</b>	12	11	150	22	9	16	
	<b>S16R SDQCR/L 07</b>	16	15	200	27	11	20	
	<b>S20S SDQCR/L 11</b>	20	18	250	40	13	25	
	<b>S25T SDQCR/L 11</b>	25	23	300	50	17	32	
107.5° 	<b>A16S SDQNR/L 11</b>	16	15	250	30	13	23	DN... 1104...  A260-A265
	<b>A20S SDQNR/L 11</b>	20	18	250	31	15	27	
	<b>A25T SDQNR/L 11</b>	25	23	300	35	19	33	
	<b>A32T SDQNR/L 11</b>	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		
								
<b>S10 ...07</b>	SO 25050I	-	-	T 7	-	-		
<b>S ...07</b>	SO 25065I	-	-	T 7	-	-		
<b>S ...11</b>	SO 35080I	-	-	T 15	-	-		
<b>A16S...11</b>	SO 35120I	-	-	T 10	-	PL 16		
<b>A20S...11</b>	SO 35120I	SSD 32	SO 50090S	T 10	L-W 3.5	PL 20		
<b>A25T...11</b>	SO 35120I	SSD 32	SO 50090S	T 10	L-W 3.5	PL 25		
<b>A32T...11</b>	SO 35120I	SSD 32	SO 50090S	T 10	L-W 3.5	PL 32		

## Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert	
		DCONMS	H	LF	LDRED	WF	DMIN		
 93°	<b>S10K SDUCR/L 07</b>	10	9	125	20	7	13	DC... 0702... A297-A300, A344	
	<b>S12M SDUCR/L 07</b>	12	11	150	23	9	16		
	<b>S16R SDUCR/L 07</b>	16	15	200	30	11	20		
	 93°	<b>S16R SDUCR/L 11</b>	16	15	200	27	11	20	DC... 11T3... A260-A265
		<b>S20S SDUCR/L 11</b>	20	18	250	32	13	25	
		<b>S25T SDUCR/L 11</b>	25	23	300	42	17	32	
		<b>S32T SDUCR/L 11</b>	32	30	300	55	22	40	
 93°	<b>A12M SDUNR/L 0803</b>	12	11	150	21.5	9	16	DN...X 0803... RHINO TURN A265	
	<b>A16Q SDUNR/L 0803</b>	16	15	180	24.5	11	20		
	<b>A20S SDUNR/L 11</b>	20	18	250	30	15	27	DN... 1104... A260-A265	
	<b>A25T SDUNR/L 11</b>	25	23	300	30	19	33		
	<b>A32T SDUNR/L 11</b>	32	30	300	44	26	44		

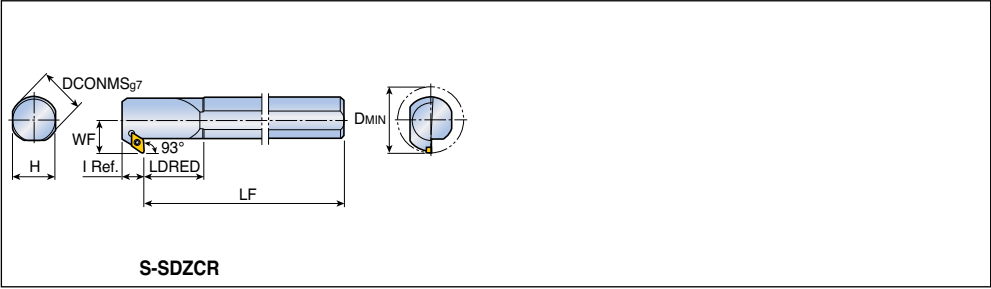
• L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

## Spare parts

Designation	Screw	Shim	Shim screw	Wrench		Seal		
<b>S ...07</b>	SO 250651	-	-	T 7	-	-		
<b>S ...11</b>	SO 350801	-	-	T 15	-	-		
<b>A20S...11</b>	SO 351201	-	-	T 10	-	PL 20		
<b>A25T ...11</b>	SO 351201	SSD 32	SO 50090S	T 10	L-W 3.5	PL 25		
<b>A32T ...11</b>	SO 351201	SSD 32	SO 50090S	T 10	L-W 3.5	PL 32		
<b>...0803</b>	TS 25D060/HG-P	-	-	T 7P	-	-		



## Screw type back boring bars



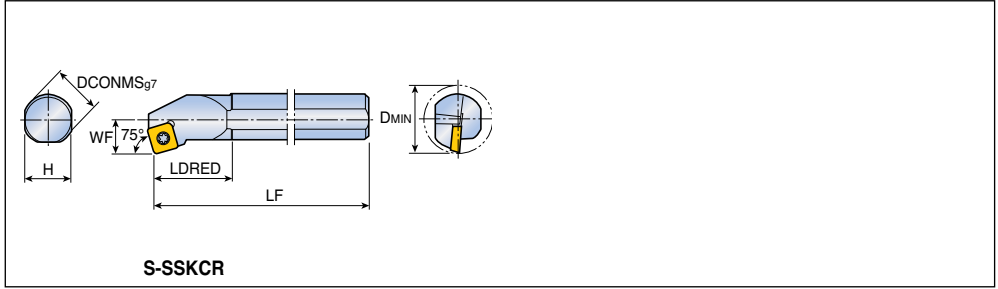
Approach angle	Designation	Dimension (mm)								Insert
		DCONMS	H	LF	LDRED	WF	I	DMIN		
93°	<b>S16R SDZCR/L 07</b>	16	15	200	23	13	12	22	DC... 0702... A297-A300, A344 DC... 11T3...	
	<b>S20S SDZCR/L 07</b>	20	18	250	28	15	12	30		
	<b>S25T SDZCR/L 07</b>	25	23	300	33	18	12	33		
	<b>S20S SDZCR/L 11</b>	20	18	250	24	15	16	27		
	<b>S32T SDZCR/L 11</b>	32	30	300	34	22	16	40		
30° max 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				
<b>...07</b>	SO 25065I	-	-	T 7	-			
<b>S20S...11</b>	SO 35080I	-	-	T 15	-			
<b>S32T...11</b>	SO 35124I	SSD 32	SO 50090S	T 15	L-W 3.5			

## Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
75°	<b>S16R SSKCR/L 09</b>	16	15	200	24.5	11	20	SC... 09T3... A304, A346
	<b>S20S SSKCR/L 09</b>	20	18	250	30	13	25	
	<b>S25T SSKCR/L 12</b>	25	23	300	33.4	17	32	SC...T 1204... A304

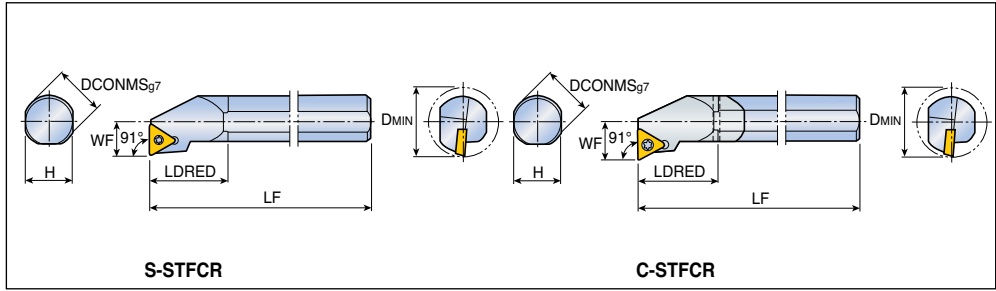
## Spare parts

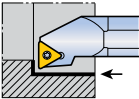

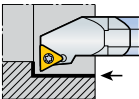
Designation	Screw	Wrench					
...09	SO 35080I	T 15					
...12	SO 45100I	T 20					

# S-STFCR/L C-STFCR/L



## Screw type boring bars



Approach angle	Designation	Dimension (mm)							Insert
		DCONMS	H	LF	LDRED	WF	DMIN		
91° 	<b>S06H STFCR/L 06T1</b>	6	5.4	100	12	4.5	8	TC...T 06T1...	
	<b>S08K STFCR/L 09</b>	8	7	125	20	6	11	TC... 0902...  A307, A308, A347, A348	
	<b>S10K STFCR/L 09</b>	10	9	125	22.5	7	13		
	<b>S12M STFCR/L 09</b>	12	11	150	30	9	16		
	<b>S16R STFCR/L 09</b>	16	15	200	35	11	20		
	<b>S12M STFCR/L 11</b>	12	11	150	25	9	16	TC... 1102...	
	<b>S16R STFCR/L 11</b>	16	15	200	35	11	20		
	<b>S20S STFCR/L 11</b>	20	18	250	36	13	25		
	<b>S20S STFCR/L 16</b>	20	18	250	36	13	25	TC... 16T3...	
	<b>S25T STFCR/L 16</b>	25	23	300	49	17	32		
	<b>S32T STFCR/L 16</b>	32	30	300	45	22	40		
<b>S40T STFCR/L 16</b>	40	37	300	60	27	50			
91° 	✓ <b>C10K STFCR/L 09</b>	10	9	125	15	7	13	TC... 0902...	
	✓ <b>C10K STFCR/L 11</b>	10	9	125	15	7	13	TC... 1102...	
	✓ <b>C12M STFCR/L 11</b>	12	11	150	20	9	16		
	✓ <b>C16R STFCR/L 11</b>	16	15	200	25	11	20		

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

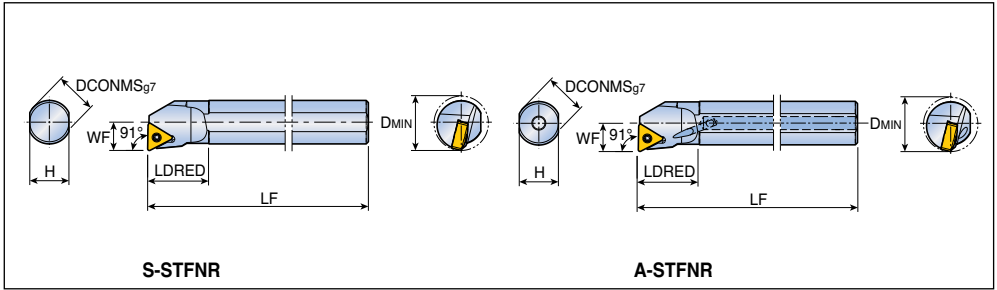
## Spare parts

Designation	Screw	Shim	Shim screw	Wrench				
...06T1	TS 20038I	-	-	T 6	-			
<b>S08K...09</b>	TS 22046I	-	-	T 7	-			
...09	SO 22050I	-	-	T 7	-			
...11	SO 25065I	-	-	T 7	-			
<b>C10K...11</b>	SO 25050I	-	-	T 7	-			
<b>S20S...16</b>	SO 35080I	-	-	T 15	-			
<b>S25T...16</b>	SO 35080I	-	-	T 15	-			
<b>S32T...16</b>	SO 35124I	SST 32	SO 50090S	T 15	L-W 3.5			
<b>S40T...16</b>	SO 35124I	SST 32	SO 50090S	T 15	L-W 3.5			

# S-STFNR/L A-STFNR/L



## Screw type boring bars



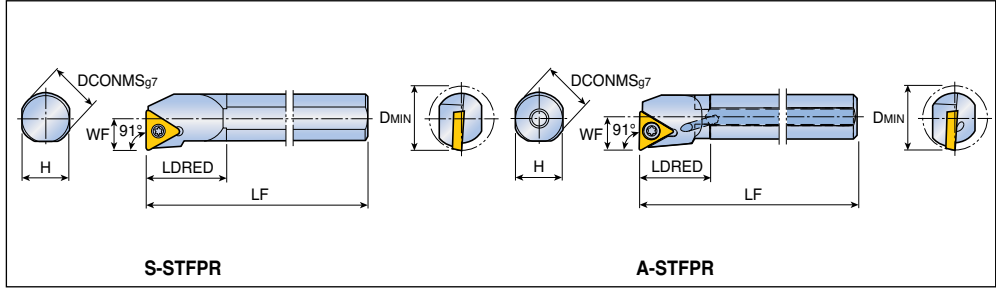
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
91°	<b>S16Q STFNR/L 1304</b>	16	15	180	25	11	20	TN... 1304... A275-A280
	<b>S20Q STFNR/L 1304</b>	20	18	180	28	13	25	
91°	<b>A16Q STFNR/L 1304</b>	16	15	180	25	11	20	
	<b>A20Q STFNR/L 1304</b>	20	18	180	28	13	25	

## Spare parts

Designation	Screw	Wrench					
...1304	TS 30080/HG	T 9					

# S-STFPR/L A-STFPR/L

## Screw type boring bars



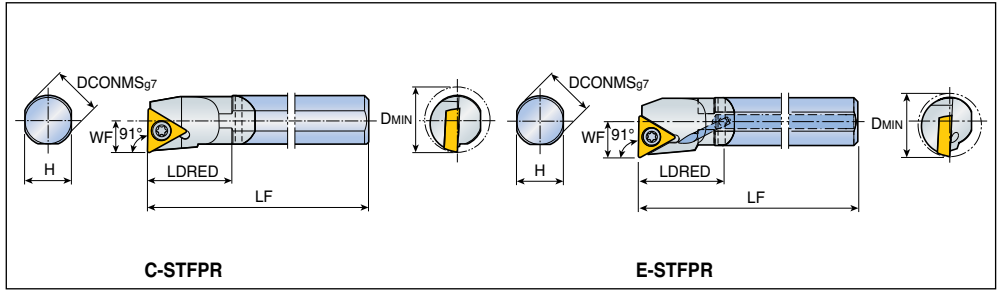
Approach angle	Designation	Dimension (mm)							Insert
		DCONMS	H	LF	LDRED	WF	DMIN		
 91°	<b>S08K STFPR/L 09-X01</b>	8	7	125	15	6	11	TPGX 0902...	
	<b>S08K STFPR/L 09</b>	8	7	125	14	6	11	TP...T 0902...  A309, A310,	
	<b>S10K STFPR/L 11</b>	10	9	125	25	6	12	TP...T 1103... A311, A347	
	<b>S12M STFPR/L 11</b>	12	11	150	30	8	16		
	<b>S16R STFPR/L 11</b>	16	15	200	35	10	20		
	<b>S16N STFPR/L 16</b>	16	15	160	30	10	20	TP...T 1604...	
	<b>S20S STFPR/L 16</b>	20	18	250	36	12.5	25		
 91°	<b>A08H STFPR/L 09</b>	8	7	100	16.7	6	11	TP...T 0902...	
	<b>A10K STFPR/L 1102</b>	10	9	125	16.4	7	13	TP...T1102...	
	<b>A12M STFPR/L 1102</b>	12	11	150	19	9	16		
	<b>A16Q STFPR/L 1102</b>	16	15	180	20	11	20		
	<b>A12M STFPR/L 1103</b>	12	11	150	19	9	16	TP...T1103...	
	<b>A16Q STFPR/L 1103</b>	16	15	180	20.5	11	20		
	<b>A20R STFPR/L 16T3</b>	20	18	200	26	13	25	TP...T 16T3...	

- TPGX type inserts are available with alternate screw. (TPGX 1103 → SO 300811)
- L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

## Spare parts

Designation	Screw	Wrench				
...09-X01	SO 25061I	T 8				
...09	TS 22046I	T 7				
<b>S10</b> ...11	SO 30055I	T 9				
...11	SO 30100I	T 9				
<b>S16R</b> ...11	SO 30040I	T 9				
...1102	SO 25050I	T 7				
...1103	SO 30100I	T 9				
...16T3	TS 35070I/HG	T 15				
...16	SO 35124I	T 15				

## Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
91°	✓ C10K STFPR/L 11	10	9	125	15	6	12	TPGT 1103... A309-A311, A347
	✓ C12M STFPR/L 11	12	11	150	20	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...T 1103...
	✓ E16R STFPR/L 1103	16	15	200	22	11	20	

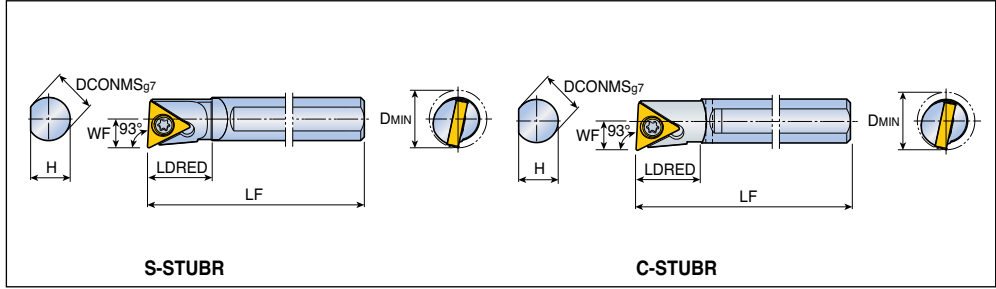
• ✓ Marked: Designates carbide shank • L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

## Spare parts

Designation	Screw	Wrench					
	...09	TS 22046I	T 7				
C10K ...11	SO 30055I	T 9					
C12M...11	SO 30100I	T 9					
...1102	SO 25050I	T 7					
...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°	<b>S06H STUBR/L 06-D08</b>	6	5.5	100	8.6	4	8	TB...T 0601... A306
93°	<b>✓ C06J STUBR/L 06-D08</b>	6	5.5	110	8.6	4	8	

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

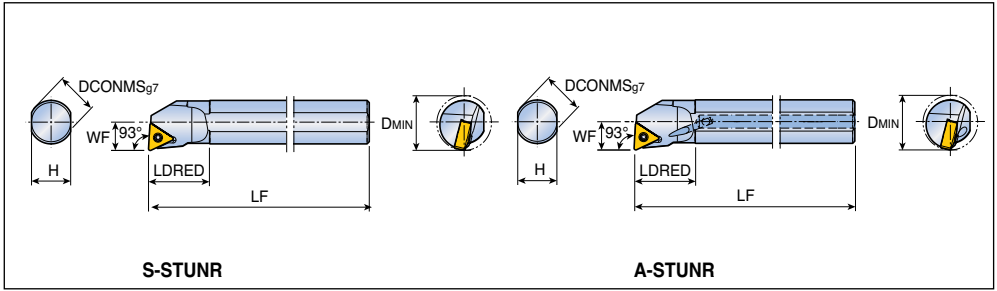
## Spare parts

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

# S-STUNR/L A-STUNR/L



## Screw type boring bars



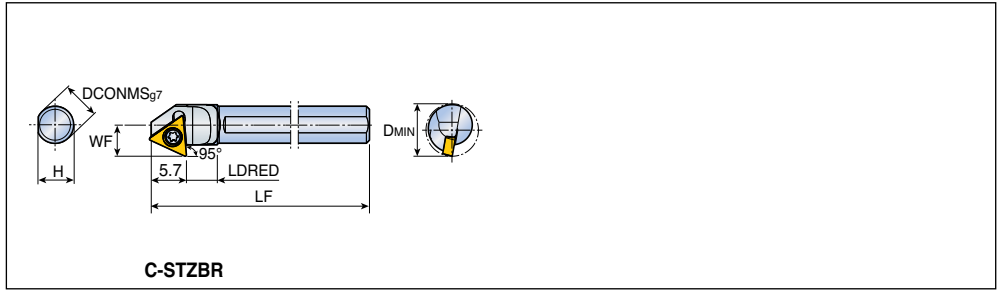
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
93°	<b>S16Q STUNR/L 1304</b>	16	15	180	25	11	20	TN... 1304... A275-A280
	<b>S20Q STUNR/L 1304</b>	20	18	180	28	13	25	
93°	<b>A16Q STUNR/L 1304</b>	16	15	180	25	11	20	
	<b>A20Q STUNR/L 1304</b>	20	18	180	28	13	25	

## Spare parts

Designation	Screw	Wrench					
	...1304	TS 30080I/HG	T 9				



## Screw type boring bars



Approach angle	Designation	Dimension (mm)							Insert
		DCONMS	H	LF	LDRED	WF	DMIN		
95°	✓ <b>C06J STZBOR/L 06-D085</b>	6	5.5	110	5	5.1	8.5	TB...T 0601... A306	

• ✓ Marked: Designates carbide shank

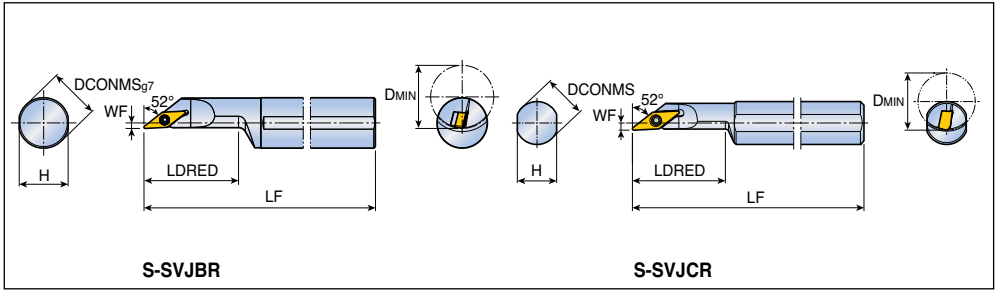
### Spare parts

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

# S-SVJBR/L S-SVJCR/L



## Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
52°	<b>S20R SVJBR/L 11-D25</b>	20	18	200	37.5	2	25	VB... 1103... A313, A314, A349
	<b>S25S SVJBR/L 11-D30</b>	25	23	250	45	3.5	30	
	<b>S32S SVJBR/L 16</b>	32	30	250	60	3.5	40	
	<b>S40T SVJBR/L 16</b>	40	37	300	75	4.5	50	
52°	<b>S12M SVJCR/L 08-D16</b>	12	11	150	26	2	16	VC... 0802... A316
	<b>S16Q SVJCR/L 08-D20</b>	16	15	180	36	2	20	

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

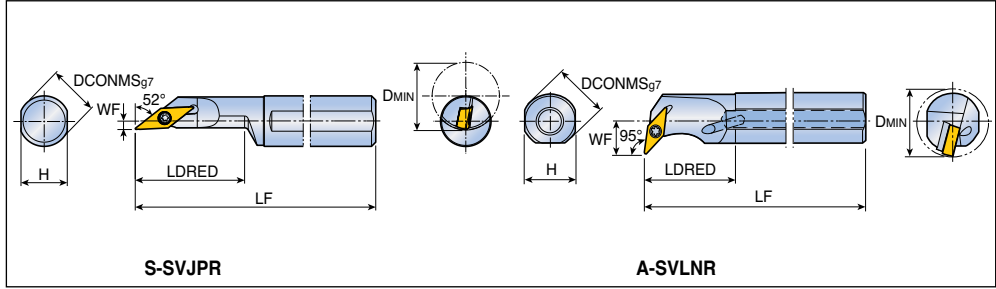
## Spare parts

Designation	Screw	Shim	Shim screw	Wrench				
...08-...	TS 20038I/HG-P	-	-	T 6P	-			
...11-...	SO 25065I	-	-	T 7	-			
...16	SO 35124I	SSV32	SO 50090S	T15	L-W 3.5			

# S-SVJPR/L A-SVLNR/L



## Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
52°	<b>S12M SVJPR/L 08-D16</b>	12	11	150	26	2	16	VP...T 0802... A317
95°	<b>A25T SVLNR/L 1304</b>	25	23	300	40	16	31	VN...X 1304... A281, A283, A289
	<b>A32T SVLNR/L 1304</b>	32	30	300	45	20	38	YVMG 1304... RHINO TURN A289
	<b>A25T SVLNR/L 13</b>	25	23	300	40	16	31	VN... 13... A281, A282, A333, A341
	<b>A32T SVLNR/L 13</b>	32	30	300	45	20	38	

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

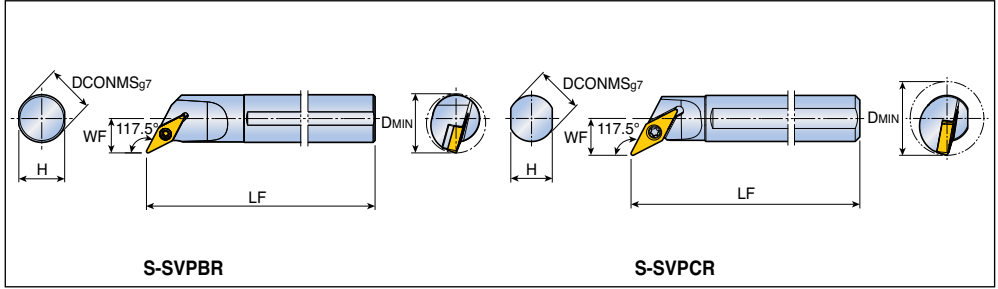
## Spare parts

Designation	Screw	Shim	Shim screw	Wrench		Seal		
<b>S...08-D16</b>	TS 20043I/HG-P	-	-	T 6P	-	-		
<b>A..1304</b>	TS 30120I/HG	SSVN 2.523	TS 5030062S	T 9	L-W 3.5	-		
<b>A25T...13</b>	SO 35120I	SSVN 2.523	TS 5035062S	T 10	L-W 3.5	PL 25		
<b>A32T...13</b>	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°	<b>S16Q SVPBR/L 11-D22</b>	16	15	180	35	13.5	22	VB... 1103... A313, A314, A349
	<b>S20R SVPBR/L 11-D26</b>	20	18	200	41	15.5	26	
	<b>S25S SVPBR/L 16</b>	25	23	250	51	18	31	
	<b>S32S SVPBR/L 16</b>	32	30	250	54	23	40	
117.5°	<b>S10K SVPCR/L 08-D16</b>	10	9	125	16	8	16	VC...T 0802... VC...T 1103... A315, A316, A349
	<b>S12M SVPCR/L 11-D20</b>	12	11	150	19	10	20	

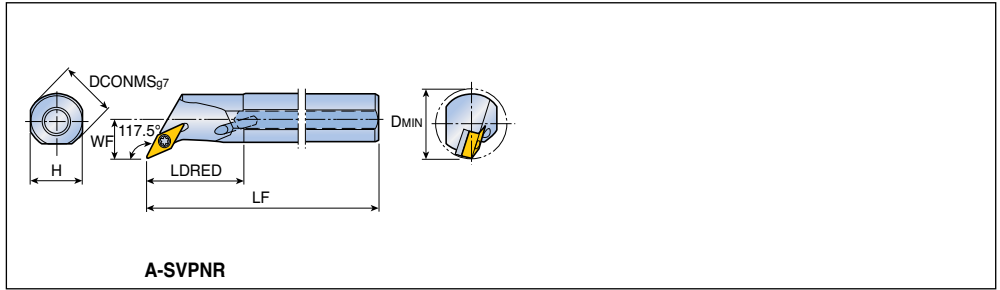
• L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

## 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

## Screw type boring bars



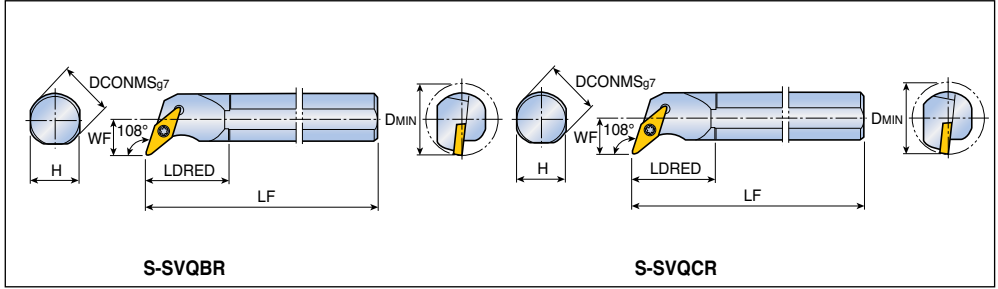
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
<b>117.5°</b>	<b>A25T SVPCR/L 1304</b>	25	23	300	45	19	33	VN...X 1304...
	<b>A32T SVPCR/L 1304</b>	32	30	300	47	26	44	YNMG 1304...  A281, A283, A289 RHINO TURN
	<b>A25T SVPCR/L 13</b>	25	23	300	45	19	33	VN... 13...
	<b>A32T SVPCR/L 13</b>	32	30	300	47	26	44	A281, A282, A333, A341

## Spare parts

Designation	Screw	Shim	Shim screw	Wrench		Seal		
<b>A..1304</b>	TS 30120I/HG	SSVN 2.523	TS 5030062S	T 9	L-W 3.5	-		
<b>A25T...13</b>	SO 35120I	SSVN 2.523	TS 5035062S	T 10	L-W 3.5	PL 25		
<b>A32T...13</b>	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°	<b>S25T SVQBR/L 16</b>	25	23	300	40	17	32	VB... 1604... A313, A314, A349	
	<b>S32T SVQBR/L 16</b>	32	30	300	45	22	40		
	<b>S40T SVQBR/L 16</b>	40	37	300	41.5	27	50		
108°	<b>S32T SVQCR/L 16</b>	32	30	300	45	22	40	VC...T 1604... A315, A316, A349	
	<b>S40T SVQCR/L 16</b>	40	37	300	55	27	50		

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

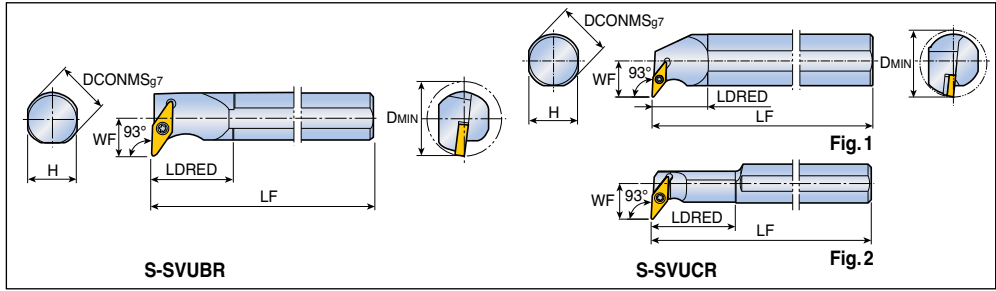
## Spare parts

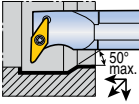
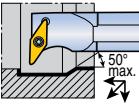
Designation	Screw	Shim	Shim screw	Wrench			
<b>S25T...16</b>	SO 35080I	-	-	T 15	-		
<b>...16</b>	SO 35124I	SSV 32	SO 50090S	T 15	L-W 3.5		

# S-SVUBR/L S-SVUCR/L



## Screw type boring bars



Approach angle	Designation	Dimension (mm)						Fig.	Insert
		DCONMS	H	LF	LDRED	WF	DMIN		
 93°	<b>S32T SVUBR/L 16</b>	32	30	300	45	22	40	VB... 1604... A313, A314, A349	
	<b>S40T SVUBR/L 16</b>	40	37	300	55	27	50		
 93°	<b>S12M SVUCR/L 08-D16</b>	12	11	150	26	11	16	2	VC...T 0802...
	<b>S16Q SVUCR/L 11-D20</b>	16	15	180	32	15.5	20	2	VC...T 1103...
	<b>S20R SVUCR/L 11-D25</b>	20	18	200	40	17.5	25	2	A315, A316, A349
	<b>S32T SVUCR/L 16</b>	32	30	300	35	22	40	1	VC...T 1604...
	<b>S40T SVUCR/L 16</b>	40	37	300	41.5	27	50	1	

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

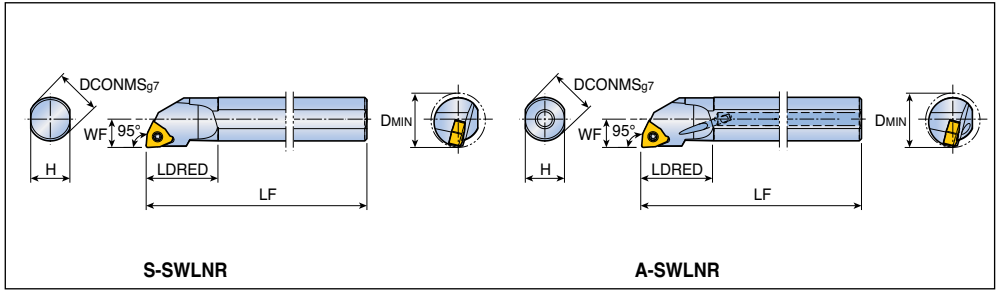
## Spare parts

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		

# S-SWLNLR/L A-SWLNLR/L



## Screw type boring bars



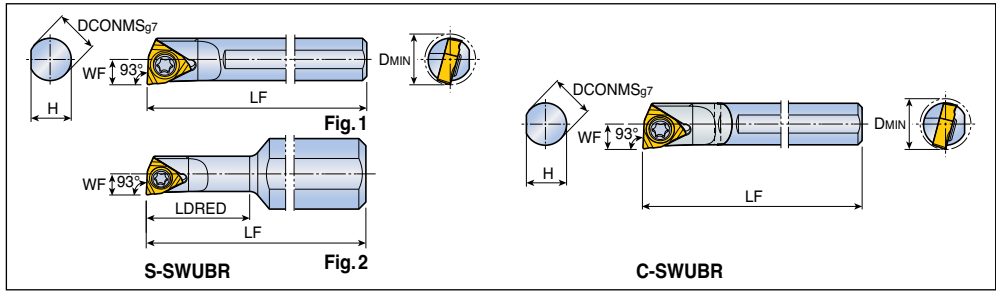
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95°	<b>S16Q SWLNLR/L 0604</b>	16	15	180	30	11	20	WN...X 0604... RHINO TURN A287, A288
	<b>S20Q SWLNLR/L 0604</b>	20	18	180	33	13	25	
95°	<b>A12M SWLNLR/L 0403</b>	12	11	150	21.5	9	16	WNMX 0403...
	<b>A16Q SWLNLR/L 0403</b>	16	15	180	24.5	11	20	RHINO TURN
	<b>A16Q SWLNLR/L 0604</b>	16	15	180	30	11	20	WNMX 0604..
	<b>A20Q SWLNLR/L 0604</b>	20	18	180	33	13	25	RHINO TURN

## Spare parts

Designation	Screw	Wrench					
...0604	TS 35083I/HG	T 10					
...0403	TS 25D060/HG-P	T 7P					



## Screw type boring bars



Approach angle	Designation	Dimension (mm)						Fig.	Insert
		DCONMS	H	LF	LDRED	WF	DMIN		
93°	<b>S05G SWUBR/L 06-D06</b>	5	4.75	90	-	3	6	1	WB...T 0601... A318
	<b>S06H SWUBR/L 06-D07</b>	6	5.5	100	-	3.5	7	1	
	<b>S07J SWUBR/L 06-D08</b>	7	6.5	110	-	4	8	1	
	<b>S10H SWUBR/L 06-D06</b>	10	9	100	18	3	6	2	
93°	✓ <b>C05H SWUBR/L 06-D06</b>	5	4.75	100	-	3	6		
	✓ <b>C06J SWUBR/L 06-D07</b>	6	5.5	110	-	3.5	7		
	✓ <b>C07K SWUBR/L 06-D08</b>	7	6.5	125	-	4	8		

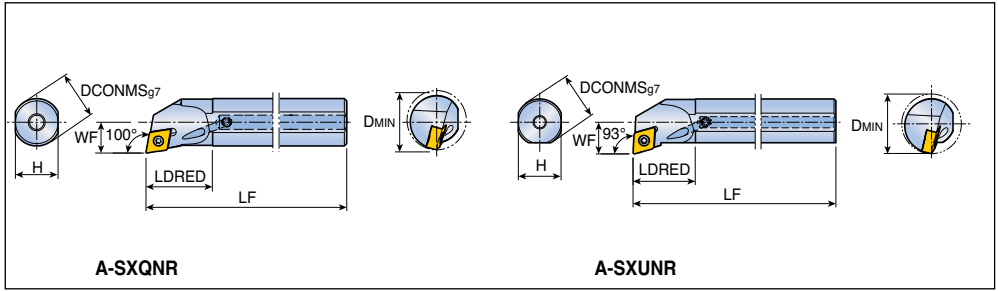
• ✓ Marked: Designates carbide shank • L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

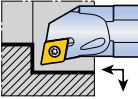
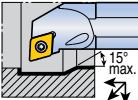
## Spare parts

Designation	Screw	Wrench						
	...06...	TS 20038I/HG-P	T 6P					

# A-SXQNR/L A-SXUNR/L

## Screw type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
<b>100°</b> 	<b>A16Q SXQNR/L 0904</b>	16	15	180	24.5	11	20	XNMG 0904...
	<b>A20Q SXQNR/L 0904</b>	20	18	180	28	13	25	<i>RHINOXTURN</i>
	<b>A20Q SXQNR/L 1105</b>	20	18	180	28	13	25	XNMG 1105...
								<i>RHINOXTURN</i>
<b>93°</b> 	<b>A25R SXUNR/L 1105</b>	25	23	200	33.4	17	32	



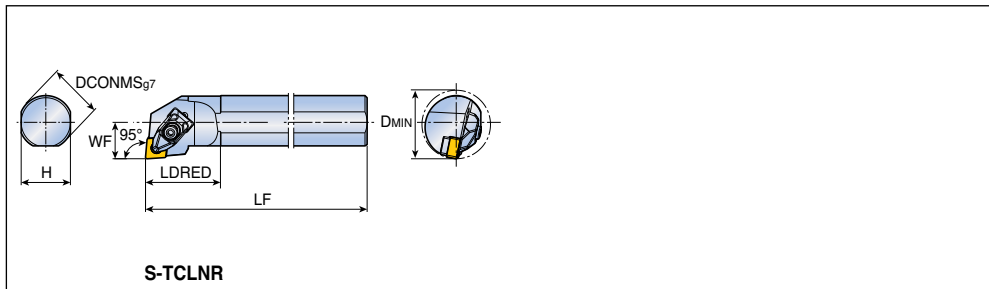
A289

## Spare parts

Designation	Screw	Wrench				
...0904	TS 30080I/HG	T 9				
...1105	TS 40G110I	T 15				

# S-TCLNR/L

## T-holder type boring bars

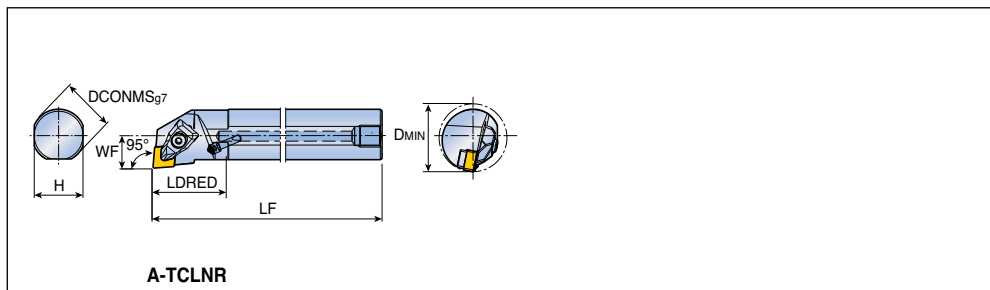


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
<b>95°</b>	<b>S25R TCLNR/L 0904</b>	25	23	200	35	17	32	CN... 0904...   A250-A257
	<b>S32S TCLNR/L 0904</b>	32	30	250	35	22	40	
	<b>S40T TCLNR/L 0904</b>	40	37	300	45	27	50	

### Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
<b>S25R ...0904</b>	DLM 3-NX	DLS 3	DSP 3	LSC 32	SO 40073I	L-W 2.5	T 15
<b>S32S,S40T...0904</b>	DLM 3-NX	DLS 3	DSP 3	LSC 32	SO 40085I	L-W 2.5	T 15

## T-holder type boring bars

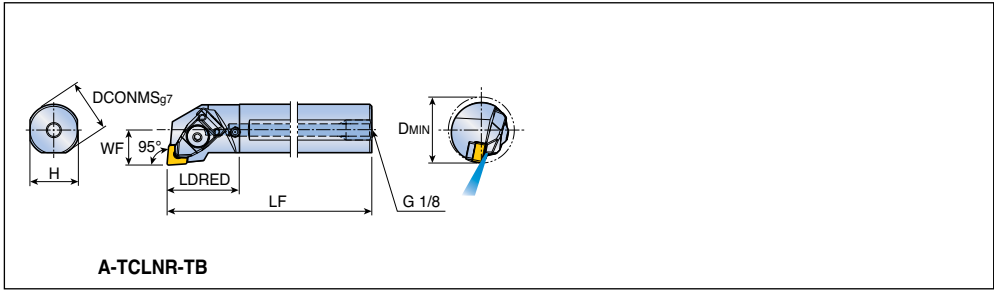


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95°	<b>A25R TCLNR/L 0904</b>	25	23	200	35	17	32	CN... 0904...
	<b>A32S TCLNR/L 0904</b>	32	30	250	35	22	40	RHINO TURN
	<b>A25T TCLNR/L 12</b>	25	23	300	45	17	32	CN... 1204...
	<b>A32T TCLNR/L 12</b>	32	30	300	45	22	40	A250-A257
	<b>A40T TCLNR/L 12</b>	40	37	300	45	27	50	
	<b>A50U TCLNR/L 12</b>	50	47	350	45	35	63	

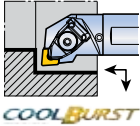
## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
<b>A25R...0904</b>	DLM 3-NX	DLS 3	DSP 3	LSC 32	SO 40073I	NZ 62	L-W 2.5	T 15
<b>A32S...0904</b>	DLM 3-NX	DLS 3	DSP 3	LSC 32	SO 40085I	NZ 62	L-W 2.5	T 15
<b>A25T...12</b>	DLM 4	DLS 4	DSP 4	LSC 42	TS 50A105I	NZ 62	L-W 3	T 20
<b>A32T...12</b>	DLM 4	DLS 4	DSP 4	LSC 42	TS 50A105I	NZ 62	L-W 3	T 20
<b>A40T...12</b>	DLM 4	DLS 4	DSP 4	TSC 44	SO 40050I	NZ 104	L-W 3	T 15
<b>A50U...12</b>	DLM 4	DLS 4	DSP 4	TSC 44	SO 40050I	NZ 104	L-W 3	T 15

## T-holder type boring bars with high pressure coolant



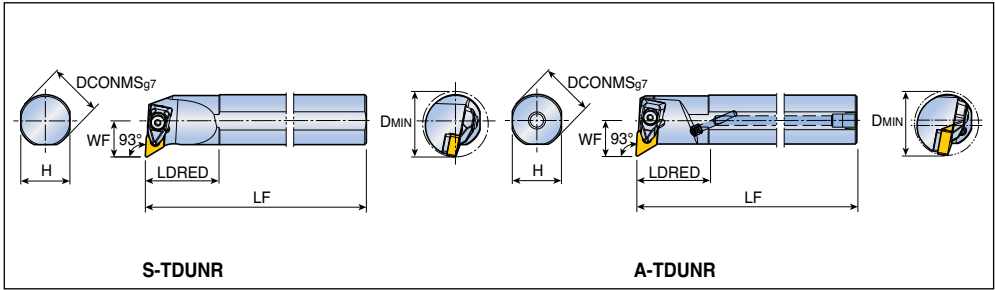
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95°	<b>A25R TCLNR/L 0904-TB</b>	25	23	200	33.4	17	32	CN... 0904...   A250-A257
	<b>A32S TCLNR/L 0904-TB</b>	32	30	250	33.4	22	40	



### Spare parts

Designation	Clamp	Clamp screw	Spring	Upper O-ring	Lower O-ring	Shim	Shim screw	Wrench	
<b>A-TCLNR/L-TB</b>	DLM 3-NX-TB	BH M4x0.7x16-TB	DSP 3	O-RING ID4.47x1.78	O-RING ID6.07x1.78	LSC 32	SO 40073I	L-W 3	T 15

## T-holder type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
93°	<b>S32S TDUNR/L 1305</b>	32	30	250	45	22	40	DN... 1305... A260-A265, A326, A337
	<b>S40T TDUNR/L 1305</b>	40	37	300	55	27	50	
93°	<b>A32S TDUNR/L 1305</b>	32	30	250	45	22	40	DN... 1305... 
	<b>A40T TDUNR/L 1305</b>	40	37	300	55	27	50	
	<b>A32T TDUNR/L 15</b>	32	30	300	45	22	40	
	<b>A40T TDUNR/L 15</b>	40	37	300	45	27	50	
	<b>A50U TDUNR/L 15</b>	50	47	350	45	35	63	

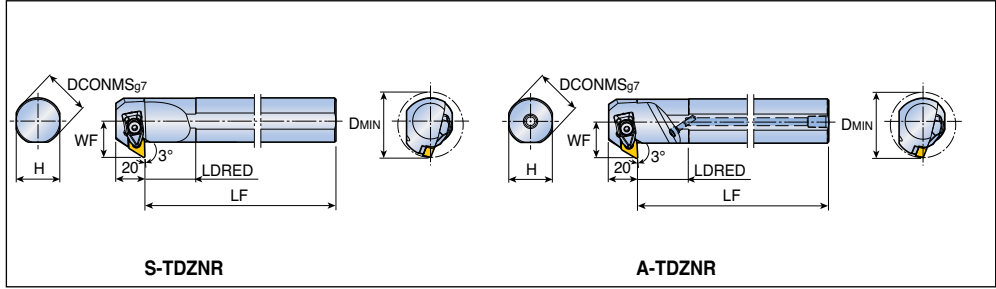
## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
<b>S ...1305</b>	DLM 3.5-NX	DLS 4	DSP 4	LSD 3.52B	TS 50A105I	-	L-W 3	T 20
<b>A32S ...1305</b>	DLM 3.5-NX	DLS 4	DSP 4	LSD 3.52B	TS 50A105I	NZ 62	L-W 3	T 20
<b>A40T ...1305</b>	DLM 3.5-NX	DLS 4	DSP 4	LSD 3.52B	TS 50A105I	NZ 104	L-W 3	T 20
<b>A32T ...15</b>	DLM 4	DLS 4	DSP 4	LSD 42	TS 50A105I	NZ 62	L-W 3	T 20
<b>...15</b>	DLM 4	DLS 4	DSP 4	TSD 43	SO 40050I	NZ 104	L-W 3	T 15

# S-TDZNR/L A-TDZNR/L



## T-holder type boring bars

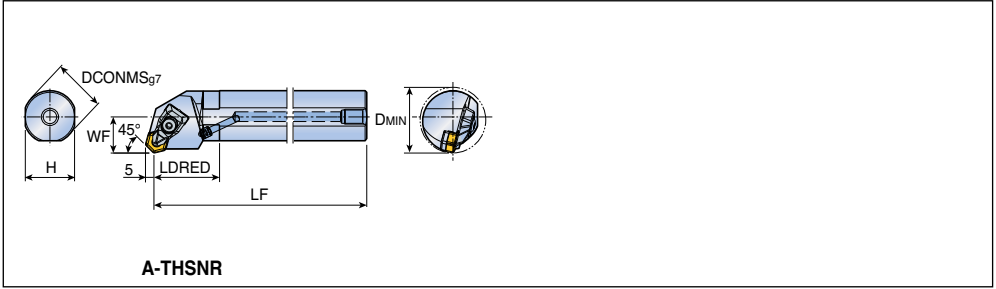


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
93°	<b>S32S TDZNR/L 1305</b>	32	30	250	35	25	45	DN... 1305... RHINO TURN A260-A265
	<b>S40T TDZNR/L 1305</b>	40	37	300	40	29	50	
93°	<b>A32S TDZNR/L 1305</b>	32	30	250	35	25	45	
	<b>A40T TDZNR/L 1305</b>	40	37	300	40	29	50	

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
<b>S ...1305</b>								
<b>A32S...1305</b>	DLM 3.5-NX	DLS 4	DSP 4	LSD 3.52B	TS 50A105I	-	L-W 3	T 20
<b>A32S...1305</b>	DLM 3.5-NX	DLS 4	DSP 4	LSD 3.52B	TS 50A105I	NZ 62	L-W 3	T 20
<b>A40T...1305</b>	DLM 3.5-NX	DLS 4	DSP 4	LSD 3.52B	TS 50A105I	NZ 104	L-W 3	T 20

## T-holder type boring bars



Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
45°	<b>A32T THSNR/L 05</b>	32	30	300	40	22	40	HN...G 0504... A266
	<b>A40T THSNR/L 05</b>	40	37	300	45	27	50	
	<b>A50U THSNR/L 05</b>	50	47	350	45	35	63	

### Spare parts

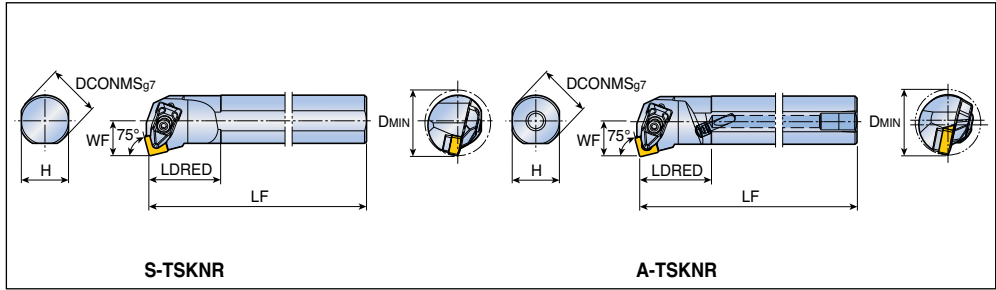
Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
<b>A32T ...05</b>	DLM 4	DLS 4	DSP 4	TSH 42	SO 40050I	NZ 62	L-W 3	T 15
<b>...05</b>	DLM 4	DLS 4	DSP 4	TSH 44	SO 40050I	NZ 104	L-W 3	T 15



# S-TSKNR/L A-TSKNR/L



## T-holder type boring bars



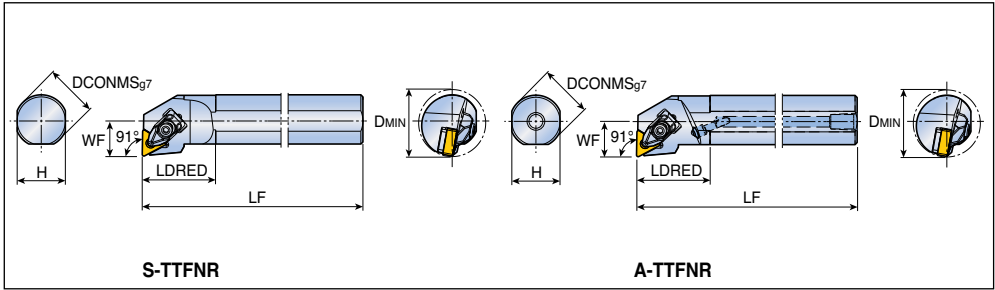
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
75°	<b>S25R TSKNR/L 0904</b>	25	23	200	35	17	32	SN... 0904... A270-A273
	<b>S32S TSKNR/L 0904</b>	32	30	250	35	22	40	
75°	<b>A25R TSKNR/L 0904</b>	25	23	200	35	17	32	SN... 0904... 
	<b>A32S TSKNR/L 0904</b>	32	30	250	35	22	40	
	<b>A25T TSKNR/L 12</b>	25	23	300	45	17	32	

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

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
<b>S25R...0904</b>	DLM 3.5-NX	DLS 3	DSP 3	LSS 32	SO 40073I	-	L-W 2.5	T 15
<b>S32S...0904</b>	DLM 3.5-NX	DLS 3	DSP 3	LSS 32	SO 40085I	-	L-W 2.5	T 15
<b>A25R...0904</b>	DLM 3.5-NX	DLS 3	DSP 3	LSS 32	SO 40073I	NZ 62	L-W 2.5	T 15
<b>A32S...0904</b>	DLM 3.5-NX	DLS 3	DSP 3	LSS 32	SO 40085I	NZ 62	L-W 2.5	T 15
<b>A25T...12</b>	DLM 4	DLS 4	DSP 4	LSS 42	TS 50A105I	NZ 62	L-W 3	T 20

## T-holder type boring bars

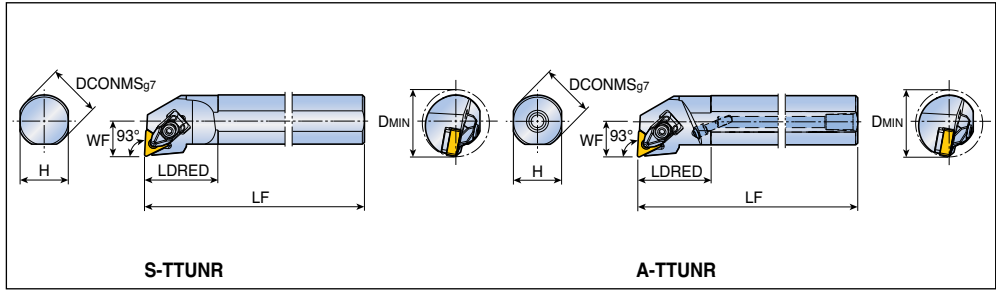


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
91°	<b>S25R TTFNR/L 1304</b>	25	23	200	35	17	32	TN... 1304... A275-A280
	<b>S32S TTFNR/L 1304</b>	32	30	250	35	22	40	
91°	<b>A25R TTFNR/L 1304</b>	25	23	200	35	17	32	
	<b>A32S TTFNR/L 1304</b>	32	30	250	35	22	40	

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
<b>S25R...1304</b>	DLM 2.5-NX	DLS 3	DSP 3	LST 2.52B	SO 40073I	-	L-W 2.5	T 15
<b>S32S...1304</b>	DLM 2.5-NX	DLS 3	DSP 3	LST 2.52B	SO 40085I	-	L-W 2.5	T 15
<b>A25R...1304</b>	DLM 2.5-NX	DLS 3	DSP 3	LST 2.52B	SO 40073I	NZ 62	L-W 2.5	T 15
<b>A32S...1304</b>	DLM 2.5-NX	DLS 3	DSP 3	LST 2.52B	SO 40085I	NZ 62	L-W 2.5	T 15

## T-holder type boring bars

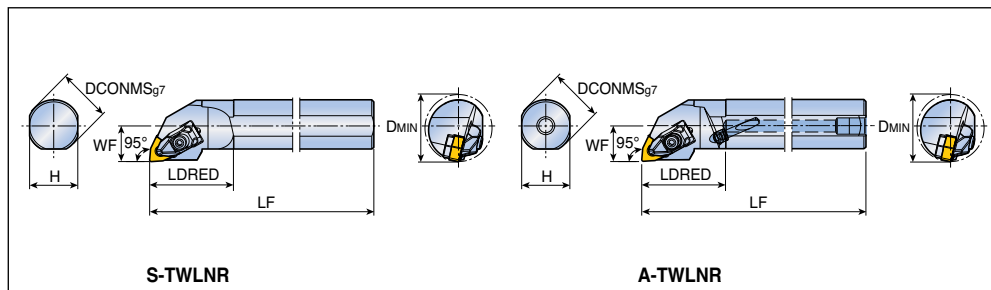


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
93°	<b>S25R TTUNR/L 1304</b>	25	23	200	35	17	32	TN... 1304...  A275-A280
	<b>S32S TTUNR/L 1304</b>	32	30	250	35	22	40	
93°	<b>A25R TTUNR/L 1304</b>	25	23	200	35	17	32	
	<b>A32S TTUNR/L 1304</b>	32	30	250	35	22	40	

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
<b>S25R...1304</b>								
<b>S32S...1304</b>	DLM 2.5-NX	DLS 3	DSP 3	LST 2.52B	SO 40073I	-	L-W 2.5	T 15
<b>A25R...1304</b>	DLM 2.5-NX	DLS 3	DSP 3	LST 2.52B	SO 40073I	NZ 62	L-W 2.5	T 15
<b>A32S...1304</b>	DLM 2.5-NX	DLS 3	DSP 3	LST 2.52B	SO 40085I	NZ 62	L-W 2.5	T 15

## T-holder type boring bars

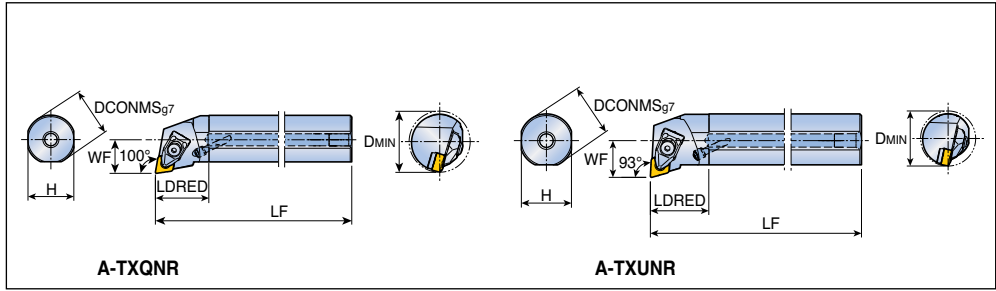


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95°	<b>S25R TWLNLR/L 0604</b>	25	23	200	40	17	32	WN...X 0604...
	<b>S32S TWLNLR/L 0604</b>	32	30	250	45	22	40	<b>RHINOTURN</b> A284-A288,
	<b>S25T TWLNLR/L 08</b>	25	23	300	35	17	32	WN... 0804... A333, A342
	<b>S32T TWLNLR/L 08</b>	32	30	300	45	22	40	
95°	<b>A25R TWLNLR/L 0604</b>	25	23	200	40	17	32	WN...X 0604...
	<b>A32S TWLNLR/L 0604</b>	32	30	250	45	22	40	<b>RHINOTURN</b>
	<b>A20S TWLNLR/L 06</b>	20	18	250	35	13	25	WN... 0604...
	<b>A25T TWLNLR/L 06</b>	25	23	300	40	17	32	
	<b>A32T TWLNLR/L 06</b>	32	30	300	45	22	40	
	<b>A25T TWLNLR/L 08</b>	25	23	300	40	17	32	WN... 0804...
	<b>A32T TWLNLR/L 08</b>	32	30	300	45	22	40	
	<b>A40T TWLNLR/L 08</b>	40	37	300	45	27	50	

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
<b>S25R...0604</b>							L-W 2.5	T 15
<b>S32S...0604</b>	DLM 3-NX	DLS 3	DSP 3	LSW 32	SO 40073I	-	L-W 2.5	T 15
<b>A25R...0604</b>	DLM 3-NX	DLS 3	DSP 3	LSW 32	SO 40073I	NZ 62	L-W 2.5	T 15
<b>A32S...0604</b>	DLM 3-NX	DLS 3	DSP 3	LSW 32	SO 40085I	NZ 62	L-W 2.5	T 15
<b>A20S...06</b>	DLM 3	DLS 3	DSP 3	-	-	NZ 62	L-W 2.5	-
<b>...06</b>	DLM 3	DLS 3	DSP 3	PSW 32	SO 40090I	NZ 62	L-W 2.5	T 15
<b>...08</b>	DLM 4	DLS 4	DSP 4	PSW 42	TS 50A105I	NZ 62	L-W 3	T 20
<b>A40T...08</b>	DLM 4	DLS 4	DSP 4	TSW 44	SO 40050I	NZ 104	L-W 3	T 15

## T-holder type boring bars

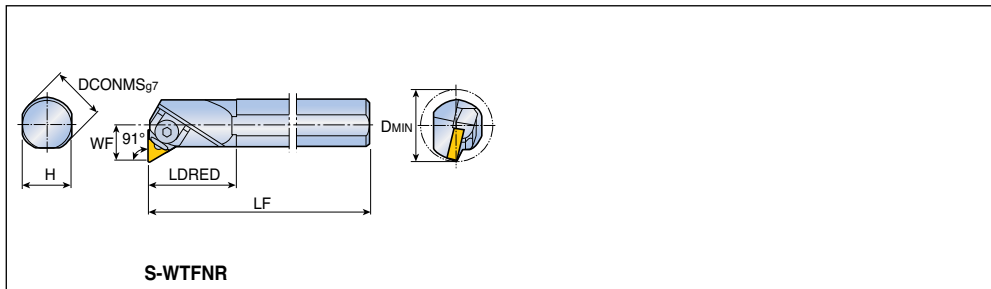


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
<b>100°</b>	<b>A25R TXQNR/L 1105</b>	25	23	200	33.4	17	32	XNMG 1105... <i>RHINOXTURN</i> A289
	<b>A32S TXQNR/L 1105</b>	32	30	250	35	22	40	
<b>93°</b>	<b>A32S TXUNR/L 1105</b>	32	30	250	35	22	40	

## Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Nozzle	Wrench	
<b>A25R...1105</b>	DLM 3.5-NX	DLS 4	DSP 4	-	-	NZ 62	L-W 3	-
<b>A32S...1105</b>	DLM 3.5-NX	DLS 4	DSP 4	LSX 3.52B	TS 50A105I	NZ 62	L-W 3	T 20

## Wedge clamp type boring bars



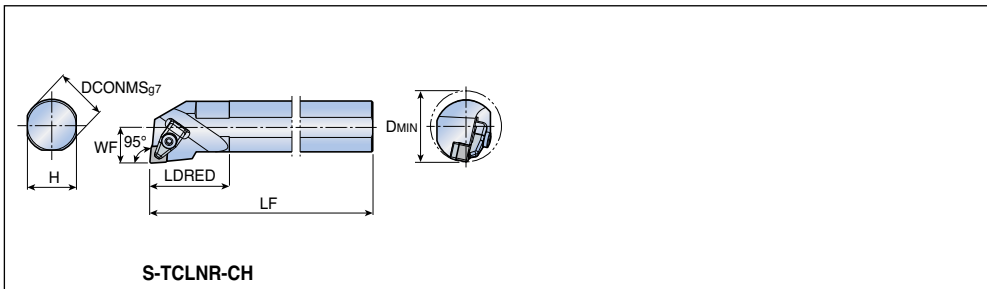
Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
91°	<b>S25R WTFNR/L 1304</b>	25	23	200	40	17	32	TN... 1304...
	<b>S32S WTFNR/L 1304</b>	32	30	250	45	22	40	A275-A280,
	<b>S25T WTFNR/L 16</b>	25	23	300	50	17	32	TN... 1604... A332, A340
	<b>S32T WTFNR/L 16</b>	32	30	300	55	22	40	
	<b>S40T WTFNR/L 16</b>	40	37	300	60	27	50	
	<b>S40T WTFNR/L 22</b>	40	37	300	60	27	50	TN... 2204...
	<b>S50U WTFNR/L 22</b>	50	47	350	65	35	63	

## Spare parts

Designation	Wedge clamp	Screw	Snap ring	Shim	Pin screw	Wrench	
<b>S25R...1304</b>	WC 2.53	WCS 2.5	CSR 2	-	WSS 2.52-1	L-W 2.5	
<b>S32S...1304</b>	WC 2.53	WCS 2.5	CSR 2	WST 2.52	WSS 2.52	L-W 2.5	
<b>S25T...16</b>	WC 33	WCS 4B	WSR 4	-	WSS 33-1	L-W 3	
<b>...16</b>	WC 33	WCS 4	WSR 4	WST 33	WSS 33	L-W 3	
<b>...22</b>	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

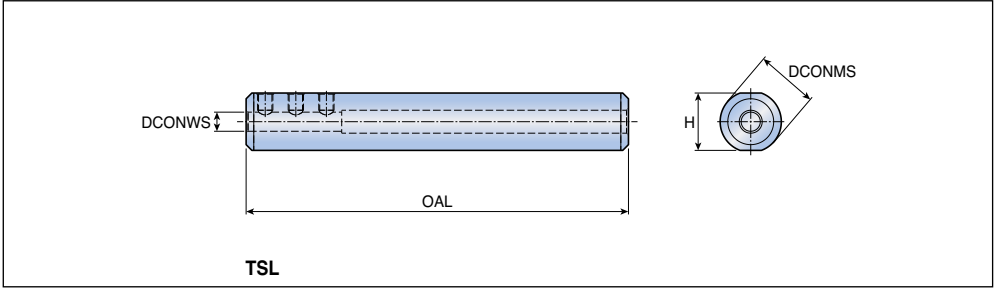


Approach angle	Designation	Dimension (mm)						Insert
		DCONMS	H	LF	LDRED	WF	DMIN	
95°	<b>S40T TCLNR/L 1207-CH</b>	40	37	300	50	27	70	CN...X 1207... A325
	<b>S50U TCLNR/L 1207-CH</b>	50	47	350	50	32	70	

### Spare parts

Designation	Clamp	Clamp screw	Spring	Shim	Shim screw	Wrench	
...1207-CH	CCL 4	CSC 4	DSP 5	S 48	BH M5x0.8x1.0	L-W 4, L-W 3	

## Sleeve



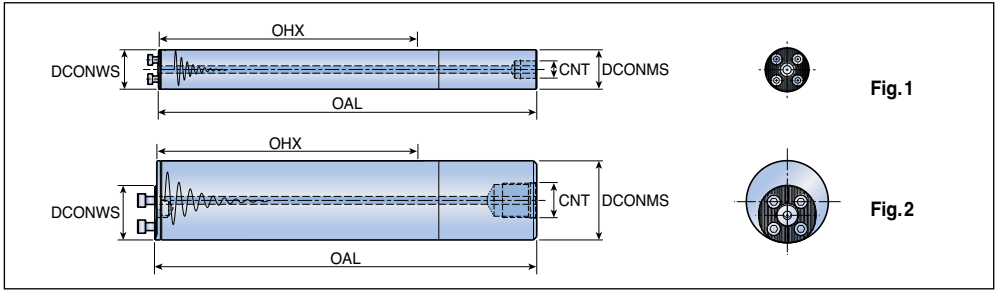
Designation	Dimension (mm)			
	DCONWS	H	OAL	DCONMS
<b>TSL 16-04</b>	4	15	100	16
<b>16-05</b>	5	15	100	16
<b>16-06</b>	6	15	100	16
<b>16-07</b>	7	15	100	16

## Spare parts

Designation	Set screw	Wrench					
<b>TSL...</b>	SS M4x0.7x4	L-W 2					



## Anti-vibration shanks for boring



Designation	Dimension (mm)					Coolant hole	Fig.
	DCONMS	DCONWS	OAL	OHX	CNT		
<b>QS16A-7D</b>	16	16	156.3	92	G 1/8	●	1
<b>QS16E-10D<sup>(1)</sup></b>	16	16	204.3	140	-	●	1
<b>QS20A-7D</b>	20	20	200.3	120	G 1/4	●	1
<b>QS20E-10D<sup>(1)</sup></b>	20	20	260.3	180	-	●	1
<b>QS25A-7D</b>	25	25	257.5	155	G 1/4	●	1
<b>QS25A-10D</b>	25	25	332.5	230	G 1/4	●	1
<b>QS32A-7D</b>	32	32	323.0	192	G 3/8	●	1
<b>QS32A-10D</b>	32	32	419.0	288	G 3/8	●	1
<b>QS40A-7D</b>	40	40	411.0	251	G 1/2	●	1
<b>QS40A-10D</b>	40	40	531.0	368	G 1/2	●	1
<b>QS50A-7D</b>	50	40	523.0	318	G 1/2	●	2
<b>QS50A-10D</b>	50	40	673.0	468	G 1/2	●	2
<b>QS60A-7D</b>	60	40	633.0	388	G 3/4	●	2
<b>QS60A-10D</b>	60	40	813.0	568	G 3/4	●	2

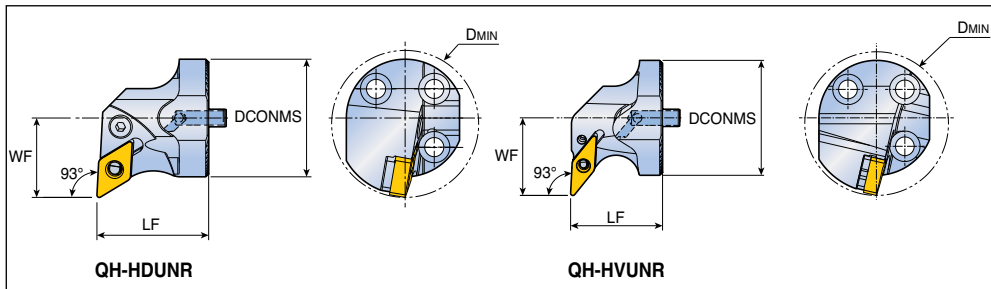
• OHX: Maximum overhang

• <sup>(1)</sup> Carbide shank

## Spare parts

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

## Hook lever type boring heads

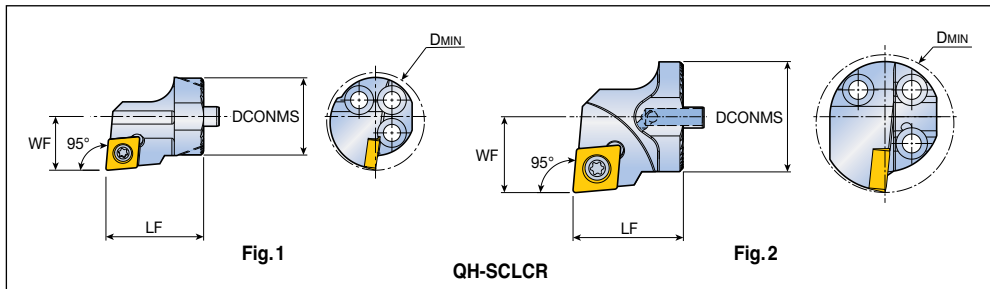


Approach angle	Designation	Dimension (mm)				Coolant hole	Insert
		DCONMS	LF	WF	DMIN		
<b>93°</b> 	<b>QH40-HDUNR/L-1305</b>	40	38	27	50	●	DN...G 1305...  A260-A265
<b>93°</b> 	<b>QH40-HVUNR/L-1304</b>	40	32	27	50	●	VN...X 1304... YNMG 1304...  A281, A283, A289

## Spare parts

Designation	Lever	Lever screw	Shim		Shim pin	Wrench	
<b>HDUNR/L-1305</b>	LCL 11-NX	LCS 4S	LSD 3.52B	-	LSP 4	L-W 3	
<b>HVUNR/L-1304</b>	LCL 08-NX	LCS 4-DH	-	LSV 2.51.8H	LSP 3B	L-W 2.5	

## Screw type boring heads



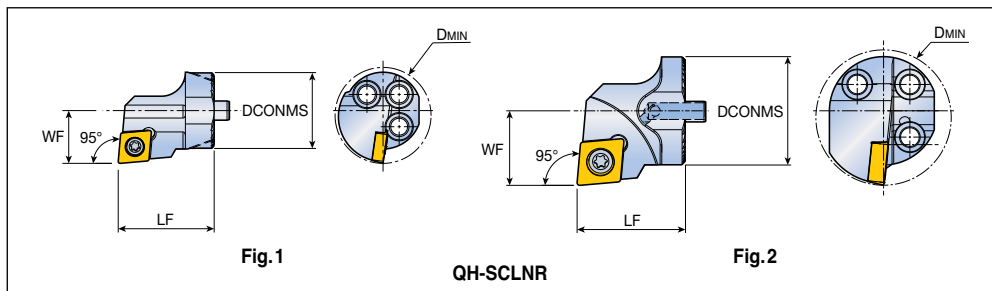
Approach angle	Designation	Dimension (mm)				Coolant hole	Fig.	Insert
		DCONMS	LF	WF	DMIN			
95°	<b>QH16-SCLCR/L-06</b>	16	20	11	20	●	1	CC... 0602...
	<b>QH20-SCLCR/L-09</b>	20	20	13	25	●	2	CC... 09T3...
	<b>QH25-SCLCR/L-09</b>	25	22	17	32	●	2	
	<b>QH32-SCLCR/L-12</b>	32	32	22	40	●	2	CC... 1204...
	<b>QH40-SCLCR/L-12</b>	40	38	27	50	●	2	

A292-A295,
   
 A343

## Spare parts

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

## Screw type boring heads



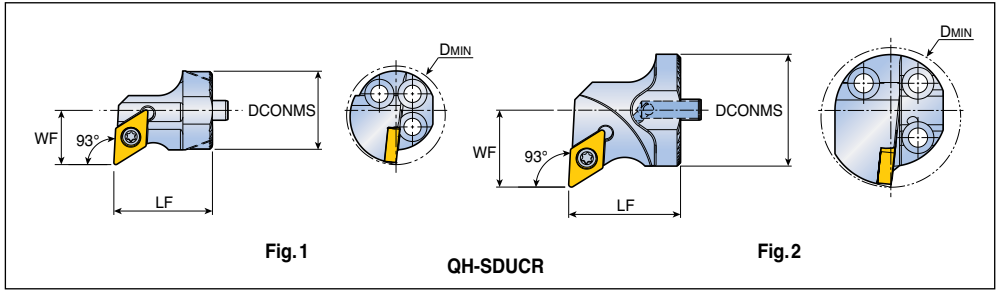
Approach angle	Designation	Dimension (mm)				Coolant hole	Fig.	Insert
		DCONMS	LF	WF	DMIN			
95°	QH16-SCLNR/L-0703	16	20	11	20	•	1	CNMX 0703...  A259
	QH20-SCLNR/L-0703	20	20	13	25	•	2	

## Spare parts

Designation	Screw	Wrench				
...0703	TS 25D060/HG-P	T 7P				

# QH-SDUCR/L

## Screw type boring heads



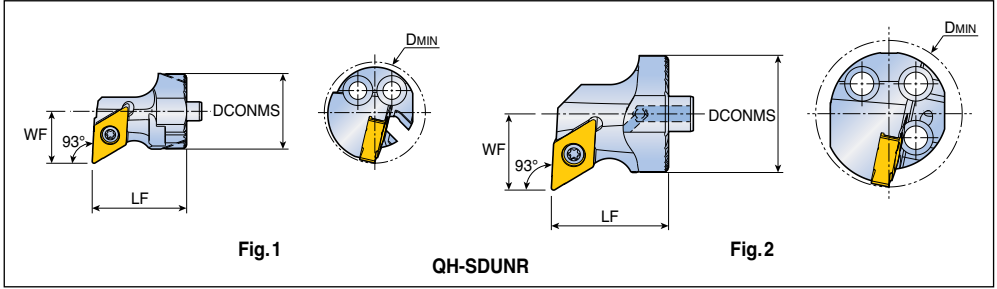
Approach angle	Designation	Dimension (mm)				Coolant hole	Fig.	Insert
		DCONMS	LF	WF	DMIN			
 30° max.	<b>QH16-SDUCR/L-07</b>	16	20	11	20	●	1	DC... 0702...
	<b>QH20-SDUCR/L-11</b>	20	20	13	25	●	2	DC... 11T3...
	<b>QH25-SDUCR/L-11</b>	25	22	17	32	●	2	 A297-A300, A344
	<b>QH32-SDUCR/L-11</b>	32	32	22	40	●	2	
<b>QH40-SDUCR/L-11</b>	40	38	27	50	●	2		

## Spare parts

Designation	Screw	Shim	Shim screw	Wrench			
...07	SO 250651	-	-	T 7	-		
...11	SO 35080I	-	-	T 15	-		
<b>QH40...11</b>	SO 35124I	SSD 32	SO 50090S	T 15	L-W 3.5		

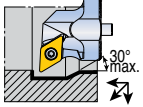
# QH-SDUNR/L

## Screw type boring heads



QH-SDUNR

Approach angle	Designation	Dimension (mm)				Coolant hole	Fig.	Insert
		DCONMS	LF	WF	DMIN			
93°	QH16-SDUNR/L-0803	16	20	11	20	●	1	DN...X 0803...
	QH20-SDUNR/L-0803	20	20	13	25	●	2	RHINO TURN DN...X 0803...
	QH32-SDUNR/L-1305	32	32	22	40	●	2	DN...G 1305... RHINO TURN

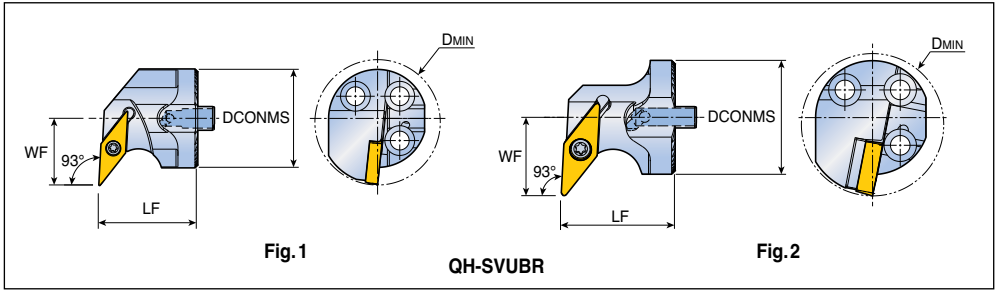


A260-A265

## Spare parts

Designation	Screw	Wrench					
...0803	TS 25D060/HG-P	T 7P					
...1305	TS 40G110I	T 15					

## Screw type boring heads



Approach angle	Designation	Dimension (mm)				Coolant hole	Fig.	Insert
		DCONMS	LF	WF	DMIN			
 93°	<b>QH20-SVUBR/L-11</b>	20	20	16	27	●	1	VB... 1103...
	<b>QH25-SVUBR/L-11</b>	25	25	17	31	●	1	
	<b>QH32-SVUBR/L-16</b>	32	32	22	40	●	2	VB... 1604...
	<b>QH40-SVUBR/L-16</b>	40	32	27	50	●	2	 A313, A314, A349

## Spare parts

Designation	Screw	Shim	Shim screw	Wrench			
<b>SVUBR/L-11</b>	SO 250651	-	-	T 7	-		
<b>SVUBR/L-16</b>	SO 351241	SSV 32	SO 50090S	T 15	L-W 3.5		

# QH-SWLNR/L

## Screw type boring heads

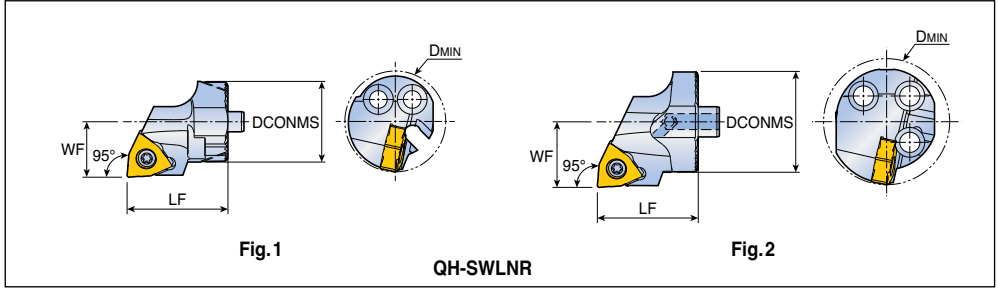


Fig. 1

QH-SWLNR

Fig. 2

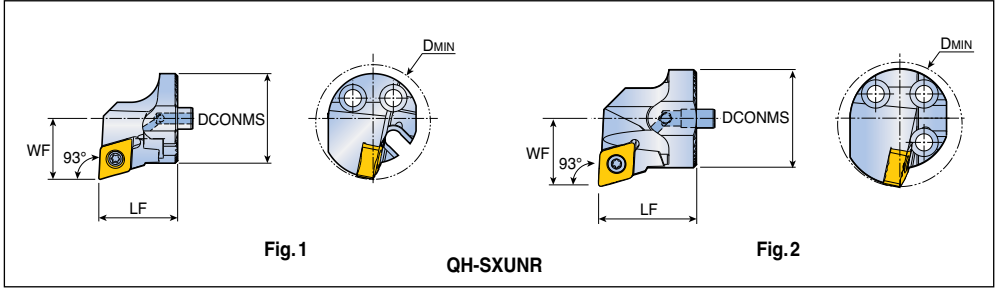
Approach angle	Designation	Dimension (mm)				Coolant hole	Fig.	Insert
		DCONMS	LF	WF	DMIN			
95°	QH16-SWLNR/L-0403	16	20	11	20	•	1	WN...X 0403...
	QH20-SWLNR/L-0403	20	20	13	25	•	2	<b>RHINO</b> TURN A287, A288

## Spare parts

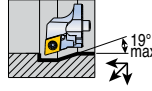
Designation	Screw	Wrench				
	SWLNR/L-0403	TS 25D060/HG-P	T 7P			



## Screw type boring heads



Approach angle	Designation	Dimension (mm)				Coolant hole	Fig.	Insert
		DCONMS	LF	WF	DMIN			
<b>93°</b>	<b>QH25-SXUNR/L-0904</b>	25	22	17	32	●	1	XNMX 0904...
	<b>QH32-SXUNR/L-1105</b>	32	32	22	40	●	2	XNMX 1105...
								<i>RHINOXTURN</i>
								A289



## Spare parts

Designation	Screw	Wrench				
<b>...0904</b>	TS 30080I/HG	T 9				
<b>...1105</b>	TS 40G110I	T 15				



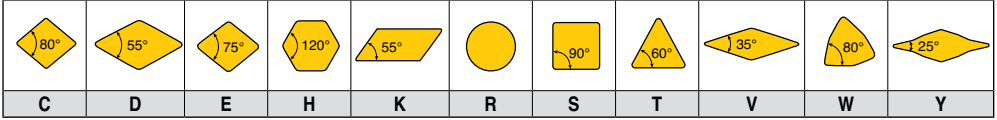
# Turning Inserts



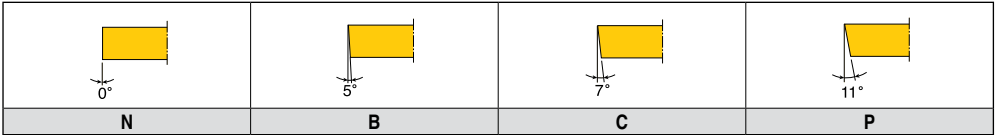
C
N
M
G

1
2
3
4

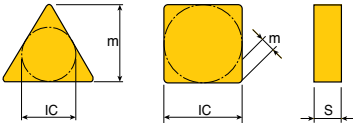
## 1 Shape



## 2 Clearance angle



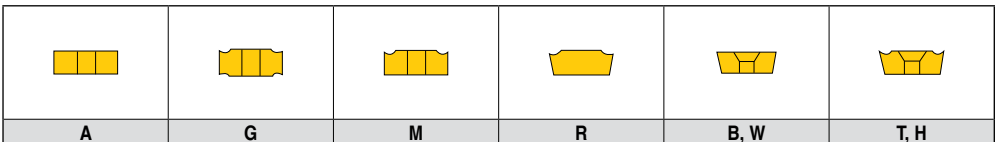
## 3 Tolerance



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



**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

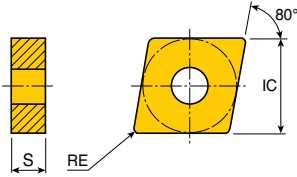
## 8 Hand of insert

<b>R: Right hand</b>	
<b>L: Left hand</b>	

## 9 Chip breaker

For chip breakers, see page A31-A44

## Negative 80° rhombic inserts



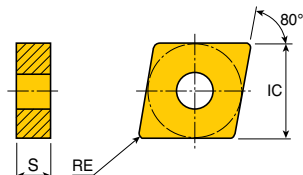
Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	4.76	0.1-1.2
<b>12</b>	12.7	4.76	0.1-1.6
<b>16</b>	15.88	6.35	1.2-1.6
<b>19</b>	19.05	6.35	0.8-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																					
				Cermet		CVD coated								PVD coated			K10								
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235		TT15100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020
 Medium	<b>CNGG 090401 ML</b>	0.1-1.0	0.03-0.10																	●					●
	<b>090402 ML</b>	0.2-1.2	0.05-0.15																	●					●
	<b>090404 ML</b>	0.5-1.5	0.05-0.20																	●					●
	<b>090408 ML</b>	0.5-1.5	0.08-0.25																	●					●
 Medium	<b>CNGG 120401 ML</b>	0.1-3.5	0.03-0.10																	●	●				
	<b>120402 ML</b>	0.2-3.5	0.05-0.15																	●	●				●
	<b>120404 ML</b>	0.8-3.5	0.10-0.30																	●	●				●
	<b>120408 ML</b>	1.0-3.5	0.12-0.35																	●	●				●
 Roughing	<b>CNMA 090408</b>	1.0-3.0	0.15-0.60				●	●																	
	<b>090412</b>	1.0-3.0	0.15-0.70				●	●																	
 Roughing	<b>CNMA 120404</b>	1.0-5.0	0.15-0.50				●	●	●																●
	<b>120408</b>	1.0-6.0	0.15-0.60				●	●	●																●
	<b>120412</b>	1.5-6.0	0.15-0.70				●	●	●	●															
	<b>120416</b>	2.0-6.0	0.20-0.80				●	●	●																
	<b>160612</b>	2.0-8.0	0.15-0.70				●	●	●																
	<b>160616</b>	2.0-8.0	0.20-0.80					●																	
	<b>190608</b>	2.0-10.0	0.15-0.70					●																	
	<b>190612</b>	2.0-10.0	0.15-0.70					●	●																
	<b>190616</b>	3.0-10.0	0.15-1.00					●	●	●															
 Roughing	<b>CNMA 120408 WT</b>	0.7-5.0	0.15-0.80				●																		

● : Standard items

A53, A67-A69, A84, A110-A112, A166, A185, A194, A200, A223-A225

## Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>19</b>	19.05	6.35	2.4
<b>25</b>	25.4	9.52	2.4

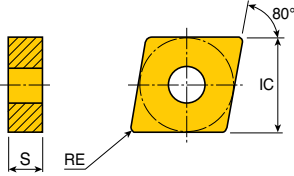
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet			CVD coated							PVD coated																										
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10															
	<b>CNMD 250924 HD</b>																																							
	Roughing	4.0-15.0	0.55-1.50								•	•	•																											
	Finishing	2.0-5.0	0.40-0.80																																					
	<b>CNMD 190624 HT</b>																																							
	Roughing	4.0-9.0	0.35-0.90																																					
	Finishing	2.0-5.0	0.40-0.80																																					
	<b>250924 HT</b>																																							
	Roughing	5.0-12.0	0.55-1.30																																					
	Finishing	2.0-5.0	0.40-0.80																																					
	<b>CNMD 190624 HY</b>																																							
	Roughing	4.0-12.0	0.50-1.10																																					
	Finishing	2.0-5.0	0.40-0.80																																					
	<b>250924 HY</b>																																							
	Roughing	4.0-15.0	0.55-1.50																																					
	Finishing	2.0-5.0	0.40-0.80																																					
	<b>CNMD 250924 HZ</b>																																							
	Roughing	4.0-15.0	0.55-1.50																																					
	Finishing	2.0-5.0	0.40-0.80																																					



A67-A69,  
A110, A111,  
A194

●: Standard items

## Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
09	9.52	4.76	0.4-1.2
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

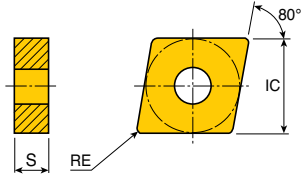
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated								PVD coated					K10					
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT17100		TT15080	TT18020	TT19080	TT13010	TT13020
	<b>CNMG 090404</b>	0.5-3.0	0.10-0.45				●	●																
	<b>090408</b>	0.5-3.0	0.10-0.50				●	●																
	<b>090412</b>	0.5-3.0	0.10-0.55				●	●																
	<b>CNMG 120404</b>	1.0-5.0	0.17-0.45	●		●	●	●	●	●		●					●							●
	<b>120408</b>	1.5-5.0	0.23-0.60	●		●	●	●	●	●		●					●	●						
	<b>120412</b>	2.0-5.0	0.25-0.60			●	●			●	●		●											
	<b>120416</b>	2.5-5.0	0.27-0.60							●	●													
	<b>160604</b>	2.0-6.5	0.20-0.45								●													
	<b>160608</b>	2.0-6.5	0.25-0.60							●	●					●								
	<b>160612</b>	2.0-6.5	0.27-0.60								●													
	<b>160616</b>	2.0-6.5	0.29-0.60								●													
	<b>190604</b>	3.0-8.0	0.20-0.45							●	●										●			
	<b>190608</b>	3.0-8.0	0.25-0.60					●	●		●	●	●								●			
	<b>190612</b>	3.0-8.0	0.30-0.60					●	●		●	●	●								●	●		
<b>190616</b>	3.0-8.0	0.35-0.70								●	●	●								●				
	<b>CNMG 090404 EA</b>	0.20-1.5	0.05-0.30										●	●	●		●	●						
	<b>090408 EA</b>	0.30-1.5	0.07-0.40											●	●	●		●	●					
	<b>CNMG 120404 EA</b>	0.15-1.5	0.05-0.30	●						●	●	●	●	●	●		●	●	●	●	●			
	<b>120408 EA</b>	0.15-1.5	0.07-0.40	●						●		●	●	●	●		●	●	●	●	●			

● : Standard items

A53, A67-A69, A84,  
A110-A112, A166,  
A185, A194, A200, A223-A225



## Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	4.76	0.8-1.2
<b>12</b>	12.7	4.76	0.4-1.6
<b>16</b>	15.88	6.35	0.8-1.2
<b>19</b>	19.05	6.35	0.8-1.6

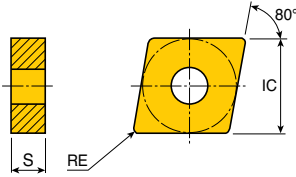
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated										PVD coated									
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT17100	TT15080	TT8020	TT9080	TT3010	TT3020	TT9020	K10
 Medium	<b>CNMG 090408 EM</b>	0.5-3.0	0.13-0.40																						
	<b>090412 EM</b>	0.7-3.0	0.15-0.40																						
 Medium	<b>CNMG 120404 EM</b>	0.5-5.0	0.11-0.50																						
	<b>120408 EM</b>	0.5-5.0	0.13-0.50																						
	<b>120412 EM</b>	0.5-5.0	0.15-0.55																						
	<b>120416 EM</b>	0.5-5.0	0.17-0.60																						
	<b>160608 EM</b>	0.5-6.5	0.13-0.50																						
	<b>160612 EM</b>	0.5-6.5	0.15-0.55																						
	<b>190608 EM</b>	0.5-8.0	0.13-0.50																						
	<b>190612 EM</b>	0.5-8.0	0.15-0.55																						
 Roughing	<b>CNMG 120408 ET</b>	1.2-5.5	0.17-0.55																						
	<b>120412 ET</b>	1.2-5.5	0.20-0.60																						
	<b>160608 ET</b>	2.5-7.0	0.20-0.60																						
	<b>160612 ET</b>	2.5-7.0	0.25-0.60																						
	<b>190608 ET</b>	3.0-9.0	0.20-0.60																						
	<b>190612 ET</b>	3.0-9.0	0.25-0.60																						
	<b>190616 ET</b>	3.0-9.0	0.30-0.65																						
 Finishing	<b>CNMG 120404 FA</b>	0.2-2.0	0.05-0.20																						
	<b>120408 FA</b>	0.3-2.0	0.05-0.25																						
 Finishing	<b>CNMG 120404 FC</b>	0.2-2.5	0.05-0.30																						
	<b>120408 FC</b>	0.3-2.5	0.08-0.35																						
	<b>120412 FC</b>	0.3-2.5	0.10-0.40																						



A53, A67-A69, A84,  
A110-A112, A166,  
A185, A194, A200, A223-A225

●: Standard items

## Negative 80° rhombic inserts



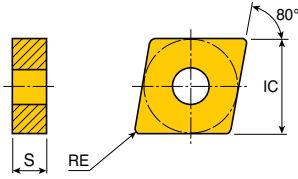
Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	4.76	0.2-1.2
<b>12</b>	12.7	4.76	0.4-1.6
<b>16</b>	15.88	6.35	1.2-1.6
<b>19</b>	19.05	6.35	1.2-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat	CVD coated								PVD coated				K10									
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9235	TT15100		TT17100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020		
	<b>CNMG 090404 FG</b>	0.2-2.0	0.07-0.30																							
	<b>090408 FG</b>	0.5-2.0	0.10-0.35									●	●													
	<b>090412 FG</b>	0.5-2.0	0.15-0.40										●	●												
Finishing																										
	<b>CNMG 120404 FG</b>	0.2-2.5	0.05-0.30	●	●																					
	<b>120408 FG</b>	0.3-2.5	0.08-0.35	●	●																					
Finishing																										
	<b>CNMG 120404 FLP</b>	0.2-2.0	0.08-0.30																							
	<b>120408 FLP</b>	0.3-2.0	0.10-0.30																							
Finishing																										
	<b>CNMG 090404 FM</b>	0.25-2.0	0.07-0.30	●	●																					
	<b>090408 FM</b>	0.3-2.0	0.10-0.35		●																					
	<b>090412 FM</b>	0.35-2.0	0.15-0.40	●	●																					
Finishing																										
	<b>CNMG 090402 FS</b>	0.2-1.5	0.05-0.25	●	●																					
	<b>090404 FS</b>	0.25-1.5	0.07-0.30	●	●																					
	<b>090408 FS</b>	0.5-1.5	0.10-0.30	●	●																					
Finishing																										
	<b>CNMG 090404 FT</b>	0.4-3.0	0.07-0.30																							
	<b>090408 FT</b>	0.5-3.0	0.10-0.40																							
	<b>090412 FT</b>	0.6-3.0	0.15-0.50																							
Finishing																										
	<b>CNMG 120408 KT</b>	0.38-7.0	0.19-0.53																							
	<b>120412 KT</b>	0.50-7.0	0.25-0.70																							
	<b>120416 KT</b>	0.75-7.0	0.28-0.85																							
	<b>160612 KT</b>	0.8-9.0	0.25-0.75																							
	<b>160616 KT</b>	1.0-9.0	0.30-0.85																							
	<b>190612 KT</b>	1.0-14.0	0.25-0.75																							
	<b>190616 KT</b>	1.5-14.0	0.30-0.85																							

● : Standard items

A53, A67-A69, A84,  
A110-A112, A166,  
A185, A194, A200, A223-A225

## Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	4.76	0.4-1.2
<b>12</b>	12.7	4.76	0.4-1.2
<b>16</b>	15.88	6.35	1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated										PVD coated									
				PV3010	CT3000	TT3005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9235	TT15100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10		
	<b>CNMG 120404 MC</b>	0.5-3.5	0.10-0.30	●			●			●	●	●			●	●									
	<b>120408 MC</b>	0.7-3.5	0.12-0.35	●											●										
	<b>120412 MC</b>	0.7-3.5	0.15-0.40																						
Medium																									
	<b>CNMG 120408 MGP</b>	0.5-5.0	0.15-0.55																						
	<b>120412 MGP</b>	0.6-5.0	0.17-0.55																						
Medium																									
	<b>CNMG 120408 MGS</b>	1.0-4.0	0.15-0.40				●															●	●	●	
	<b>120412 MGS</b>	1.5-4.0	0.17-0.50				●															●	●	●	
Medium																									
	<b>CNMG 090404 MK</b>	0.7-3.0	0.17-0.40												●	●									
	<b>090408 MK</b>	1.0-3.0	0.20-0.50												●	●						●	●	●	●
	<b>090412 MK</b>	1.2-3.0	0.23-0.50												●	●						●	●		
Medium																									
	<b>CNMG 120404 ML</b>	0.8-3.5	0.10-0.30	●											●	●									●
	<b>120408 ML</b>	1.0-3.5	0.12-0.35	●											●	●	●	●	●						●
	<b>120412 ML</b>	1.3-3.5	0.15-0.35													●									
Medium																									
	<b>CNMG 120408 MLP</b>	0.5-3.5	0.10-0.40																						
	<b>120412 MLP</b>	0.6-3.5	0.15-0.50																						
Medium																									
	<b>CNMG 090404 MM</b>	0.4-3.0	0.15-0.45												●	●	●	●	●	●					●
	<b>090408 MM</b>	0.5-3.0	0.20-0.50												●	●	●	●	●	●					●
	<b>090412 MM</b>	0.7-3.0	0.23-0.50												●	●	●	●	●	●					●
Medium																									
	<b>CNMG 120404 MP</b>	0.8-4.0	0.10-0.30												●	●	●	●	●	●					
	<b>120408 MP</b>	1.0-4.0	0.12-0.40												●	●	●	●	●	●					
	<b>120412 MP</b>	1.5-4.0	0.15-0.50												●	●	●	●	●	●					●
	<b>160612 MP</b> ✓	2.5-6.0	0.15-0.50													●									
Medium																									

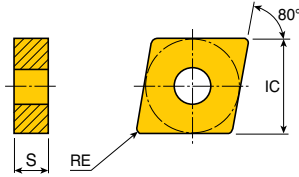
A53, A67-A69, A84, A110-A112, A166, A185, A194, A200, A223-A225

● ✓ Marked: Old type chip breaker






●: Standard items



## Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	4.76	0.4-1.2
<b>12</b>	12.7	4.76	0.4-1.6
<b>16</b>	15.88	6.35	0.8-1.6
<b>19</b>	19.05	6.35	0.8-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																					
				Cermat		CVD coated								PVD coated				K10							
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100		TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020
 Medium	<b>CNMG 090404 MT</b>	0.8-3.0	0.10-0.35							●	●	●	●				●								
	<b>090408 MT</b>	1.0-3.0	0.15-0.45	●						●	●	●	●				●	●		●					
	<b>090412 MT</b>	1.2-3.0	0.20-0.55								●	●	●				●								
 <b>OLD</b> Medium	<b>CNMG 120404 MT</b>	1.0-5.0	0.15-0.40	●		●	●	●		●	●						●		●	●					
	<b>120408 MT</b>	1.2-5.0	0.17-0.55	●	●					●	●	●	●	●	●	●	●	●	●	●	●	●			
	<b>120412 MT</b>	1.5-5.0	0.20-0.55				●	●		●	●	●	●	●	●	●	●	●	●	●	●	●			
	<b>160608 MT</b> ✓	2.0-6.5	0.20-0.55				●				●														
	<b>160612 MT</b> ✓	2.0-6.5	0.25-0.55				●				●	●					●		●	●					
	<b>160616 MT</b> ✓	2.0-6.5	0.30-0.55								●							●		●	●				
	<b>190608 MT</b>	3.0-8.0	0.23-0.55				●				●	●	●	●	●	●	●	●	●	●	●	●			
	<b>190612 MT</b>	3.0-8.0	0.25-0.55								●	●	●	●	●	●	●	●	●	●	●	●			
	<b>190616 MT</b> ✓	3.0-8.0	0.30-0.55									●										●	●		
 Medium	<b>CNMG 090404 PC</b>	0.4-3.0	0.10-0.30								●	●	●									●			
	<b>090408 PC</b>	0.5-3.0	0.15-0.40								●	●	●				●					●			
	<b>090412 PC</b>	0.6-3.0	0.18-0.50								●	●	●				●					●			
 Medium	<b>CNMG 120404 PC</b>	0.4-5.0	0.10-0.40								●	●	●	●	●	●									
	<b>120408 PC</b>	0.5-5.0	0.15-0.50								●	●	●	●	●	●	●					●			
	<b>120412 PC</b>	0.6-5.0	0.17-0.55								●	●	●	●	●	●	●					●			
	<b>120416 PC</b>	0.8-5.0	0.20-0.60								●	●	●	●	●	●	●	●					●		
	<b>160608 PC</b>	2.0-6.5	0.20-0.55								●	●													
	<b>160612 PC</b>	2.0-6.5	0.25-0.55								●	●													
	<b>160616 PC</b>	2.0-6.5	0.30-0.55								●	●													
	<b>190608 PC</b>	3.0-8.0	0.23-0.55								●	●	●	●	●	●	●	●	●	●	●	●			
	<b>190612 PC</b>	3.0-8.0	0.25-0.55								●	●	●	●	●	●	●	●	●	●	●	●			
	<b>190616 PC</b>	3.0-8.0	0.30-0.55									●											●	●	
 Roughing	<b>CNMG 120408 RGP</b>	2.5-6.0	0.25-0.70								●	●													
	<b>120412 RGP</b>	2.5-6.0	0.25-0.70								●	●													
	<b>120416 RGP</b>	2.5-6.0	0.30-0.70								●	●													
	<b>190616 RGP</b>	3.0-9.0	0.30-0.85								●	●													

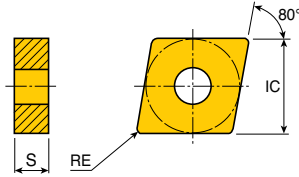


A53, A67-A69, A84,  
A110-A112, A166,  
A185, A194, A200, A223-A225

● ✓ Marked: Old type chip breaker

●: Standard items

## Negative 80° rhombic inserts



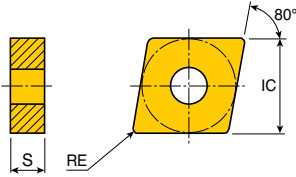
Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	4.76	0.4-1.2
<b>12</b>	12.7	4.76	0.4-1.6
<b>16</b>	15.88	6.35	1.2-1.6
<b>19</b>	19.05	6.35	0.8-1.6
<b>25</b>	25.4	9.52	2.4

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	TT15100	TT17100	TT15080	TT8020	TT9080	TT3010	TT3020	TT9020	K10	
 Roughing	<b>CNMG 120408 RT</b>	2.5-6.0	0.25-0.70			●	●	●	●	●	●	●	●	●	●	●	●	●								
	<b>120412 RT</b>	2.5-6.0	0.25-0.70			●	●	●	●	●	●	●	●	●	●	●	●	●								
	<b>120416 RT</b>	2.5-6.0	0.30-0.70					●	●	●																
	<b>160612 RT</b>	3.0-7.0	0.25-0.70					●	●	●	●	●			●	●	●	●								
	<b>160616 RT</b>	3.0-7.0	0.30-0.85					●	●	●	●															
	<b>190608 RT</b>	3.0-9.0	0.25-0.70							●	●					●										
	<b>190612 RT</b>	3.0-9.0	0.25-0.70					●	●	●	●	●	●		●	●	●	●								
	<b>190616 RT</b>	3.0-9.0	0.30-0.85					●	●	●	●	●			●	●	●	●			●					
	<b>250924 RT</b>	5.0-12.0	0.45-1.00							●	●						●									
 Finishing	<b>CNMG 120404 SF</b>	0.5-1.5	0.08-0.25	●											●		●	●								
	<b>120408 SF</b>	0.7-1.5	0.10-0.30	●						●	●				●		●	●								
 Finishing	<b>CNMG 090404 WA</b>	0.25-2.5	0.08-0.25	●	●	●	●	●	●	●	●				●											
	<b>090408 WA</b>	0.25-3.0	0.10-0.40	●	●	●	●	●	●	●	●				●											
	<b>090412 WA</b>	0.4-3.0	0.20-0.50	●	●	●	●	●	●	●	●				●											
 Finishing	<b>CNMG 120404 WS</b>	0.5-2.0	0.05-0.35	●	●				●	●					●											
 Medium	<b>CNMG 120408 WT</b>	1.0-5.0	0.15-0.60	●	●	●	●	●	●	●	●			●												
	<b>120412 WT</b>	1.0-5.0	0.20-0.80						●	●					●											





A53, A67-A69, A84,  
 A110-A112, A166,  
 A185, A194, A200, A223-A225

●: Standard items

## Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>19</b>	19.05	6.35	1.2-2.4
<b>25</b>	25.4	7.94-9.52	2.4-3.2

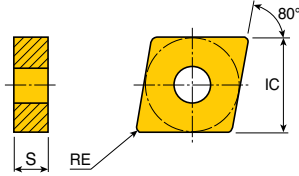
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																							
				Cermet		CVD coated								PVD coated				K10									
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100		TT17100	TT15080	TT18020	TT19080	TT13010	TT13020	TT19020		
 Roughing	<b>CNMM 250924 EH</b>	2.5-15.0	0.45-1.20												●	●	●										
 Roughing	<b>CNMM 190612 HT</b>	4.0-9.0	0.35-0.90								●						●										
	<b>190616 HT</b>	4.0-9.0	0.45-1.00								●	●															
	<b>190624 HT</b>	4.0-9.0	0.55-1.20								●	●						●									
	<b>250724 HT</b>	5.0-12.0	0.55-1.30															●	●								
	<b>250924 HT</b>	5.0-12.0	0.55-1.30															●	●								
	<b>250932 HT</b>	5.0-13.0	0.65-1.30															●	●								
 Roughing	<b>CNMM 190624 HY</b>	4.0-12.0	0.50-1.10								●	●															
	<b>250924 HY</b>	4.0-15.0	0.55-1.50								●	●	●														
 Roughing	<b>CNMM 250924 HZ</b>	4.0-15.0	0.55-1.50								●	●															



A67-A69,  
A194

● : Standard items

## Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>07</b>	7.0	3.18	0.4
<b>12</b>	12.7	4.76-5.56	0.8-1.2
<b>16</b>	15.88	6.35-7.94	0.8-2.4
<b>19</b>	19.05	6.35	0.8-2.4
<b>25</b>	25.4	7.94-9.52	2.4

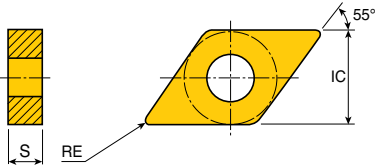
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																						
				Cermet		CVD coated								PVD coated												
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT17100	TT15080	TT8020	TT9080	TT3010	TT3020	TT9020	K10	
 Roughing	<b>CNMM 120408 RH</b>	2.5-6.0	0.30-0.70					●		●	●						●									
	<b>120412 RH</b>	2.5-6.0	0.30-0.80					●		●	●						●									
	<b>160608 RH</b>	3.0-8.0	0.30-0.70								●											●				
	<b>160612 RH</b>	3.0-8.0	0.30-0.80								●	●						●								
	<b>160616 RH</b>	4.0-8.0	0.45-1.00								●	●						●								
	<b>190608 RH *</b>	3.0-9.0	0.30-0.70																							
	<b>190612 RH</b>	4.0-9.0	0.35-0.80									●	●					●	●							
	<b>190616 RH</b>	4.0-9.0	0.45-1.00									●	●		●			●								
	<b>190624 RH</b>	4.0-9.0	0.55-1.20									●	●					●								
	<b>250724 RH *</b>	5.0-12.0	0.55-1.20										●													
<b>250924 RH *</b>	5.0-12.0	0.55-1.20										●														
 Roughing	<b>CNMM 120408 RX</b>	0.7-7.0	0.20-0.55								●	●														
	<b>120412 RX</b>	1.0-7.0	0.25-0.70								●	●														
	<b>160612 RX</b>	1.0-9.0	0.25-0.70								●							●								
	<b>160616 RX</b>	1.5-9.0	0.30-0.90								●	●	●		●	●										
	<b>160624 RX</b>	2.0-9.0	0.35-1.20								●	●														
	<b>190608 RX</b>	0.7-10.0	0.20-0.55									●														
	<b>190612 RX</b>	1.0-10.0	0.25-0.70									●	●													
	<b>190616 RX</b>	1.5-10.0	0.30-0.90									●	●													
	<b>190624 RX</b>	2.0-10.0	0.35-1.10									●	●													
	<b>250724 RX</b>	2.0-12.0	0.35-1.20									●														
<b>250924 RX</b>	2.0-12.0	0.35-1.20									●															
 Finishing	<b>CNMX 070304 FGP</b>	0.3-2.0	0.05-0.25	●							●	●							●				●			



● \* Marked: Chip breaker shape is not the same as shown in the catalogue

● : Standard items

## Negative 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>08</b>	7.0	3.18	0.2
<b>11</b>	9.52	4.76	0.8-1.2
<b>13</b>	11.11	5.56	0.1-1.2
<b>15</b>	12.7	4.76-6.35	0.1-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																						
				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	TT4430	
Finishing For Swiss	<b>DNGG 130501M FU-F</b>	0.2-2.5	0.03-0.12																					•	•	
	<b>130502M FU-F</b>	0.2-2.5	0.04-0.12																						•	•
	<b>130504M FU-F</b>	0.4-2.5	0.05-0.12																							•
Medium	<b>DNGG 130501 ML</b>	0.1-1.0	0.03-0.10																	•						•
	<b>130502 ML</b>	0.2-1.2	0.05-0.15																	•						•
	<b>130504 ML</b>	0.5-1.5	0.05-0.20																	•						•
	<b>130508 ML</b>	0.5-1.5	0.08-0.25																	•						•
Medium	<b>DNGG 150401 ML</b>	0.1-1.0	0.03-0.10																	•						•
	<b>150402 ML</b>	0.2-1.2	0.05-0.15																	•						•
	<b>150404 ML</b>	0.8-3.5	0.10-0.30																	•						•
	<b>150408 ML</b>	1.0-3.5	0.12-0.35																	•						•
Finishing For Swiss	<b>DNGX 080302M SM-F</b>	0.2-1.2	0.02-0.12																					•		
Roughing	<b>DNMA 110408 #</b>	0.8-3.0	0.15-0.50																							
	<b>110412 #</b>	0.8-3.0	0.15-0.50					•																		
	<b>150408</b>	0.8-4.0	0.15-0.65					•	•																	
	<b>150608</b>	0.8-4.0	0.15-0.65					•	•																	
	<b>150412</b>	1.2-4.0	0.15-0.65					•	•																	
	<b>150612</b>	1.2-4.0	0.15-0.65					•																		
Medium	<b>DNMG 130504</b>	0.5-3.5	0.10-0.45					•	•																	
	<b>130508</b>	0.5-3.5	0.10-0.50					•	•												•	•				
	<b>130512</b>	0.5-3.5	0.10-0.55					•	•																	
Medium	<b>DNMG 150404</b>	1.0-4.0	0.17-0.45					•					•													
	<b>150604</b>	1.0-4.0	0.17-0.45	•		•	•					•	•					•								
	<b>150408</b>	1.5-4.0	0.17-0.55					•				•														
	<b>150608</b>	1.5-4.0	0.17-0.55	•		•	•	•				•	•	•				•								•
	<b>150412</b>	1.5-4.0	0.25-0.55					•				•	•													
	<b>150612</b>	1.5-4.0	0.25-0.55					•		•		•	•					•								
	<b>150416</b>	2.5-4.0	0.25-0.65					•				•	•													
<b>150616</b>	2.5-4.0	0.25-0.65					•				•															



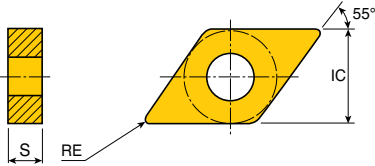
A54, A55, A61, A62, A70, A71, A87, A88, A91, • # Marked: Insert with screw hole  
 A113-A116, A121, A164, A166, A186-A188,  
 A195, A202-A204, A226, A227, A238, A242

• : Standard items





## Negative 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>11</b>	9.52	4.76	0.4-0.8
<b>13</b>	11.11	5.56	0.2-1.2
<b>15</b>	12.7	4.76-6.35	0.4-1.2

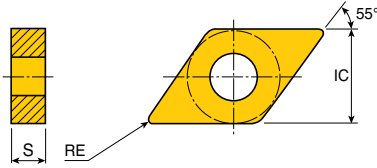
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																					
				Cermat		CVD coated						PVD coated				K10									
				PV3010	CT3000	TT3005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235		TT15100	TT17100	TT15080	TT18020	TT19080	TT13010	TT13020	TT19020	
Finishing	<b>DNMG 130504 FG</b>	0.2-2.0	0.07-0.30						●	●						●									
	<b>130508 FG</b>	0.5-2.0	0.10-0.35						●	●						●									
	<b>130512 FG</b>	0.5-2.0	0.15-0.40						●	●						●									
Finishing	<b>DNMG 110404 FG #</b>	0.5-2.0	0.07-0.20	●	●				●	●				●		●									
	<b>110408 FG #</b>	0.7-2.0	0.10-0.25	●	●				●							●									
	<b>150404 FG</b>	0.5-2.0	0.07-0.20	●	●				●	●						●									
	<b>150604 FG</b>	0.5-2.0	0.07-0.20	●	●				●	●						●									
	<b>150408 FG ✓</b>	0.7-2.0	0.10-0.25	●	●				●	●						●									
	<b>150412 FG</b>	1.0-2.0	0.12-0.25						●																
	<b>150608 FG ✓</b>	0.7-2.0	0.10-0.25	●	●				●	●						●									
Finishing	<b>DNMG 150604 FLP</b>	0.2-2.0	0.08-0.30						●	●															
	<b>150608 FLP</b>	0.3-2.0	0.10-0.30						●	●															
Finishing	<b>DNMG 130504 FM</b>	0.25-2.0	0.07-0.30	●					●	●	●					●									
	<b>130508 FM</b>	0.3-2.0	0.10-0.35	●					●	●	●					●									
	<b>130512 FM</b>	0.35-2.0	0.15-0.40	●					●	●	●					●									
Finishing	<b>DNMG 130502 FS</b>	0.2-2.0	0.05-0.25	●	●				●	●															
	<b>130504 FS</b>	0.25-2.0	0.07-0.30	●	●				●	●															
	<b>130508 FS</b>	0.5-2.0	0.10-0.30	●	●				●	●															
Finishing	<b>DNMG 130504 FT</b>	0.25-3.0	0.07-0.30						●	●	●					●									
	<b>130508 FT</b>	0.3-3.0	0.10-0.40						●	●	●					●									
	<b>130512 FT</b>	0.35-3.0	0.15-0.50						●	●	●					●									
Roughing	<b>DNMG 150408 KT</b>	0.38-7.0	0.17-0.47				●	●	●	●															
	<b>150608 KT</b>	0.38-7.0	0.17-0.47				●	●	●	●															
	<b>150412 KT</b>	0.5-7.0	0.23-0.63				●	●	●	●															
	<b>150612 KT</b>	0.5-7.0	0.23-0.63				●	●	●	●															

A54, A55, A61, A62, A70, A71, A87, A88,  
 A91, A113-A116, A121, A164, A166,  
 A186-A188, A195, A226, A227, A238

- ✓ Marked: Old type chip breaker
- # Marked: Insert with screw hole

● : Standard items

## Negative 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>13</b>	11.11	5.56	0.4-1.2
<b>15</b>	12.7	4.76-6.35	0.4-1.2

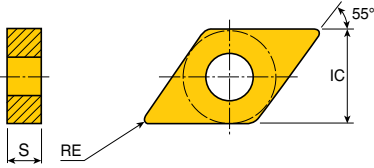
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		CVD coated								PVD coated												
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9235	TT9255	TT15100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10	
Medium	<b>DNMG 150604 MC</b>	0.5-3.5	0.10-0.30							●	●	●			●											
	<b>150408 MC</b>	0.7-3.5	0.12-0.35							●	●	●														
	<b>150608 MC</b>	0.7-3.5	0.12-0.35								●	●	●		●	●	●									
	<b>150412 MC</b>	1.0-3.5	0.15-0.35								●					●										
	<b>150612 MC</b>	1.0-3.5	0.15-0.35									●				●										
Medium	<b>DNMG 150608 MGP</b>	0.5-4.0	0.15-0.50								●	●														
	<b>150612 MGP</b>	0.6-4.0	0.17-0.55								●	●														
Medium	<b>DNMG 150408 MGS</b>	1.0-4.0	0.15-0.40			●															●	●		●		
	<b>150608 MGS</b>	1.0-4.0	0.15-0.40			●															●	●		●		
	<b>150612 MGS</b>	1.0-4.0	0.17-0.40			●															●	●		●		
Medium	<b>DNMG 130504 MK</b>	0.7-4.0	0.17-0.40												●	●		●	●							
	<b>130508 MK</b>	1.0-4.0	0.20-0.45												●	●		●	●	●	●					
	<b>130512 MK</b>	1.2-4.0	0.23-0.50												●	●		●	●							
Medium	<b>DNMG 150404 ML</b>	0.8-3.5	0.10-0.30									●			●		●									
	<b>150604 ML</b>	0.8-3.5	0.10-0.30									●	●		●		●									
	<b>150408 ML</b>	1.0-3.5	0.12-0.35									●			●		●								●	
	<b>150608 ML</b>	1.0-3.5	0.12-0.35									●	●		●	●	●	●								
Medium	<b>DNMG 150608 MLP</b>	0.3-3.5	0.10-0.40									●	●													
	<b>150612 MLP</b>	0.35-3.5	0.15-0.50									●	●													
Medium	<b>DNMG 130504 MM</b>	0.4-4.0	0.15-0.45									●	●	●	●	●	●	●	●	●	●		●	●		
	<b>130508 MM</b>	0.5-4.0	0.20-0.50									●	●	●	●	●	●	●	●	●	●					
	<b>130512 MM</b>	0.7-4.0	0.23-0.50									●	●	●	●	●	●	●	●	●	●					



A54, A55, A61, A62, A70, A71, A87, A88,  
 A91, A113-A116, A121, A164, A166,  
 A186-A188, A195, A226, A227, A238

●: Standard items

## Negative 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>11</b>	9.52	4.76	0.8-1.2
<b>13</b>	11.11	5.56	0.4-1.2
<b>15</b>	12.7	4.76-6.35	0.4-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																					
				Cermat		CVD coated										PVD coated									
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT17100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10
 <b>OLD</b> Medium	<b>DNMG 150404 MP</b>	0.8-4.0	0.10-0.30								●				●		●		●						
	<b>150604 MP</b>	0.8-4.0	0.10-0.30								●	●			●		●		●						
	<b>150408 MP</b>	1.0-4.0	0.12-0.40								●						●		●		●	●			
	<b>150608 MP</b>	1.0-4.0	0.12-0.40								●	●			●	●		●		●	●	●			
	<b>150612 MP</b> ✓	1.0-4.0	0.15-0.40								●				●	●	●	●		●					
 Medium	<b>DNMG 130504 MT</b>	0.8-4.0	0.10-0.35								●	●	●				●								
	<b>130508 MT</b>	1.0-4.0	0.15-0.45								●	●	●				●								
	<b>130512 MT</b>	1.2-4.0	0.20-0.55								●	●	●				●								
 Medium	<b>DNMG 110408 MT #</b>	1.0-3.0	0.17-0.40	●		●	●				●	●					●		●						
	<b>110412 MT #</b>	1.0-3.0	0.20-0.45			●	●				●														
	<b>150404 MT</b>	0.8-4.0	0.15-0.40	●			●	●			●	●					●								
	<b>150604 MT</b>	0.8-4.0	0.15-0.40	●		●	●	●			●	●					●		●						
	<b>150408 MT</b>	1.0-4.0	0.17-0.50	●			●	●			●	●			●	●		●		●	●				
	<b>150608 MT</b>	1.0-4.0	0.17-0.50	●		●	●	●			●	●			●	●	●	●		●	●				
	<b>150412 MT</b>	1.3-4.0	0.20-0.50				●				●							●							
<b>150612 MT</b>	1.3-4.0	0.20-0.50				●	●	●			●	●					●		●	●					
 Medium	<b>DNMG 130504 PC</b>	0.4-3.5	0.10-0.30								●	●	●				●								
	<b>130508 PC</b>	0.5-3.5	0.15-0.40								●	●	●				●								
	<b>130512 PC</b>	0.6-3.5	0.18-0.50								●	●	●				●								
 Medium	<b>DNMG 110408 PC #</b>	0.5-3.0	0.17-0.40								●	●	●												
	<b>150404 PC</b>	0.4-4.0	0.10-0.40								●	●													
	<b>150604 PC</b>	0.4-4.0	0.10-0.40								●	●					●								
	<b>150408 PC</b>	0.5-4.0	0.15-0.50								●	●					●								
	<b>150608 PC</b>	0.5-4.0	0.15-0.50								●	●			●	●	●	●							
	<b>150412 PC</b>	0.6-4.0	0.17-0.55								●	●					●								
	<b>150612 PC</b>	0.6-4.0	0.17-0.55								●	●					●								
 Roughing	<b>DNMG 150408 RT</b>	2.0-4.0	0.25-0.65					●	●	●	●						●								
	<b>150608 RT</b>	2.0-4.0	0.25-0.65					●	●	●	●						●								
	<b>150412 RT</b>	2.5-4.0	0.25-0.65						●			●													
	<b>150612 RT</b>	2.5-4.0	0.25-0.65						●	●	●						●								
	<b>150616 RT</b>	2.5-5.5	0.25-0.70									●	●					●							

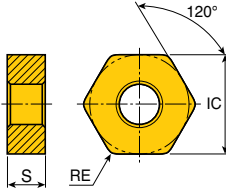
A54, A55, A61, A62, A70, A71, A87, A88, A91, A113-A116, A121, A164, A166, A186-A188, A195, A226, A227, A238

● ✓ Marked: Old type chip breaker  
 ● # Marked: Insert with screw hole

● : Standard items



## Negative 120° hexagonal inserts



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

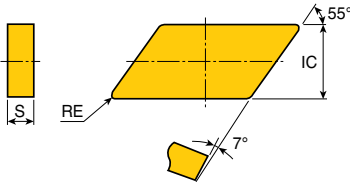
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		CVD coated								PVD coated				K10							
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100		TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020
Medium	<b>HNMG 050408 GU</b>	0.5-3.5	0.15-0.60					●	●							●									
	<b>100612 GU</b>	1.0-5.0	0.25-0.70					●	●			●													
Medium	<b>HNMG 050408 SU</b>	0.5-3.5	0.15-0.50												●		●								
	<b>100612 SU</b>	1.0-5.0	0.25-0.70														●								



● : Standard items

# KNUX

## Negative 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>16</b>	9.52	4.76	0.5-1.0

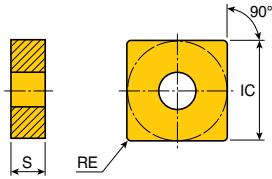
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		CVD coated								PVD coated				K10								
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100		TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	
Right hand Medium	<b>KNUX 160405 L11</b>	1.5-5.0	0.15-0.35									●	●		●	●										●
	<b>160405 R11</b>	1.5-5.0	0.15-0.35		●		●					●	●		●	●		●								
	<b>160410 L11</b>	2.0-5.0	0.21-0.45									●	●		●	●										
	<b>160410 R11</b>	2.0-5.0	0.21-0.45									●	●		●	●										
Right hand Medium	<b>KNUX 160405 L12</b>	2.0-5.0	0.24-0.50												●											
	<b>160405 R12</b>	2.0-5.0	0.24-0.50												●											
	<b>160410 L12</b>	2.5-6.0	0.30-0.60												●											
	<b>160410 R12</b>	2.5-6.0	0.30-0.60												●											



● : Standard items



## Negative square inserts



Size	Dimension (mm)		
	IC	S	RE
<b>12</b>	12.7	4.76	0.4-1.6
<b>15</b>	15.88	6.35	1.2-1.6
<b>19</b>	19.05	6.35	1.2-1.6
<b>25</b>	25.4	7.94-9.52	2.4
<b>31</b>	31.75	9.52	2.4

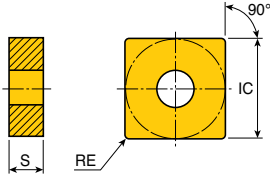
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																						
				Cermet		CVD coated								PVD coated				K10								
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100		TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	
 Right hand Medium	<b>SNGG 120404 L</b>	1.0-4.0	0.15-0.35	●																						
	<b>120404 R</b>	1.0-4.0	0.12-0.35	●																						
	<b>120408 L</b>	1.0-4.0	0.15-0.40	●																						
	<b>120408 R</b>	1.0-4.0	0.15-0.35	●																						
 Roughing	<b>SNMA 120408</b>	1.0-6.0	0.15-0.70				●	●																		●
	<b>120412</b>	1.5-6.0	0.20-0.80				●	●																		
	<b>120416</b>	2.0-6.0	0.30-1.00				●	●																		
	<b>150612</b>	2.0-8.0	0.20-0.80				●																			
	<b>150616</b>	2.0-8.0	0.30-1.00					●																		
	<b>190612</b>	2.0-10.0	0.20-0.80				●	●																		●
	<b>190616</b>	2.0-10.0	0.30-1.00				●																			
	<b>250724</b>	3.0-13.0	0.40-1.20				●			●																
 Roughing	<b>SNMD 250924 HD</b>										●	●	●													
	Roughing	4.0-15.0	0.55-1.50																							
 Finishing	Finishing	2.0-5.0	0.40-0.80																							
 Roughing	<b>SNMD 310924 HD</b>										●	●							●							
	Roughing	7.0-25.0	0.60-1.50																							
 Finishing	Finishing	2.0-5.0	0.40-0.80																							

A56, A75, A76,  
 A126, A127,  
 A167, A196

● : Standard items



## Negative square inserts



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

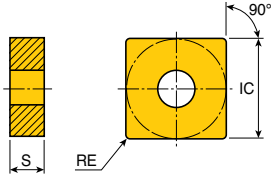
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																				
				Cemet			CVD coated							PVD coated										
				PV3010	CT3000	TT3005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9235	TT15100	TT17100	TT15080	TT18020	TT19080	TT13010	TT13020	TT19020	K10	
Roughing	<b>SNMD 190624 HT</b>								●	●														
	Roughing	4.0-9.0	0.55-1.20																					
Finishing	Finishing	2.0-5.0	0.40-0.80																					
Roughing	<b>250924 HT</b>								●	●														
	Roughing	5.0-12.0	0.55-1.30																					
Finishing	Finishing	2.0-5.0	0.40-0.80																					
Roughing	<b>SNMD 310924 HT</b>								●	●						●								
	Roughing	6.0-22.0	0.50-1.40																					
Finishing	Finishing	2.0-5.0	0.40-0.80																					
Roughing	<b>SNMD 190624 HY</b>								●	●														
	Roughing	4.0-12.0	0.50-1.10																					
Finishing	Finishing	2.0-5.0	0.40-0.80																					
Roughing	<b>250924 HY</b>								●	●	●													
	Roughing	4.0-15.0	0.55-1.50																					
Finishing	Finishing	2.0-5.0	0.40-0.80																					
Roughing	<b>SNMD 250924 HZ</b>								●	●	●													
	Roughing	4.0-15.0	0.55-1.50																					
Finishing	Finishing	2.0-5.0	0.40-0.80																					



A56, A75, A76,  
A126, A196

●: Standard items

## Negative square inserts



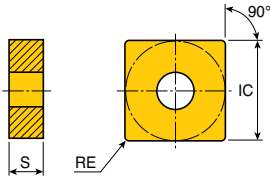
Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	4.76	0.4-1.2
<b>12</b>	12.7	4.76	0.4-1.6
<b>15</b>	15.88	6.35	0.8-1.6
<b>19</b>	19.05	6.35	0.4-1.6
<b>25</b>	25.4	7.94-9.52	1.6-2.4

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	TT15100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10
 Medium	<b>SNMG 090404</b>	0.5-3.0	0.10-0.45				●	●		●	●														
	<b>090408</b>	0.5-3.0	0.10-0.50				●	●		●	●														
	<b>090412</b>	0.5-3.0	0.10-0.55				●	●		●															
 Medium	<b>SNMG 120404</b>	1.0-5.0	0.17-0.45							●	●					●									
	<b>120408</b>	1.5-5.0	0.23-0.60	●			●	●	●	●	●	●				●									
	<b>120412</b>	2.0-5.0	0.25-0.60					●			●					●									
	<b>120416</b>	2.0-5.0	0.35-0.70								●					●									
	<b>150608</b>	1.5-6.0	0.25-0.60								●					●									
	<b>150612</b>	2.0-6.0	0.25-0.60								●					●									
	<b>150616</b>	2.0-6.0	0.35-0.70								●					●									
	<b>190604</b>	3.0-8.0	0.17-0.45								●														
	<b>190608</b>	3.0-8.0	0.25-0.60					●			●	●				●			●						
	<b>190612</b>	3.0-8.0	0.30-0.60					●	●		●	●	●			●									
	<b>190616</b>	3.0-8.0	0.35-0.70								●	●	●			●									
	<b>250716</b>	4.0-12.0	0.35-0.70								●	●	●			●									
	<b>250724</b>	5.0-12.0	0.50-1.00								●	●				●									
<b>250924</b>	5.0-12.0	0.50-1.00								●															
 Finishing	<b>SNMG 090404 EA</b>	0.2-1.5	0.05-0.30								●	●	●			●		●							
	<b>090408 EA</b>	0.3-1.5	0.07-0.40								●	●	●			●		●							
 Finishing	<b>SNMG 120404 EA</b>	0.1-1.5	0.05-0.20								●	●				●									
	<b>120408 EA</b>	0.1-1.5	0.10-0.40								●	●				●									
 Medium	<b>SNMG 090408 EM</b>	0.5-3.0	0.13-0.40								●	●	●			●		●							
	<b>090412 EM</b>	0.7-3.0	0.15-0.40								●	●	●			●		●							

A75, A76,  
A126, A127,  
A165, A167, A196

● : Standard items

## Negative square inserts



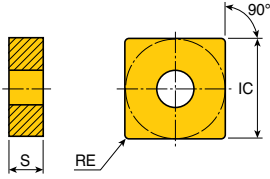
Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	4.76	0.4-1.2
<b>12</b>	12.7	4.76	0.4-1.6
<b>15</b>	15.88	6.35	1.2-1.6
<b>19</b>	19.05	6.35	0.8-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated																					
				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	<b>SNMG 120408 EM</b>	0.8-5.0	0.13-0.50											•	•	•			•		•		•		
	<b>120412 EM</b>	0.8-5.0	0.15-0.55												•	•	•			•			•		
	<b>150612 EM</b>	0.8-6.5	0.15-0.55												•	•	•			•	•				
	<b>150616 EM</b>	0.8-6.5	0.17-0.60												•	•	•			•	•				
	<b>190612 EM</b>	0.8-8.0	0.15-0.55												•	•	•			•				•	
	<b>190616 EM</b>	0.8-8.0	0.17-0.60											•	•	•			•						
Roughing	<b>SNMG 120408 ET</b>	2.0-7.0	0.25-0.70											•	•	•			•			•		•	
	<b>120412 ET</b>	2.0-7.0	0.30-0.70												•	•	•			•			•		•
	<b>190608 ET</b>	3.0-9.0	0.30-0.75												•	•	•			•	•				
	<b>190612 ET</b>	3.0-9.0	0.35-0.75												•	•	•			•				•	
Finishing	<b>SNMG 120404 FC</b>	0.2-2.5	0.05-0.30										•												
	<b>120408 FC</b>	0.2-2.5	0.08-0.35	•									•												
	<b>120412 FC</b>	0.3-2.5	0.10-0.40	•									•												
Finishing	<b>SNMG 090404 FG</b>	0.2-2.0	0.07-0.30	•									•	•			•								
	<b>090408 FG</b>	0.5-2.0	0.10-0.35	•									•	•			•								
	<b>090412 FG</b>	0.5-2.0	0.15-0.40										•	•			•								
Finishing	<b>SNMG 120404 FG</b>	0.5-3.0	0.07-0.20	•									•						•						
	<b>120408 FG</b>	0.7-3.0	0.10-0.25	•	•								•	•											
Finishing	<b>SNMG 090404 FM</b>	0.25-2.0	0.07-0.30	•									•	•	•	•		•							
	<b>090408 FM</b>	0.3-2.0	0.10-0.35	•	•								•	•	•	•		•							
	<b>090412 FM</b>	0.35-2.0	0.15-0.40	•									•	•	•	•		•							
Roughing	<b>SNMG 120408 KT</b>	0.38-7.0	0.19-0.53					•	•	•		•													
	<b>120412 KT</b>	0.50-7.0	0.28-0.70					•	•	•		•													
	<b>120416 KT</b>	0.75-7.0	0.30-0.75					•	•			•													
	<b>150612 KT</b>	0.6-8.5	0.30-0.75					•	•			•													
	<b>150616 KT</b>	0.9-8.5	0.30-0.85					•	•			•													
	<b>190616 KT</b>	1.3-12.0	0.30-0.85					•	•			•													

A75, A76,  
A126, A127,  
A165, A167, A196

•: Standard items

## Negative square inserts



Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	4.76	0.4-1.2
<b>12</b>	12.7	4.76	0.4-1.2
<b>15</b>	15.88	6.35	0.8-1.2
<b>19</b>	19.05	6.35	0.8-1.2

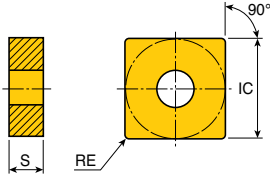
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet	CVD coated										PVD coated												
					PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT17100	TT5080	TT8020	TT9080	TT13010	TT13020	TT19020	K10	
Medium	<b>SNMG 120408 MC</b>	0.7-3.5	0.12-0.35																								
	<b>120412 MC</b>	0.7-3.5	0.15-0.40																								
Medium	<b>SNMG 120408 MGP</b>	0.5-5.0	0.15-0.50																								
Medium	<b>SNMG 120408 MGS</b>	1.0-4.0	0.15-0.40																								
	<b>120412 MGS</b>	1.3-4.0	0.17-0.40																								
	<b>190616 MGS</b>	1.5-8.0	0.17-0.60																								
Medium	<b>SNMG 090404 MK</b>	0.7-3.0	0.17-0.40																								
	<b>090408 MK</b>	1.0-3.0	0.20-0.50																								
	<b>090412 MK</b>	1.2-3.0	0.23-0.50																								
Medium	<b>SNMG 120408 ML</b>	1.0-3.5	0.12-0.35																								
	<b>120412 ML</b>	1.0-3.5	0.15-0.35																								
Medium	<b>SNMG 090404 MM</b>	0.4-3.0	0.15-0.45																								
	<b>090408 MM</b>	0.5-3.0	0.20-0.50																								
	<b>090412 MM</b>	0.7-3.0	0.23-0.50																								
Medium	<b>SNMG 120404 MP</b> ✓	0.8-4.0	0.10-0.30																								
	<b>120408 MP</b>	1.0-4.0	0.12-0.40																								
	<b>120412 MP</b>	1.3-4.0	0.15-0.40																								
	<b>150608 MP</b>	1.5-6.0	0.25-0.60																								
Medium	<b>SNMG 090404 MT</b>	0.8-3.0	0.10-0.35																								
	<b>090408 MT</b>	1.0-3.0	0.15-0.45																								
	<b>090412 MT</b>	1.2-3.0	0.20-0.55																								

✓ Marked: Old type chip breaker

●: Standard items

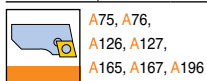
A75, A76,  
A126, A127,  
A165, A167, A196

## Negative square inserts



Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	4.76	0.4-1.2
<b>12</b>	12.7	4.76	0.4-1.6
<b>15</b>	15.88	6.35	1.2
<b>19</b>	19.05	6.35	1.2-2.4
<b>25</b>	25.4	7.94-9.52	2.4-3.2

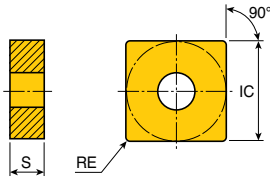
Insert	Designation	ap (mm)	Feed (mm/rev)	CVD coated												PVD coated										
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10	
 <b>OLD</b> Medium	<b>SNMG 12040 MT</b> ✓	1.0-5.0	0.12-0.40	●																						
	<b>120408 MT</b>	1.2-5.0	0.17-0.55	●		●	●	●	●			●	●	●			●	●								
	<b>120412 MT</b> ✓	1.5-5.0	0.20-0.55			●			●	●			●	●			●	●								
	<b>150612 MT</b> ✓	2.0-7.0	0.30-0.65							●	●															
	<b>190608 MT</b>	3.0-8.0	0.17-0.55								●															
 <b>MINOTURN</b> Medium	<b>SNMG 09040 PC</b>	0.4-3.0	0.10-0.30						●	●	●					●										
	<b>090408 PC</b>	0.5-3.0	0.15-0.40							●	●	●				●										
	<b>090412 PC</b>	0.6-3.0	0.18-0.50							●	●	●				●										
 Medium	<b>SNMG 12040 PC</b>	0.4-5.0	0.12-0.40										●													
	<b>120408 PC</b>	0.5-5.0	0.15-0.50										●	●		●					●					
	<b>120412 PC</b>	0.6-5.0	0.15-0.50										●	●												
 <b>OLD</b> Roughing	<b>SNMG 120408 RT</b>	2.5-6.0	0.25-0.70			●	●			●	●					●										
	<b>120412 RT</b>	2.5-6.0	0.30-0.70			●	●			●	●	●				●										
	<b>120416 RT</b>	2.5-6.0	0.40-0.70							●	●	●														
	<b>150612 RT</b>	3.0-7.0	0.30-0.70				●			●																
	<b>190612 RT</b>	3.0-9.0	0.30-0.75							●	●	●				●	●					●				
	<b>190616 RT</b> ✓	3.0-9.0	0.40-0.90							●	●	●				●	●					●	●			
	<b>250724 RT</b>	5.0-12.0	0.40-1.00																							
<b>250924 RT</b>	5.0-12.0	0.40-1.00											●													
 Roughing	<b>SNMM 250924 EH</b>	2.8-18.0	0.45-1.20													●	●	●								
 Roughing	<b>SNMM 190612 HT</b>	4.0-9.0	0.35-0.90										●	●												
	<b>190616 HT</b>	4.0-9.0	0.45-1.00										●	●							●					
	<b>190624 HT</b>	4.0-9.0	0.55-1.20										●													
	<b>250724 HT</b>	5.0-12.0	0.55-1.30										●	●		●	●									
	<b>250924 HT</b>	5.0-12.0	0.55-1.30										●									●				
	<b>250932 HT</b>	5.0-13.0	0.65-1.30																							



● ✓ Marked: Old type chip breaker

●: Standard items

## Negative square inserts

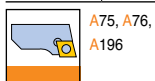


Size	Dimension (mm)		
	IC	S	RE
<b>12</b>	12.7	4.76	0.8-1.2
<b>15</b>	15.88	6.35-7.94	1.2
<b>19</b>	19.05	6.35	0.8-2.4
<b>25</b>	25.4	7.94-9.52	1.6-2.4

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																						
				Cermet		CVD coated								PVD coated												
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT7100	TT15080	TT8020	TT9080	TT3010	TT3020	TT9020	K10	
Roughing	<b>SNMM 190624 HY</b>	4.0-12.0	0.50-1.10								●	●														
	<b>250924 HY</b>	4.0-15.0	0.55-1.50								●	●	●													
Roughing	<b>SNMM 250924 HZ</b>	4.0-15.0	0.55-1.50								●	●														
Roughing	<b>SNMM 120408 RH</b>	2.5-6.0	0.30-0.70										●				●									
	<b>120412 RH</b>	2.5-6.0	0.30-0.80										●				●									
	<b>150612 RH</b>	3.0-7.0	0.30-0.80										●				●									
	<b>190608 RH*</b>	3.0-9.0	0.30-0.70										●													
	<b>190612 RH</b>	4.0-9.0	0.30-0.80										●	●				●								
	<b>190616 RH</b>	4.0-9.0	0.45-1.00										●		●		●		●							
	<b>190624 RH</b>	4.0-9.0	0.55-1.20										●													
	<b>250716 RH*</b>	5.0-12.0	0.55-1.00										●													
	<b>250724 RH*</b>	5.0-12.0	0.55-1.20										●	●				●								
<b>250924 RH*</b>	5.0-12.0	0.55-1.20										●														
Roughing	<b>SNMM 120408 RX</b>	0.7-7.0	0.20-0.55										●	●	●											
	<b>120412 RX</b>	1.0-7.0	0.25-0.70										●	●	●											
	<b>150612 RX</b>	1.0-9.0	0.25-0.70										●	●	●											
	<b>190612 RX</b>	1.0-10.0	0.25-0.70										●	●												
	<b>190616 RX</b>	1.5-10.0	0.30-0.90										●													
	<b>190624 RX</b>	2.0-10.0	0.35-1.10										●													
	<b>250724 RX</b>	2.0-12.0	0.35-1.20										●					●								
	<b>250924 RX</b>	2.0-12.0	0.35-1.20										●	●												

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

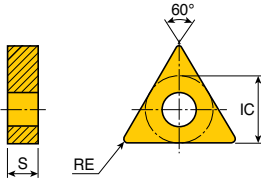
●: Standard items








# TNGG TNMA TNMG



## Negative triangular inserts



Size	Dimension (mm)		
	IC	S	RE
<b>13</b>	7.94	4.76	0.2-1.2
<b>16</b>	9.52	4.76	0.4-1.6
<b>22</b>	12.7	4.76	0.4-1.6

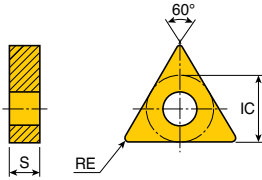
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated										PVD coated										
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT17100	TT15080	TT18020	TT19080	TT13010	TT13020	TT19020	K10	
  Left hand Medium	<b>TNGG 130402 L</b>	0.8-3.5	0.10-0.30	●																						
	<b>130402 R</b>	0.8-3.5	0.10-0.30	●																						
	<b>130404 L</b>	1.0-3.5	0.12-0.30	●																						
	<b>130408 R</b>	1.3-3.5	0.15-0.35	●																						
	<b>130408 L</b>	1.3-3.5	0.15-0.35	●																						
	<b>130408 R</b>	1.3-3.5	0.15-0.35	●																						
 Left hand Medium	<b>TNGG 160404 L</b>	1.0-3.5	0.12-0.30	●								●														
	<b>160404 R</b>	1.0-3.5	0.12-0.30	●								●			●											
	<b>160408 L</b>	1.3-3.5	0.15-0.35	●																						
	<b>160408 R</b>	1.3-3.5	0.15-0.35	●																						
	<b>220404 L</b>	1.0-5.0	0.12-0.30	●																				●		
	<b>220404 R</b>	1.0-5.0	0.12-0.30	●																				●		
	<b>220408 L</b>	1.3-5.0	0.15-0.35	●																				●		
	<b>220408 R</b>	1.3-5.0	0.15-0.35	●																				●		
 Roughing	<b>TNMA 160404</b>	1.0-4.0	0.15-0.30	●		●	●	●																		
	<b>160408</b>	1.0-4.0	0.15-0.40	●		●	●	●																		
	<b>160412</b>	1.5-4.5	0.20-0.50					●	●																	
	<b>160416</b>	1.0-4.5	0.20-0.50				●																			
	<b>220404</b>	1.5-5.0	0.15-0.30																							
	<b>220408</b>	1.5-5.0	0.15-0.40						●	●																
	<b>220412</b>	1.5-5.0	0.20-0.50					●	●																	
	<b>220416</b>	2.0-5.0	0.20-0.61																							
 Medium	<b>TNMG 130404</b>	0.5-3.5	0.10-0.45					●	●																	
	<b>130408</b>	0.5-3.5	0.10-0.50					●	●																	
	<b>130412</b>	0.5-3.5	0.10-0.55					●	●																	

A57, A63, A77, A78, A99, A128,  
 A140, A141, A165, A168, A189, A190, A197  
 A208, A212, A230, A231, A234

●: Standard items



## Negative triangular inserts



Size	Dimension (mm)		
	IC	S	RE
<b>11</b>	6.35	3.18	0.4-0.8
<b>13</b>	7.94	4.76	0.4-1.2
<b>16</b>	9.52	4.76	0.4-1.2
<b>22</b>	12.7	4.76	0.4-1.6
<b>27</b>	15.88	6.35	0.8-1.6
<b>33</b>	19.05	7.94-9.52	1.6-2.4

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																					
				Cermet	CVD coated							PVD coated													
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT17100	TT15080	TT18020	TT19080	TT13010	TT13020	TT19020	K10
	<b>TNMG 110304</b>	1.2-3.0	0.15-0.40							●	●														
	<b>110308</b>	1.5-3.0	0.17-0.40							●															
	<b>160404</b>	1.5-3.5	0.17-0.45	●		●	●	●		●	●					●				●					●
	<b>160408</b>	2.0-3.5	0.17-0.55	●		●	●	●		●	●					●				●					●
	<b>160412</b>	2.0-3.5	0.25-0.55							●						●									
	<b>220404</b>	1.5-5.0	0.17-0.45				●				●	●					●								
	<b>220408</b>	2.0-5.0	0.17-0.55				●	●			●	●					●	●							
	<b>220412</b>	2.0-5.0	0.25-0.55								●	●													
	<b>220416</b>	2.0-5.0	0.30-0.60									●													
	<b>270608</b>	2.0-5.0	0.17-0.55																						
	<b>270612</b>	3.0-7.0	0.25-0.55									●													
	<b>270616</b>	3.0-7.0	0.30-0.60									●													
	<b>330716</b>	3.0-9.0	0.35-0.70									●	●						●						
<b>330924</b>	3.0-9.0	0.40-0.80										●													
	<b>TNMG 130404 EA</b>	0.2-1.5	0.05-0.30											●	●	●			●	●					
	<b>130408 EA</b>	0.3-1.5	0.07-0.40											●	●	●			●	●					
	<b>TNMG 160404 EA</b>	0.1-1.5	0.05-0.20											●	●				●	●					
	<b>160408 EA</b>	0.1-1.5	0.10-0.40																●	●					
	<b>TNMG 130408 EM</b>	0.5-3.0	0.13-0.40											●	●	●			●	●					
	<b>130412 EM</b>	0.7-3.0	0.15-0.40											●	●	●			●	●					
	<b>TNMG 160408 EM</b>	0.8-4.5	0.13-0.50											●	●				●	●					
	<b>160412 EM</b>	0.8-4.5	0.15-0.55																●	●					
	<b>220408 EM</b>	0.8-6.0	0.13-0.50											●	●	●				●	●				
	<b>220412 EM</b>	0.8-6.0	0.15-0.55											●						●	●				

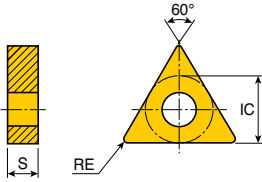
● : Standard items



A57, A63, A77, A78, A99, A128,  
A140, A141, A165, A168, A189, A190, A197  
A208, A212, A230, A231, A234



## Negative triangular inserts



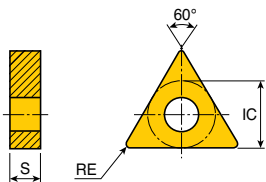
Size	Dimension (mm)		
	IC	S	RE
<b>11</b>	6.35	3.18	0.4
<b>13</b>	7.94	4.76	0.2-1.2
<b>16</b>	9.52	4.76	0.4-1.2
<b>22</b>	12.7	4.76	0.8-1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																					
				Cemet		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	<b>TNMG 160408 ET</b>	2.0-5.0	0.25-0.65											•	•	•			•		•				
	<b>220408 ET</b>	2.5-7.0	0.25-0.65												•	•	•			•		•			
	<b>220412 ET</b>	2.5-7.0	0.25-0.65												•	•				•		•			
Finishing	<b>TNMG 160404 FC</b>	0.2-2.5	0.05-0.30	•	•					•	•	•		•	•	•			•						
	<b>160408 FC</b>	0.2-2.5	0.08-0.35	•	•					•	•	•		•	•	•									
	<b>160412 FC</b>	0.3-2.5	0.10-0.40							•	•														
Finishing	<b>TNMG 130404 FG</b>	0.25-1.5	0.07-0.30							•	•								•						
	<b>130408 FG</b>	0.3-1.5	0.10-0.35							•	•								•						
	<b>130412 FG</b>	0.35-1.5	0.15-0.40							•	•								•						
Finishing	<b>TNMG 110304 FG</b>	0.5-1.5	0.07-0.20			•													•						
	<b>160404 FG</b>	0.5-2.0	0.07-0.20	•	•					•	•								•						
	<b>160408 FG</b>	0.7-2.0	0.10-0.25	•	•					•	•								•						
	<b>160412 FG</b>	0.7-2.0	0.13-0.30	•																					
	<b>220408 FG</b>	0.7-2.0	0.10-0.25																						
Finishing	<b>TNMG 160404 FLP</b>	0.2-2.0	0.08-0.30							•	•														
	<b>160408 FLP</b>	0.3-2.0	0.10-0.30							•	•														
Finishing	<b>TNMG 130404 FM</b>	0.25-1.5	0.07-0.30	•	•					•	•	•	•						•						
	<b>130408 FM</b>	0.3-1.5	0.10-0.35	•	•					•	•	•	•						•						
	<b>130412 FM</b>	0.35-1.5	0.15-0.40	•	•					•	•	•	•						•						
Finishing	<b>TNMG 130402 FS</b>	0.2-1.0	0.05-0.25	•	•					•	•														
	<b>130404 FS</b>	0.25-1.0	0.07-0.30	•	•					•	•														
	<b>130408 FS</b>	0.5-1.0	0.10-0.30	•	•					•	•														

A57, A63, A77, A78, A99, A128,  
 A140, A141, A165, A168, A189, A190, A197  
 A208, A212, A230, A231, A234

•: Standard items

## Negative triangular inserts



Size	Dimension (mm)		
	IC	S	RE
<b>13</b>	7.94	4.76	0.4-1.2
<b>16</b>	9.52	4.76	0.4-1.2
<b>22</b>	12.7	4.76	0.4-1.2

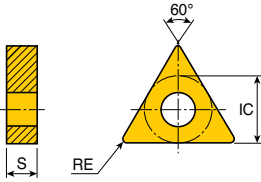
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																						
				Cermet		CVD coated								PVD coated				K10								
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100		TT7100	TT15080	TT18020	TT19080	TT13010	TT13020	TT19020	
Right hand Medium	<b>TNMG 160404 L-FS</b>	0.8-3.0	0.15-0.30	●									●				●									
	<b>160404 R-FS</b>	0.8-3.0	0.15-0.30	●									●				●				●					
	<b>160408 L-FS</b>	1.0-3.5	0.20-0.40											●												
	<b>160408 R-FS</b>	1.0-3.5	0.20-0.40											●				●			●					
Finishing	<b>TNMG 130404 FT</b>	0.25-2.5	0.07-0.30								●	●	●				●									
	<b>130408 FT</b>	0.3-2.5	0.10-0.40								●	●	●				●									
	<b>130412 FT</b>	0.35-2.5	0.15-0.50								●	●	●				●									
Roughing	<b>TNMG 160408 KT</b>	0.34-6.2	0.17-0.42				●	●	●		●															
	<b>160412 KT</b>	0.45-6.3	0.20-0.56				●	●		●																
	<b>220408 KT</b>	0.38-7.0	0.19-0.53				●	●		●																
	<b>220412 KT</b>	0.5-7.0	0.25-0.70				●	●		●																
Medium	<b>TNMG 160408 MC</b>	0.7-3.5	0.17-0.40								●	●					●									
Medium	<b>TNMG 160408 MGP</b>	0.5-4.5	0.15-0.50								●	●														
	<b>160412 MGP</b>	0.6-4.5	0.17-0.55								●	●														
Medium	<b>TNMG 130404 MK</b>	0.7-3.0	0.17-0.40													●	●		●	●						
	<b>130408 MK</b>	1.0-3.0	0.20-0.45													●	●		●	●						
	<b>130412 MK</b>	1.2-3.0	0.23-0.50													●	●		●	●						
Medium	<b>TNMG 160404 ML</b>	0.8-3.5	0.10-0.30								●	●					●		●	●						
	<b>160408 ML</b>	1.0-3.5	0.12-0.35								●	●	●				●		●	●						
	<b>160412 ML</b>	1.5-3.5	0.15-0.35														●									
	<b>220404 ML</b>	1.0-4.0	0.10-0.30														●							●		
	<b>220408 ML</b>	1.0-4.0	0.12-0.35									●					●								●	



A57, A63, A77, A78, A99, A128,  
A140, A141, A165, A168, A189, A190, A197  
A208, A212, A230, A231, A234

● : Standard items

## Negative triangular inserts



Size	Dimension (mm)		
	IC	S	RE
<b>11</b>	6.35	3.18	0.8
<b>13</b>	7.94	4.76	0.4-1.2
<b>16</b>	9.52	4.76	0.4-1.2
<b>22</b>	12.7	4.76	0.4-1.2
<b>27</b>	15.88	6.35	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	TT15100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10	
				Medium	<b>TNMG 16040 MLP</b>	0.25-2.5	0.07-0.30																			
	<b>160408 MLP</b>	0.30-2.5	0.10-0.40																							
	<b>160412 MLP</b>	0.35-2.5	0.15-0.50																							
Rhinoturn	<b>TNMG 13040 MM</b>	0.4-3.0	0.15-0.45																							
	<b>130408 MM</b>	0.5-3.0	0.20-0.50																							
	<b>130412 MM</b>	0.7-3.0	0.23-0.50																							
Medium	<b>TNMG 16040 MP</b>	0.8-3.5	0.10-0.30																							
	<b>160408 MP</b>	1.0-3.5	0.12-0.40																							
	<b>160412 MP</b>	1.5-3.5	0.15-0.40																							
	<b>220404 MP</b>	1.0-3.5	0.12-0.35																							
	<b>220408 MP</b>	1.0-4.0	0.12-0.40																							
	<b>220412 MP</b>	1.0-4.0	0.15-0.40																							
Rhinoturn	<b>TNMG 13040 MT</b>	0.8-3.0	0.10-0.35																							
	<b>130408 MT</b>	1.0-3.0	0.15-0.45																							
	<b>130412 MT</b>	1.2-3.0	0.20-0.55																							
Medium	<b>TNMG 110308 MT</b>	1.0-3.0	0.17-0.40																							
	<b>160404 MT</b>	1.0-3.5	0.17-0.40																							
	<b>160408 MT</b>	1.2-3.5	0.17-0.50																							
<b>OLD</b>	<b>160412 MT</b>	1.5-3.5	0.20-0.50																							
	<b>220404 MT</b> ✓	1.2-5.0	0.15-0.40																							
	<b>220408 MT</b> ✓	1.2-5.0	0.17-0.50																							
	<b>220412 MT</b>	1.5-5.0	0.20-0.50																							
	<b>270612 MT</b> ✓	3.0-7.0	0.20-0.50																							
Rhinoturn	<b>TNMG 13040 PC</b>	0.4-3.0	0.10-0.30																							
	<b>130408 PC</b>	0.5-3.0	0.15-0.40																							
	<b>130412 PC</b>	0.6-3.0	0.18-0.50																							

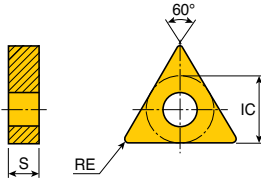


A57, A63, A77, A78, A99, A128,  
A140, A141, A165, A168, A189, A190, A197  
A208, A212, A230, A231, A234

• ✓ Marked: Old type chip breaker

•: Standard items

## Negative triangular inserts



Size	Dimension (mm)		
	IC	S	RE
<b>13</b>	7.94	4.76	0.4-1.2
<b>16</b>	9.52	4.76	0.4-1.2
<b>22</b>	12.7	4.76	0.8-1.6
<b>27</b>	15.88	6.35	1.2
<b>33</b>	19.05	9.52	2.4

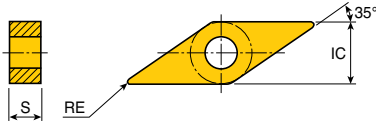
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated										PVD coated				K10							
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT17100	TT15080		TT18020	TT19080	TT3010	TT3020	TT9020		
	<b>TNMG 160404 PC</b>	1.0-3.5	0.15-0.40							•	•	•		•													
	<b>160408 PC</b>	0.5-4.5	0.15-0.50							•	•	•		•	•	•					•						
	<b>160412 PC</b>	0.6-4.5	0.17-0.55							•	•	•															
	<b>220408 PC</b>	1.2-5.0	0.17-0.50								•	•															
	<b>220412 PC</b>	1.5-5.0	0.20-0.50								•	•															
	<b>TNMG 160408 RT</b>	2.0-5.0	0.25-0.65				•	•	•		•																
	<b>160412 RT</b>	2.0-5.0	0.25-0.65				•	•	•		•																
	<b>220408 RT</b>	2.0-7.0	0.25-0.65								•	•			•												
	<b>220412 RT</b>	2.5-7.0	0.25-0.65					•																			
	<b>330924 RT</b>	3.0-9.0	0.35-0.70									•	•				•										
	<b>TNMG 160408 SF</b>	0.7-1.5	0.10-0.30	•											•		•										
	<b>TNMG 160404 L-VF</b>	0.7-3.5	0.10-0.30		•					•	•				•												
	<b>160404 R-VF</b>	0.7-3.5	0.10-0.30	•	•					•	•				•						•						
	<b>160408 L-VF</b>	1.0-3.5	0.12-0.35							•	•				•												
	<b>160408 R-VF</b>	1.0-3.5	0.12-0.35							•	•				•												
	<b>TNMG 130404 WA *</b>	0.25-2.5	0.08-0.25	•	•		•	•		•	•	•			•												
	<b>130408 WA *</b>	0.25-3.0	0.10-0.35	•	•		•	•		•	•	•			•												
	<b>130412 WA *</b>	0.40-3.5	0.15-0.45	•	•		•	•		•	•	•			•												
	<b>TNMM160408 RH</b>	2.0-7.0	0.30-0.70									•															
	<b>220408 RH</b>	2.0-7.0	0.30-0.70								•	•	•														
	<b>220412 RH</b>	2.5-7.0	0.30-0.70								•				•	•											
	<b>270612 RH</b>	3.0-8.0	0.30-0.80								•																
	<b>TNMM160408 RX</b>	0.7-6.0	0.20-0.55								•	•	•														
	<b>160412 RX</b>	1.0-7.0	0.25-0.70								•	•	•														
	<b>220408 RX</b>	0.7-7.5	0.20-0.55								•	•	•														
	<b>220412 RX</b>	1.0-7.5	0.25-0.70								•	•	•														
	<b>220416 RX</b>	1.5-7.5	0.30-0.90								•	•	•														

A57, A63, A77, A78, A99, A128, A140, A141, A165, A168, A189, A190, A197  
 A208, A212, A230, A231, A234

• \* Marked: Wiper inserts should be applied to  
 TGNR/L...,  TFNR/L...

• : Standard items

## Negative 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>13</b>	7.94	4.76	0.1-0.8
<b>16</b>	9.52	4.76	0.1-1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																				
				Cermet		CVD coated						PVD coated		K10										
				PV3010	CT3000	TT3005	TT7005	TT7015	TT8115B	TT8125B	TT8135B	TT9215	TT9235		TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430
Medium	<b>VNGG 160401 ML</b>	0.1-1.0	0.03-0.10																					•
	<b>160402 ML</b>	0.2-1.2	0.05-0.15													•								•
	<b>160404 ML</b>	0.8-3.0	0.10-0.27													•								•
	<b>160408 ML</b>	0.8-3.5	0.10-0.30																					
Finishing For Swiss	<b>VNGX 130401M FS-F</b>	0.2-1.0	0.03-0.12																			•	•	
	<b>130402M FS-F</b>	0.2-1.0	0.04-0.12																			•	•	
Medium	<b>VNGX 130401 ML</b>	0.1-1.0	0.03-0.10														•							•
	<b>130402 ML</b>	0.2-1.2	0.05-0.15														•							
	<b>130404 ML</b>	0.5-1.5	0.05-0.20														•							
Medium	<b>VNMG 160404</b>	1.0-3.0	0.17-0.40		•		•	•	•					•										
	<b>160408</b>	1.5-3.0	0.17-0.50		•		•	•	•					•										
	<b>160412</b>	1.5-3.0	0.20-0.50				•	•	•															
Finishing	<b>VNMG 160404 EA</b>	0.1-1.5	0.05-0.20										•	•		•	•	•	•					
	<b>160408 EA</b>	0.2-2.5	0.08-0.30						•				•			•		•	•					
Medium	<b>VNMG 160408 EM</b>	0.8-3.5	0.13-0.50										•				•							
Finishing	<b>VNMG 160408 FA</b>	0.3-2.0	0.05-0.25	•	•				•					•		•								
Finishing	<b>VNMG 130404 FC #</b>	0.5-1.5	0.08-0.20		•				•	•			•											
	<b>130408 FC #</b>	0.5-2.0	0.10-0.23							•														
	<b>160404 FC</b>	0.3-2.5	0.05-0.30		•				•	•			•											
	<b>160408 FC</b>	0.3-2.5	0.08-0.35		•				•	•			•											

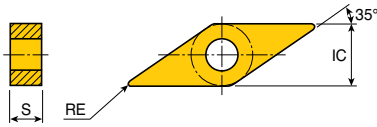


A58, A59, A64, A65,  
A104, A105, A129-A132,  
A168, A215, A217, A238

• # Marked: Insert with screw hole

•: Standard items

## Negative 35° rhombic inserts



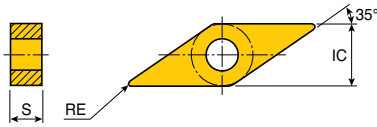
Size	Dimension (mm)		
	IC	S	RE
<b>13</b>	7.94	4.76	0.4-0.8
<b>16</b>	9.52	4.76	0.4-0.8

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																					
				Cermet		CVD coated								PVD coated			K10								
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235		TT15100	TT17100	TT15080	TT8020	TT9080	TT3010	TT3020	TT19020
Finishing	<b>VNMG 130404 FG #</b>	0.5-1.5	0.08-0.20	●						●	●						●	●							
	<b>130408 FG #</b>	0.5-2.0	0.10-0.23	●							●	●													
	<b>160404 FG</b>	0.5-2.0	0.08-0.20	●	●						●	●	●		●		●	●	●	●					
	<b>160408 FG</b>	0.5-2.0	0.10-0.23	●	●						●	●	●				●	●	●	●					
Finishing	<b>VNMG 160404 FLP</b>	0.2-1.5	0.08-0.30								●	●													
	<b>160408 FLP</b>	0.3-1.5	0.10-0.30								●	●													
Finishing	<b>VNMG 160404 FX</b>	0.2-2.0	0.05-0.20	●							●	●													
	<b>160408 FX</b>	0.2-2.0	0.07-0.20	●							●	●	●												
Medium	<b>VNMG 160408 MGP</b>	0.5-3.0	0.17-0.36								●	●													
 <small>OLD</small> Medium	<b>VNMG 130404 MT #</b>	0.8-2.5	0.15-0.36	●			●	●		●							●								
	<b>130408 MT #</b>	1.0-2.5	0.17-0.36	●		●				●	●						●								
	<b>160404 MT ✓</b>	0.8-3.0	0.15-0.36	●						●	●	●			●		●		●						
	<b>160408 MT</b>	1.0-2.5	0.17-0.36	●		●	●	●		●	●	●			●	●	●	●	●	●					
Medium	<b>VNMG 160404 PC</b>	0.4-3.0	0.15-0.36								●	●	●	●											
	<b>160408 PC</b>	0.5-3.0	0.17-0.36								●	●	●												
Medium	<b>VNMM 160404 ML</b>	0.8-3.0	0.10-0.27																						●
	<b>160408 ML</b>	1.0-3.0	0.12-0.32														●								●

A64, A65, A105, A129, A131, A168, A215, A217

● ✓ Marked: Old type chip breaker  
 ● # Marked: Insert with screw hole  
 ● : Standard items

## Negative 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>13</b>	7.94	4.76	0.2-1.2

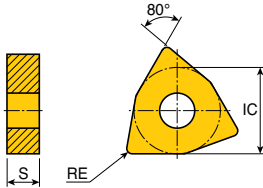
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																				
				Cermet			CVD coated							PVD coated										
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9235	TT15100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10
Finishing	<b>VNMX 130404 FG</b>	0.5-2.0	0.08-0.20	●							●	●			●		●	●						
	<b>130408 FG</b>	0.5-2.0	0.10-0.23	●							●	●			●		●	●						
Finishing	<b>VNMX 130404 FM</b>	0.25-1.5	0.07-0.30	●						●	●	●	●		●		●	●						
	<b>130408 FM</b>	0.3-1.5	0.10-0.35	●						●	●	●	●		●		●	●						
Finishing	<b>VNMX 130402 FS</b>	0.2-1.0	0.05-0.20	●	●						●	●												
	<b>130404 FS</b>	0.25-1.0	0.07-0.20	●	●						●	●												
	<b>130408 FS</b>	0.5-1.0	0.10-0.23	●	●						●	●												
Finishing	<b>VNMX 130404 FX</b>	0.2-2.0	0.05-0.20	●	●						●	●					●							
	<b>130408 FX</b>	0.2-2.0	0.07-0.20	●	●						●	●					●							
Medium	<b>VNMX 130404 MK</b>	0.7-3.0	0.17-0.35											●	●		●	●						
	<b>130408 MK</b>	1.0-3.0	0.20-0.40			●								●	●		●	●	●	●				
Medium	<b>VNMX 130404 MT</b>	0.8-3.0	0.15-0.36	●						●	●	●	●		●		●	●						
	<b>130408 MT</b>	1.0-3.0	0.17-0.36	●		●	●			●	●	●	●		●		●	●						
	<b>130412 MT</b>	1.5-3.0	0.20-0.40			●	●			●	●	●	●		●		●	●						
Medium	<b>VNMX 130404 PC</b>	0.4-3.0	0.15-0.36							●	●	●	●		●		●	●						
	<b>130408 PC</b>	0.5-3.0	0.17-0.36							●	●	●	●		●		●	●						
	<b>130412 PC</b>	1.0-3.0	0.20-0.40							●	●	●	●		●		●	●						



A58, A59, A104,  
A129-A132,  
A215, A217, A217, A238

●: Standard items

## Negative 80° trigon inserts



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

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating														K10							
				Cermat		CVD coated								PVD coated											
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT7100	TT15080	TT8020	TT9080	TT3010	TT3020	TT9020	
 Roughing	<b>WNMA 060408</b>	1.0-4.0	0.15-0.70							●															
	<b>060412</b>	1.5-4.0	0.20-0.80				●																		
	<b>080408</b>	1.0-5.0	0.15-0.70				●	●																	
	<b>080412</b>	1.5-5.0	0.20-0.80				●	●																	
	<b>080416</b>	1.5-5.0	0.20-0.80				●	●																	
 Finishing	<b>WNMG 080404 EA</b>	0.1-1.5	0.05-0.20																	●		●			
	<b>080408 EA</b>	0.1-1.5	0.10-0.40											●	●	●				●					
 Medium	<b>WNMG 060408 EM</b>	0.8-3.0	0.13-0.50												●					●		●			
	<b>060412 EM</b>	0.8-3.0	0.15-0.55											●	●	●				●		●			
	<b>080404 EM</b>	0.8-4.0	0.10-0.45											●	●	●						●			
	<b>080408 EM</b>	0.8-4.0	0.12-0.45											●	●	●				●		●			
	<b>080412 EM</b>	0.8-4.0	0.12-0.45											●	●	●				●		●			
 Roughing	<b>WNMG 060408 ET</b>	0.8-4.0	0.15-0.50											●	●	●				●		●			
	<b>060412 ET</b>	0.8-4.0	0.15-0.50											●	●	●				●		●			
	<b>080408 ET</b>	0.8-4.5	0.15-0.55											●	●					●					
	<b>080412 ET</b>	0.8-4.5	0.20-0.50											●	●					●					
 Finishing	<b>WNMG 060404 FC</b>	0.5-2.0	0.07-0.20		●						●	●			●										
	<b>060408 FC</b>	0.5-2.0	0.10-0.25		●						●	●													
	<b>080404 FC</b>	0.5-2.0	0.07-0.20								●	●													
	<b>080408 FC</b>	0.5-2.0	0.07-0.20		●						●	●	●	●	●	●									
	<b>080412 FC</b>	0.5-2.0	0.10-0.25																						
 Finishing	<b>WNMG 060404 FG</b>	0.5-2.0	0.07-0.20	●	●						●	●								●					
	<b>060408 FG</b>	0.7-2.0	0.10-0.25	●	●						●														
	<b>080404 FG</b>	0.5-2.0	0.07-0.20	●	●						●	●	●							●		●			
	<b>080408 FG</b>	0.7-2.0	0.10-0.25	●	●						●	●								●					

● : Standard items

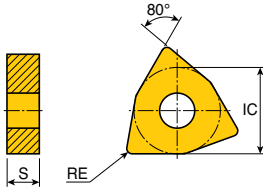


A66, A79, A133, A169,  
A193, A232





## Negative 80° trigon inserts



Size	Dimension (mm)		
	IC	S	RE
<b>06</b>	9.52	4.76	0.4-1.2
<b>08</b>	12.7	4.76	0.8-1.2

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	TT15100	TT17100	TT15080	TT18020		TT19080	TT3010	TT3020	TT9020		
 Medium	<b>WNMG 060404 MT</b>	1.0-3.0	0.12-0.40					●	●			●	●		●	●		●	●								
	<b>060408 MT</b>	1.2-3.0	0.15-0.45					●	●			●	●		●	●		●	●								
	<b>060412 MT</b>	1.5-3.0	0.23-0.50									●															
	<b>080404 MT</b> ✓	1.0-4.0	0.12-0.40		●			●	●			●	●		●	●			●	●							
	<b>080408 MT</b>	1.2-4.0	0.17-0.55		●			●	●			●	●		●	●			●	●							
	<b>080412 MT</b>	1.5-4.0	0.25-0.55					●	●			●	●		●	●			●	●							
	<b>080416 MT</b>	1.5-4.0	0.25-0.55									●	●														
 Medium	<b>WNMG 060408 PC</b>	0.5-4.0	0.15-0.50																								
	<b>060412 PC</b>	0.6-4.0	0.17-0.50																								
	<b>080408 PC</b>	0.5-4.0	0.15-0.50									●	●		●	●			●	●							
	<b>080412 PC</b>	0.6-4.0	0.17-0.50									●	●	●	●	●								●			
	<b>080416 PC</b>	0.8-4.0	0.20-0.50									●	●														
 Roughing	<b>WNMG 080408 RGP</b>	2.5-4.0	0.25-0.70																								
	<b>080412 RGP</b>	2.5-4.0	0.25-0.70																								
	<b>080416 RGP</b>	2.5-4.0	0.30-0.75																								
 Roughing	<b>WNMG 080408 RT</b>	2.5-4.0	0.25-0.70					●	●			●	●	●	●	●	●										
	<b>080412 RT</b>	2.5-4.0	0.25-0.70					●	●	●		●	●			●	●										
	<b>080416 RT</b>	2.5-4.0	0.30-0.75					●				●	●														
 Finishing	<b>WNMG 080408 WS</b>	0.5-2.0	0.07-0.35									●			●	●											



A66, A79, A133,  
A169, A193, A232

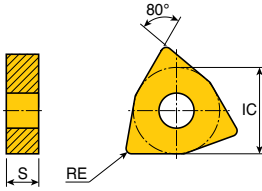
● ✓ Marked: Old type chip breaker

● : Standard items

# WNUMG WNUMX



## Negative 80° trigon inserts



Size	Dimension (mm)		
	IC	S	RE
<b>04</b>	7	3.18	0.4
<b>06</b>	9.52	4.76	0.4-1.2
<b>08</b>	12.7	4.76	0.8-1.6

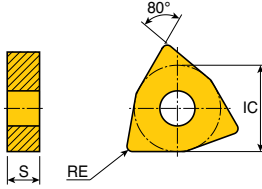
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		CVD coated										PVD coated										
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10	
Wiper	<b>WNUMG 060408 WT</b>	0.7-3.5	0.15-0.60																							
	<b>060412 WT</b>	0.7-3.5	0.20-0.80																							
	<b>080408 WT</b>	1.0-4.0	0.15-0.60																							
Medium	<b>080412 WT</b>	1.0-4.0	0.20-0.80																							
Rhino Turn	<b>WNUMX 060404 EM</b>	0.4-3.0	0.10-0.35																							
	<b>060408 EM</b>	0.5-3.0	0.13-0.40																							
Medium	<b>060412 EM</b>	0.7-3.0	0.15-0.40																							
Rhino Turn	<b>WNUMX 060404 FG</b>	0.2-2.0	0.07-0.30																							
Finishing																										
Rhino Turn	<b>WNUMX 040304 FGP</b>	0.3-2.0	0.05-0.25																							
Finishing																										
Rhino Turn	<b>WNUMX 060404 FM</b>	0.25-2.0	0.07-0.30																							
	<b>060408 FM</b>	0.3-2.0	0.10-0.35																							
Finishing	<b>060412 FM</b>	0.35-2.0	0.15-0.40																							
Rhino Turn	<b>WNUMX 060404 FS</b>	0.25-1.5	0.07-0.30																							
Finishing	<b>060408 FS</b>	0.5-1.5	0.10-0.30																							

A60, A66, A79, A109,  
A133, A169,  
A191, A193, A220, A232






●: Standard items



## Negative 80° trigon inserts



Size	Dimension (mm)		
	IC	S	RE
<b>06</b>	9.52	4.76	0.4-1.2

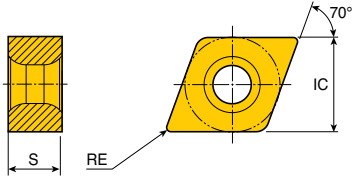
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		CVD coated										PVD coated				K10								
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT7100	TT5080		TT8020	TT9080	TT3010	TT3020	TT9020			
 Medium	<b>WNMX 060404 MK</b>	0.7-3.0	0.17-0.40																									
	<b>060408 MK</b>	1.0-3.0	0.20-0.45																									
	<b>060412 MK</b>	1.2-3.0	0.23-0.50																									
 Medium	<b>WNMX 060404 MM</b>	0.4-3.0	0.15-0.45																									
	<b>060408 MM</b>	0.5-3.0	0.20-0.50																									
	<b>060412 MM</b>	0.7-3.0	0.23-0.50																									
 Medium	<b>WNMX 060404 MT</b>	0.8-3.0	0.10-0.35																									
	<b>060408 MT</b>	1.0-3.0	0.15-0.45																									
	<b>060412 MT</b>	1.2-3.0	0.20-0.55																									
 Medium	<b>WNMX 060404 PC</b>	0.4-3.0	0.10-0.30																									
	<b>060408 PC</b>	0.5-3.0	0.15-0.40																									
	<b>060412 PC</b>	0.6-3.0	0.18-0.50																									
 Finishing	<b>WNMX 060404 WA</b>	0.25-2.5	0.08-0.25	•	•		•	•		•	•	•																
	<b>060408 WA</b>	0.25-3.0	0.10-0.40	•	•		•	•		•	•	•																
	<b>060412 WA</b>	0.4-3.0	0.20-0.50	•	•		•	•		•	•	•																

● : Standard items



A60, A109,  
A133, A134,  
A191, A220, A244

## Negative 70° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	8.7	4.76	0.4
<b>11</b>	11.11	5.56	0.4-1.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																					
				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	<b>XNMG 090404 FLP</b>	0.20-1.50	0.07-0.30							●	●	●													
 Finishing	<b>XNMG 110504 FGP</b>	0.25-2.00	0.07-0.30							●	●	●													
	<b>110508 FGP</b>	0.30-2.00	0.10-0.35							●	●	●													
	<b>110512 FGP</b>	0.35-2.00	0.15-0.40							●	●														
 Medium	<b>XNMG 110508 MLP</b>	0.50-3.50	0.10-0.40							●	●	●													
	<b>110512 MLP</b>	0.60-3.50	0.15-0.50							●	●	●													

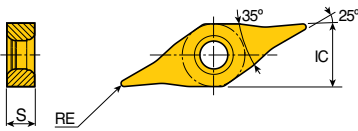


A135-A137,  
A192, A222, A233

●: Standard items

# YNMG

## Negative 25° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>13</b>	7.94	4.76	0.4-0.8

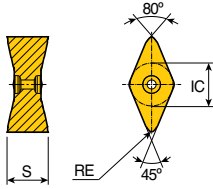
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																						
				Cermet	CVD coated							PVD coated			K10											
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215		TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	
 Finishing	<b>YNMG 130404 FS</b>	0.3-1.0	0.08-0.20	●	●							●								●	●					
	<b>130408 FS</b>	0.5-1.5	0.08-0.25	●	●							●									●					



A58, A59,  
A129, A131, A132,  
A215, A217

●: Standard items

## Negative rhombic inserts with 80° corner angle



Size	Dimension (mm)		
	IC	S	RE
<b>14</b>	10.5	10	0.8

Insert	Designation	BWT <sup>(1)</sup>		FWT <sup>(2)</sup>		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	
	<b>ZNMV 141008-BM</b>	0.5-2.5	0.40-1.00	0.5-2.0	0.20-0.60					●	●	●												
Medium																								
	<b>ZNMV 141008-BS</b>	0.5-2.5	0.50-1.00	1.0-2.0	0.20-0.40															●	●			
Medium																								



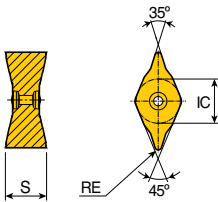
A138

- <sup>(1)</sup> BWT: Backward turning
- <sup>(2)</sup> FWT: Forward turning

● : Standard items

## ZNMV Y-BF

## Negative rhombic inserts with 35° corner angle



Size	Dimension (mm)		
	IC	S	RE
<b>14</b>	10.5	10	0.8

Insert	Designation	BWT <sup>(1)</sup>		FWT <sup>(2)</sup>		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	
	<b>ZNMV 141008Y-BF</b>	0.25-1.5	0.20-0.50	0.25-1.0	0.20-0.35					●	●	●												
Finishing																								



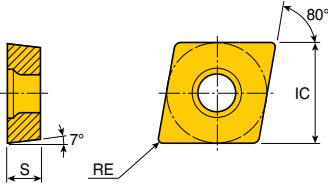
A138, A139

- <sup>(1)</sup> BWT: Backward turning
- <sup>(2)</sup> FWT: Forward turning

● : Standard items



## 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

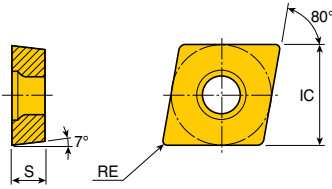
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated				
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10			
 	<b>CCET 0602003 L-GF</b>	0.1-1.5	0.02-0.15	●							●							
	<b>0602003 R-GF</b>	0.1-1.5	0.02-0.15	●							●							
	<b>060201 L-GF</b>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

A80-A82, A119,
   
 A170, A198,
   
 A199, A239

● : Standard items
   
 \* : Marked: Wiper inserts should be applied to
   
 CLCR/L...



## Positive 7° clearance 80° rhombic inserts



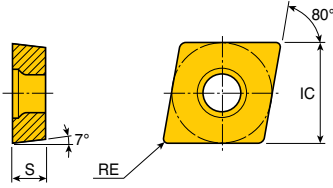
Size	Dimension (mm)		
	IC	S	RE
<b>03</b>	3.5	1.4	0.03-0.4
<b>04</b>	4.3	1.8	0.03-0.4
<b>06</b>	6.35	2.38	0.1-0.4
<b>09</b>	9.52	3.97	0.1-0.8
<b>12</b>	12.7	4.76	0.2-0.8

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

A80-A82, A119,  
 A170, A198,  
 A199, A239

●: Standard items

## Positive 7° clearance 80° rhombic inserts



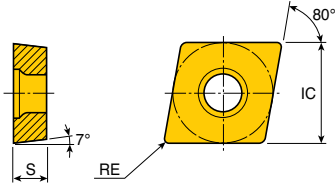
Size	Dimension (mm)		
	IC	S	RE
<b>06</b>	6.35	2.38	0.2
<b>09</b>	9.52	3.97	0.1-0.4

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	<b>CCGT 09T304M SH-F</b>	0.7-3.5	0.07-0.17										●	●			
  Medium For Swiss	<b>CCGT 060202M SM-F</b>	0.3-1.5	0.03-0.12										●	●			
	<b>09T301M SM-F</b>	0.2-1.5	0.02-0.12											●	●		
	<b>09T302M SM-F</b>	0.2-1.5	0.02-0.12											●	●		
	<b>09T304M SM-F</b>	0.3-1.5	0.03-0.12											●	●		
  Finishing For Swiss	<b>CCGT 060202M SL-F</b>	0.02-0.2	0.02-0.10										●	●			
	<b>09T301M SL-F</b>	0.02-0.2	0.015-0.10											●	●		
	<b>09T302M SL-F</b>	0.02-0.2	0.02-0.10											●	●		

A80-A82, A119,  
 A170, A198,  
 A199, A239

● : Standard items

## Positive 7° clearance 80° rhombic inserts



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

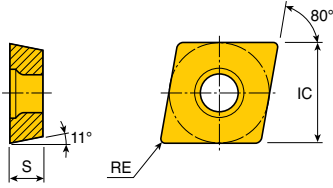
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																						
				Cermat		CVD coated							PVD coated													
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10	
	<b>CCMT060202 FA</b>	0.1-1.5	0.03-0.15	●	●										●		●		●	●						
	<b>060204 FA</b>	0.2-1.5	0.05-0.15	●	●						●				●		●		●	●						
	<b>09T302 FA</b>	0.1-2.0	0.03-0.15	●	●										●		●		●	●		●				
	<b>09T304 FA</b>	0.2-2.0	0.05-0.20	●	●							●				●		●		●	●					
	<b>09T308 FA</b>	0.3-2.0	0.08-0.25	●	●							●				●		●		●	●					
	<b>CCMT060204 FG</b>	0.3-1.5	0.05-0.15	●	●	●	●			●	●	●		●	●	●		●	●	●	●	●	●			
	<b>09T304 FG</b>	0.4-2.0	0.07-0.20	●	●	●	●			●	●	●		●	●	●		●	●	●	●	●	●			
	<b>09T308 FG</b>	0.6-2.0	0.10-0.25	●	●	●	●			●	●	●		●	●	●		●	●	●	●	●	●			
	<b>120408 FG</b> ✓	0.6-2.0	0.10-0.25	●							●						●		●	●	●	●	●			
	<b>CCMT060202 FM</b>	0.5-1.5	0.07-0.15	●	●						●	●					●		●	●						
	<b>060204 FM</b>	0.5-1.5	0.08-0.15	●	●						●	●					●		●	●						
	<b>09T302 FM</b>	0.5-2.0	0.07-0.20	●	●						●	●					●		●	●						
	<b>09T304 FM</b>	0.5-2.5	0.08-0.25	●	●						●	●					●		●	●						
	<b>09T308 FM</b>	0.8-2.5	0.10-0.25	●	●						●	●					●		●	●						
	<b>CCMT060204 MT</b> ✓	0.5-2.0	0.07-0.20	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●		●	
	<b>060208 MT</b> ✓	0.7-2.0	0.13-0.30	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●			
	<b>09T304 MT</b>	0.7-3.5	0.10-0.25	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●			
	<b>09T308 MT</b>	1.0-3.5	0.13-0.30	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●			
	<b>120404 MT</b> ✓	1.0-5.0	0.10-0.25	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●			
	<b>120408 MT</b>	1.3-5.0	0.13-0.30	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●			
	<b>CCMT060204 PC</b>	0.3-2.0	0.06-0.18	●						●	●	●	●	●	●					●	●					
	<b>060208 PC</b>	0.4-2.0	0.08-0.25	●						●	●	●	●	●	●					●	●					
	<b>09T304 PC</b>	0.35-3.0	0.08-0.25	●						●	●	●	●	●	●					●	●					
	<b>09T308 PC</b>	0.5-3.0	0.10-0.28	●						●	●	●	●	●	●					●	●					
	<b>120404 PC</b>	0.4-4.0	0.08-0.25	●						●	●	●	●	●	●					●	●					
	<b>120408 PC</b>	0.7-4.0	0.10-0.30	●						●	●	●	●	●	●					●	●					
	<b>120412 PC</b>	1.0-4.0	0.12-0.35	●						●	●	●	●	●	●					●	●					
	<b>CCMT09T308 WT</b> *	0.7-3.0	0.10-0.40	●	●					●	●					●		●	●							

A80-A82, A119,  
A170, A198,  
A199, A239

● ✓ Marked: Old type chip breaker  
● \* Marked: Wiper inserts should be applied to □CLCR/L...

●: Standard items

## Positive 11° clearance 80° rhombic inserts



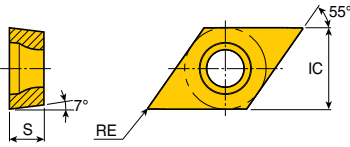
Size	Dimension (mm)		
	IC	S	RE
<b>06</b>	6.35	2.38	0.4-0.8
<b>08</b>	7.94	2.38	0.4-0.8
<b>09</b>	9.52	3.18-3.97	0.4-0.8

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																						
				Cermet		CVD coated										PVD coated										
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT17100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10	
Finishing	<b>CPGT 080204 C</b>	0.4-1.5	0.05-0.20	●																						
	<b>090304 C</b>	0.4-2.0	0.05-0.20	●																						
Finishing	<b>CPMT 080204 FG</b>	0.4-1.5	0.07-0.20	●							●						●									
	<b>080208 FG</b>	0.6-1.5	0.10-0.25	●							●						●									
	<b>090304 FG</b>	0.4-2.0	0.07-0.20	●							●						●									
	<b>090308 FG</b>	0.6-2.0	0.10-0.25	●							●	●					●									
Medium	<b>CPMT 080204 FM</b>	0.5-2.0	0.08-0.20	●	●						●	●					●		●	●						
	<b>080208 FM</b>	0.8-2.0	0.10-0.20	●	●						●	●					●		●	●						
	<b>090304 FM</b>	0.5-2.5	0.08-0.25	●	●						●	●					●		●	●						
	<b>090308 FM</b>	0.8-2.5	0.10-0.25	●	●						●	●					●		●	●						
Medium	<b>CPMT 060204 PC</b>	0.3-2.0	0.06-0.18	●		●	●							●	●		●		●							
	<b>060208 PC</b>	0.4-2.0	0.08-0.25	●			●							●	●		●		●							
	<b>090304 PC</b>	0.45-3.0	0.08-0.25	●							●			●	●		●		●							
	<b>090308 PC</b>	0.6-3.0	0.10-0.30	●							●			●	●		●		●							
	<b>09T304 PC</b>	0.45-3.0	0.08-0.25	●							●	●					●		●				●			
	<b>09T308 PC</b>	0.6-3.0	0.10-0.30	●		●	●				●			●	●		●		●							



● : Standard items

## 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

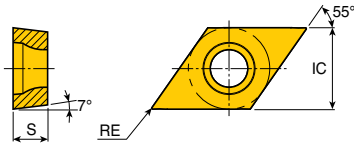
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated					
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10				
  Right hand Finishing	<b>DCET 0702003 L-GF</b>	0.2-1.5	0.01-0.15	●															
	<b>0702003 R-GF</b>	0.2-1.5	0.01-0.15	●										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

A85, A86, A89, A90,  
 A120, A123, A125,  
 A170, A203-A205, A241

\* Marked: Wiper inserts should be applied to  
DJCR/L..., DUCR/L..., DZCR/L...

●: Standard items

## Positive 7° clearance 55° rhombic inserts



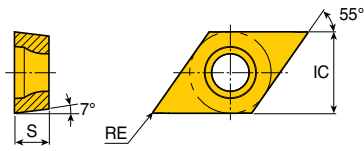
Size	Dimension (mm)		
	IC	S	RE
<b>07</b>	6.35	2.38	0.03-0.4
<b>11</b>	9.52	3.97	0.03-0.8

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	<b>DCGT 0702003 L-FF</b>	0.05-0.3	0.03-0.10		●													
	<b>0702003 R-FF</b>	0.05-0.3	0.03-0.10		●													
	<b>070201 L-FF</b>	0.08-0.4	0.03-0.12		●													
	<b>070201 R-FF</b>	0.08-0.4	0.03-0.12		●													
	<b>070202 L-FF</b>	0.1-0.4	0.03-0.15		●													
	<b>070202 R-FF</b>	0.1-0.4	0.03-0.15		●													
	<b>070204 L-FF</b>	0.1-0.4	0.05-0.20		●													
	<b>070204 R-FF</b>	0.1-0.4	0.05-0.20		●													
	<b>11T3003 L-FF</b>	0.05-0.4	0.03-0.10		●													
	<b>11T3003 R-FF</b>	0.05-0.4	0.03-0.10		●													
	<b>11T301 L-FF</b>	0.1-0.5	0.03-0.12		●													
	<b>11T301 R-FF</b>	0.1-0.5	0.03-0.12		●													
	<b>11T302 L-FF</b>	0.1-0.5	0.03-0.15		●													
	<b>11T302 R-FF</b>	0.1-0.5	0.03-0.15		●													
	<b>11T304 L-FF</b>	0.1-0.5	0.05-0.20		●													
<b>11T304 R-FF</b>	0.1-0.5	0.05-0.20		●														
 Medium For aluminum	<b>DCGT 070202 FL</b>	0.5-2.0	0.05-0.20														●	
	<b>070204 FL</b>	0.5-2.5	0.05-0.25															●
	<b>11T302 FL</b>	0.5-2.5	0.05-0.25															●
	<b>11T304 FL</b>	0.5-2.5	0.05-0.25															●
	<b>11T308 FL</b>	0.8-3.0	0.08-0.30															●
 Finishing	<b>DCGT 070201 SA</b>	0.1-1.5	0.02-0.15			●						●						
	<b>070202 SA</b>	0.1-1.5	0.02-0.15			●						●						
	<b>070204 SA</b>	0.1-1.5	0.03-0.20			●						●						
	<b>11T301 SA</b>	0.1-2.5	0.01-0.05			●						●						
	<b>11T302 SA</b>	0.1-2.5	0.02-0.15			●						●						
	<b>11T304 SA</b>	0.1-2.5	0.03-0.20			●						●						
	<b>11T308 SA</b>	0.1-2.5	0.03-0.20			●						●						

● : Standard items

A85, A86, A89, A90,  
 A120, A123, A125,  
 A170, A203-A205, A241

## Positive 7° clearance 55° rhombic inserts



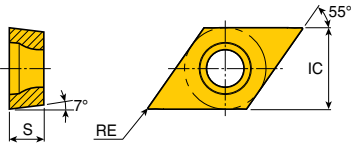
Size	Dimension (mm)		
	IC	S	RE
07	6.35	2.38	0.1-0.4
11	9.52	3.97	0.1-0.4

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet								PVD coated		Uncoated					
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10				
  Roughing For Swiss	<b>DCGT 11T302M SH-E</b>	0.5-3.5	0.05-0.15											•	•				
	<b>11T304M SH-E</b>	0.7-3.5	0.07-0.17												•	•			
	<b>11T302M SH-F</b>	0.5-3.5	0.05-0.15												•	•			
	<b>11T304M SH-F</b>	0.7-3.5	0.07-0.17												•	•			
  Medium For Swiss	<b>DCGT 070201M SM-F</b>	0.2-1.5	0.02-0.12												•	•			
	<b>070202M SM-F</b>	0.2-1.5	0.02-0.12													•	•		
	<b>070204M SM-F</b>	0.3-1.5	0.03-0.12													•	•		
	<b>11T301M SM-F</b>	0.2-1.5	0.02-0.12													•	•		
	<b>11T302M SM-F</b>	0.2-1.5	0.02-0.12													•	•		
	<b>11T304M SM-F</b>	0.3-1.5	0.03-0.12													•	•		
  Finishing For Swiss	<b>DCGT 070202M SL-F</b>	0.02-0.20	0.02-0.10												•	•			
	<b>11T301M SL-F</b>	0.02-0.20	0.015-0.10													•	•		
	<b>11T302M SL-F</b>	0.02-0.20	0.02-0.10													•	•		

A85, A86, A89, A90,  
 A120, A123, A125,  
 A170, A203-A205, A241

•: Standard items

## Positive 7° clearance 55° rhombic inserts



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

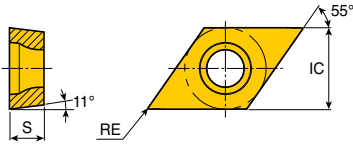
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																					
				Cermet	CVD coated							PVD coated					K10								
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235		TT15100	TT17100	TT15080	TT18020	TT19080	TT13010	TT13020	TT19020
Finishing	<b>DCMT 070202 FA</b>	0.1-1.5	0.03-0.15	●	●												●		●	●					
	<b>070204 FA</b>	0.2-1.5	0.05-0.20	●	●					●	●								●	●					
	<b>11T302 FA</b>	0.1-2.0	0.03-0.15	●	●									●			●		●	●					
	<b>11T304 FA</b>	0.2-2.0	0.05-0.20	●	●						●	●							●	●					
	<b>11T308 FA</b>	0.3-2.0	0.08-0.25	●	●						●	●						●		●	●				
Finishing	<b>DCMT 070204 FG</b>	0.4-1.5	0.07-0.20	●	●					●	●	●			●	●	●		●	●	●				
	<b>070208 FG</b>	0.4-2.0	0.07-0.20	●	●					●	●				●	●	●		●	●					
	<b>11T304 FG</b>	0.6-1.5	0.10-0.25	●	●	●	●			●	●			●	●	●	●		●	●	●	●	●		
	<b>11T308 FG</b>	0.6-2.0	0.10-0.25	●	●	●	●			●	●			●	●	●	●		●	●	●	●	●		
Medium	<b>DCMT 070202 FM</b>	0.5-1.5	0.07-0.20	●	●					●	●						●		●	●					
	<b>070204 FM</b>	0.5-1.5	0.08-0.20	●	●					●	●				●	●	●		●	●	●				
	<b>070208 FM</b>	0.8-1.5	0.10-0.20	●	●					●	●						●		●	●					
	<b>11T302 FM</b>	0.5-2.0	0.07-0.20	●	●					●	●						●		●	●					
	<b>11T304 FM</b>	0.5-2.0	0.08-0.20	●	●					●	●						●		●	●					
	<b>11T308 FM</b>	0.8-2.5	0.10-0.25	●	●					●	●						●		●	●					
Medium	<b>DCMT 11T304 MT</b>	0.7-3.0	0.10-0.25	●	●		●	●		●	●	●			●	●	●		●	●					
	<b>11T308 MT</b>	1.0-3.0	0.13-0.30	●		●	●	●	●	●	●				●	●	●		●	●	●				
	<b>11T312 MT</b>	1.5-3.0	0.17-0.35	●		●	●			●							●		●	●					
Medium	<b>DCMT 070204 PC</b>	0.3-2.0	0.06-0.18	●						●	●			●	●						●				
	<b>070208 PC</b>	0.4-2.0	0.08-0.25	●						●	●			●	●						●				
	<b>11T304 PC</b>	0.35-3.0	0.08-0.25	●						●	●			●	●						●				
	<b>11T308 PC</b>	0.5-3.0	0.10-0.28	●						●	●			●	●						●				
	<b>11T312 PC</b>	0.5-3.0	0.12-0.32	●						●	●			●	●						●				

● : Standard items

A85, A86, A89, A90,  
A120, A123, A125,  
A170, A203-A205, A241



## Positive 11° clearance 55° rhombic inserts

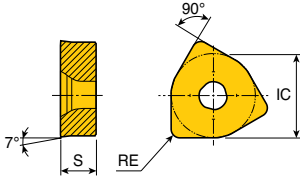


Size	Dimension (mm)		
	IC	S	RE
<b>07</b>	6.35	2.38	0.03-0.2
<b>11</b>	9.52	3.97	0.03-0.2

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	<b>DPET 0702003 L-GF</b>	0.2-1.5	0.01-0.15	●														
	<b>0702003 R-GF</b>	0.2-1.5	0.01-0.15	●														
	<b>070201 L-GF</b>	0.2-1.5	0.02-0.15	●														
	<b>070201 R-GF</b>	0.2-1.5	0.02-0.15	●														
	<b>070202 L-GF</b>	0.3-1.5	0.03-0.17	●														
	<b>070202 R-GF</b>	0.3-1.5	0.03-0.17	●														
	<b>11T3003 L-GF</b>	0.2-2.5	0.02-0.15	●														
	<b>11T3003 R-GF</b>	0.2-2.5	0.02-0.15	●														
	<b>11T301 L-GF</b>	0.2-2.5	0.02-0.15	●														
	<b>11T301 R-GF</b>	0.2-2.5	0.02-0.15	●														
	<b>11T302 L-GF</b>	0.3-2.5	0.03-0.17	●														
	<b>11T302 R-GF</b>	0.3-2.5	0.03-0.17	●														
 Right hand Finishing	<b>DPGT 0702003 L-FF</b>	0.05-0.3	0.03-0.10	●														
	<b>0702003 R-FF</b>	0.05-0.3	0.03-0.10	●														
	<b>070201 L-FF</b>	0.08-0.4	0.03-0.12	●														
	<b>070201 R-FF</b>	0.08-0.4	0.03-0.12	●														
	<b>070202 L-FF</b>	0.1-0.4	0.03-0.15	●														
	<b>070202 R-FF</b>	0.1-0.4	0.03-0.15	●														
	<b>11T3003 L-FF</b>	0.05-0.4	0.03-0.10	●														
	<b>11T3003 R-FF</b>	0.05-0.4	0.03-0.10	●														
	<b>11T301 L-FF</b>	0.1-0.5	0.03-0.12	●														
	<b>11T301 R-FF</b>	0.1-0.5	0.03-0.12	●														
	<b>11T302 L-FF</b>	0.1-0.5	0.03-0.15	●														
	<b>11T302 R-FF</b>	0.1-0.5	0.03-0.15	●														

●: Standard items

## Positive 7° clearance high feed inserts



Size	Dimension (mm)		
	IC	S	RE
<b>10</b>	15.45	6.5	1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																							
				Cermet		CVD coated								PVD coated													
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT17100	TT15080	TT18020	TT19080	TT13010	TT13020	TT19020	K10		
 High feed For general	<b>FCMX 100616-HFG</b>	0.5-2.0	1.50-3.00										●	●	●												
 High feed For alloy steel	<b>FCMX 100616-HFP</b>	0.5-2.0	1.00-2.50										●	●	●												

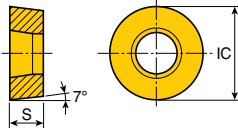
● : Standard items









# RCGT RCMT RCMX

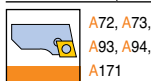


## Positive 7° clearance round inserts



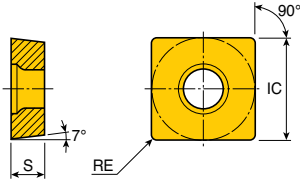
Size	Dimension (mm)		Size	Dimension (mm)	
	IC	S		IC	S
<b>08</b>	8.0	3.18	<b>20</b>	20.0	6.35
<b>10</b>	10.0	3.18-3.97	<b>25</b>	25.0	7.94
<b>12</b>	12.0	4.76	<b>32</b>	32.0	9.52
<b>16</b>	16.0	6.35			

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermat		CVD coated										PVD coated								
				PV3010	CT3000	TT3005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10
 Medium For aluminum	<b>RCGT 0803MO FL</b>	1.0-4.0	0.20-0.40																					●
	<b>1003MO FL</b>	1.0-5.0	0.20-0.40																					●
	<b>10T3MO FL</b>	1.0-5.0	0.20-0.40																					●
 Medium	<b>RCMT 080300 MGS</b>	0.5-2.0	0.15-0.30			●																		●
	<b>120400 MGS</b>	1.0-3.0	0.25-0.50			●																		●
 Medium	<b>RCMT 080300 MT</b>	0.5-3.0	0.15-0.40																					
	<b>10T300 MT</b>	1.0-4.0	0.20-0.50				●	●			●	●	●											
	<b>120400 MT</b>	2.0-5.0	0.30-0.60				●	●			●	●												
	<b>160600 MT</b>	3.0-7.0	0.40-0.80																					
 Medium	<b>RCMT 120400 PC</b>	2.0-5.0	0.30-0.60								●	●	●											
 Roughing	<b>RCMX 100300</b>	1.5-4.0	0.25-0.50				●	●			●	●												●
	<b>120400</b>	2.5-5.0	0.30-0.60				●	●			●	●												
	<b>160600</b>	3.0-7.0	0.40-0.75				●	●			●	●												
	<b>200600</b>	3.5-9.0	0.48-0.90				●	●			●	●	●											●
	<b>250700</b>	4.0-12.0	0.55-1.20				●	●	●		●	●	●											●
	<b>320900</b>	5.0-15.0	0.65-1.50				●				●	●	●											●
 Roughing	<b>RCMX 100300 RA</b>	1.0-4.0	0.20-0.50								●	●	●											
	<b>120400 RA</b>	2.0-5.0	0.25-0.60								●	●	●											
	<b>160600 RA</b>	2.5-7.0	0.35-0.75								●	●	●											
	<b>200600 RA</b>	3.0-9.0	0.40-0.90				●				●	●	●											●
	<b>250700 RA</b>	3.5-12.0	0.50-1.20								●	●	●	●										
	<b>320900 RA</b>	4.0-15.0	0.60-1.50								●	●	●											



●: Standard items

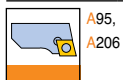
## Positive 7° clearance square inserts



Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	3.97	0.4-0.8
<b>12</b>	12.7	4.76	0.4-1.2

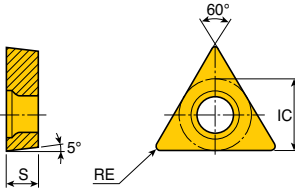
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																							
				Cermet		CVD coated										PVD coated				K10							
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT17100	TT15080		TT18020	TT19080	TT13010	TT13020	TT19020		
 Medium For aluminum	<b>SCGT 09T308 FL</b>	0.5-3.0	0.10-0.30																							●	
	<b>120402 FL</b>	0.5-3.0	0.10-0.30																								●
	<b>120404 FL</b>	0.5-4.0	0.10-0.30																								●
	<b>120408 FL</b>	1.0-4.0	0.10-0.30																								●
 Finishing	<b>SCMT 09T304 FG</b>	0.6-2.0	0.08-0.25								●				●												
	<b>09T308 FG</b>	0.6-2.0	0.10-0.25	●							●	●			●	●				●	●						
 Medium	<b>SCMT 09T304 FM</b>	0.5-2.5	0.08-0.25	●	●						●	●					●			●	●						
	<b>09T308 FM</b>	0.8-2.5	0.10-0.25	●	●						●	●					●			●	●						
 Medium	<b>SCMT 09T304 MT</b>	0.7-3.5	0.10-0.25	●	●						●	●			●	●				●							
	<b>09T308 MT</b>	1.0-3.5	0.13-0.30	●	●	●	●				●	●	●		●	●	●	●		●	●						
	<b>120404 MT</b>	1.0-5.0	0.10-0.25	●	●	●					●	●					●										
	<b>120408 MT</b>	1.0-5.0	0.13-0.30	●	●	●	●				●	●	●		●	●	●			●	●						
	<b>120412 MT</b>	1.0-5.0	0.15-0.35			●	●				●	●									●						
 Medium	<b>SCMT 09T304 PC</b>	0.35-3.0	0.08-0.25	●	●						●	●			●	●						●					
	<b>09T308 PC</b>	0.5-3.0	0.10-0.28	●							●	●			●	●						●					
	<b>120404 PC</b>	0.4-4.0	0.08-0.25	●							●	●			●	●						●					
	<b>120408 PC</b>	0.7-4.0	0.10-0.30	●							●	●			●	●						●					
	<b>120412 PC</b>	1.0-4.0	0.12-0.35								●	●			●	●						●					

● : Standard items





## Positive 5° clearance triangular inserts



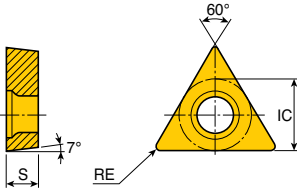
Size	Dimension (mm)		
	IC	S	RE
06	3.97	1.59	0.03-0.4

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated				
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10			
<p>Right hand Finishing</p>	<b>TBGT 0601003 R-FF</b>	0.05-0.3	0.03-0.10		●													
	<b>0601003 L-FF</b>	0.05-0.3	0.03-0.10		●													
	<b>060101 R-FF</b>	0.08-0.4	0.03-0.12		●													
	<b>060101 L-FF</b>	0.08-0.4	0.03-0.12		●													
	<b>060102 R-FF</b>	0.1-0.4	0.03-0.15		●													
	<b>060102 L-FF</b>	0.1-0.4	0.03-0.15		●													
	<b>060104 R-FF</b>	0.1-0.4	0.05-0.20		●													
	<b>060104 L-FF</b>	0.1-0.4	0.05-0.20		●													



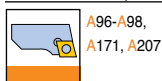
● : Standard items

## Positive 7° clearance triangular inserts



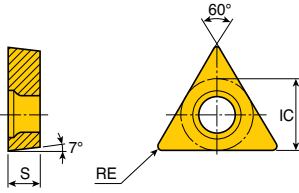
Size	Dimension (mm)		
	IC	S	RE
<b>08</b>	4.76	2.38	0.03-0.2
<b>09</b>	5.56	2.36	0.4
<b>11</b>	6.35	2.38-3.18	0.03-0.8
<b>16</b>	9.52	3.97	0.4-0.8

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	<b>TCET 0802003 L-GF</b>	0.2-1.5	0.02-0.12	●														
	<b>0802003 R-GF</b>	0.2-1.5	0.02-0.12	●														
	<b>080201 L-GF</b>	0.2-1.5	0.02-0.15	●														
	<b>080201 R-GF</b>	0.2-1.5	0.02-0.15	●														
	<b>080202 L-GF</b>	0.3-1.5	0.03-0.17	●														
	<b>080202 R-GF</b>	0.3-1.5	0.03-0.17	●														
	<b>1103003 L-GF</b>	0.2-1.5	0.02-0.12	●														
	<b>1103003 R-GF</b>	0.2-1.5	0.02-0.12	●														
	<b>110301 L-GF</b>	0.2-1.5	0.02-0.15	●														
	<b>110301 R-GF</b>	0.2-1.5	0.02-0.15	●														
	<b>110302 L-GF</b>	0.3-1.5	0.03-0.17	●														
	<b>110302 R-GF</b>	0.3-1.5	0.03-0.17	●														
	<b>110304 L-GF</b>	0.5-1.5	0.05-0.20	●														
	<b>110304 R-GF</b>	0.5-1.5	0.05-0.20	●														
 Medium For aluminum	<b>TCGT 090204 FL</b>	0.2-2.5	0.05-0.25													●		
	<b>110204 FL</b>	0.2-3.0	0.05-0.30														●	
	<b>16T304 FL</b>	0.5-3.0	0.05-0.30														●	
	<b>16T308 FL</b>	0.5-3.0	0.10-0.30														●	
  Finishing	<b>TCGT 110201 SA</b>	0.1-2.5	0.01-0.05			●											●	
	<b>110202 SA</b>	0.2-2.5	0.02-0.15			●												●
	<b>110204 SA</b>	0.2-2.5	0.03-0.20			●												●



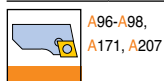
●: Standard items

## Positive 7° clearance triangular inserts



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

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																					
				Cermat		CVD coated								PVD coated											
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT18105B	TT18115B	TT18125B	TT18135B	TT19215	TT19235	TT15100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10	
Finishing	<b>TCMT 06T102 FA</b>	0.4-1.2	0.03-0.15	●												●									
	<b>110202 FA</b>	0.1-1.5	0.03-0.15	●							●							●		●					
	<b>110204 FA</b>	0.1-1.5	0.05-0.15	●	●						●						●								
Finishing	<b>TCMT 090208 FG</b>	0.6-1.5	0.10-0.25	●	●					●	●					●									
	<b>110204 FG</b>	0.4-1.5	0.07-0.20	●	●					●					●	●	●			●	●				
	<b>110208 FG</b>	0.6-1.5	0.10-0.25	●	●		●	●		●	●				●	●	●			●					
	<b>16T304 FG</b>	0.4-2.0	0.07-0.20	●	●		●			●						●				●					
	<b>16T308 FG</b>	0.6-2.0	0.10-0.25	●	●		●	●		●					●	●	●			●	●				
Medium	<b>TCMT 090202 FM</b>	0.5-1.5	0.07-0.20	●	●					●	●					●			●	●					
	<b>090204 FM</b>	0.5-1.5	0.08-0.20	●	●					●	●					●			●	●					
	<b>110202 FM</b>	0.5-1.5	0.07-0.20	●	●					●	●					●			●	●					
	<b>110204 FM</b>	0.5-1.5	0.08-0.20	●	●					●	●					●			●	●					
	<b>110208 FM</b>	0.8-1.5	0.10-0.20	●	●					●	●					●			●	●					
	<b>16T304 FM</b>	0.5-2.0	0.08-0.20	●	●					●	●					●			●	●					
	<b>16T308 FM</b>	0.8-2.0	0.10-0.20	●	●					●	●					●			●	●					
<b>16T312 FM</b>	1.0-2.5	0.10-0.25	●	●					●	●					●			●	●						
Medium	<b>TCMT 090204 MT</b>	0.6-2.0	0.10-0.25	●	●		●	●		●	●			●	●	●			●	●					
	<b>090208 MT</b>	0.8-2.0	0.13-0.30	●	●		●	●		●	●				●			●	●						
	<b>110204 MT</b>	0.6-3.0	0.10-0.25	●	●		●	●		●	●				●	●	●			●	●			●	
	<b>110208 MT</b>	0.8-3.0	0.13-0.30	●	●		●	●		●	●				●	●	●			●	●			●	
	<b>16T304 MT</b>	0.8-5.0	0.10-0.25	●	●		●	●		●	●				●	●	●			●	●			●	
	<b>16T308 MT</b>	1.0-5.0	0.10-0.30	●	●		●	●		●	●				●	●	●			●	●			●	
	<b>16T312 MT</b>	1.5-5.0	0.10-0.30				●			●						●			●	●				●	
	<b>220408 MT</b>	2.0-6.0	0.10-0.35								●														
Medium	<b>TCMT 090204 PC</b>	0.3-2.0	0.06-0.18	●						●	●		●							●					
	<b>090208 PC</b>	0.4-2.0	0.08-0.25	●						●	●		●							●					
	<b>110204 PC</b>	0.3-2.5	0.06-0.20	●						●	●		●							●					
	<b>110208 PC</b>	0.42-2.5	0.09-0.26	●						●	●		●							●					
	<b>16T304 PC</b>	0.35-3.0	0.08-0.25	●						●	●		●							●					
	<b>16T308 PC</b>	0.5-3.0	0.10-0.28	●						●	●		●							●					
<b>16T312 PC</b>	0.6-3.0	0.12-0.36	●						●	●		●							●						

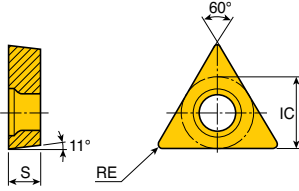


● ✓ Marked: Old type chip breaker

●: 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	0.03-0.8

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

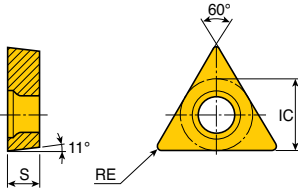


●: Standard items

# TPGN TPGT TPGX



Positive 11° clearance triangular inserts



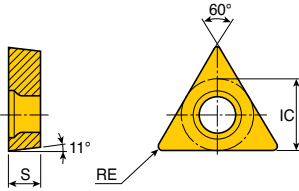
Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	5.56	2.38	0.2-0.4
<b>11</b>	6.35	3.18	0.2-0.8
<b>16</b>	9.52	4.76	0.2-12
<b>22</b>	12.7	4.76	0.4-3.0
<b>27</b>	15.88	6.35	0.8

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																									
				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	<b>TPGN 090204</b>	0.5-3.0	0.07-0.20																							●	●		
	<b>110304</b>	0.7-3.0	0.07-0.20	●																						●	●		
	<b>110308</b>	1.0-3.0	0.10-0.25									●															●		
	<b>160302</b>	1.0-5.0	0.05-0.18																								●		
	<b>160304</b>	1.0-5.0	0.07-0.20		●							●															●	●	
	<b>160308</b>	1.0-5.0	0.10-0.25		●		●				●	●															●	●	
	<b>160312</b>	1.0-5.0	0.15-0.30																								●		
	<b>220404</b>	1.5-7.0	0.07-0.20																								●	●	
	<b>220408</b>	1.5-7.0	0.10-0.25											●														●	
	<b>220412</b>	1.5-7.0	0.15-0.30																									●	●
	<b>220416</b>	1.5-7.0	0.20-0.35																								●		
	<b>220425</b>	1.5-7.0	0.25-0.40																										
<b>220430</b>	1.5-7.0	0.30-0.45																											
<b>270608</b>	3.0-8.0	0.15-0.25										●																	
Right hand Finishing	<b>TPGT 090204 L-C</b>	0.3-1.5	0.05-0.20	●																							●		
	<b>110304 L-C</b>	0.5-2.0	0.05-0.20	●																							●		
	<b>110304 R-C</b>	0.5-2.0	0.05-0.20	●																									
	<b>110308 L-C</b>	0.5-2.0	0.07-0.25	●																									
	<b>160404 L-C</b>	0.7-3.0	0.05-0.20	●																									
	<b>160404 R-C</b>	0.7-3.0	0.05-0.20	●																									
Left hand Finishing	<b>TPGX 090202 L</b>	0.4-1.5	0.05-0.15	●																							●		
	<b>090204 L</b>	0.6-1.5	0.08-0.20	●																							●		
	<b>110302 L</b>	0.5-1.5	0.08-0.20	●																									
	<b>110302 R</b>	0.5-1.5	0.08-0.20	●																									
	<b>110304 L</b>	0.6-2.0	0.08-0.20	●																							●		
	<b>110304 R</b>	0.6-2.0	0.08-0.20	●																									

A51, A52, A184, A209, A210

● : Standard items

## Positive 11° clearance triangular inserts



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

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																					
				Cermert			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
 Medium	<b>TPMR 090204</b>	0.5-2.0	0.10-0.25							●	●						●								
	<b>090208</b>	0.7-2.0	0.13-0.30	●				●		●	●						●								
	<b>110304</b> ✓	0.7-3.0	0.10-0.25	●		●	●			●	●						●			●					
	<b>110308</b>	1.0-3.0	0.13-0.30	●	●			●		●	●						●								
	<b>160304</b> ✓	1.0-5.0	0.10-0.25	●	●	●	●			●	●	●	●				●			●	●				
	<b>160308</b>	1.0-5.0	0.13-0.30	●		●	●										●			●	●				
	<b>160312</b>	1.0-5.0	0.15-0.35								●	●													
	<b>220404</b> ✓	1.0-7.0	0.10-0.25									●						●							
	<b>220408</b> ✓	1.5-7.0	0.13-0.30			●						●						●							
<b>220412</b> ✓	1.5-7.0	0.15-0.35									●														
 Finishing	<b>TPMT 090202 FA</b>	0.1-1.2	0.03-0.15	●	●						●	●					●			●	●				
	<b>090204 FA</b>	0.2-1.2	0.05-0.20	●	●						●	●					●			●	●				
	<b>110302 FA</b>	0.1-1.5	0.03-0.15	●	●						●	●					●			●	●				
	<b>110304 FA</b>	0.2-1.5	0.05-0.20	●	●						●	●					●			●	●				
	<b>110308 FA</b>	0.3-1.5	0.08-0.25	●	●						●	●					●			●	●	●			
	<b>16T304 FA</b>	0.2-2.0	0.05-0.20	●	●						●	●					●			●	●				
	<b>16T308 FA</b>	0.3-2.0	0.08-0.25	●	●						●	●					●			●	●				
 Finishing	<b>TPMT 110304 FG</b>	0.4-1.5	0.07-0.20	●	●	●				●	●					●			●						
 Medium	<b>TPMT 090202 FM</b>	0.5-1.5	0.07-0.20	●	●						●	●					●			●	●				
	<b>090204 FM</b>	0.5-1.5	0.08-0.20	●	●						●	●					●			●	●				
	<b>110302 FM</b>	0.5-1.5	0.07-0.20	●	●						●	●					●			●	●				
	<b>110304 FM</b>	0.5-1.5	0.08-0.20	●	●						●	●					●			●	●				
	<b>110308 FM</b>	0.8-1.5	0.10-0.20	●	●						●	●					●			●	●				
	<b>160302 FM</b>	0.5-2.0	0.07-0.20	●	●						●	●					●			●	●				
	<b>160304 FM</b>	0.5-2.0	0.08-0.20	●	●						●	●					●			●	●				
<b>160308 FM</b>	0.8-2.5	0.10-0.25	●	●						●	●					●			●	●					
 Medium	<b>TPMT 090204 PC</b>	0.3-2.0	0.06-0.18	●							●	●		●	●		●			●					
	<b>110204 PC</b>	0.4-2.5	0.06-0.20	●		●								●	●		●			●					
	<b>110208 PC</b>	0.5-2.5	0.10-0.26	●										●	●		●			●					
	<b>110304 PC</b>	0.4-2.5	0.06-0.20	●										●	●		●			●					
	<b>110308 PC</b>	0.5-2.5	0.10-0.26	●								●	●		●	●		●			●				
	<b>16T304 PC</b>	0.45-3.0	0.08-0.25	●								●	●		●	●		●			●				
	<b>16T308 PC</b>	0.5-3.0	0.10-0.30	●								●	●		●	●		●			●				



● ✓ Marked: Old type chip breaker

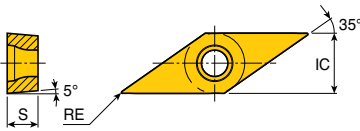
● : Standard items









# 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	<b>VBET 110301 L-GF</b>	0.2-1.5	0.02-0.15		●							●			
	<b>110301 R-GF</b>	0.2-1.5	0.02-0.15		●							●			
	<b>110302 L-GF</b>	0.3-1.5	0.03-0.17		●							●			
	<b>110302 R-GF</b>	0.3-1.5	0.03-0.17		●							●			
	<b>110304 L-GF</b>	0.3-1.5	0.05-0.20		●							●			
	<b>110304 R-GF</b>	0.3-1.5	0.05-0.20		●							●			
 Right hand Finishing	<b>VBET 1103003 L-GW*</b>	0.1-1.5	0.02-0.15									●			
	<b>1103003 R-GW*</b>	0.1-1.5	0.02-0.15									●			
 Left hand Finishing	<b>VBGT 1103003 L-FF</b>	0.05-0.4	0.03-0.10		●							●			
	<b>1103003 R-FF</b>	0.05-0.4	0.03-0.10		●							●			
	<b>110301 L-FF</b>	0.1-0.5	0.03-0.12		●							●			
	<b>110301 R-FF</b>	0.1-0.5	0.03-0.12		●							●			
	<b>110302 L-FF</b>	0.1-0.5	0.03-0.15		●							●			
	<b>110302 R-FF</b>	0.1-0.5	0.03-0.15		●							●			
 Finishing	<b>VBGT 110301 SA</b>	0.1-1.5	0.01-0.20			●						●			
	<b>110302 SA</b>	0.2-1.5	0.02-0.20			●						●			
	<b>110304 SA</b>	0.2-1.5	0.05-0.20	●		●						●			
	<b>160401 SA</b>	0.1-1.5	0.01-0.20			●						●			
	<b>160402 SA</b>	0.2-1.5	0.02-0.20			●						●			
	<b>160404 SA</b>	0.2-2.5	0.03-0.20									●			
 Finishing For Swiss	<b>VBGT 110302M SL-F</b>	0.02-0.20	0.02-0.10										●	●	
 Medium For Swiss	<b>VBGT 110301M SM-F</b>	0.2-1.5	0.02-0.12										●	●	
	<b>110302M SM-F</b>	0.2-1.5	0.02-0.12										●	●	
	<b>110304M SM-F</b>	0.3-1.5	0.03-0.12										●	●	

 A100, A101, A106-A108, A122, A124, A125, A172, A214, A216, A218, A219, A243

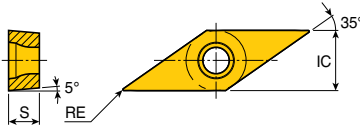
\* Marked: Wiper inserts should be applied to □VJBR/L...

●: Standard items

# VBGT VBMT



## Positive 5° clearance 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>11</b>	6.35	3.18	0.4-0.8
<b>16</b>	9.52	4.76	0.4-1.2

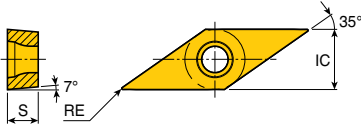
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																				
				Cermet		CVD coated										PVD coated								
				PV3010	CT3000	TT3005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	K10
Finishing	<b>VBGT 160404 FGS</b>	0.2-2.5	0.03-0.20			●												●			●	●		●
	<b>160408 FGS</b>	0.3-2.5	0.05-0.20			●												●			●	●		●
	<b>160412 FGS</b>	0.3-2.5	0.07-0.20			●												●			●	●		●
Finishing	<b>VBMT 110304 FA</b>	0.2-1.5	0.05-0.20	●	●				●	●						●		●	●					
	<b>160404 FA</b>	0.2-2.0	0.05-0.20	●	●				●	●						●		●	●					
	<b>160408 FA</b>	0.3-2.0	0.08-0.25	●	●				●	●						●		●	●					
Finishing	<b>VBMT 160404 FG</b>	0.5-1.5	0.07-0.20	●	●	●	●		●	●			●	●		●		●	●			●	●	
	<b>160408 FG</b>	0.7-2.0	0.10-0.25	●	●	●	●		●	●			●	●		●		●	●			●	●	
Medium	<b>VBMT 110304 FM</b>	0.5-1.5	0.08-0.20	●	●				●	●						●		●	●					
	<b>110308 FM</b>	0.5-1.5	0.10-0.20	●	●				●	●						●		●	●					
	<b>160404 FM</b>	0.5-2.0	0.08-0.20	●	●				●	●						●		●	●					
	<b>160408 FM</b>	0.8-2.0	0.10-0.20	●	●				●	●						●		●	●					
	<b>160412 FM</b>	1.0-2.5	0.10-0.25	●	●				●	●						●		●	●					
Finishing	<b>VBMT 160404 FX</b>	0.2-2.0	0.05-0.20	●	●				●	●								●		●				
	<b>160408 FX</b>	0.2-2.0	0.07-0.20	●	●				●	●										●				
Medium	<b>VBMT 160404 MT</b>	0.6-3.0	0.10-0.25	●	●	●	●		●	●			●	●		●		●	●					●
	<b>160408 MT</b>	0.9-3.0	0.13-0.30	●	●	●	●		●	●			●	●		●		●	●					
	<b>160412 MT</b>	1.2-3.0	0.15-0.30						●	●						●								
Medium	<b>VBMT 160404 PC</b>	0.5-2.8	0.07-0.22	●					●	●			●							●				
	<b>160408 PC</b>	0.5-2.8	0.10-0.27	●					●	●			●							●				
	<b>160412 PC</b>	0.5-2.8	0.10-0.28	●		●			●	●						●		●						

● : Standard items



A100, A101, A106-A108,  
A122, A124, A125, A172,  
A214, A216, A218, A219, A243

## Positive 7° clearance 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>11</b>	6.35	3.18	0.1-0.4
<b>16</b>	9.52	4.76	0.2-1.2
<b>22</b>	12.7	5.56	3.0

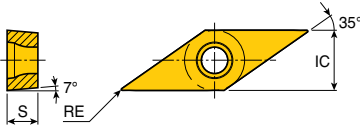
Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated						Uncoated		
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20
<p>Medium For aluminum</p>	<b>VCGT 110302 FL</b>	0.2-2.5	0.05-0.20											●
	<b>110304 FL</b>	0.5-3.0	0.05-0.25											●
	<b>160402 FL</b>	0.5-2.5	0.05-0.25											●
	<b>160404 FL</b>	0.5-3.0	0.05-0.25											●
	<b>160408 FL</b>	0.5-3.0	0.10-0.25											●
	<b>160412 FL</b>	0.5-3.0	0.10-0.25											●
	<b>220530 FL</b>	1.5-4.5	0.15-0.30											●
<p>Finishing</p>	<b>VCGT 110301 SA</b>	0.1-1.5	0.01-0.20			●				●				
	<b>110302 SA</b>	0.2-1.5	0.02-0.20			●				●				
	<b>110304 SA</b>	0.2-1.5	0.05-0.20			●				●				
<p>Medium For Swiss</p>	<b>VCGT 110301M SM-F</b>	0.2-1.5	0.02-0.12								●	●		
	<b>110302M SM-F</b>	0.2-1.5	0.02-0.12								●	●		
	<b>110304M SM-F</b>	0.3-1.5	0.03-0.12								●	●		
<p>Finishing For Swiss</p>	<b>VCGT 110302M SL-F</b>	0.02-0.25	0.02-0.10								●	●		



A102, A103, A108, A118,  
A214, A216, A218, A219

●: Standard items

## Positive 7° clearance 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>08</b>	4.76	2.38	0.2-0.4
<b>11</b>	6.35	3.18	0.1-0.4
<b>16</b>	9.52	4.76	0.4-0.8

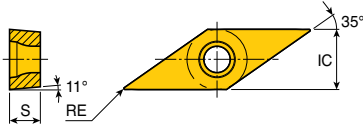
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																					
				Cermet		CVD coated										PVD coated				K10					
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT17100	TT15080		TT18020	TT19080	TT13010	TT13020	TT19020
 VCMT 08, 11	<b>VCMT 080202 PC</b>	0.2-1.5	0.02-0.15	●									●		●										
	<b>080204 PC</b>	0.2-1.5	0.05-0.20	●	●								●	●		●									
	<b>110304 PC</b>	0.1-1.7	0.05-0.20	●									●	●		●							●		
	<b>160404 PC</b>	0.3-2.0	0.05-0.20	●									●	●		●							●		
	<b>160408 PC</b>	0.3-2.0	0.07-0.20	●									●	●		●							●		
 VCMT 16 Medium																									
 Medium	<b>VCMT 080202 FM</b>	0.5-1.5	0.07-0.15	●	●							●	●			●			●	●					
	<b>080204 FM</b>	0.5-1.5	0.08-0.15	●	●							●	●			●			●	●					
	<b>110304 FM</b>	0.5-1.5	0.08-0.20	●	●							●	●			●			●	●					
	<b>160404 FM</b>	0.5-2.0	0.08-0.20	●	●							●	●			●			●	●					
	<b>160408 FM</b>	0.8-2.0	0.10-0.20	●	●							●	●			●			●	●					

● : Standard items

A102, A103, A108, A118,  
 A214, A216, A218, A219

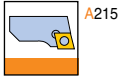


## Positive 11° clearance 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>08</b>	4.76	2.38	0.1-0.2
<b>11</b>	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	<b>VPET 080201 L-GF</b>	0.2-1.5	0.02-0.15	●														
	<b>080201 R-GF</b>	0.2-1.5	0.02-0.15	●														
	<b>080202 L-GF</b>	0.3-1.5	0.03-0.17	●														
	<b>080202 R-GF</b>	0.3-1.5	0.03-0.17	●														
	<b>1103003 L-GF</b>	0.2-1.5	0.02-0.12	●														
	<b>1103003 R-GF</b>	0.2-1.5	0.02-0.12	●														
	<b>110301 L-GF</b>	0.2-1.5	0.02-0.15	●														
	<b>110301 R-GF</b>	0.2-1.5	0.02-0.15	●														
	<b>110302 L-GF</b>	0.3-1.5	0.03-0.17	●														
	<b>110302 R-GF</b>	0.3-1.5	0.03-0.17	●														
 Left hand Finishing	<b>VPGT 080201 L-FF</b>	0.08-0.4	0.03-0.12	●							●							
	<b>080201 R-FF</b>	0.08-0.4	0.03-0.12	●							●							
	<b>080202 L-FF</b>	0.1-0.4	0.03-0.15	●							●							
	<b>080202 R-FF</b>	0.1-0.4	0.03-0.15	●							●							
	<b>1103003 L-FF</b>	0.05-0.4	0.03-0.10	●							●							
	<b>1103003 R-FF</b>	0.05-0.4	0.03-0.10	●							●							
	<b>110301 L-FF</b>	0.1-0.5	0.03-0.12	●							●							
	<b>110301 R-FF</b>	0.1-0.5	0.03-0.12	●							●							
	<b>110302 L-FF</b>	0.1-0.5	0.03-0.15	●							●							
	<b>110302 R-FF</b>	0.1-0.5	0.03-0.15	●							●							

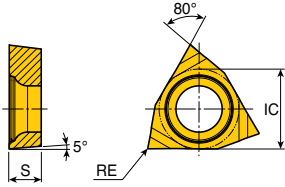


●: Standard items



# WBGT WBMT

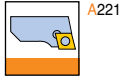


Positive 5° clearance 80° trigon inserts



Size	Dimension (mm)		
	IC	S	RE
<b>06</b>	3.97	1.59	0.03-0.4

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

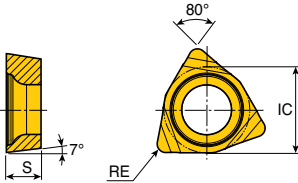


● : Standard items



# WCGT



Positive 7° clearance 80° trigon inserts



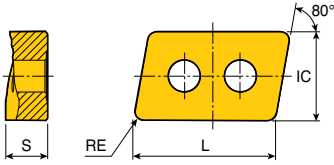
Size	Dimension (mm)		
	IC	S	RE
<b>02</b>	3.97	1.59	0.2-0.4

Insert	Designation	ap (mm)	Feed (mm/rev)	Cermet		PVD coated								Uncoated		
				PV3010	CT3000	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020	TT4410	TT4430	P20	K10	
  Left hand Finishing	<b>WCGT 020102 L-FF</b>	0.1-0.4	0.03-0.15	●	●											
	<b>020104 L-FF</b>	0.1-0.4	0.05-0.20	●	●											


● : Standard items

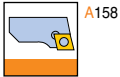


## Inserts



Size	Dimension (mm)			
	L	IC	S	RE
<b>40</b>	40.6	25.4	11.65	2.38

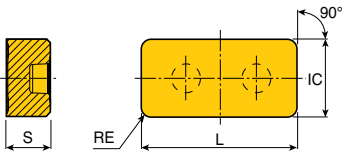
Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																				
				Cermet			CVD coated							PVD coated			K10							
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT5100		TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020
	<b>LNMM 401224 R-HX</b>	6.0-32.0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





● : Standard items

# LNMX

## Inserts



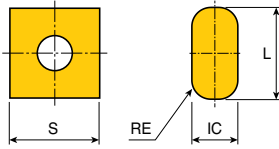
Size	Dimension (mm)			
	L	IC	S	RE
<b>50</b>	50.8	25.4	14.2	3.2

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																				
				Cermet			CVD coated							PVD coated			K10							
				PV3010	CT3000	TT3005	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT5100		TT7100	TT5080	TT8020	TT9080	TT3010	TT3020	TT9020
	<b>LNMX 501432 HD</b>	6.0-40.0	0.70-1.60										●	●		●								
Roughing																								
	<b>LNMX 501432 HY</b>	5.0-40.0	0.65-1.50										●		●									
Roughing																								



● : Standard items

## TOP-RAIL inserts



Size	Dimension (mm)			
	L	RE	IC	S
<b>19</b>	19.05	4	10	19.05
<b>30</b>	30	4	12	19.05

Insert	Designation	ap (mm)	Feed (mm/rev)	Coating																						
				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	K10	
 Finishing	<b>LNMX 191940 TWF</b>	0.3-5.0	0.30-1.0							●	●	●														
 Medium	<b>LNMX 191940 TWM</b>	1.5-9.0	0.45-1.5							●	●	●														
	<b>301940 TWM</b>	1.5-15.0	0.50-1.5							●	●	●														
 Roughing	<b>LNMX 301940 TWR</b>	2.0-15.0	0.70-1.8							●	●	●														



A159

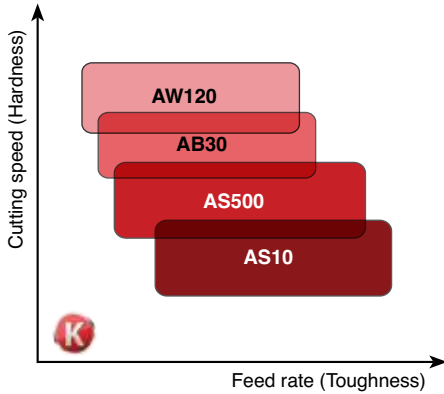
●: Standard items

# Hard Turn for Ceramic, CBN and PCD Inserts

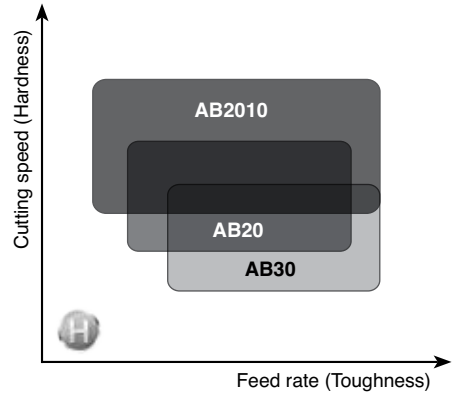


## Selection guide for ceramic grades

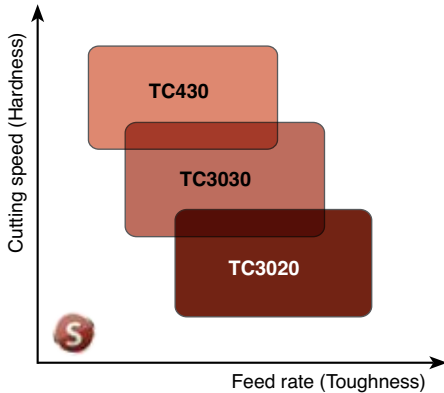
### For cast iron



### For hardened steel (HRc 40~50)



### For super alloys



## Edge preparations for ceramic inserts

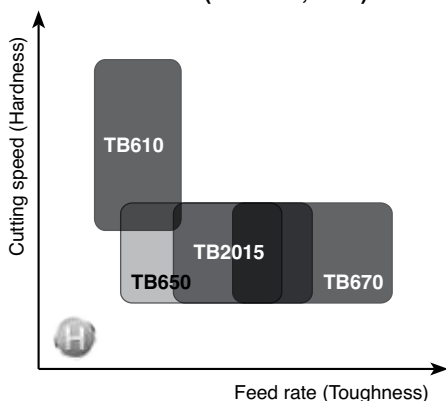
Single land		Double land			
Symbol	Width(mm) X angle	Symbol	Width(mm) X angle		Shape
			L1 X A1	L2 X A2	
T2	0.10 X 30°	U1	0.15 X 30°	0.7 X 15°	
T3	0.15 X 30°	U2	0.15~0.2 X 30°	1.5 X 15°	
T4	0.20 X 30°	U3	0.2 X 30°	2.0 X 15°	
T5	0.30 X 20°	- All items are honed			
T6	0.10 X 20°				
T7	0.20 X 20°				

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

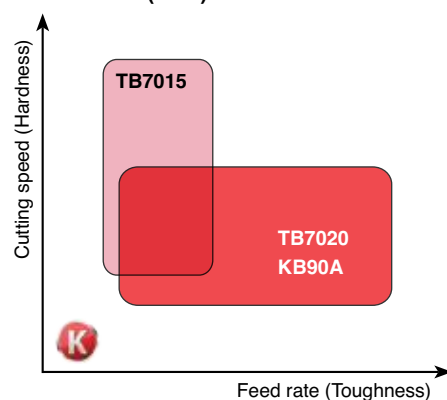
# Hard Turn for Ceramic, CBN and PCD Inserts

## Selection guide for CBN and PCD grades

### For hardened steel (HRC ≥ 50, CBN)

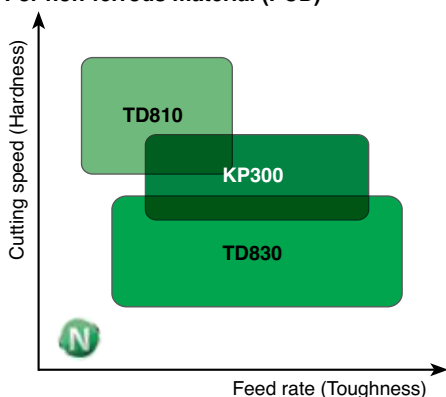


### For cast iron (CBN)



- TB730 for General turning of sintered or powder metals

### For non-ferrous material (PCD)



### Information of CBN type

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
WZ	Wiper geometry

### Edge preparations for CBN inserts

Symbol	Width(mm) x angle	Symbol	Width(mm) x angle
TL	0.13X15°	SL	0.13X15°+ honed
TM	0.13X25°	SM	0.13X25°+ honed
TH	0.13X35°	SH	0.13X35°+ honed

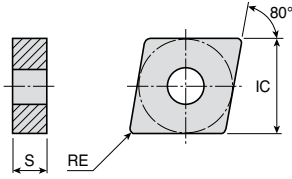
- Edge preparations of non symbol items depends on grades

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

TB730, TB7015 : 0.13x20°+no honed

KB90A, TB7020 : 0.20x20°+honed

## Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>12</b>	12.7	4.76-7.94	0.4-1.6
<b>16</b>	15.88	4.76-6.35	0.8-2.4
<b>19</b>	19.05	6.35-7.94	0.8-2.4

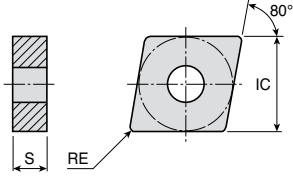
Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic															
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030						
	<b>CNGA 120404</b>	0.10-3.00	0.05-0.15	●	●	●													
	<b>120404 T2</b>	0.10-3.00	0.05-0.15			●													
	<b>120404 T7-WZ</b>	0.10-3.00	0.05-0.15	●															
	<b>120408</b>	0.10-3.00	0.05-0.20	●	●	●		●	●	●									
	<b>120408 E</b>	0.10-3.00	0.05-0.20												●	●			
	<b>120408 S7</b>	0.10-3.00	0.05-0.20	●															
	<b>120408 T2</b>	0.10-3.00	0.05-0.20		●	●													
	<b>120408 T6</b>	0.10-3.00	0.05-0.20		●								●	●	●	●			
	<b>120408 T6-WZ</b>	0.10-3.00	0.05-0.20																
	<b>120408 T7</b>	0.10-3.00	0.05-0.20				●	●											
	<b>120408 T7-WZ</b>	0.10-3.00	0.05-0.20		●	●													
	<b>120412</b>	0.10-3.00	0.05-0.25		●	●	●			●	●								
	<b>120412 T2</b>	0.10-3.00	0.05-0.25			●													
	<b>120412 T6-WZ</b>	0.10-3.00	0.05-0.25							●	●								
	<b>120412 T7</b>	0.10-3.00	0.05-0.25						●										
	<b>120412 T7-WZ</b>	0.10-3.00	0.05-0.25		●	●													
	<b>120416</b>	0.10-3.00	0.05-0.30			●	●			●	●								
	<b>160608</b>	0.10-3.50	0.05-0.20			●													
	<b>160612</b>	0.10-3.50	0.05-0.25				●												
	<b>160616</b>	0.10-3.50	0.05-0.30				●												
<b>190608</b>	0.10-4.50	0.05-0.20			●	●													
<b>190612</b>	0.10-4.50	0.05-0.25			●	●													
	<b>CNGN 120404</b>	0.10-3.00	0.05-0.15			●													
	<b>120404 T6</b>	0.10-3.00	0.05-0.15										●						
	<b>120408</b>	0.10-3.00	0.05-0.20	●	●	●				●									
	<b>120408 E</b>	0.10-3.00	0.05-0.20												●	●			
	<b>120408 T6</b>	0.10-3.00	0.05-0.20										●	●	●	●			
	<b>120408 T7</b>	0.10-3.00	0.05-0.20						●										
	<b>120412</b>	0.10-3.00	0.05-0.25		●					●	●								
	<b>120412 E</b>	0.10-3.00	0.05-0.25											●		●			
	<b>120412 T6</b>	0.10-3.00	0.05-0.25											●					
	<b>120412 T7</b>	0.10-3.00	0.05-0.25				●												
	<b>120416</b>	0.10-3.00	0.05-0.30							●									
	<b>120416 T6</b>	0.10-3.00	0.05-0.30											●					
	<b>120708</b>	0.10-3.00	0.05-0.20	●	●	●													

● : Standard items





## Negative 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>12</b>	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								
	<b>CNGN 120708 E</b>	0.10-3.00	0.05-0.20																			
	<b>120708 T6</b>	0.10-3.00	0.05-0.20																			
	<b>120712</b>	0.10-3.00	0.05-0.25																			
	<b>120712 E</b>	0.10-3.00	0.05-0.25																			
	<b>120712 T6</b>	0.10-3.00	0.05-0.25																			
	<b>120712 T7</b>	0.10-3.00	0.05-0.25																			
	<b>120716</b>	0.10-3.00	0.05-0.30																			
	<b>120716 T6</b>	0.10-3.00	0.05-0.30																			
 Dimple type	<b>CNGX 120712 CH</b>	0.10-3.50	0.05-0.30																			
	<b>120712 T7-CH</b>	0.10-3.50	0.05-0.30																			
	<b>120716 CH</b>	0.10-3.50	0.05-0.35																			
	<b>120716 T7-CH</b>	0.10-3.50	0.05-0.35																			
	<b>CNMG 120404 CE</b>	0.10-3.00	0.05-0.15																			
	<b>120408 CE</b>	0.10-3.00	0.05-0.20																			

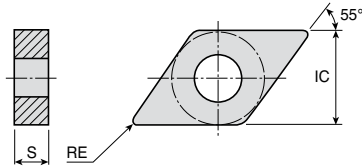
A110, A111, A144-A146,  
 A151, A166,  
 A223-A225, A235

●: Standard items

# DNGA DNGN DNGX-CH DNMG-CE



## Negative 55° rhombic inserts



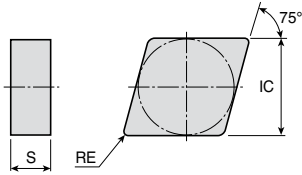
Size	Dimension (mm)		
	IC	S	RE
<b>12</b>	10	8.0	1.2
<b>15</b>	12.7	4.76-8.0	0.4-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic												
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030			
	<b>DNGA 150404</b>	0.10-2.50	0.05-0.15		●	●										
	<b>150408</b>	0.10-2.50	0.05-0.20	●	●	●										
	<b>150408 S7</b>	0.10-2.50	0.05-0.20	●												
	<b>150412</b>	0.10-2.50	0.05-0.25	●	●	●										
	<b>150604</b>	0.10-2.50	0.05-0.15	●	●	●										
	<b>150608</b>	0.10-2.50	0.05-0.20	●	●	●				●						
	<b>150608 T5</b>	0.10-2.50	0.05-0.20			●										
	<b>150612</b>	0.10-2.50	0.05-0.25	●	●	●				●						
	<b>150616</b>	0.10-2.50	0.05-0.30		●	●										
	<b>DNGN 150408</b>	0.10-2.50	0.05-0.20		●	●										
	<b>150704</b>	0.10-2.50	0.05-0.15			●										
	<b>150708</b>	0.10-2.50	0.05-0.20			●										
	<b>150708 T6</b>	0.10-2.50	0.05-0.20											●		
	<b>150708 T7</b>	0.10-2.50	0.05-0.20					●								
	<b>150712 T6</b>	0.10-2.50	0.05-0.25					●							●	
	<b>150712 T7</b>	0.10-2.50	0.05-0.25					●								
	<b>150716 U2</b>	0.10-2.50	0.05-0.30			●										
	 Dimple type	<b>DNGX 120712 T7-CH</b>	0.10-3.00	0.05-0.30									●			
<b>150708 T7-CH</b>		0.10-3.00	0.05-0.25									●				
<b>150712 CH</b>		0.10-3.00	0.05-0.30						●			●				
<b>150712 T7-CH</b>		0.10-3.00	0.05-0.30						●			●				
<b>150716 CH</b>		0.10-3.50	0.05-0.35									●				
<b>150716 T7-CH</b>		0.10-3.50	0.05-0.35									●				
	<b>DNMG 150608 CE</b>	0.10-2.50	0.05-0.20			●										

A61, A62, A70, A71,
   
 A113-A116, A147, A152,
   
 A166, A195, A226, A227

● : Standard items

## Negative 75° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>13</b>	12.7	7.94	0.8-1.6

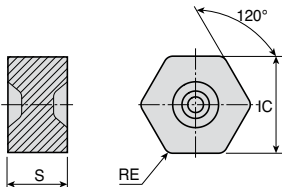
Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
	<b>ENGN 130708</b>	0.10-2.50	0.05-0.20	●	●	●							
	<b>130708 T5</b>	0.10-2.50	0.05-0.20			●							
	<b>130712 T5</b>	0.10-2.50	0.05-0.25			●							
	<b>130716</b>	0.10-2.50	0.05-0.30		●								
	<b>130716 U2</b>	0.10-2.50	0.05-0.30			●							



● : Standard items

# HNGX-CH

## Negative 120° hexagonal inserts

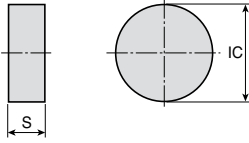


Size	Dimension (mm)		
	IC	S	RE
<b>05</b>	12.7	7.94	1.2-1.6

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
 Dimple type	<b>HNGX 050712 CH</b>	0.05-0.25	0.10-2.00							●			
	<b>050712 T7-CH</b>	0.05-0.25	0.10-2.00					●					
	<b>050716 CH</b>	0.05-0.30	0.10-2.00							●			
	<b>050716 T7-CH</b>	0.05-0.30	0.10-2.00					●					

● : Standard items

## Negative round inserts



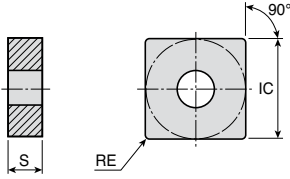
Size	Dimension (mm)	
	IC	S
<b>09</b>	9.52	3.18-4.76
<b>12</b>	12.7	4.76-7.94
<b>15</b>	15.88	7.94
<b>19</b>	19.05	7.94
<b>25</b>	25.4	9.52

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic																	
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030								
	<b>RNGN 090300</b>	0.10-2.50	0.05-0.15		●	●															
	<b>090300 T6</b>	0.10-2.50	0.05-0.15										●								
	<b>090400 T6</b>	0.10-2.50	0.05-0.15										●								
	<b>120400</b>	0.10-4.00	0.05-0.20	●	●	●															
	<b>120400 E</b>	0.10-4.00	0.05-0.20										●							●	
	<b>120400 T6</b>	0.10-4.00	0.05-0.20										●								
	<b>120700</b>	0.10-4.00	0.05-0.20	●	●	●															
	<b>120700 E</b>	0.10-4.00	0.05-0.20																	●	●
	<b>120700 E04</b>	0.10-4.00	0.05-0.20																	●	
	<b>120700 S6</b>	0.10-4.00	0.05-0.20																	●	●
	<b>120700 T6</b>	0.10-4.00	0.05-0.20										●	●	●						
	<b>150700</b>	0.10-4.50	0.05-0.25		●	●															
	<b>150700 T6</b>	0.10-4.50	0.05-0.25										●								
	<b>190700</b>	0.10-5.00	0.05-0.30		●	●															
	<b>190700 E04</b>	0.10-5.00	0.05-0.30																	●	●
	<b>190700 T6</b>	0.10-5.00	0.05-0.30										●	●	●						
	<b>190700 U2</b>	0.10-5.00	0.05-0.30			●															
	<b>250900 E04</b>	0.10-5.00	0.05-0.35																	●	●
	<b>250900 T6</b>	0.10-5.00	0.05-0.35																	●	●

● : Standard items



## Negative square inserts



Size	Dimension (mm)		
	IC	S	RE
<b>12</b>	12.7	4.76-7.94	0.4-2.0
<b>15</b>	15.88	7.94	1.2-1.6
<b>19</b>	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					
	<b>SNGA 120404</b>	0.10-3.00	0.05-0.15	●	●	●												
	<b>120408</b>	0.10-3.00	0.05-0.20	●	●	●												
	<b>120408 S7</b>	0.10-3.00	0.05-0.20	●														
	<b>120408 T2</b>	0.10-3.00	0.05-0.20			●												
	<b>120412</b>	0.10-3.00	0.05-0.25	●	●	●					●							
	<b>120416</b>	0.10-3.00	0.05-0.30							●		●						
	<b>190608</b>	0.10-4.50	0.05-0.20			●												
	<b>190612</b>	0.10-4.50	0.05-0.25			●												
	<b>SNGN 120404</b>	0.10-3.00	0.05-0.15	●	●	●												
	<b>120404 T7</b>	0.10-3.00	0.05-0.15				●											
	<b>120408</b>	0.10-3.00	0.05-0.20	●	●	●					●							
	<b>120408 T2</b>	0.10-3.00	0.05-0.20			●												
	<b>120408 T6</b>	0.10-3.00	0.05-0.20										●	●	●			
	<b>120412</b>	0.10-3.00	0.05-0.25	●	●	●				●								
	<b>120412 T3</b>	0.10-3.00	0.05-0.25								●							
	<b>120412 T6</b>	0.10-3.00	0.05-0.25											●				
	<b>120412 T7</b>	0.10-3.00	0.05-0.25				●	●										
	<b>120416</b>	0.10-3.00	0.05-0.30	●	●	●				●								
	<b>120416 T6</b>	0.10-3.00	0.05-0.30											●				
	<b>120416 T7</b>	0.10-3.00	0.05-0.30				●								●			
	<b>120708</b>	0.10-3.00	0.05-0.20	●	●	●												
	<b>120708 T6</b>	0.10-3.00	0.05-0.20											●				
	<b>120708 T7</b>	0.10-3.00	0.05-0.20				●											
	<b>120712</b>	0.10-3.00	0.05-0.25	●	●	●				●								
	<b>120712 T6</b>	0.10-3.00	0.05-0.25			●								●	●	●		
	<b>120712 T7</b>	0.10-3.00	0.05-0.25				●											
	<b>120716</b>	0.10-3.00	0.05-0.30	●		●												
	<b>120716 T7</b>	0.10-3.00	0.05-0.30				●											
	<b>120720 U2</b>	0.10-3.00	0.05-0.30			●												
	<b>150712 T6</b>	0.10-3.50	0.05-0.25											●				
	<b>150716</b>	0.10-3.50	0.05-0.30			●												
	<b>190716</b>	0.10-4.00	0.05-0.30			●												

●: Standard items

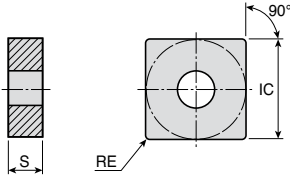


A75, A76,  
A126, A127,  
A155, A156, A167, A196



# SNGX-CH SNMG-CE




## Negative square inserts



Size	Dimension (mm)		
	IC	S	RE
<b>12</b>	12.7	4.76-7.94	0.8-1.6
<b>15</b>	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	<b>SNGX 120712 CH</b>	0.10-3.00	0.05-0.30							●	●			
	<b>120712 T7-CH</b>	0.10-3.00	0.05-0.30						●					
	<b>120716 CH</b>	0.10-3.00	0.05-0.35							●	●			
	<b>120716 T7-CH</b>	0.10-3.00	0.05-0.35					●	●		●			
	<b>150716 T7-CH</b>	0.10-3.50	0.05-0.35									●		
	<b>SNMG 120408 CE</b>	0.10-3.00	0.05-0.20			●								


 A75, A76,  
 A126, A127, A148,  
 A167, A196

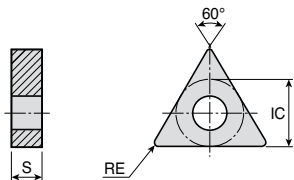
● : Standard items



# TNGA TNGN TNMG-CE



## Negative triangular inserts



Size	Dimension (mm)		
	IC	S	RE
<b>11</b>	6.35	3.18	0.8
<b>16</b>	9.52	3.18-7.94	0.4-1.6
<b>22</b>	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		
	<b>TNGA 160404</b>	0.10-2.50	0.05-0.15	●	●	●									
	<b>160404 T2</b>	0.10-2.50	0.05-0.15			●									
	<b>160408</b>	0.10-2.50	0.05-0.20	●	●	●									
	<b>160408 T2</b>	0.10-2.50	0.05-0.20		●	●									
	<b>160412</b>	0.10-2.50	0.05-0.25	●	●										
	<b>160412 T2</b>	0.10-2.50	0.05-0.25			●									
	<b>160416</b>	0.10-2.50	0.05-0.30		●										
	<b>220404</b>	0.10-3.00	0.05-0.15		●	●									
	<b>220408</b>	0.10-3.00	0.05-0.20	●	●	●									
	<b>220412</b>	0.10-3.00	0.05-0.25		●	●									
<b>220416</b>	0.10-3.00	0.05-0.30		●	●										
	<b>TNGN 110308</b>	0.10-1.00	0.05-0.15			●									
	<b>160404</b>	0.10-2.50	0.05-0.15		●	●									
	<b>160408</b>	0.10-2.50	0.05-0.20	●	●	●				●					
	<b>160408 T6</b>	0.10-2.50	0.05-0.20									●			
	<b>160408 T7</b>	0.10-2.50	0.05-0.20				●								
	<b>160412</b>	0.10-2.50	0.05-0.25		●	●			●	●					
	<b>160412 T7</b>	0.10-2.50	0.05-0.25				●	●							
	<b>160416</b>	0.10-1.00	0.05-0.20			●									
	<b>160416 T7</b>	0.10-1.00	0.05-0.20				●								
	<b>160704</b>	0.10-2.50	0.05-0.15			●									
<b>160708</b>	0.10-2.50	0.05-0.20			●										
	<b>TNMG 160408 CE</b>	0.10-2.50	0.05-0.20			●									

A63, A77, A78, A128,  
 A140, A141, A168, A197,  

 A230, A231, A234

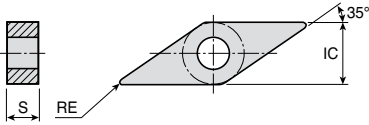
● : Standard items



# VNGA VNGX-CH



## Negative 35° rhombic inserts



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

Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
	<b>VNGA 160404</b>	0.05-1.00	0.05-0.10	●	●	●							
	<b>160408</b>	0.05-1.00	0.05-0.15	●	●	●							
	<b>160412</b>	0.05-1.50	0.05-0.20		●	●							
	<b>220412</b>	0.05-2.00	0.05-0.20			●							
	<b>VNGX 160712 T7-CH</b>	0.05-1.50	0.05-0.20							●			
Dimple type													

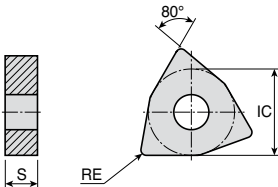


●: Standard items

# WNGA



## Negative 80° trigon inserts



Size	Dimension (mm)		
	IC	S	RE
<b>08</b>	12.7	4.76	0.8-1.2

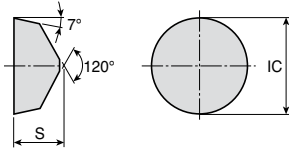
Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic									
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030
	<b>WNGA 080408</b>	0.10-2.50	0.05-0.25	●	●	●			●	●			
	<b>080408 T7-WZ</b>	0.10-2.50	0.05-0.25	●	●								
	<b>080412</b>	0.10-2.50	0.05-0.25	●	●	●			●	●			
	<b>080412 T7</b>	0.10-2.50	0.05-0.25					●					
	<b>080412 T7-WZ</b>	0.10-2.50	0.05-0.25							●			



●: Standard items



## Positive round inserts



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

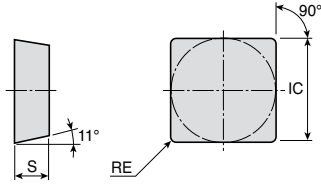
Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic										
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030	
 	<b>RCGX 060600 T6</b>	0.10-2.00	0.05-0.25									●		
	<b>060600 U1</b>	0.10-2.00	0.05-0.25			●								
	<b>090700 E</b>	0.10-3.00	0.05-0.35										●	●
	<b>090700 E04</b>	0.10-3.00	0.05-0.30										●	●
	<b>090700 T2</b>	0.10-3.00	0.05-0.30			●								
	<b>090700 T6</b>	0.10-3.00	0.05-0.30									●	●	●
	<b>090700 U1</b>	0.10-3.00	0.05-0.30		●	●								
	<b>120700</b>	0.10-4.00	0.05-0.35			●							●	
	<b>120700 E</b>	0.10-4.00	0.05-0.35										●	●
	<b>120700 E04</b>	0.10-4.00	0.05-0.35										●	●
	<b>120700 T6</b>	0.10-4.00	0.05-0.35									●	●	●
	<b>120700 U2</b>	0.10-4.00	0.05-0.35		●	●						●		
	<b>151000 U2</b>	0.10-5.00	0.05-0.35		●	●								
	<b>191000 U2</b>	0.10-5.00	0.05-0.35		●	●								
<b>251200 U3 *</b>	0.10-5.00	0.05-0.35		●	●									
	<b>RPGN 090300 E</b>	0.10-3.00	0.05-0.30									●		
	<b>120400 E</b>	0.10-4.00	0.05-0.35										●	●
	<b>120400 T6</b>	0.10-4.00	0.05-0.35									●	●	●
	<b>RPGX 090700 E</b>	0.10-3.00	0.05-0.35										●	●
	<b>090700 T6</b>	0.10-3.00	0.05-0.35											●
	<b>120700 E</b>	0.10-4.00	0.05-0.35										●	●
	<b>120700 T6</b>	0.10-4.00	0.05-0.35									●	●	●
	<b>T11- 3219</b>	0.10-5.00	0.05-0.35		●									



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

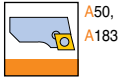
●: Standard items

## Positive square inserts



Size	Dimension (mm)		
	IC	S	RE
<b>12</b>	12.7	3.18-4.76	0.8-1.2

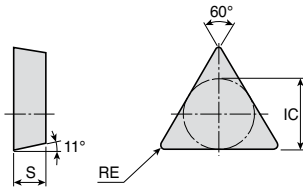
Insert	Designation	ap (mm)	Feed (mm/rev)	Ceramic										
				AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	TC3020	TC3030	
	<b>SPGN 120308</b>	0.10-3.50	0.05-0.20			●					●			
	<b>120412</b>	0.10-3.50	0.05-0.20								●			



●: Standard items

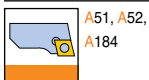
# TPGN

## Positive triangular inserts



Size	Dimension (mm)		
	IC	S	RE
<b>11</b>	6.35	3.18	0.4-0.8
<b>16</b>	9.52	3.18	0.4-1.2
<b>22</b>	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	
	<b>TPGN 110304</b>	0.10-2.00	0.05-0.10	●	●	●								
	<b>110304 T2</b>	0.10-2.00	0.05-0.10			●								
	<b>110308</b>	0.10-2.00	0.05-0.10	●	●	●								
	<b>160304</b>	0.10-2.50	0.05-0.15	●	●	●								
	<b>160304 T2</b>	0.10-2.50	0.05-0.15		●									
	<b>160308</b>	0.10-2.50	0.05-0.20	●	●	●			●					
	<b>160308 T2</b>	0.10-2.50	0.05-0.20		●	●								
	<b>160308 T6</b>	0.10-2.50	0.05-0.20							●				
	<b>160312</b>	0.10-2.50	0.05-0.25		●									
	<b>220408</b>	0.10-3.00	0.05-0.20			●								
<b>220412</b>	0.10-3.00	0.05-0.25		●										

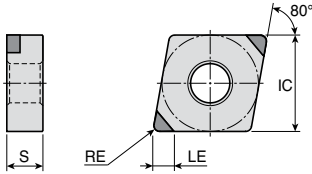


●: Standard items

# CNGA CNGN-SD CNGX-DA



## Negative 80° rhombic inserts



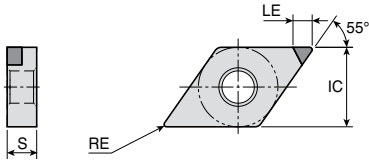
Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	3.18	0.8-1.6
<b>12</b>	12.7	4.76	0.4-1.6

Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN							PCD					
					TB610	TB650	TB670	TB730	TB7015	KB90A	TB7020	TD810	KP300	TD830			
	<b>CNGA 120404 WZ-LS</b>	2.1	0.10-0.50	0.05-0.30		●											
	<b>120404 WZ-LS2</b>	2.1	0.10-0.50	0.05-0.30	●	●	●										
	<b>120408 WZ-LS</b>	2.1	0.10-0.50	0.05-0.30		●			●								
	<b>120408 WZ-LS2</b>	2.1	0.10-0.50	0.05-0.30	●	●	●	●									
	<b>120408 WZ-LS4</b>	2.1	0.10-0.50	0.05-0.30	●	●	●										
	<b>120412 WZ-LS</b>	2.5	0.10-0.50	0.05-0.30		●			●								
	<b>120412 WZ-LS2</b>	2.5	0.10-0.50	0.05-0.30		●	●	●									
	<b>120412 WZ-LS4</b>	2.5	0.10-0.50	0.05-0.30			●										
	<b>CNGA 120404 LN</b>	4.2	0.10-0.50	0.05-0.30	●		●		●								
	<b>120404 LS</b>	2.2	0.10-0.50	0.05-0.30					●								
	<b>120404 LS2</b>	2.2	0.10-0.50	0.05-0.30	●	●	●	●									
	<b>120404 LS4</b>	2.2	0.10-0.50	0.05-0.30		●	●										
	<b>120408 LN</b>	4.0	0.10-0.50	0.05-0.30	●	●		●	●								
	<b>120408 LN4</b>	4.0	0.10-0.50	0.05-0.30		●											
	<b>120408 LS</b>	2.1	0.10-0.50	0.05-0.30		●			●								
	<b>120408 LS2</b>	2.1	0.10-0.50	0.05-0.30	●	●	●	●	●								
	<b>120408 LS4</b>	2.1	0.10-0.50	0.05-0.30		●	●	●	●								
	<b>120412 LN</b>	3.9	0.10-0.50	0.05-0.30	●		●		●								
	<b>120412 LS2</b>	2.5	0.10-0.50	0.05-0.30		●		●	●								
<b>120412 LS4</b>	2.5	0.10-0.50	0.05-0.30			●	●										
	<b>CNGA 120404 LN-10</b>	4.0	0.10-3.00	0.05-0.25									●	●			
	<b>120408 LN-10</b>	3.9	0.10-3.00	0.05-0.25									●	●			
	<b>120412 LN-10</b>	3.8	0.10-3.00	0.05-0.25										●			
	<b>CNGN 090308 SD</b>	-	0.10-3.00	0.05-0.30						●							
	<b>090312 SD</b>	-	0.10-3.00	0.05-0.30						●							
	<b>090316 SD</b>	-	0.10-3.00	0.05-0.30						●							
	<b>120412 SD</b>	-	0.10-4.00	0.05-0.30							●						
	<b>120416 SD</b>	-	0.10-4.00	0.05-0.30							●						
	<b>CNGX 120412 DA</b>	-	0.10-4.00	0.05-0.30									●				
	<b>120416 DA</b>	-	0.10-4.00	0.05-0.30									●				



● : Standard items

## Negative 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>15</b>	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	KB90A	TB7020	TD810	KP300	TD830	
	<b>DNGA 150404 LN</b>	4.2	0.10-0.50	0.05-0.30	●	●	●								
	<b>150404 LS</b>	2.6	0.10-0.50	0.05-0.30		●			●						
	<b>150404 LS2</b>	2.6	0.10-0.50	0.05-0.30	●	●	●								
	<b>150404 LS4</b>	2.6	0.10-0.50	0.05-0.30	●	●	●								
	<b>150408 LN</b>	3.9	0.10-0.50	0.05-0.30	●	●	●		●						
	<b>150408 LS</b>	2.3	0.10-0.50	0.05-0.30		●			●						
	<b>150408 LS2</b>	2.3	0.10-0.50	0.05-0.30	●	●	●	●							
	<b>150408 LS4</b>	2.3	0.10-0.50	0.05-0.30			●								
	<b>150412 LN</b>	3.5	0.10-0.50	0.05-0.30		●			●						
	<b>150412 LS2</b>	2.2	0.10-0.50	0.05-0.30			●	●							
	<b>150412 LS4</b>	2.2	0.10-0.50	0.05-0.30			●								
	<b>150604 LN</b>	4.2	0.10-0.50	0.05-0.30		●	●	●	●						
	<b>150604 LS</b>	2.6	0.10-0.50	0.05-0.30		●									
	<b>150604 LS2</b>	2.6	0.10-0.50	0.05-0.30	●	●	●	●							
	<b>150608 LN</b>	3.9	0.10-0.50	0.05-0.30	●	●	●	●							
	<b>150608 LS2</b>	2.3	0.10-0.50	0.05-0.30	●	●	●	●	●						
<b>150608 LS4</b>	2.3	0.10-0.50	0.05-0.30			●									
<b>150612 LS2</b>	2.2	0.10-0.50	0.05-0.30			●									
	<b>DNGA 150404 LN-10</b>	4.0	0.10-2.50	0.05-0.20								●	●		
	<b>150408 LN-10</b>	3.7	0.10-2.50	0.05-0.20								●	●		
	<b>150604 LN-10</b>	4.0	0.10-2.50	0.05-0.20								●	●		
	<b>150608 LN-10</b>	3.7	0.10-2.50	0.05-0.20								●	●		

- A61, A62, A70, A71,
- A113-A116, A166,
- A195, A226, A227

●: Standard items

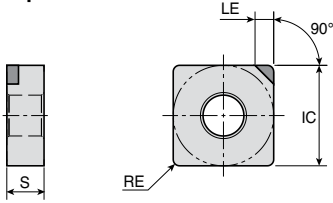




# SNGA SNGN-SD SNGX-DA



## Negative square inserts



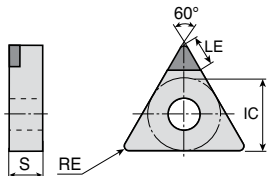
Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	3.18	0.8-1.2
<b>12</b>	12.7	4.76	0.4-1.6

Insert	DeWW	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD					
					TB610	TB650	TB670	TB730	TB7015	KB90A	TB7020	TD810	KP300	TD830		
	<b>SNGA 120404 LS2</b>	2.5	0.10-0.50	0.05-0.30			●	●								
	<b>120408 LN</b>	4.2	0.10-0.50	0.05-0.30		●			●							
	<b>120408 LS</b>	2.5	0.10-0.50	0.05-0.30		●										
	<b>120408 LS2</b>	2.5	0.10-0.50	0.05-0.30				●	●							
	<b>120408 LS4</b>	2.5	0.10-0.50	0.05-0.30				●								
	<b>120408 LS8</b>	2.5	0.10-0.50	0.05-0.30				●								
	<b>SNGA 120408 LN-10</b>	4.0	0.10-3.00	0.05-0.20												●
	<b>120412 LN-10</b>	4.0	0.10-3.00	0.05-0.20												●
 Solid CBN	<b>SNGN 090308 SD</b>	-	0.10-2.00	0.05-0.30						●						
	<b>090312 SD</b>	-	0.10-3.00	0.05-0.30						●	●					●
	<b>120416 SD</b>	-	0.10-4.00	0.05-0.30							●					
 Dimple type	<b>SNGX 120416 DA</b>	-	0.10-4.00	0.05-0.30								●				

A75, A76, A126, A127,  
 A150, A155, A156,  
 A167, A196

●: Standard items

## Negative triangular inserts



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

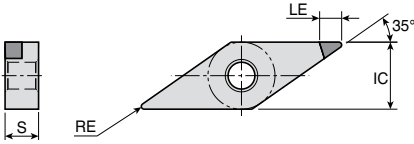
Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD			
					TB610	TB650	TB670	TB730	TB7015	KB90A	TB7020	TD810	KP300	TD830
	<b>TNGA 160404 LN</b>	4.3	0.10-0.50	0.05-0.30	●	●		●						
	<b>160404 LS</b>	2.2	0.10-0.50	0.05-0.30	●									
	<b>160404 LS3</b>	2.2	0.10-0.50	0.05-0.30	●		●	●						
	<b>160404 LS6</b>	2.2	0.10-0.50	0.05-0.30	●									
	<b>160408 LN</b>	4.0	0.10-0.50	0.05-0.30	●	●			●					
	<b>160408 LS3</b>	2.1	0.10-0.50	0.05-0.30	●	●	●	●	●					
	<b>160408 LS6</b>	2.1	0.10-0.50	0.05-0.30			●							
	<b>160412 LS3</b>	2.5	0.10-0.50	0.05-0.30			●							
	<b>220404 LN</b>	4.1	0.10-0.50	0.05-0.30	●									
	<b>220408 LS</b>	2.6	0.10-0.50	0.05-0.30	●									
 	<b>TNGA 160404 LN-10</b>	4.3	0.10-3.00	0.05-0.20								●	●	

● : Standard items





## Negative 35° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>16</b>	9.52	4.76	0.4-0.8

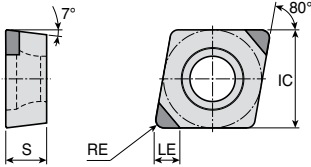
Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD			
					TB610	TB650	TB670	TB730	TB7015	KB90A	TB7020	TD810	KP300	TD830
	<b>VNGA 160404 LN</b>	5.0	0.10-0.50	0.05-0.30	●									
	<b>160404 LS</b>	3.2	0.10-0.50	0.05-0.30	●									
	<b>160404 LS2</b>	3.2	0.10-0.50	0.05-0.30		●	●							
	<b>160408 LN</b>	4.1	0.10-0.50	0.05-0.30	●									
	<b>160408 LS</b>	2.4	0.10-0.50	0.05-0.30					●					
	<b>160408 LS2</b>	2.4	0.10-0.50	0.05-0.30	●	●	●	●						
	<b>160408 LS4</b>	2.4	0.10-0.50	0.05-0.30					●					
	<b>VNGA 160404 LN-10</b>	5.0	0.10-2.00	0.05-0.20								●	●	
	<b>160408 LN-10</b>	4.1	0.10-2.00	0.05-0.20								●	●	



●: Standard items



## Positive 80° rhombic inserts



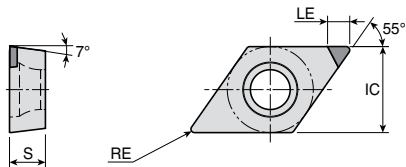
Size	Dimension (mm)		
	IC	S	RE
<b>06</b>	6.35	2.38	0.2-0.8
<b>09</b>	9.52	3.97	0.2-0.8
<b>12</b>	12.7	4.76	0.4-0.8

Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD				
					TB610	TB650	TB670	TB730	TB7015	KB90A	TB7020	TD810	KP300	TD830	
	<b>CCGW 060202 LS</b>	2.4	0.05-0.50	0.05-0.30		●				●					
	<b>060202 LS2</b>	2.2	0.05-0.50	0.05-0.30			●	●							
	<b>060204 LS</b>	2.4	0.05-0.50	0.05-0.30		●				●					
	<b>060204 LS2</b>	2.1	0.05-0.50	0.05-0.30	●		●	●							
	<b>060208 LS2</b>	2.1	0.05-0.50	0.05-0.30	●		●	●							
	<b>09T304 LS</b>	2.4	0.05-0.50	0.05-0.30		●				●					
	<b>09T304 LS2</b>	2.4	0.05-0.50	0.05-0.30	●	●	●	●	●						
	<b>09T304 WZ-LS</b>	2.8	0.05-0.50	0.05-0.30		●									
	<b>09T304 WZ-LS2</b>	2.4	0.05-0.50	0.05-0.30			●	●							
	<b>09T308 LS</b>	2.3	0.05-0.50	0.05-0.30		●				●					
	<b>09T308 LS2</b>	2.3	0.05-0.50	0.05-0.30	●		●	●							
	<b>09T308 WZ-LS</b>	2.3	0.05-0.50	0.05-0.30		●									
	<b>09T308 WZ-LS2</b>	2.3	0.05-0.50	0.05-0.30		●		●							
	<b>120404 LS2</b>	2.1	0.05-0.50	0.05-0.30					●						
	<b>120408 LS</b>	2.5	0.05-0.50	0.05-0.30						●					
<b>120408 LS2</b>	2.1	0.05-0.50	0.05-0.30				●								
 	<b>CCGT 060204 CB</b>	3.1	0.50-1.50	0.10-0.50										●	
	<b>09T302 CB</b>	4.15	0.50-2.00	0.10-0.50										●	
	<b>09T304 CB</b>	4.1	0.50-2.00	0.10-0.50										●	
	<b>09T308 CB</b>	4.0	0.50-2.00	0.10-0.50										●	
	<b>120404 CB</b>	4.1	0.50-2.00	0.10-0.50										●	
	<b>120408 CB</b>	4.0	0.50-2.00	0.10-0.50										●	
 	<b>CCGW 060202 LN-7</b>	3.1	0.08-3.00	0.05-0.30									●	●	
	<b>060204 LN-7</b>	3.1	0.08-3.00	0.05-0.30									●	●	
	<b>09T304 LN-7</b>	4.0	0.10-3.00	0.05-0.30									●	●	
	<b>09T308 LN-7</b>	3.9	0.10-3.00	0.05-0.30									●	●	
	<b>120404 LN-7</b>	4.0	0.10-3.00	0.05-0.30									●	●	
	<b>120408 LN-7</b>	3.9	0.10-3.00	0.05-0.30									●	●	

A80-A82, A119, A170, A198, A199, A239

●: Standard items

## Positive 55° rhombic inserts



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

Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN						PCD							
					TB610	TB650	TB670	TB730	TB7015	KB90A	TB7020	TD810	KP300	TD830				
	<b>DCGW 070202 LS</b>	2.6	0.05-0.50	0.05-0.30		●												
	<b>070202 LS2</b>	2.6	0.05-0.50	0.05-0.30	●		●	●										
	<b>070204 LS</b>	2.4	0.05-0.50	0.05-0.30		●			●									
	<b>070204 LS2</b>	2.4	0.05-0.50	0.05-0.30	●		●	●										
	<b>070208 LS2</b>	2.6	0.05-0.50	0.05-0.30					●									
	<b>11T304 LS</b>	2.6	0.05-0.50	0.05-0.30		●			●									
	<b>11T304 LS2</b>	3.4	0.05-0.50	0.05-0.30	●		●	●										
	<b>11T308 LS</b>	2.2	0.05-0.50	0.05-0.30		●			●									
	<b>11T308 LS2</b>	2.2	0.05-0.50	0.05-0.30	●		●	●										
    	<b>DCGT 070202 CB</b>	3.4	0.50-1.50	0.10-0.50													●	
	<b>070204 CB</b>	3.3	0.50-1.50	0.10-0.50														●
	<b>11T302 CB</b>	4.9	0.50-2.50	0.10-0.50														●
	<b>11T304 CB</b>	4.7	0.50-2.50	0.10-0.50														●
	<b>11T308 CB</b>	4.4	0.50-2.50	0.10-0.50														●
    	<b>DCGW 070202 LN-7</b>	3.4	0.10-2.00	0.05-0.30													● ●	
	<b>070204 LN-7</b>	3.3	0.10-2.00	0.05-0.30													● ●	
	<b>11T302 LN-7</b>	3.9	0.10-2.00	0.05-0.30													● ●	
	<b>11T304 LN-7</b>	3.7	0.10-2.00	0.05-0.30													● ●	
	<b>11T308 LN-7</b>	3.3	0.10-2.00	0.05-0.30													● ●	

● : Standard items

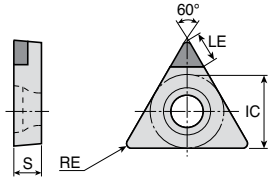


A85, A86, A89, A90,  
A120, A123, A125,  
A170, A203-A205, A241





## Positive triangular inserts



Size	Dimension (mm)		
	IC	S	RE
<b>08</b>	4.76	2.38	0.4
<b>09</b>	5.56	2.38	0.4-0.8
<b>11</b>	6.35	2.38-3.18	0.2-0.8
<b>16</b>	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	KB90A	TB7020	TD810	KP300	TD830	
	<b>TCGW 090204 LS3</b>	2.3	0.05-0.50	0.05-0.30			●	●							
	<b>110204 LS</b>	2.3	0.05-0.50	0.05-0.30		●			●						
	<b>110204 LS3</b>	2.3	0.05-0.50	0.05-0.30	●		●	●							
	<b>110208 LS</b>	2.1	0.05-0.50	0.05-0.30		●			●						
	<b>110208 LS3</b>	2.1	0.05-0.50	0.05-0.30			●	●							
	<b>16T304 LS</b>	2.8	0.05-0.50	0.05-0.30		●			●						
	<b>16T304 LS3</b>	2.8	0.05-0.50	0.05-0.30			●	●							
	<b>16T308 LS</b>	2.5	0.05-0.50	0.05-0.30		●			●						
	<b>16T308 LS3</b>	2.5	0.05-0.50	0.05-0.30	●		●	●							
	<b>TPGN 090204 LS3</b>	2.3	0.05-0.50	0.05-0.30	●										
	<b>110302 LS3</b>	2.8	0.05-0.50	0.05-0.30				●							
	<b>110304 LS</b>	2.6	0.05-0.50	0.05-0.30		●			●						
	<b>110304 LS3</b>	2.6	0.05-0.50	0.05-0.30					●						
	<b>110308 LS3</b>	2.3	0.05-0.50	0.05-0.30	●		●								
	<b>160304 LS</b>	2.8	0.05-0.50	0.05-0.30		●									
	<b>160304 LS3</b>	2.8	0.05-0.50	0.05-0.30	●		●								
	<b>160308 LS</b>	2.5	0.05-0.50	0.05-0.30		●									
	<b>160308 LS3</b>	2.5	0.05-0.50	0.05-0.30	●		●	●							
	<b>TPGW 080204 LS3</b>	2.1	0.05-0.50	0.05-0.30				●							
	<b>090204 LS3</b>	2.3	0.05-0.50	0.05-0.30			●	●							
	<b>090208 LS3</b>	2.0	0.05-0.50	0.05-0.30				●							
	<b>110302 LS3</b>	2.8	0.05-0.50	0.05-0.30	●										
	<b>110304 LS</b>	2.6	0.05-0.50	0.05-0.30		●	●								
	<b>110304 LS3</b>	2.6	0.05-0.50	0.05-0.30	●			●							
	<b>110308 LS3</b>	2.3	0.05-0.50	0.05-0.30	●		●								
	<b>160404 LS3</b>	2.8	0.05-0.50	0.05-0.30			●								

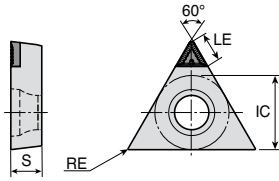
A51, A52, A96-A98,  
A171, A184,  
A207, A209, A210

●: Standard items

# TCGT-CB TCGW TPGN



## Positive triangular inserts



Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	5.56	2.38	0.4-0.8
<b>11</b>	6.35	2.38-3.18	0.4-0.8
<b>16</b>	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	KB90A	TB7020	TD810	KP300	TD830
 PCD chip breaker 	<b>TCGT 090204 CB</b>	2.8	0.50-1.50	0.10-0.50									●	
	<b>110204 CB</b>	3.8	0.50-2.00	0.10-0.50									●	
	<b>16T304 CB</b>	3.9	0.50-2.00	0.10-0.50									●	
	<b>16T308 CB</b>	3.6	0.50-2.00	0.10-0.50									●	
 	<b>TCGW 090204 LN-7</b>	3.3	0.10-2.00	0.05-0.30									●	
	<b>090208 LN-7</b>	3.0	0.10-2.00	0.05-0.30									●	
	<b>110204 LN-7</b>	3.8	0.10-2.00	0.05-0.30								●	●	
	<b>110208 LN-7</b>	3.5	0.10-2.00	0.05-0.30									●	
	<b>16T304 LN-7</b>	3.8	0.10-2.00	0.05-0.30									●	
	<b>16T308 LN-7</b>	3.5	0.10-2.00	0.05-0.30								●	●	
 	<b>TPGN 110302 LN-7</b>	3.9	0.10-2.00	0.05-0.30									●	
	<b>110304 LN-7</b>	3.8	0.10-2.00	0.05-0.30									●	
	<b>160302 LN-7</b>	4.4	0.10-2.00	0.05-0.30									●	
	<b>160304 LN-7</b>	4.3	0.10-2.00	0.05-0.30									●	

● : Standard items

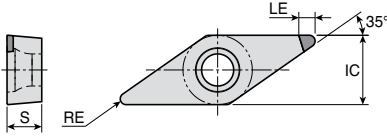
A51, A52, A96-A98,  
 A171, A184,  
 A207



# VBGW VCGT-CB VCGW



## Positive 35° rhombic inserts



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

Insert	Designation	LE (mm)	ap (mm)	Feed (mm/rev)	CBN							PCD				
					TB610	TB650	TB670	TB730	TB7015	KB90A	TB7020	TD810	KP300	TD830		
	<b>VBGW 110304 LS2</b>	3.2	0.05-0.50	0.05-0.30				●								
	<b>160402 LS2</b>	3.6	0.05-0.50	0.05-0.30				●								
	<b>160404 LS</b>	3.2	0.05-0.50	0.05-0.30		●			●							
	<b>160404 LS2</b>	3.2	0.05-0.50	0.05-0.30		●		●	●							
	<b>160408 LS</b>	2.3	0.05-0.50	0.05-0.30			●			●						
	<b>160408 LS2</b>	2.3	0.05-0.50	0.05-0.30		●		●	●							
 	<b>VBGW 160402 LN-7</b>	5.2	0.10-2.00	0.05-0.30									●	●		
	<b>160404 LN-7</b>	5.0	0.10-2.00	0.05-0.30									●	●		
	<b>160408 LN-7</b>	4.2	0.10-2.00	0.05-0.30									●	●		
  	<b>VCGT 110302 CB</b>	4.7	0.50-2.00	0.10-0.50											●	
	<b>110304 CB</b>	5.0	0.50-2.00	0.10-0.50											●	
	<b>160404 CB</b>	7.3	0.50-3.50	0.10-0.50											●	
	<b>160408 CB</b>	6.4	0.50-3.50	0.10-0.50											●	
	<b>160412 CB</b>	6.2	0.50-3.50	0.10-0.50											●	
	<b>220530 CB</b>	6.4	0.50-3.50	0.10-0.50											●	
 	<b>VCGW 110304 LN-7</b>	5.0	0.10-2.00	0.05-0.30											●	
	<b>160404 LN-7</b>	5.0	0.10-2.00	0.05-0.30											●	●
	<b>160408 LN-7</b>	4.1	0.10-2.00	0.05-0.30											●	●

●: Standard items

A100-A103, A106-A108, A118, A122, A124, A125, A214, A216, A218, A219

# Recommended Cutting Conditions

## Machining data for turning grades

ISO	Material	Condition	Tensile strength (N/mm <sup>2</sup> )	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)	Quenched and tempered	600	200	6	
			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			29
			Hard rubber			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		Rm 400		36	
Alpha+beta alloys cured		Rm 1050		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



# Recommended Cutting Conditions

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				1000	300	8
				1200	350	9
	High alloy steel, cast steel and tool steel		Annealed	680	200	10
			Quenched and tempered	1100	325	11
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	Titanium, Ti alloys			Rm 400		36
Alpha+beta alloys cured			Rm 1050		37	
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Cast iron nodular	Hardened		55HRC	41		

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			Cured	350	34	
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		Alpha+beta alloys cured	Rm 1050		37	
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	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		

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					930	275	7
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			Cured		90	24	
		>12% Si	High temp.		130	25	
	Copper alloys		>1% Pb	Free cutting	110	26	
				Brass	90	27	
				Electrolytic copper	100	28	
	Non-metallic		Duroplastics, fiber plastics			29	
			Hard rubber			30	
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			Cured	280	32		
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			Cured	350	34		
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