

# TURNING



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# TURNING

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• For more technical information, see TaeguTec technical guide part TA



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

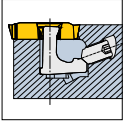
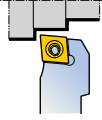
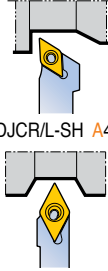
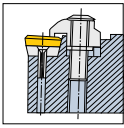
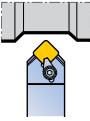
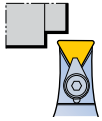
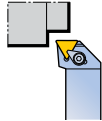
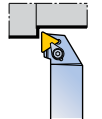
➤ Components Page



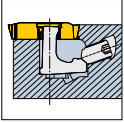
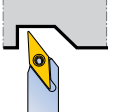
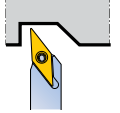
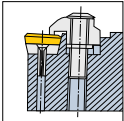
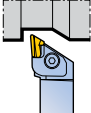
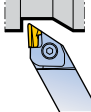
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# Tool Selection Guide

## External holder

Holder type	<b>T-TURN</b>				
					
<b>B</b> <b>B-Holder</b> 	 BCLCR/L-SH A47	 BDJCR/L-SH A48 BDNCN-SH A48			
<b>C</b> <b>Top clamp</b> 				 CSDPN A51	 CTCPN A52  CTFPR/L A52  CTGPR/L A53

## External holder

Holder type	T-TURN				
<b>B</b> <b>B-Holder</b> 	 BVJBR/L-SH A49  BVJCR/L-SH A49				
<b>C</b> <b>Top clamp</b> 			 CKJNR/L A50  CKNNR/L A50		

## External holder

Holder type	<b>T-TURN</b>				
<b>C</b> <b>C-Adapter</b> 	 C...HCLNR/L A130  C...TCLNR/L A132  C...SCLCR/L A136	 C...HDJNR/L A130  C...TDJNR/L A132  C...SDJCR/L A136	 C...SRDCN A137	 C...HSSNR/L A131  C...TSDNN A133  C...TSSNR/L A133	 C...HTGNR/L A131 C...HTJNR/L A131  C...TTGNR/L A134 C...TTJNR/L A134  C...STGCR/L A137 C...STJCR/L A137
<b>H</b> <b>Hook lever holder</b> 	 HCBNR/L-RS A54 HCBNR/L A54  HCKNR/L A55  HCLNR/L-RS A56 HCLNR/L A56	 HDJNR/L A57  HDNNR/L A57  HDQNR/L A58  HDUNR/L A58		 HSBNR/L A59 A119  HSDNN A59 A119  HSKNR/L A60  HSSNR/L A60	 HTFNR/L A61  HTGNR/L A61

## External holder

Holder type	T-TURN				
<b>C</b> <b>C-Adapter</b> 	 C...TVJNR/L A134  C...SVJBR/L A138  C...SVVBN A138	 C...TWLNR/L A135			
<b>H</b> <b>Hook lever holder</b> 		 HWLNR/L A62			

## External holder

Holder type	T-TURN				
<b>M</b> <b>Multi lock</b> 		 MDJNR/L A63  MDNNA A63  MDQNR/L A64			 MTJNR/L A65
<b>P</b> <b>Lever lock</b> 	 PCBNR/L A69  PCLNR/L A70  PCKNR/L A70	 PDJNR/L A71  PDNNR/L A71	 PRDCN A72  PRGCR/L A73  PRGNR/L A74	 PSBNR/L A75  PSDNN A75  PSKNR/L A76  PSSNR/L A76	 PTFNR/L A77  PTGNR/L A78  PTTNR/L A78

## External holder

Holder type	<b>T-TURN</b>				
<b>M</b> <b>Multi lock</b> 	 MVJNR/L A66  MVLNR/L A68  MVQNR/L A66  MNVN A67				
<b>P</b> <b>Lever lock</b> 					

## External holder

Holder type	<b>T-TURN</b>				
<b>S</b> <b>Screw clamp</b> 	 SCACR/L-SH A78	 SDJCR/L-SH A81	 SRDCN A85	 SSDCN A86	 STFCR/L A87
	 SCLCR/L-SH A80	 SDJCR/L A81	 SRGCR/L A85	 SSSCR/L A86	 STGCR/L-SH A88
	 SCLCR/L A80	 SDJNR/L A82			 STGCR/L A88
		 SDNCN-SH A83			
		 SDNCN A83			
		 SDQNR A84			



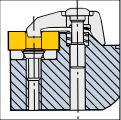
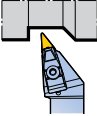
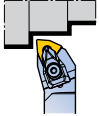
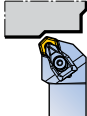
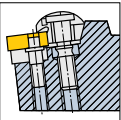
## External holder

Holder type	T-TURN				
<b>S</b> <b>Screw clamp</b> 	 SVJBR/L-SH A89  SVJBR/L A89  SVJCR/L A90  SVJNR/L A90  SVVBN-SH A91  SVVBN A91  SVVCN A92				

## External holder

Holder type	<b>T-TURN</b>				
<b>T</b> <b>T-Holder</b> 	 TCBNR/L A93  TCLNR/L A93  TCKNR/L A94	 TDJNR/L A95  TDNNR/L A95  TDQNR/L A96  TDUNR/L A96		 TSBNR/L A98  TSDNN A98  TSKNR/L A99  TSSNR/L A99	 TTGNR/L A100  TTJNR/L A100  TTFNR/L A100
<b>W</b> <b>Wedge clamp</b> 				 WTENN A103  WTGNR/L A103  WTJNR/L A104  WTQNR/L A104	






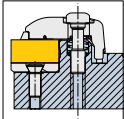
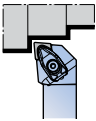
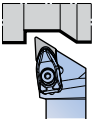
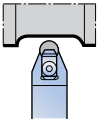



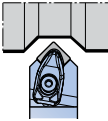


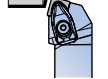
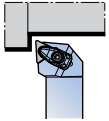
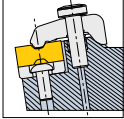
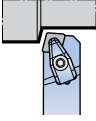


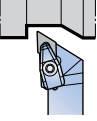

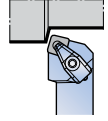
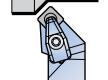
## External holder

Holder type	<b>T-TURN</b>				
<p><b>T</b></p> <p><b>T-Holder</b></p> 	 <p>TVJNR/L A101</p>	 <p>TWLNR/L A102</p>		 <p>THSNR/L A97</p>	
<p><b>W</b></p> <p><b>Wedge clamp</b></p> 					

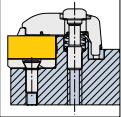
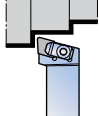
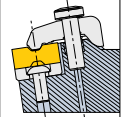
# Tool Selection Guide

**T-TURN**

External holder

Holder type	<b>T-TURN</b>				
					
<p><b>T-F</b></p> <p>Ceramic T-Holder</p> 	 TCLNR/L-F A105	 TDJNR/L-F A106	 CRDCN-120 A112 CRDCN-140 A112  TRDNN-F A108  CRGCR/L-120 A113 CRGCR/L-140 A113  TRGNR/L-F A108	 TSDNN-F A109  TSKNR/L-F A109  TSRNR/L-F A110  TSSNR/L-F A110	 TTJNR/L-F A111
<p><b>T-CH</b></p> <p>Ceramic dimple holder</p> 	 TCBNR/L-CH A114  TCKNR/L-CH A114  TCLNR/L-CH A115	 TDJNR/L-CH A116  TDNNN-CH A116		 TSRNR/L-CH A117  TSSNR/L-CH A117	

## External holder

Holder type	<b>T-TURN</b>				
<p><b>T-F</b> Ceramic T-Holder</p> 					 TEGNR/L-F A107
<p><b>T-CH</b> Ceramic dimple holder</p> 					






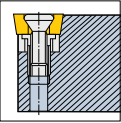
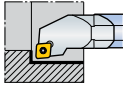
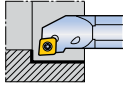
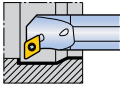
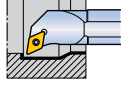
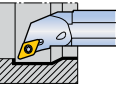
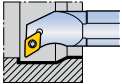
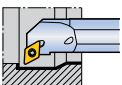
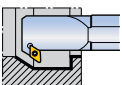
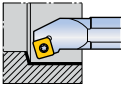
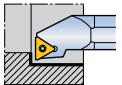
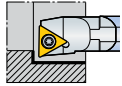
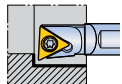
## Internal holder

Holder type	T-TURN				
<b>C</b> <b>Top clamp</b> 				 S-CSKPR/L A141	 S-CTFCR/L A142 S-CTFPR/L A142
<b>H</b> <b>Hook lever holder</b> 	 S-HCLNR/L A143 A-HCLNR/L A143	 S-HDUNR/L A144 A-HDUNR/L A144   S-HDZNR/L A145 A-HDZNR/L A145		 S-HSKNR/L A146 A-HSKNR/L A146	 S-HTFNR/L A147 A-HTFNR/L A147   S-HTUNR/L A148 A-HTUNR/L A148
<b>M</b> <b>Multi lock</b> 					
<b>P</b> <b>Lever lock</b> 	 S-PCLNR/L A151	 S-PDUNR/L A152   S-PDZNR/L A152		 S-PSKNR/L A153	 S-PTFNR/L A154

## Internal holder

Holder type	<b>T-TURN</b>				
<b>C</b> <b>Top clamp</b> 			 S-CKUNR/L A140		
<b>H</b> <b>Hook lever holder</b> 		 S-HWLNRL A149 A-HWLNRL A149			
<b>M</b> <b>Multi lock</b> 			 S-MWLNRL A150		
<b>P</b> <b>Lever lock</b> 					

## Internal holder

Holder type	T-TURN				
					
<p><b>S</b></p> <p><b>Screw clamp</b></p> 	 S-SCLCR/L A155 C-SCLCR/L A156   S-SCLPR/L A157 A-SCLPR/L A157 E-SCLPR/L A158	 A-SDLNR/L A158   S-SDQCR/L A159   A-SDQNR/L A159   S-SDUCR/L A160   A-SDUNR/L A160   S-SDZCR/L A161		 S-SSKCR/L A162	 S-STFCR/L A163 C-STFCR/L A163   S-STFPR/L A164 A-STFPR/L A164 C-STFPR/L A165 E-STFPR/L A165   S-STUBR/L A166 C-STUBR/L A166



## Internal holder

Holder type	T-TURN				
<b>S</b> <b>Screw clamp</b> 	 A-SVLNR/L A167  A-SVPCR/L A167  S-SVQBR/L A168  S-SVQCR/L A168  S-SVUBR/L A169  S-SVUCR/L A169  S-SVJCR/L A170  S-SVPCR/L A170	 S-SWUBR/L A171 C-SWUBR/L A171			

## Internal holder

Holder type	<b>T-TURN</b>				
<b>T</b> <b>T-Holder</b> 	 S-TCLNR/L A172 A-TCLNR/L A172	 S-TDUNR/L A173 A-TDUNR/L A173   S-TDZNR/L A174 A-TDZNR/L A174		 S-TSKNR/L A176 A-TSKNR/L A176	 S-TTFNR/L A177 A-TTFNR/L A177   S-TTUNR/L A178 A-TTUNR/L A178
<b>W</b> <b>Wedge clamp</b> 					 S-WTFNR/L A180
<b>T-CH</b> <b>Ceramic dimple holder</b> 	 S-TCLNR/L-CH A181				






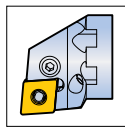

## Internal holder

Holder type	<b>T-TURN</b>				
<b>T</b> <b>T-Holder</b> 		 S-TWLN/R L A179 A-TWLN/R L A179		 A-THSNR/L A175	
<b>W</b> <b>Wedge clamp</b> 					
<b>T-CH</b> <b>Ceramic dimple holder</b> 					

## Internal holder


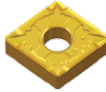


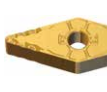







Holder type	T-TURN				
<b>HE</b> <b>Modular bar</b> 	 HE-PCLNR/L A184	 HE-PDUNR/L A184			 HE-PTFNR/L A185
	 HE-SCLCR/L A186	 HE-SDQCR/L A186			
		 HE-SDUCR/L A187			

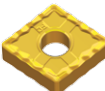


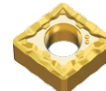








## Internal holder

Holder type	<b>T-TURN</b>				
					
<b>HE</b> <b>Modular bar</b> 	 HE-SVUBR/L A187				

# Tool Selection Guide



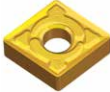









## Negative insert





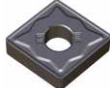







		<b>T-TURN</b>										
Application		Super finishing					Finishing					
Chip breaker		FA		EA		FG		SF		FX		
Insert												
Material		P	S	M	S	P	S	P	S	P	M	S
<b>C</b>		• A215		• A214		• A216		• A218				
<b>D</b>		• A222		• A222		• A223						
<b>R</b>												
<b>S</b>				• A230		• A231						
<b>T</b>				• A236		• A237		• A240				
<b>V</b>		• A241		• A241		• A241					• A242	
<b>W</b>				• A243		• A243 A245						

		<b>T-TURN</b>									
Application		Finishing					Medium				
Chip breaker		FC		FM		MC		FT		PC	
Insert											
Material		P	M	P		P		P		P	M
<b>C</b>		• A215		• A216		• A216		• A216		• A218	
<b>D</b>		• A222		• A223		• A223		• A223		• A224 A225	
<b>R</b>											
<b>S</b>		• A231		• A231		• A232				• A233	
<b>T</b>		• A237		• A237		• A238		• A237		• A239	
<b>V</b>		• A241								• A242	
<b>W</b>		• A243		• A245		• A244				• A244 A246	

# Tool Selection Guide













## Negative insert



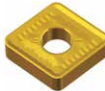
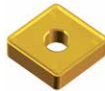
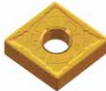





		<b>T-TURN</b>											
Application	Medium												
Chip breaker	VF		ML		MP		MM		EM				
Insert													
Material	P	M	S	P	M	S	P	M	S	P	M	M	S
C			• A212 A216		• A217		• A217		• A215				
D			• A225		• A221 A224		• A224		• A224		• A222		
R													
S			• A232		• A232		• A232		• A230 A231				
T			• A240		• A238		• A238		• A238		• A236		
V			• A241 A242						• A241				
W			• A244		• A244		• A246		• A243 A245				

		<b>T-TURN</b>											
Application	Medium					Roughing							
Chip breaker	MT		MG-		ET		RT		KT				
Insert													
Material	P	M	S	P	K	S	M	S	P	M	K	S	K
C			• A217		• A214		• A215		• A218		• A216		
D			• A224		• A221		• A222		• A225		• A223		
R			• A227										
S			• A232		• A230		• A231		• A233		• A231		
T			• A239		• A235 A236		• A237		• A239		• A238		
V			• A242		• A241								
W			• A244 A246				• A243		• A245		• A244		

# Tool Selection Guide

## Negative insert

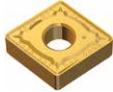











		<b>T-TURN</b>				
Application	Semi-Heavy				Heavy	
Chip breaker	HB	RH(N)	RX	RH	EH	
Insert						
Material	P M S	P	P	P M	M	
C 	• A220	• A220	• A220	• A220	• A219	
D 						
R 						
S 	• A234	• A234	• A234	• A234	• A233	
T 			• A240	• A240		
V 						
W 						

		<b>T-TURN</b>				
Application	Heavy				Finishing wiper	
Chip breaker	HT	HD	HY	HZ	WS	
Insert						
Material	P M K	P	P	P	P M K S	
C 	• A213 A219	• A212	• A213 A219	• A213 A219	• A218	
D 					• A225	
R 						
S 	• A229 A233	• A228	• A229 A234	• A229 A234		
T 						
V						
W					• A245	







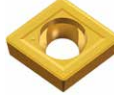







# Tool Selection Guide




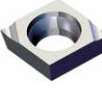








## Negative insert

	<b>T-TURN</b>															
Application	Medium wiper				Medium				Roughing		Medium					
Chip breaker	WT		GU		SU		KNUX type		DNUX type							
Insert																
Material	P	M	K	S	P	K	P	M	S	P	M	K	S	P	M	S
<b>C</b> 	● A212 A219															
<b>D</b> 	● A225												● A225			
<b>H</b> 			● A226		● A226											
<b>K</b> 									● A226							
<b>T</b> 																
<b>V</b> 																
<b>W</b> 	● A245															

# Tool Selection Guide


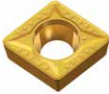
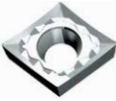
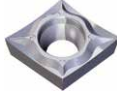







## Positive insert

		<b>T-TURN</b>												
Application		Super finishing			Finishing			Medium						
Chip breaker		FA		FG	FX		PC		MT					
Insert														
Material		P	M	S	P	M	S	P	M	S	P	M	K	S
C		• A248	• A248 A249						• A248 A249		• A248			
D		• A250	• A250						• A251		• A251			
R			• A253						• A252		• A252			
S			• A253						• A253		• A253			
T		• A256	• A256 A258						• A256 A258		• A256			
V		• A259	• A259			• A259		• A260				• A259		
W														

		<b>T-TURN</b>											
Application		Roughing					Finishing						
Chip breaker		PMR-		RA	CMX-		FF		GF				
Insert													
Material		P	M	K	S	P	P	P	M	S	P	M	S
C								• A247		• A247			
D										• A250			
R			• A252			• A252							
S		• A254											
T		• A258						• A255		• A256			
V										• A259			
W								• A261					

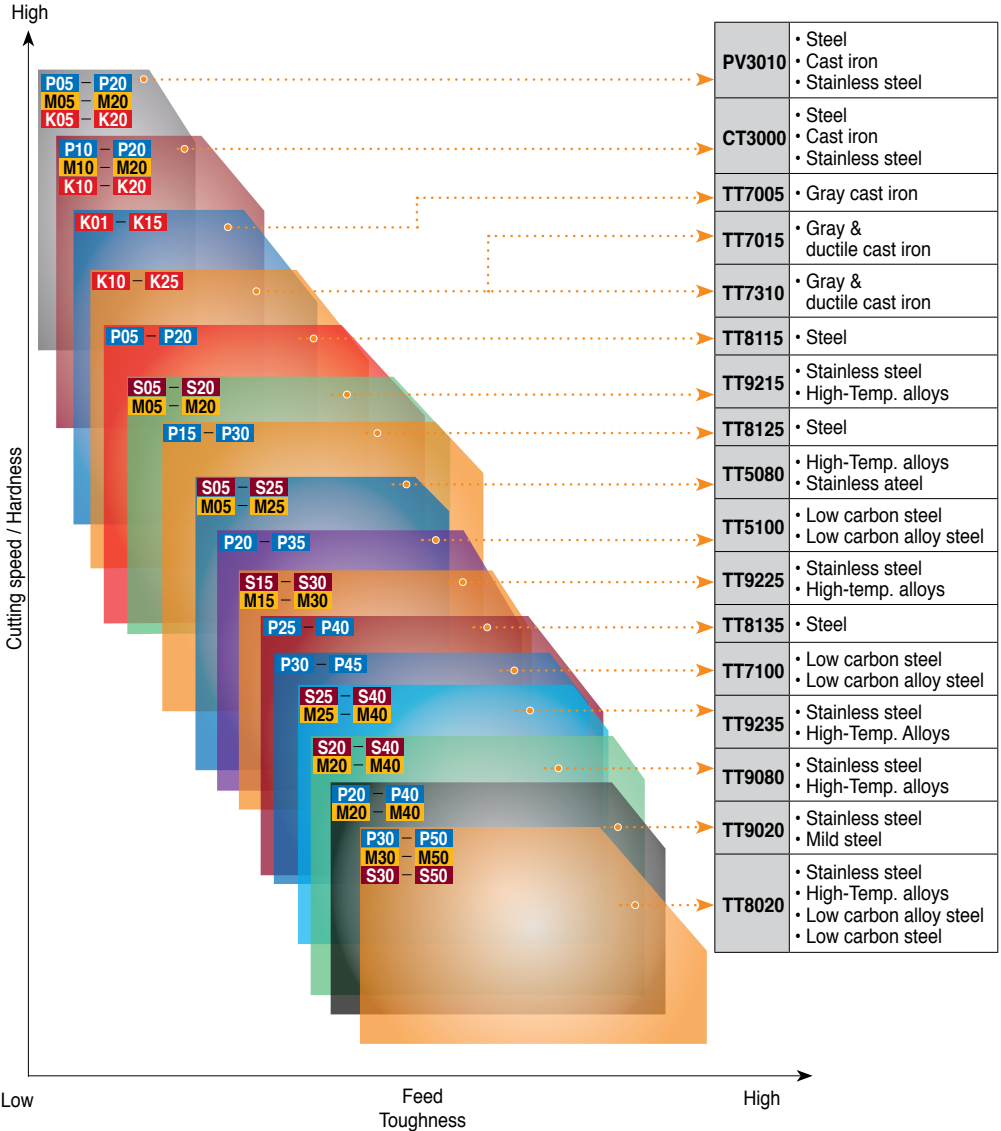
# Tool Selection Guide

## Positive insert

	<b>T-TURN</b>				
Application	Finishing		Medium wiper	Finishing	
Chip breaker	GW		WT	FL	SA
Insert					
Material	<b>P</b> <b>M</b> <b>S</b>	<b>P</b> <b>M</b> <b>K</b> <b>S</b>	<b>M</b> <b>N</b> <b>S</b>	<b>P</b> <b>M</b> <b>S</b>	
<b>C</b> 	• A247	• A248	• A263	• A248	
<b>D</b> 	• A250		• A263	• A250	
<b>R</b> 			• A263		
<b>S</b> 			• A263		
<b>T</b> 			• A263	• A256	
<b>V</b> 	• A259		• A263	• A259 A260	
<b>W</b> 					

# Grades

## Insert grades



- PV3010: PVD Coated cermet, CT3000: Uncoated cermet
- TT7005, TT7015, TT7310, TT8115, TT8125, TT8135, TT5100, TT7100, TT9215, TT9225, TT9235: CVD coated carbide
- TT5080, TT8020, TT9080, TT9020: PVD coated carbide

# Grades

## Coated carbide, cermet and carbide grades

Grades	ISO	Characteristics & applications
<b>TT7005</b> CVD coated <i>BLACK-RUSH</i>	<b>K01 – K15</b>	<ul style="list-style-type: none"> <li>For high speed machining of gray and ductile cast iron</li> <li>Excellent wear resistant coated grade assures optimum performance in high speed continuous machining of cast iron</li> </ul>
<b>TT7015</b> CVD coated <i>BLACK-RUSH</i>	<b>K10 – K25</b>	<ul style="list-style-type: none"> <li>For general machining of gray and ductile cast iron</li> <li>For continuous and interrupted machining of gray and ductile cast iron</li> </ul>
<b>TT7310</b> CVD coated	<b>K10 – K25</b>	<ul style="list-style-type: none"> <li>For general machining of gray and ductile cast iron</li> </ul>
<b>TT8115</b> CVD coated	<b>P05 – P20</b>	<ul style="list-style-type: none"> <li>For high speed turning continuous cutting on steels</li> <li>Excellent wear resistance and heat-resistance</li> </ul>
<b>TT9215</b> CVD coated	<b>S05 – S20</b> <b>M05 – M20</b>	<ul style="list-style-type: none"> <li>Excellent insert wear resistance</li> <li>For high cutting speed &amp; continuous cutting on stainless steels</li> </ul>
<b>TT5080</b> PVD coated	<b>S05 – S25</b> <b>M05 – M25</b>	<ul style="list-style-type: none"> <li>For a wide range of turning of high-temp alloys</li> <li>Very hard submicron substrate with good fracture toughness</li> </ul>
<b>TT8125</b> CVD coated	<b>P15 – P30</b>	<ul style="list-style-type: none"> <li>For a wide range of turning on steels</li> <li>Very good combination of wear resistance and toughness</li> <li>For general use on steels</li> </ul>
<b>TT5100</b> CVD coated	<b>P20 – P35</b>	<ul style="list-style-type: none"> <li>For a wide range of turning of mild steel, low carbon steel and low carbon alloy steel</li> <li>Excellent chipping resistance and sticking resistance</li> </ul>
<b>TT9225</b> CVD coated	<b>S15 – S30</b> <b>M15 – M30</b>	<ul style="list-style-type: none"> <li>Excellent combination of insert wear resistance &amp; fracture resistance</li> <li>For general use on stainless steel</li> <li>For continuous and interrupted cutting on stainless steel</li> </ul>
<b>TT9020</b> PVD coated	<b>P20 – P40</b> <b>M20 – M40</b>	<ul style="list-style-type: none"> <li>Submicron substrate with PVD coating</li> <li>For stainless steel</li> </ul>
<b>TT9080</b> PVD coated	<b>M20 – M40</b> <b>S20 – S40</b>	<ul style="list-style-type: none"> <li>Very hard submicron substrate</li> <li>For turning small components</li> </ul>
<b>TT8135</b> CVD coated	<b>P25 – P40</b>	<ul style="list-style-type: none"> <li>Tough carbide substrate</li> <li>For a wide range of medium to roughing applications at low cutting speed on steels</li> <li>For heavy turning</li> </ul>
<b>TT7100</b> CVD coated	<b>P30 – P45</b>	<ul style="list-style-type: none"> <li>Very tough carbide substrate base - with a CVD coating</li> <li>This combination provides both excellent toughness and chipping resistance</li> <li>For heavy turning</li> </ul>
<b>TT9235</b> CVD coated	<b>S25 – S40</b> <b>M25 – M40</b>	<ul style="list-style-type: none"> <li>Excellent combination of insert wear resistance &amp; toughness</li> <li>For low cutting speed &amp; interrupted cutting</li> </ul>
<b>TT8020</b> PVD coated	<b>P30 – P50</b> <b>M30 – M50</b> <b>S30 – S50</b>	<ul style="list-style-type: none"> <li>For medium to low speed turning of stainless steel, exotic alloys and low carbon steel</li> <li>Toughest grade in turning grade</li> <li>For interrupted cut on stainless steel and exotic alloys</li> </ul>
<b>PV3010</b> PVD coated cermet	<b>P05 – P20</b> <b>M05 – M20</b> <b>K05 – K20</b>	<ul style="list-style-type: none"> <li>For high surface finish turning of steel, stainless steel and cast iron</li> <li>Excellent wear resistance and low coefficient of friction</li> <li>Long tool life</li> </ul>
<b>CT3000</b> Uncoated cermet	<b>P10 – P20</b> <b>M10 – M20</b> <b>K10 – K20</b>	<ul style="list-style-type: none"> <li>Excellent surface finish turning on steel, stainless steel and cast iron</li> <li>Excellent wear resistance and low coefficient of friction</li> </ul>
<b>K10</b> Carbide	<b>K05 – K15</b> <b>N05 – N15</b> <b>S05 – S15</b>	<ul style="list-style-type: none"> <li>General turning of cast iron, exotic alloy and non-ferrous materials including aluminum and copper alloy</li> <li>Excellent wear resistant grade</li> </ul>

# Grades

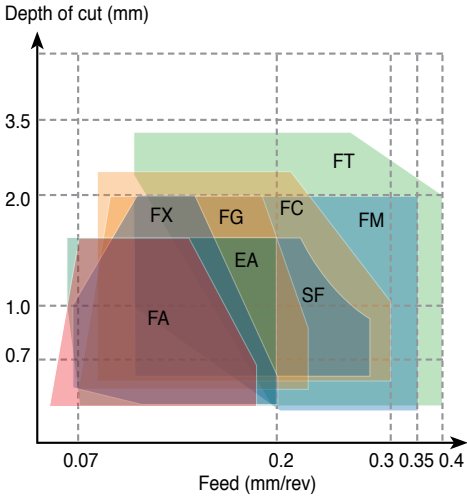
## CBN, PCD and ceramic grades

Grades	Composition	Characteristics & applications
<b>KP300</b> PCD	PCD + Binder	<ul style="list-style-type: none"> <li>• For general use on aluminum alloy</li> <li>• Excellent combination of wear resistance and toughness</li> </ul>
<b>TD810</b> PCD	PCD + Binder	<ul style="list-style-type: none"> <li>• Optimal combination of strong wear resistance and superior toughness</li> <li>• Suitably designed for aluminum and non-ferrous materials</li> <li>• Achieves excellent surface finish</li> </ul>
<b>TB610</b> CBN	CBN + Binder	<ul style="list-style-type: none"> <li>• Excellent wear resistant grade with low CBN content</li> <li>• Continuous cutting at high cutting speeds on hardened steels</li> </ul>
<b>TB650</b> CBN	CBN + Binder	<ul style="list-style-type: none"> <li>• High wear resistant grade with moderate fracture toughness</li> <li>• Can be applied to light interrupted cutting applications</li> </ul>
<b>TB670</b> CBN	CBN + Binder	<ul style="list-style-type: none"> <li>• Excellent combination of wear resistance and toughness</li> <li>• For general use on hardened steel</li> <li>• For continuous and interrupted cutting</li> </ul>
<b>TB730</b> CBN	CBN + Binder	<ul style="list-style-type: none"> <li>• Excellent toughness with high CBN content</li> <li>• For high speed machining of cast iron</li> <li>• Can be applied to interrupted cutting on hardened steel and other materials</li> </ul>
<b>KB90A</b> CBN	CBN + Binder	<ul style="list-style-type: none"> <li>• Solid CBN with excellent impact resistance</li> <li>• For high speed machining of cast iron</li> <li>• Can be applied to rough to medium machining of hardened steel</li> </ul>
<b>AW120</b> Ceramic	Al <sub>2</sub> O <sub>3</sub> + ZrO <sub>2</sub>	<ul style="list-style-type: none"> <li>• Excellent wear resistant grade with chemical stability and temperature resistance</li> <li>• For high speed continuous turning of cast iron</li> <li>• For finishing applications on hard materials</li> </ul>
<b>AB2010</b> Coated ceramic	(Al <sub>2</sub> O <sub>3</sub> + TiCN) +TiN PVD Coating	<ul style="list-style-type: none"> <li>• Excellent wear resistance and tool life</li> <li>• Very good combination with improved wear and fracture resistance</li> <li>• Finishing operations on hardened steels and hardened cast irons</li> </ul>
<b>AB20</b> Ceramic	Al <sub>2</sub> O <sub>3</sub> + TiCN	<ul style="list-style-type: none"> <li>• High wear resistant grade with excellent cutting edge stability</li> <li>• For high speed continuous turning of hardened steel and other hard materials</li> <li>• For finishing applications on cast iron.</li> </ul>
<b>AB30</b> Ceramic	Al <sub>2</sub> O <sub>3</sub> + TiC	<ul style="list-style-type: none"> <li>• Mixed ceramic with good toughness and wear resistance</li> <li>• For general use on hardened steel, cast iron and hard materials</li> <li>• Can be applied to interrupted cutting conditions</li> </ul>
<b>TC430</b> Ceramic	Whisker	<ul style="list-style-type: none"> <li>• SiC whisker reinforced ceramic grade</li> <li>• General turning and milling</li> <li>• For Ni-base superalloy, inconel, waspaloy and rene</li> </ul>
<b>AS500</b> Ceramic	SiAlON	<ul style="list-style-type: none"> <li>• For roughing to finishing cast iron applications</li> <li>• For higher cutting speeds compared to AS10</li> <li>• Wet and dry cutting</li> </ul>
<b>SC10</b> Coated ceramic	AS10 + CVD	<ul style="list-style-type: none"> <li>• Wear resistant grade with excellent toughness and thermal shock resistance</li> <li>• For high speed turning of cast iron</li> <li>• Wet and dry cutting</li> </ul>
<b>AS10</b> Ceramic	Si <sub>3</sub> N <sub>4</sub>	<ul style="list-style-type: none"> <li>• High wear resistant grade with excellent toughness and thermal shock resistance</li> <li>• For general use on cast iron</li> <li>• Wet and dry cutting</li> </ul>
<b>AS20</b> Ceramic	Si <sub>3</sub> N <sub>4</sub>	<ul style="list-style-type: none"> <li>• Very tough Si<sub>3</sub>N<sub>4</sub> ceramic grade with high cutting edge stability</li> <li>• For roughing to finishing applications with high temperature nickel based alloys</li> <li>• Wet and dry cutting</li> </ul>

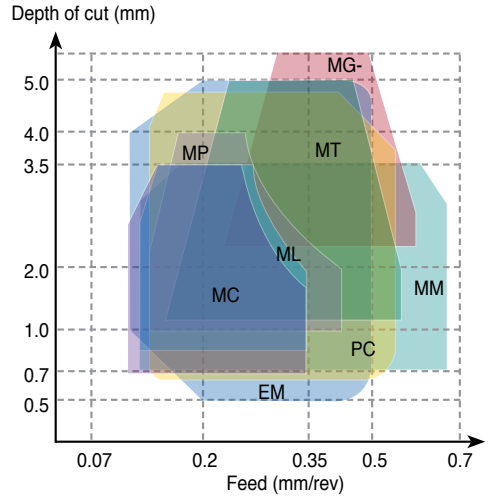
# Chip Breakers

## Negative inserts

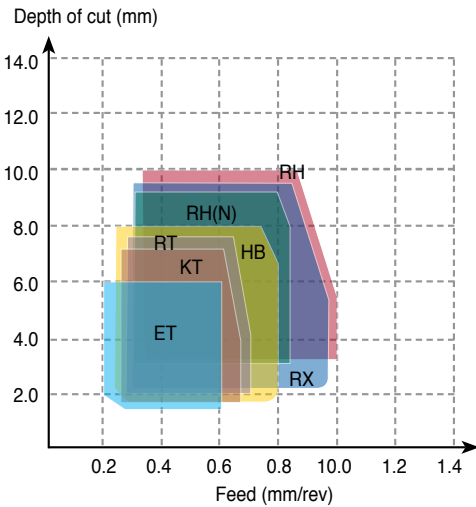
For finishing applications



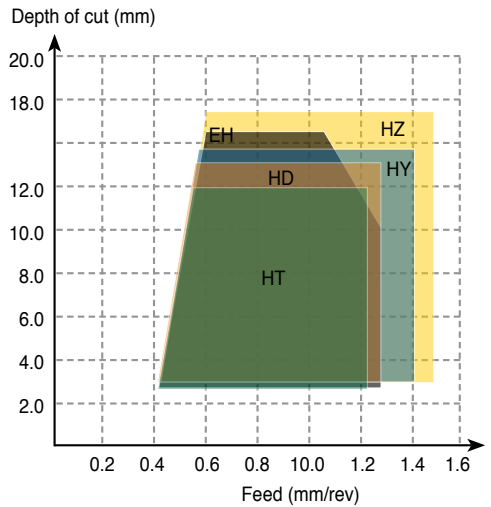
For medium applications



For roughing applications



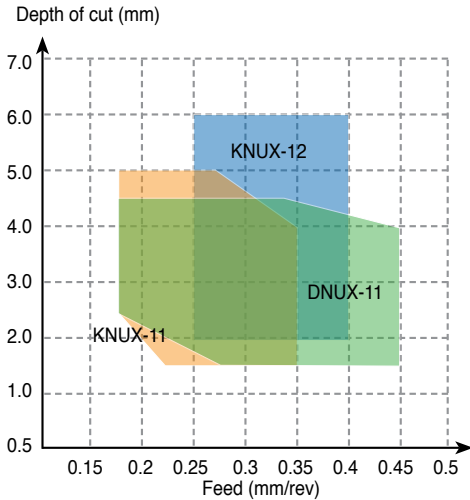
For heavy machining



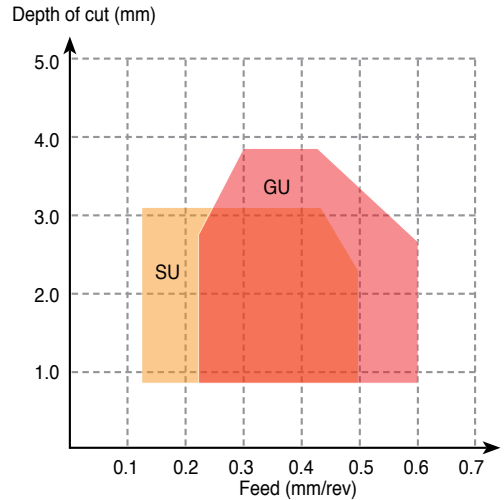
# Chip Breakers

## Negative inserts

KNUX / DNUX type

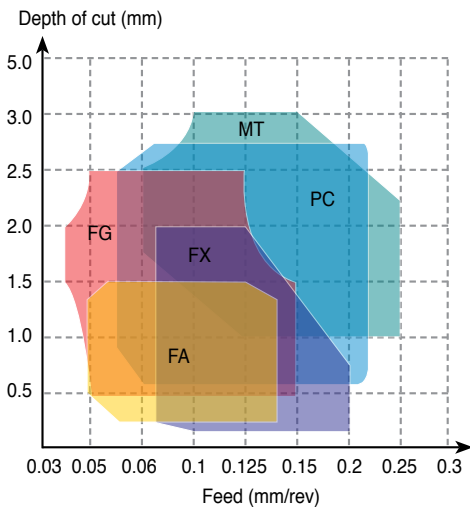


HNMG type

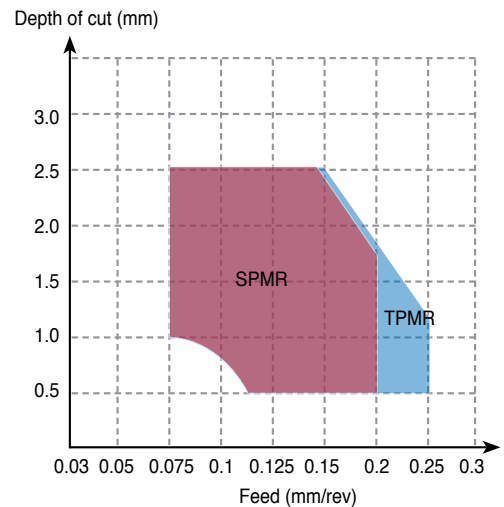


## Positive inserts

For Finish to medium applications



For medium applications

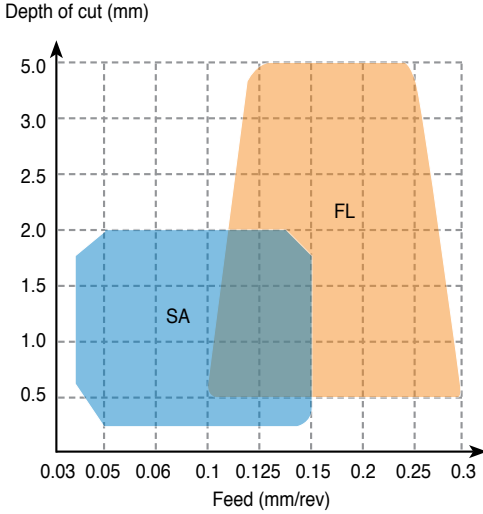




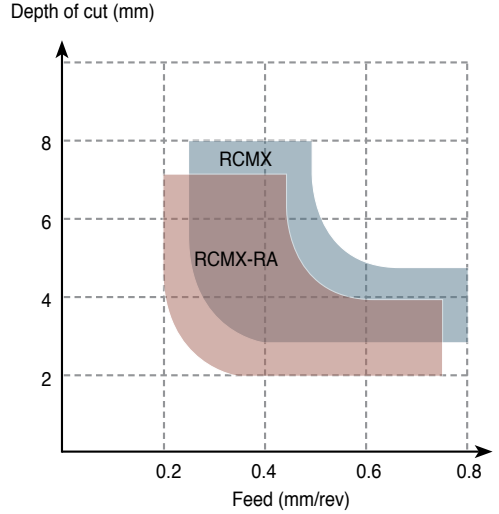
# Chip Breakers

## Positive inserts

Ground insert for finishing applications

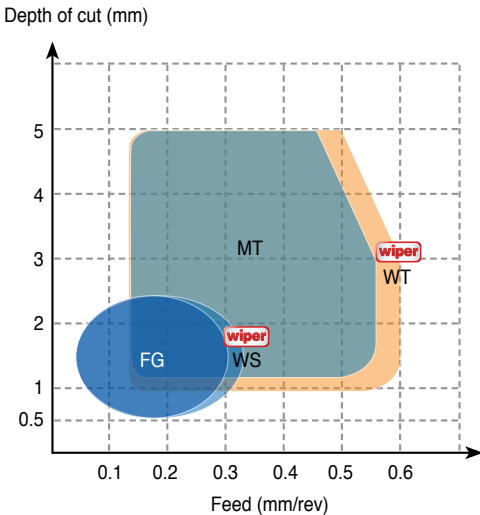


Round insert for roughing applications

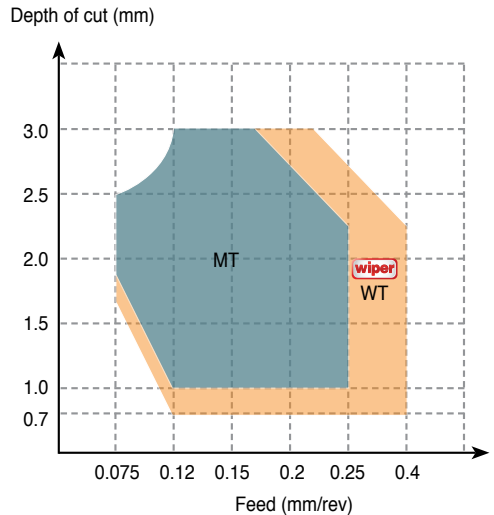


## 'WS' and 'WT' wiper inserts for high feed turning

### Negative inserts

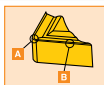





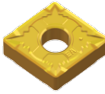








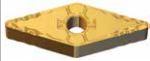


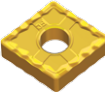





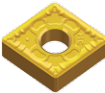
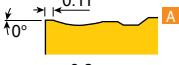
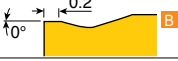
### Positive inserts



# Chip Breakers

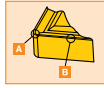
## Negative inserts













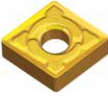













Chip breaker name and geometry		Applications and features
FA	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For super finish applications</li> <li>• Steel, stainless steel and heat resistant alloy machining</li> <li>• Excellent chip control</li> </ul>
EA	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For finishing applications</li> <li>• Exotic materials</li> <li>• Excellent chip control at low feeds and depths of cut</li> </ul>
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>
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>
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>

# Chip Breakers

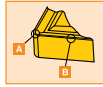
## Negative inserts



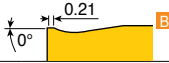

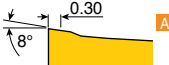
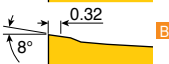

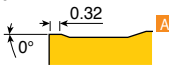

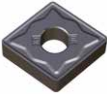
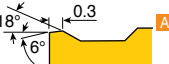
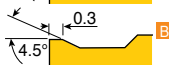




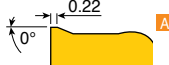





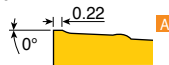



Chip breaker name and geometry		Applications and features
FT	 <p>CNMG 0904</p>  	<ul style="list-style-type: none"> <li>• For steel machining</li> <li>• Strong, serrated cutting edge for excellent chip evacuation</li> <li>• Semi-finishing and medium machining</li> <li>• Excellent chip breaking for automotive components</li> </ul>
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>
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>
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>
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>
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>
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>

# Chip Breakers

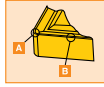
## Negative inserts


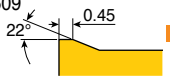
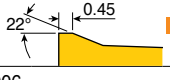

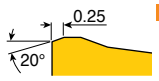

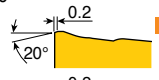
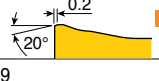

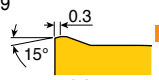
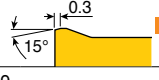

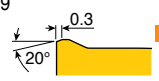
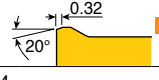

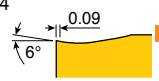
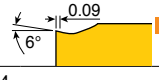

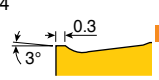
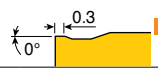


Chip breaker name and geometry		Applications and features
MG-	 <p>CNMG 1204</p>  	<ul style="list-style-type: none"> <li>• For medium rough applications</li> <li>• Steel and cast iron machining</li> <li>• Strong rake geometry</li> <li>• Suitable for manual lathes</li> </ul>
ET	 <p>CNMG 1204</p>  	<ul 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>
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>
HB	 <p>CNMX 1607</p>  	<ul style="list-style-type: none"> <li>• For semi heavy roughing applications</li> <li>• Steel and alloy steel machining</li> <li>• Double sided semi-heavy turn insert</li> <li>• Stable contact surface with seat</li> </ul>
RH(N)	 <p>CNMM 1906</p>  	<ul style="list-style-type: none"> <li>• For high feed roughing applications</li> <li>• Steel, cast iron and stainless steel machining</li> <li>• Very strong rake geometry</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>
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>

# Chip Breakers

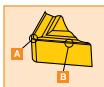
## Negative inserts





Chip breaker name and geometry		Applications and features
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>
WT	 <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>

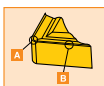
# Chip Breakers

## Negative inserts


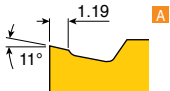

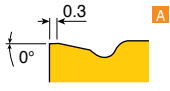


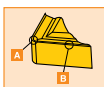
### DNUX type

Chip breaker name and geometry		Applications and features
11	 <p>DNUX 1304</p> 	<ul style="list-style-type: none"> <li>• Suitable for RhinoRush holder and 4 corners insert</li> <li>• For medium light to 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 and low cutting force machine</li> </ul>


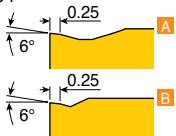

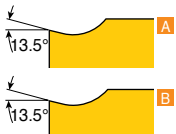


### KNUX type

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>

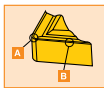



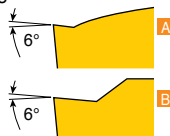

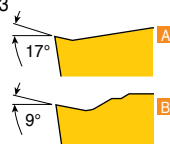

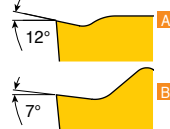

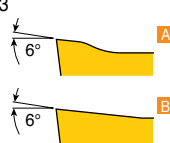

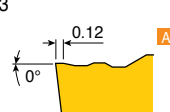

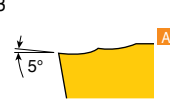

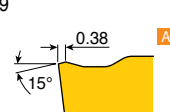

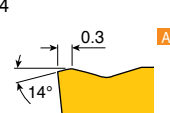
### HNMG type

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

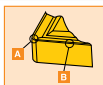
## Positive inserts-pressed



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>
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>
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>
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>

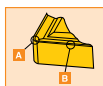
# Chip Breakers

## Positive inserts-pressed



Chip breaker name and geometry		Applications and features
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>

## 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>
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>
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>



# 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

N	B	C	P

# 25

# 25

# M

# 12

# -

# -

6

7

8

9

10

11

## 6 Shank height

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

## 7 Shank width

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

## 8 Tool length

l <sub>1</sub> (mm)	Symbol	l <sub>1</sub> (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 A211

## 10 Qualified tool

Q

F

B

## 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

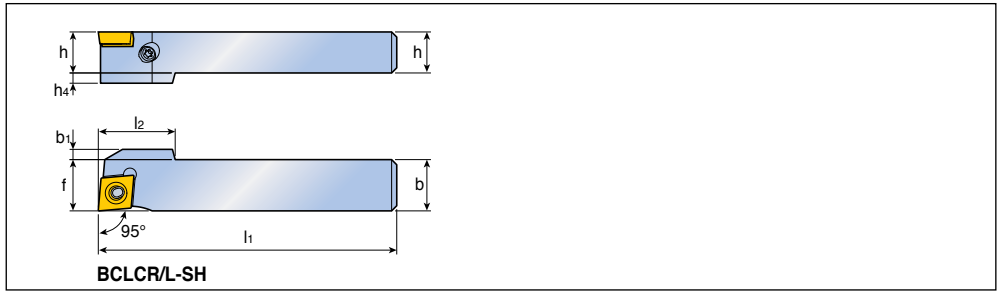
**Ceramic dimple holder** **T**

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

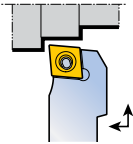
**Hook lever type** **H**

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

## Mini turn holder

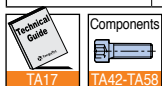


Approach angle	Designation	Dimension (mm)							Insert
		h	h4	b	b1	l1	f	l2	
95°	<b>BCLCR/L 1010 K06-SH</b>	10	-	10	-	125	10	-	CC...T 0602...
	<b>1212 K06-SH</b>	12	-	12	-	125	12	-	A247-A248
	<b>1010 K09-SH</b>	10	3	10	4	125	10	17	CC...T 09T3...
	<b>1212 K09-SH</b>	12	1	12	2	125	12	17	

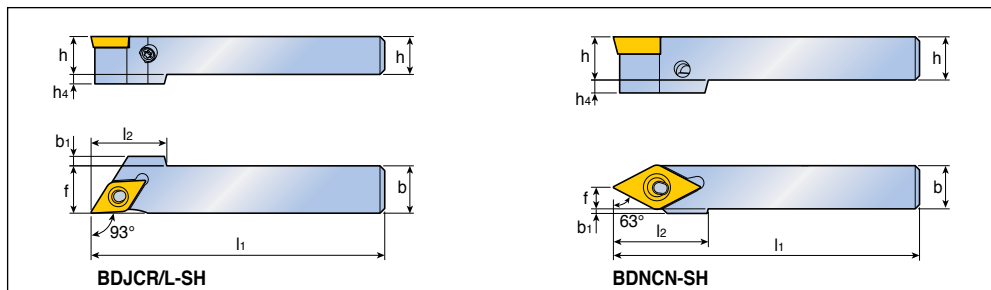


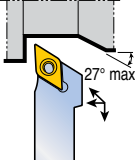
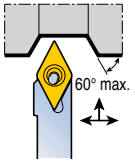
## Spare parts

Designation	Lever	Lever screw	Snap ring	Wrench				
...06	BLCL 2	BLCS 2	BLSR 2	T 6				
...09	BLCL 3	BLCS 3	BLSR 3	L-W 2F				



## Mini turn holder



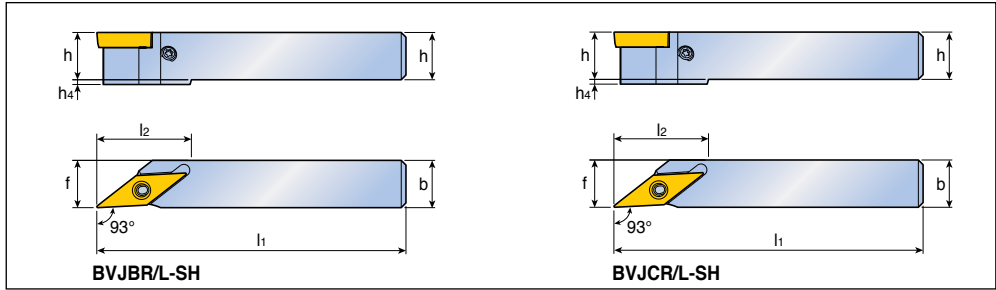
Approach angle	Designation	Dimension (mm)							Insert	
		h	h4	b	b1	l1	f	l2		
<b>93°</b> 	<b>BDJCR/L</b>	<b>1010 K07-SH</b>	10	-	10	-	125	10	-	DC...T 0702... A250-A251
		<b>1212 K07-SH</b>	12	-	12	-	125	12	-	
		<b>1010 K11-SH</b>	10	3	10	4	125	10	17	
		<b>1212 K11-SH</b>	12	1	12	2	125	12	17	
<b>63°</b> 	<b>BDNCN</b>	<b>1010 K07-SH</b>	10	-	10	-	125	5	-	DC...T 0702... DC...T 11T3...
		<b>1212 K07-SH</b>	12	-	12	-	125	6	-	
		<b>1010 K11-SH</b>	10	3	10	1	125	5	22	
		<b>1212 K11-SH</b>	12	1	12	-	125	6	22	


## Spare parts

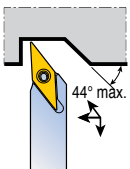
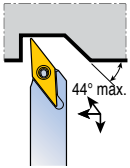
Designation	Lever	Lever screw	Snap ring	Wrench			
...07	BLCL 2	BLCS 2	BLSR 2	T 6			
...11	BLCL 3	BLCS 3	BLSR 3	L-W 2F			







## Mini turn holder

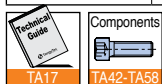


Approach angle	Designation	Dimension (mm)							Insert	
		h	h4	b	l1	f	l2			
93°	<b>BVJBR/L</b>	<b>1010 K11-SH</b>	10	1	10	-	125	10	20	VB...T 1103...  A259-A260
	<b>1212 K11-SH</b>	12	-	12	-	125	12	-		
93°	<b>BVJCR/L</b>	<b>1010 K11-SH</b>	10	1	10	125	10	20	VC...T 1103...	
	<b>1212 K11-SH</b>	12	-	12	125	12	-			

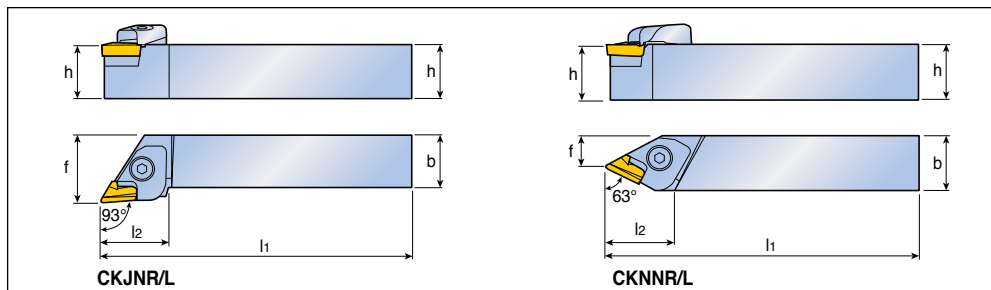


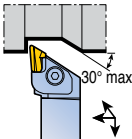

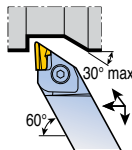
## Spare parts

Designation	Lever	Lever screw	Snap ring	Wrench				
...11	 BLCL 2	 BLCS 2	 BLSR 2	 T 6				










## Top clamp type



Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
<b>93°</b> 	<b>CKJNR/L</b>	<b>2020 K16</b>	20	20	125	35	25	KNUX 1604...R/L 11 KNUX 1604...R/L 12 
		<b>2020 M16</b>	20	20	150	35	25	
		<b>2525 M16</b>	25	25	150	32	32	
		<b>3225 P16</b>	32	25	170	33.3	32	
		<b>3232 M16</b>	32	32	150	33.3	40	
		<b>3232 P16</b>	32	32	170	33.3	40	
		<b>4040 R16</b>	40	40	200	33.3	50	
<b>63°</b> 	<b>CKNNR/L</b>	<b>2525 M16</b>	25	25	150	44.7	14.4	KNUX 1604... R/L 11 KNUX 1604... R/L 12
		<b>3225 M16</b>	32	25	150	44.7	14.4	

## Spare parts

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

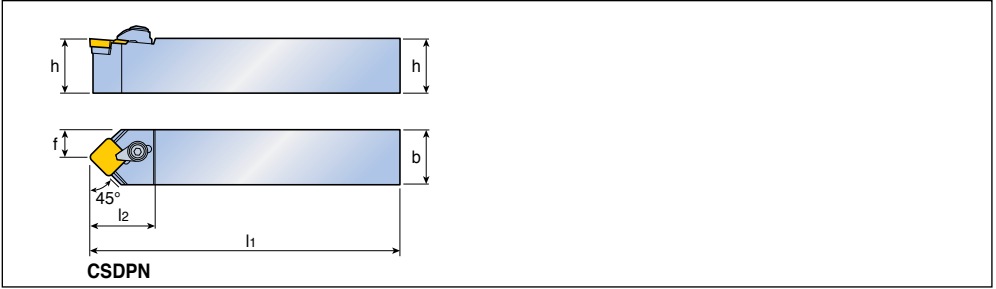
Components




TA42-TA58















## Top clamp type



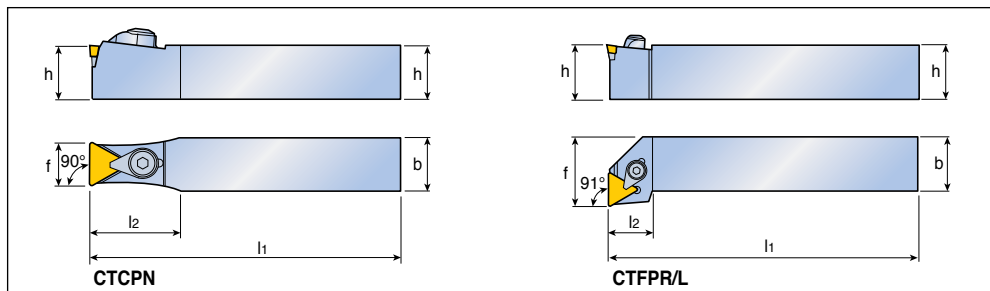
Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
45°	<b>CSDPN 1616 H09</b>	16	16	100	24	8.0	SPMR,SP...N 0903... SPMR,SP...N 1203...  A254
	<b>2020 K12</b>	20	20	125	29	10	
	<b>2525 M12</b>	25	25	150	29	12.5	

## Spare parts

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



## Top clamp type



Approach angle	Designation	Dimension (mm)					Insert		
		h	b	l <sub>1</sub>	l <sub>2</sub>	f			
<b>90°</b> 	<b>CTCPN</b>	<b>2009 K11</b>	20	9	125	20	9.4	TPMR,TP...N 1103...	
		<b>2513 Q16</b>	25	13	180	30	14.1	TPMR,TP...N 1603...	
		<b>2020 K22</b>	20	20	125	50	19.4	TPMR,TP...N 2204...	
		<b>2525 M22</b>	25	25	150	50	19.4		
<b>91°</b> 	<b>CTFPR/L</b>	<b>1616 H11</b>	16	16	100	14.4	20	TPMR,TP...N 1103...	
		<b>2020 K11</b>	20	20	125	16	25		
		<b>2020 K16</b>	20	20	125	20	25		TPMR,TP...N 1603...
		<b>2525 M16</b>	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		

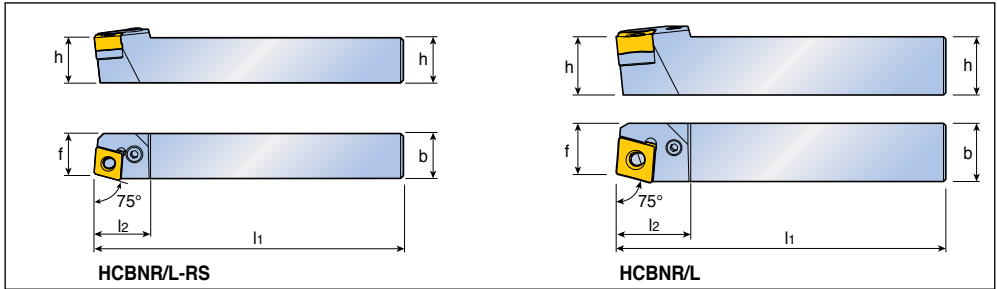
Components



TA42-TA58



## Hook lever type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
75° 	✓ HCBNR/L 1616 K0904-RS	16	16	125	20	14.5	CN... 0904... 
							A212-A220
75° 	✓ HCBNR/L 2020 K0904	20	20	125	23	18.5	CN... 0904...
	2525 M0904	25	25	150	23	23.5	
	* HCBNR/L 2525 M1205	25	25	150	28	22	CNMX 1205...
	3232 M1205	32	32	150	28	27	
	2525 M1607	25	25	150	32	22	CNMX 1607...
	3232 P1607	32	32	170	32	27	

✓Marked: For RHINORUSH insert \*Marked: For TURNRUSH insert

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Shim pin punch	Wrench	
...0904	LCL 09-NX	LCS 3	LSC 32A	-	LSP 3A	-	L-W 2.5
...1205	LCL 12-NX	LCS 5	-	LSC 43-NX	LSP 4	SPP 3-4	L-W 3
...1607	LCL 16-NX	LCS 5-L25.5	-	LSC 54-NX	LSP 5	SPP 5-6	L-W 3

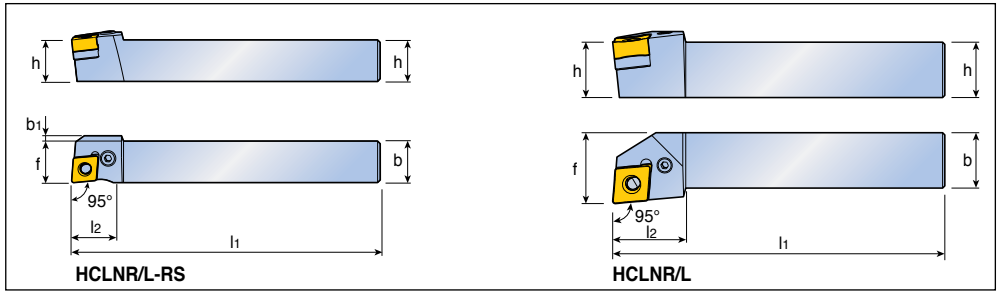


TA4-TA10

TA42-TA58



## Hook lever type

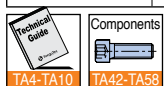


Approach angle	Designation	Dimension (mm)							Insert
		h	b	b1	l1	l2	f		
95°	✓ HCLNR 1212 K0904-RS	12	16	2	125	18	12	CN... 0904...	
	✓ HCLNR/L 1616 K0904-RS	16	16	-	125	20	16		
95°	✓ HCLNR/L 1616 H0904	16	16	-	100	22	20	CN... 0904...	
	2020 H0904	20	20	-	100	22	25		
	2020 K0904	20	20	-	125	22	25		
	2525 M0904	25	25	-	150	22	32		
	* HCLNR/L 2525 M1205	25	25	-	150	25	32	CNMX 1205...	
	3232 P1205	32	32	-	170	-	40		
	2525 M1607	25	25	-	150	-	32	CNMX 1607...	
	3232 P1607	32	32	-	170	-	40		

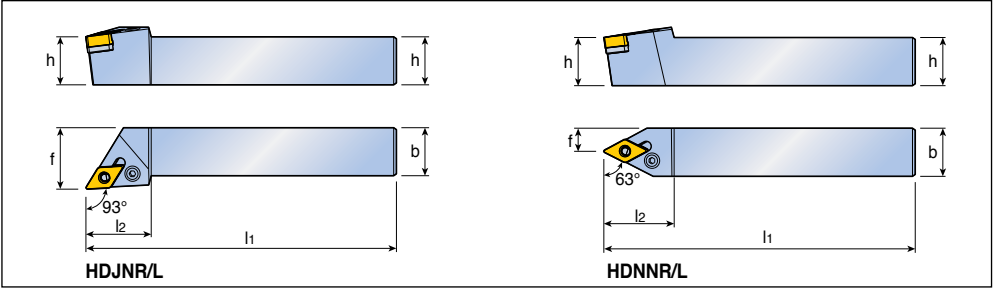
✓ Marked: For RHINORUSH insert \*Marked: For TURNRUSH insert

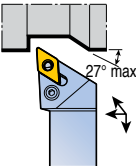

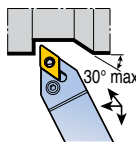
## Spare parts

Designation	Lever	Screw	Shim		Shim pin	Shim pin punch	Wrench
...1212...0904	LCL 09B-NX	LCS 3	LSC 32A	-	LSP 3A	-	L-W 2.5
...0904	LCL 09-NX	LCS 3	LSC 32A	-	LSP 3A	-	L-W 2.5
...1205	LCL 12-NX	LCS 5	-	LSC 43-NX	LSP 4	SPP 3-4	L-W 3
...1607	LCL 16-NX	LCS 5-L25.5	-	LSC 54-NX	LSP 5	SPP 5-6	L-W 3



## Hook lever type



Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
<b>93°</b> 	✓ <b>HDJNR/L 2020 H1305</b>	20	20	100	34	25	DN... 1305...  A221-A225	
	<b>2020 K1305</b>	20	20	125	34	25		
	<b>2525 M1305</b>	25	25	150	34	32		
<b>63°</b> 	✓ <b>HDNNR/L 2020 K1305</b>	20	20	125	36.5	10		
	<b>2525 M1305</b>	25	25	150	36.5	12		

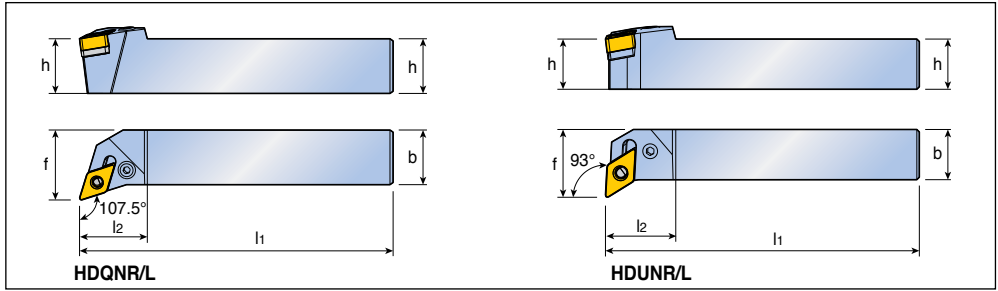
✓ Marked: For RHINORUSH insert

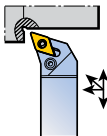

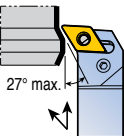
## Spare parts

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



## Hook lever type

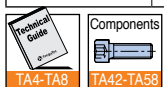


Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>107.5°</b> 	✓ HDQNR/L 2020 K1305	20	20	125	31	25	DNMG 1305...  A221-A225
	2525 M1305	25	25	150	31	32	
<b>93°</b> 	✓ HDUNR/L 2020 K1305	20	20	125	28	27	

✓ Marked: For RHINORUSH insert

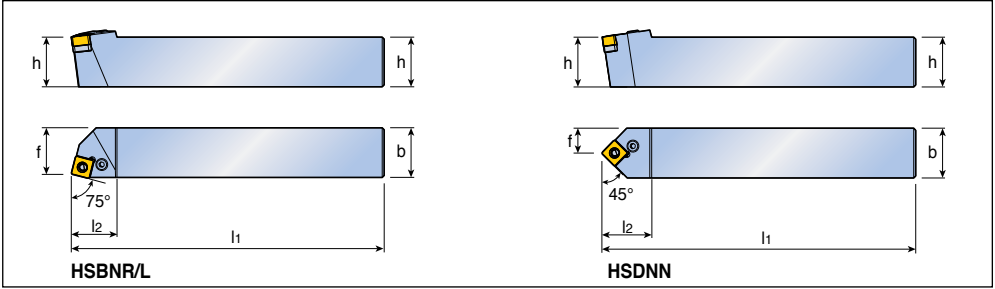
## Spare parts

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





## Hook lever type

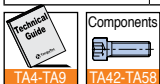


Approach angle	Designation	Dimension (mm)					Insert
		h	b	l1	l2	f	
<b>75°</b> 	✓ HSBNR/L <b>2020 K0904</b>	20	20	125	23	18.5	SNMG 0904... A228-A234
	<b>2525 M0904</b>	25	25	150	23	23.5	
	* HSBNR/L <b>2525 M1507</b>	25	25	150	-	22	SNMX 1507...
	<b>3232 P1507</b>	32	32	170	-	27	
<b>45°</b> 	✓ HSDNN <b>2020 K0904</b>	20	20	125	25	10	SNMG 0904...
	<b>2525 M0904</b>	25	25	150	25	12.5	
	* HSDNN <b>2525 M1507</b>	25	25	150	-	12.5	SNMX 1507...
	<b>3232 P1507</b>	32	32	170	-	16	

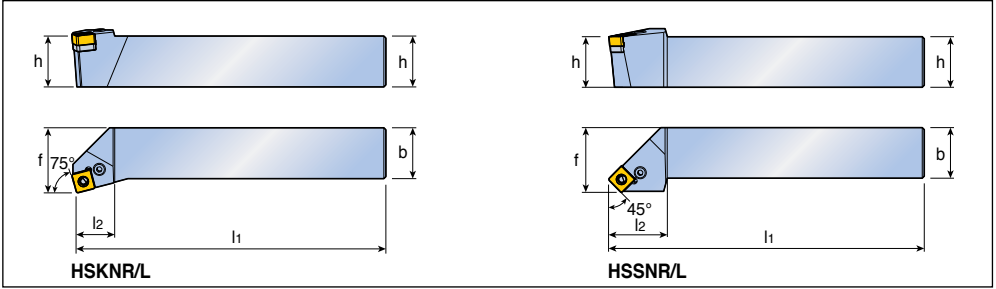
✓ Marked: For RHINORUSH insert \*Marked: For TURNRUSH insert

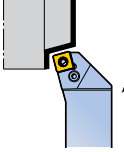
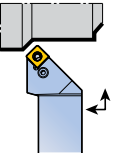
## Spare parts

Designation	Lever	Screw	Shim		Shim Ppin	Shim pin punch	Wrench	
...0904	LCL 09-NX	LCS 3	LSS 32A	LSP 3A	LSP 3A	-	L-W 2.5	
...1507	LCL 16-NX	LCS 5-L25.5	-	LSS 54-NX	LSP 5	SPP 5-6	L-W 3	



## Hook lever type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>75°</b> 	✓ HSKNR/L <b>2020 K0904</b>	20	20	125	19	25	SNMG 0904... A228-A234
	2525 M0904	25	25	150	19	32	
	* HSKNR/L <b>2525 M1507</b>	25	25	150	-	32	SNMX 1507...
	3232 P1507	32	32	170	-	40	
<b>45°</b> 	✓ HSSNR/L <b>2020 K0904</b>	20	20	125	21.5	25	SNMG 0904...
	2525 M0904	25	25	150	29	32	

✓ Marked: For RHINORUSH insert \*Marked: For TURNRUSH insert

## Spare parts

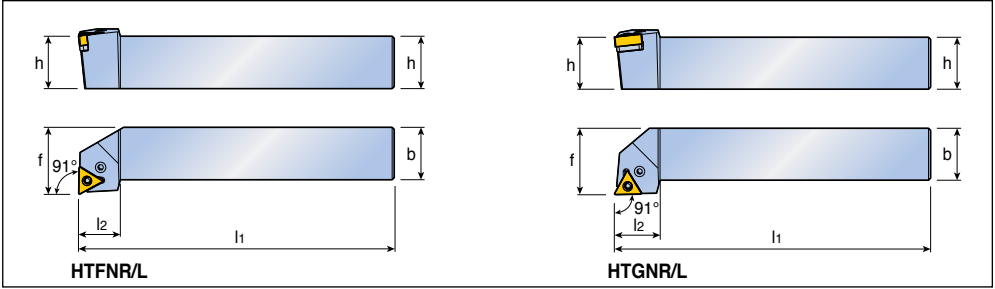
Designation	Lever	Screw	Shim	Shim pin	Shim pin punch	Wrench	
...0904	LCL 09-NX	LCS 3	LSS 32A	-	LSP 3A	-	L-W 2.5
...1507	LCL 16-NX	LCS 5-L25.5	-	LSS 54-NX	LSP 5	SPP 5-6	L-W 3



TA4-TA9

TA42-TA58

## Hook lever type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
91° 	✓ HTFNR/L <b>2020 K1304</b>	20	20	125	20	25	TNMG 1304...  A235-A240
	<b>2525 M1304</b>	25	25	150	20	32	
91° 	✓ HTGNR/L <b>1616 H1304</b>	16	16	100	22	20	
	<b>2020 H1304</b>	20	20	100	22	25	
	<b>2020 K1304</b>	20	20	125	22	25	
	<b>2525 M1304</b>	25	25	150	22	32	

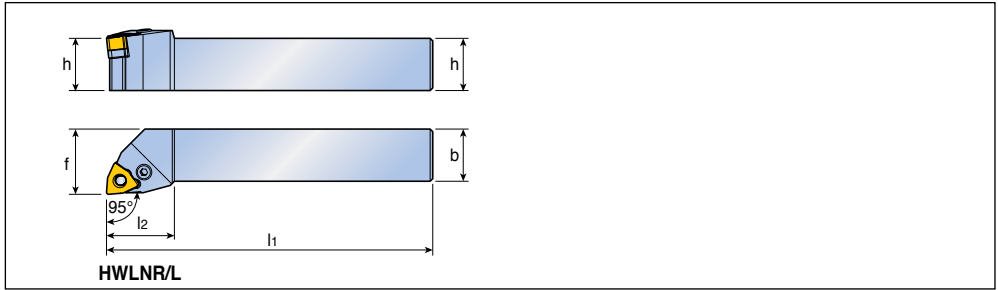
✓ Marked: For RHINORUSH insert

## Spare parts

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



## Hook lever type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
95° 	✓ <b>HWLNLR/L 1616 H0604</b>	16	16	100	26	20	WNMXX 0604... A245-A246
	<b>2020 K0604</b>	20	20	125	26	25	
	<b>2525 M0604</b>	25	25	150	26	32	

✓ Marked: For RHINORUSH insert

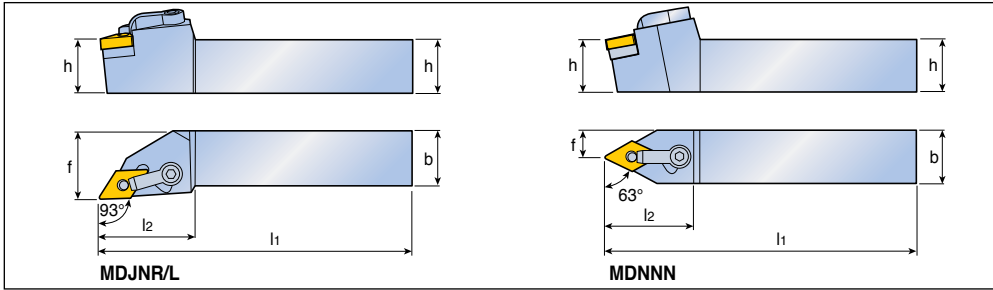
## Spare parts

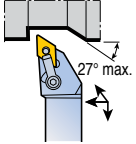
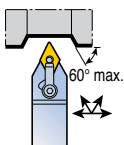
Designation	Lever	Screw	Shim	Shim pin	Wrench		
<b>...0604</b>	LCL 09-NX	LCS 3	LSW 32A	LSP 3A	L-W 2.5		

Technical Guide  
TA4-TA8






Components  
TA42-TA58

## Multi lock type



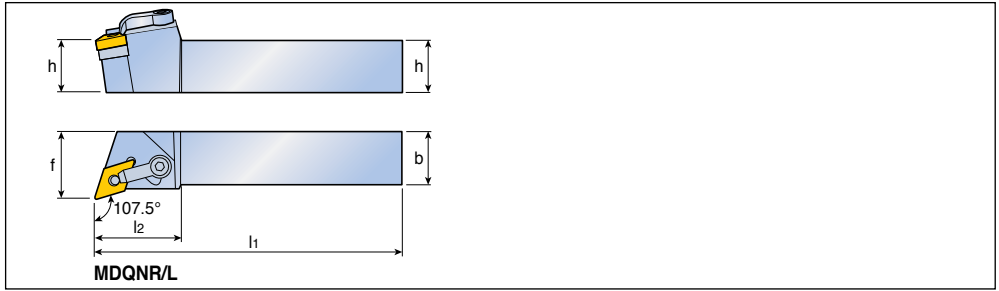
Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
<b>93°</b> 	<b>MDJNR/L</b>	<b>2020 K15</b>	20	20	125	45	25	DN... 1504...
		<b>2525 M15</b>	25	25	150	45	32	
		<b>2020 K15A</b>	20	20	125	45	25	DN... 1506...
		<b>2525 M15A</b>	25	25	150	45	32	
		<b>3232 P15A</b>	32	32	170	45	40	
<b>63°</b> 	<b>MDNNN</b>	<b>2525 M15</b>	25	25	150	45	12.5	DN... 1504...
		<b>3225 P15</b>	32	25	170	45	12.5	
		<b>2525 M15A</b>	25	25	150	45	12.5	DN... 1506...

## Spare parts

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



## Multi lock type



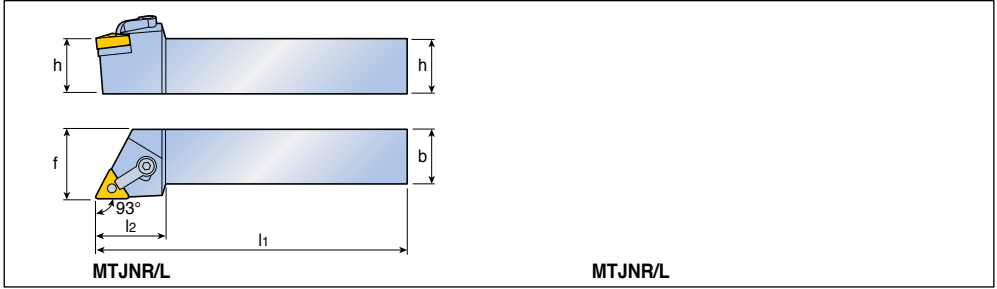
Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>107.5°</b> 	<b>MDQNR/L 2020 K15</b>	20	20	125	40	25	DN... 1504...
	<b>2525 M15</b>	25	25	150	40	32	A221-A225
	<b>2525 M15A</b>	25	25	150	40	32	DN... 1506...

## 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



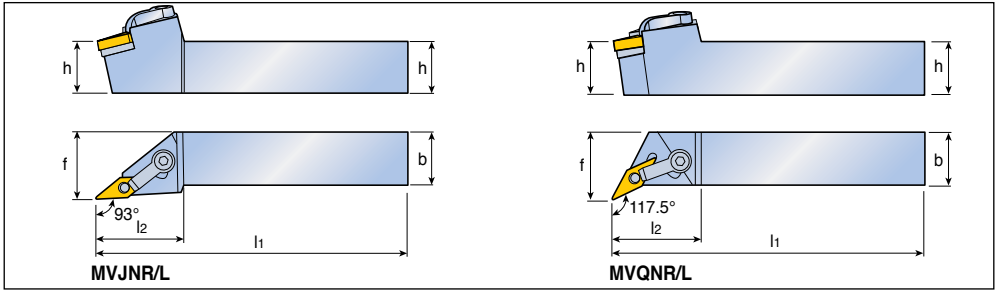
Approach angle	Designation	Dimension (mm)					Insert
		h	b	l1	l2	f	
93°	<b>MTJNR/L 2020 K16</b>	20	20	125	28	25	TN...1603...
	<b>2525 M16</b>	25	25	150	28	32	A235-A240
	<b>2525 M1604</b>	25	25	150	28	32	TN...1604...

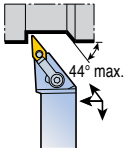

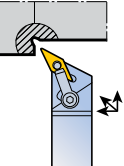
## Spare parts

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








## Multi lock type



Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
<b>93°</b> 	<b>MVJNR/L</b>	<b>2020 K16</b>	20	20	125	42	25	VN... 1604...  A241-A242
	<b>2525 M16</b>	25	25	150	42	32		
	<b>3225 P16</b>	32	25	170	42	32		
	<b>3232 P16</b>	32	32	170	42	40		
<b>117.5°</b> 	<b>MVQNR/L</b>	<b>2020 K16</b>	20	20	125	42	25	VN... 1604...
	<b>2525 M16</b>	25	25	150	42	32		
	<b>3232 P16</b>	32	32	170	42	40		

## Spare parts

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

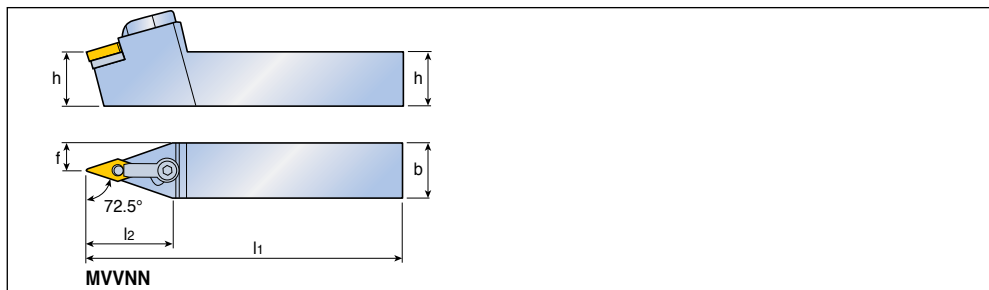
Components



TA42-TA58



## Multi lock type



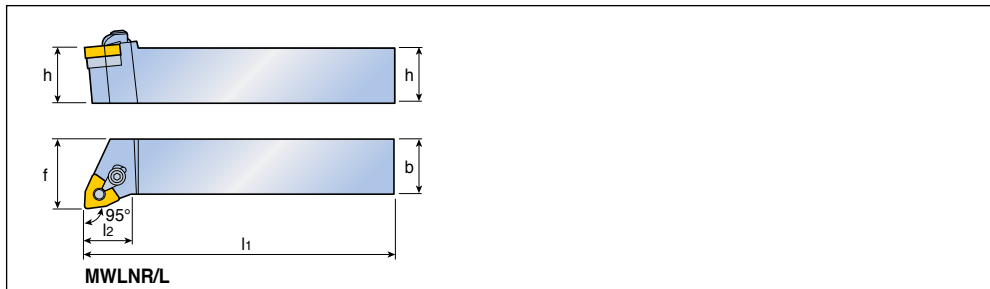
Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>72.5°</b>	<b>MVVNN 2020 K16</b>	20	20	125	46	10.0	VN... 1604...  A241-A242
	<b>2525 M16</b>	25	25	150	46	12.5	

### Spare parts

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



## Multi lock type



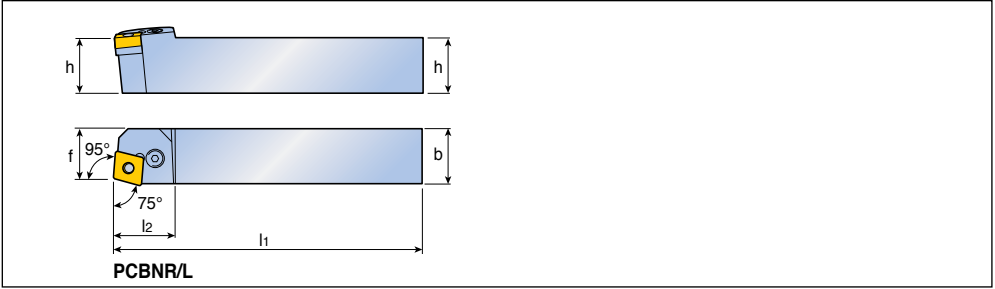
Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
95°	<b>MWLNLR/L 1616 H06</b>	16	16	100	19.4	16	WN...0604...
	<b>2020 K08</b>	20	20	125	25	25	WN...0804...
	<b>2525 M08</b>	25	25	150	25	32	

## Spare parts

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



## Lever lock type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
75°	<b>PCBNR/L 2020 K12</b>	20	20	125	28	17.5	CN... 1204...  A212-A220
	<b>2525 M12</b>	25	25	150	28	22.5	
	<b>3225 P12</b>	32	25	170	28	22.5	
	<b>2525 M16</b>	25	25	150	32	22	CN... 1606...
	<b>3232 P16</b>	32	32	170	32	27	
	<b>3232 P1906D</b>	32	32	170	37	27	CN... 1906...
	<b>4040 S1906D</b>	40	40	250	37	37	
	<b>4040 S2509D</b>	40	40	250	50	37	CN... 2509...
	<b>5050 T2509D</b>	50	50	300	50	47	

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

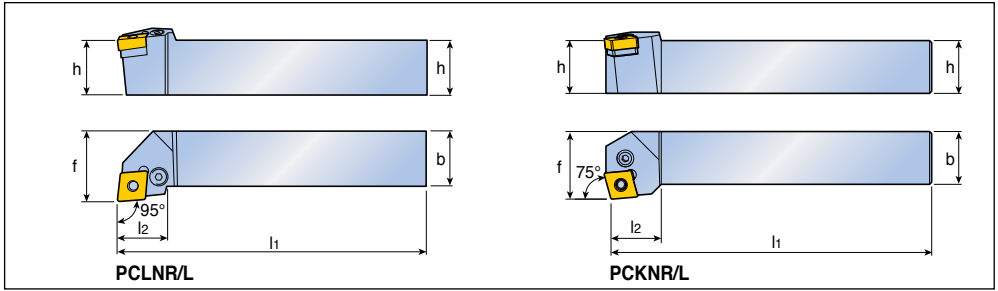
## Spare parts

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

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



## Lever lock type



Approach angle	Designation	Dimension (mm)					Insert		
		h	b	l <sub>1</sub>	l <sub>2</sub>	f			
	<b>PCLNR/L</b>	<b>1616 H12</b>	16	16	100	27	20	CN... 1204...  A212-A220	
		<b>2020 K12</b>	20	20	125	27	25		
		<b>2525 M12</b>	25	25	150	27	32		
		<b>3225 P12</b>	32	25	170	27	32		
		<b>3232 P12</b>	32	32	170	27	40		
		<b>2525 M16</b>	25	25	150	33	32		CN... 1606...
		<b>3225 P16</b>	32	25	170	33	32		
		<b>3232 P16</b>	32	32	170	33	40		CN... 1906...
		<b>2525 M1906D</b>	25	25	150	38	32		
		<b>3225 P1906D</b>	32	25	170	38	32		
		<b>3232 P1906D</b>	32	32	170	38	40		
				<b>4040 S1906D</b>	40	40	250		38
<b>4040 S2509D</b>	40			40	250	47	50		
<b>5050 T2509D</b>	50			50	300	47	60		
	<b>PCKNR/L</b>	<b>2020 K12</b>	20	20	125	27	25	CN... 1204...	
		<b>2525 M12</b>	25	25	150	24	32		

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

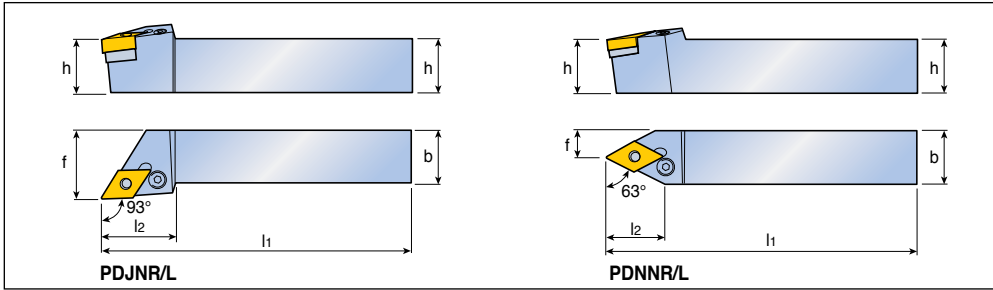
## Spare parts

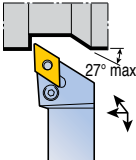

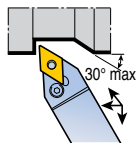
Designation	Lever	Screw	Shim	Shim pin	Wrench			
<b>1616...12</b>	LCL 4	LCS 4S	LSC 42	LSP 4	L-W 3			
<b>...12</b>	LCL 4	LCS 4	LSC 42	LSP 4	L-W 3			
<b>...16</b>	LCL 5	LCS 5	LSC 53	LSP 5	L-W 3			
<b>...1906</b>	LCL 6D	LCS 25C	LSC 64D	LSP 6	L-W 4			
<b>...2509</b>	LCL 8	LCS 8	LSC 84D	LSP 8	L-W 5			

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








## Lever lock type



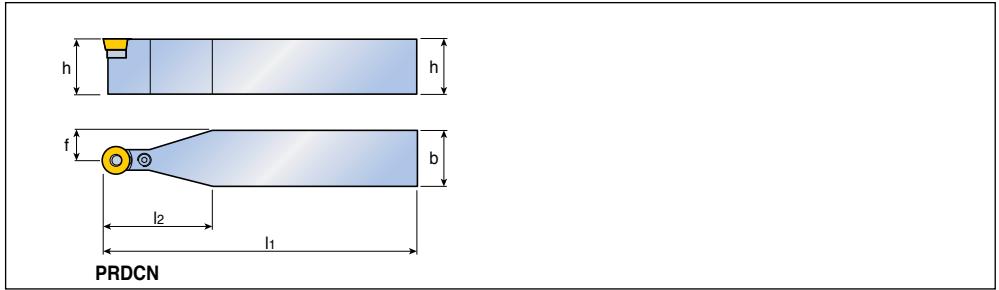
Approach angle	Designation	Dimension (mm)					Insert		
		h	b	l1	l2	f			
<b>93°</b> 	<b>PDJNR/L</b>	<b>1616 H11</b>	16	16	100	30	20	DN... 1104...  A221-A225	
		<b>2020 K11</b>	20	20	125	30	25		
		<b>2525 M11</b>	25	25	150	30	32		
		<b>2020 K15</b>	20	20	125	34	25		DN... 1506...
		<b>2525 M15</b>	25	25	150	34	32		
		<b>3225 P15</b>	32	25	170	34	32		DN... 1504...
		<b>3232 P15</b>	32	32	170	34	40		
		<b>2020 K15A</b>	20	20	125	34	25		
		<b>2525 M15A</b>	25	25	150	34	32		
		<b>63°</b> 	<b>PDNNR/L</b>	<b>2020 K15</b>	20	20	125		36.5
<b>2525 M15</b>	25			25	150	36.5	12		
<b>3232 P15</b>	32			32	170	36.5	16.8		

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
								
<b>...11</b>	LCL 12C	LCS 3	LSD 32	LSP 3A	L-W 2.5			
<b>...15</b>	LCL 4A	LCS 4	LSD 42	LSP 4	L-W 3			
<b>...15A</b>	LCL 4A	LCS 4	LSD 42	LSP 4	L-W 3			



## Lever lock type



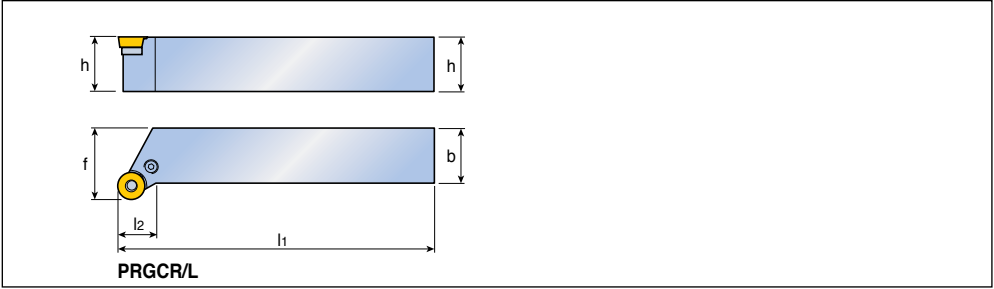
Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
<b>45°</b> 	<b>PRDCN</b>							
	<b>2020 M10</b>	20	20	150	50	10.0		RC...X 100300
	<b>2525 M10</b>	25	25	150	50	12.5		
	<b>2020 K12</b>	20	20	125	50	10.0		RC...X 120400
	<b>2525 M12</b>	25	25	150	50	12.5		
	<b>3225 Q12</b>	32	25	180	50	12.5		
	<b>2525 Q16</b>	25	25	180	50	12.5		RC...X 160600
	<b>3225 Q16</b>	32	25	180	50	12.5		
	<b>3232 Q16</b>	32	32	180	50	16.0		
	<b>3232 S20</b>	32	32	250	60	16.0		RC...X 200600
	<b>4040 S20</b>	40	40	250	70	20.0		
	<b>4040 S25</b>	40	40	250	80	20.0		RC...X 250700
	<b>4040 T25</b>	40	40	300	80	20.0		
<b>5050 U32</b>	50	50	350	90	25.0		RC...X 320900	

## 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



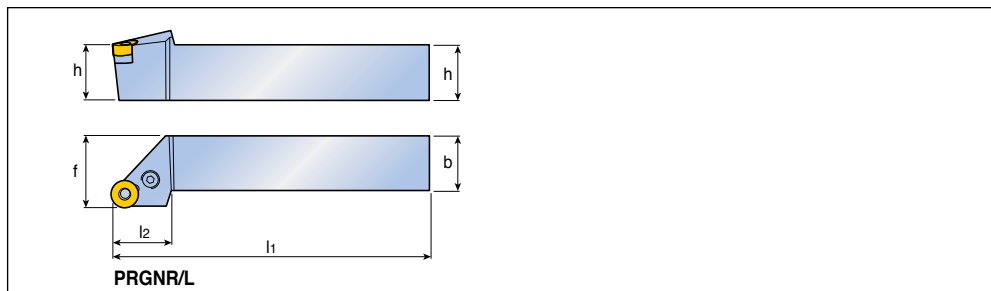
Approach angle	Designation	Dimension (mm)					Insert		
		h	b	l <sub>1</sub>	l <sub>2</sub>	f			
<p>27° max.</p>	<b>PRGCR/L</b>	<b>2020 K10</b>	20	20	125	14.5	25	RC...X 100300	
		<b>2525 M10</b>	25	25	150	17.5	32		
		<b>3225 P10</b>	32	25	170	17	32		
		<b>2020 K12</b>	20	20	125	18	25	RC...X 120400	
		<b>2525 M12</b>	25	25	150	18	32		
		<b>3225 P12</b>	32	25	170	18	32		
		<b>2525 M16</b>	25	25	150	23	32	RC...X 160600	
		<b>3225 P16</b>	32	25	170	23	32		
		<b>3232 P16</b>	32	32	170	23	40		
		<b>4040 P16</b>	40	40	170	23	50	RC...X 200600	
		<b>3232 P20</b>	32	32	170	27.5	40		
		<b>4040 S25</b>	40	40	250	33.5	50		
		<b>4040 S32</b>	40	40	250	41	50	RC...X 320900	

## Spare parts

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



## Lever lock type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>90°</b> 	<b>PRGNR/L 2020 K09</b>	20	20	125	22	25	RNMG 090300
	<b>2525 M12</b>	25	25	150	28	32	RNMG 120400
	<b>3225 P15</b>	32	25	170	35	32	RNMG 150600
	<b>3232 P19</b>	32	32	170	38	40	RNMG 190600

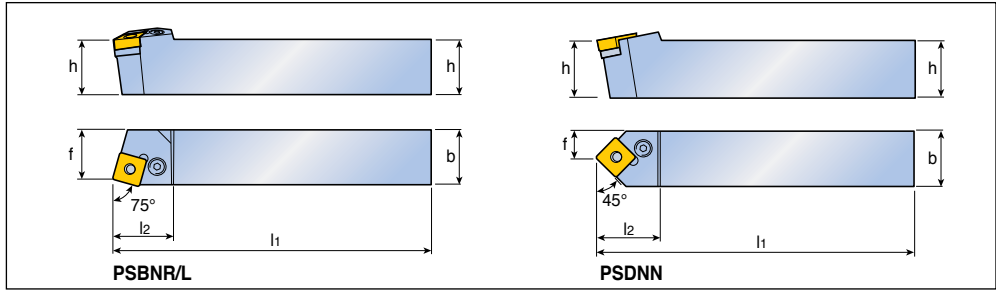
## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench			
<b>...09</b>	LCL 3	LCS 3	LSR 32	LSP 3A	L-W 2.5			
<b>...12</b>	LCL 4	LCS 4	LSR 42	LSP 4	L-W 3			
<b>...15</b>	LCL 5	LCS 5	LSR 53	LSP 5	L-W 3			
<b>...19</b>	LCL 6D	LCS 6	LSR 63	LSP 6	L-W 4			





## Lever lock type



Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l1	l2	f		
<b>75°</b> 	<b>PSBNR/L</b>	<b>2020 K12</b>	20	20	125	28	17	SN... 1204... A228-A234
	<b>2525 M12</b>	25	25	150	28	22		
	<b>3225 P12</b>	32	25	170	28	22		
	<b>2525 M15</b>	25	25	150	34	22	SN... 1506...	
	<b>3232 P1906D</b>	32	32	170	39	27	SN... 1906...	
	<b>4040 S1906D</b>	40	40	250	39	35		
	<b>4040 S2509D</b>	40	40	250	48	35	SN... 2509...	
	<b>5050 T2509D</b>	50	50	300	48	43		
<b>45°</b> 	<b>PSDNN</b>	<b>2020 K12</b>	20	20	125	28	10.0	SN... 1204...
	<b>2525 M12</b>	25	25	150	28	12.5		
	<b>3225 P12</b>	32	25	170	28	12.5		
	<b>2020 K15</b>	20	20	125	34	10.0	SN... 1506...	
	<b>2525 M15</b>	25	25	150	34	12.5		
	<b>3225 P1906D</b>	32	25	170	40.5	12.5	SN... 1906...	
	<b>3232 P1906D</b>	32	32	170	40.5	16.0		
	<b>4040 S1906D</b>	40	40	250	40.5	20.0		
	<b>5050 S1906D</b>	50	50	250	40.5	25.0		
	<b>4040 S2509D</b>	40	40	250	49	20.0	SN... 2509...	
	<b>5050 T2509D</b>	50	50	300	49	25.0		

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

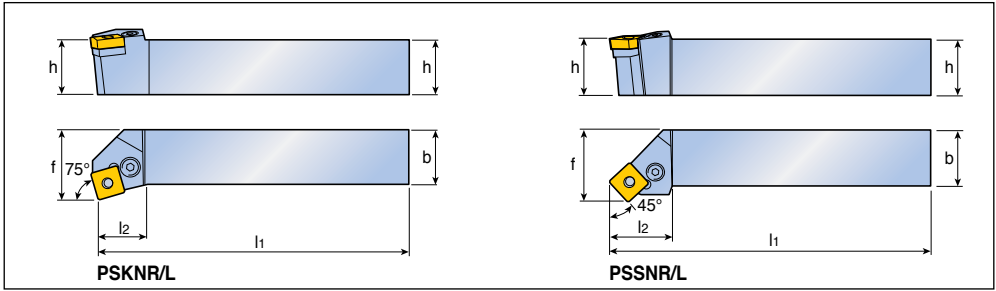
## Spare parts

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

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



## Lever lock type



Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
	<b>PSKNR/L</b>	<b>2020 K12</b>	20	20	125	25	25	SN... 1204...
		<b>2525 M12</b>	25	25	150	25	32	SN... 1506...
		<b>2525 M15</b>	25	25	150	32	32	
		<b>3232 P15</b>	32	32	170	32	40	SN... 1906...
		<b>3232 P1906D</b>	32	32	170	38	40	
		<b>4040 S1906D</b>	40	40	250	38	50	SN... 2509...
		<b>4040 S2509D</b>	40	40	250	42	50	
		<b>5050 T2509D</b>	50	50	300	42	60	
	<b>PSSNR/L</b>	<b>2020 K12</b>	20	20	125	30	25	SN... 1204...
		<b>2525 K12</b>	25	25	125	30	32	SN... 1506...
		<b>2525 M12</b>	25	25	150	30	32	
		<b>3225 P12</b>	32	25	170	30	32	SN... 1906...
		<b>3232 P12</b>	32	32	170	32	40	
		<b>3232 P15</b>	32	32	170	37	40	SN... 1506...
		<b>3232 P1906D</b>	32	32	170	42	40	SN... 1906...
		<b>4040 S1906D</b>	40	40	250	42	50	SN... 2509...
<b>4040 S2509D</b>	40	40	250	53	50			

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

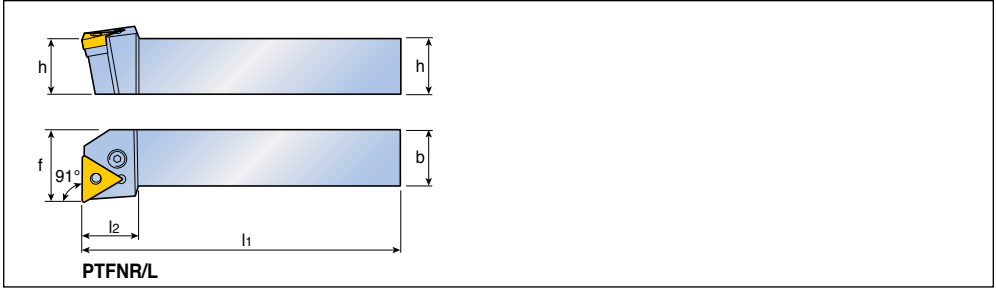
## Spare parts

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

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



## Lever lock type



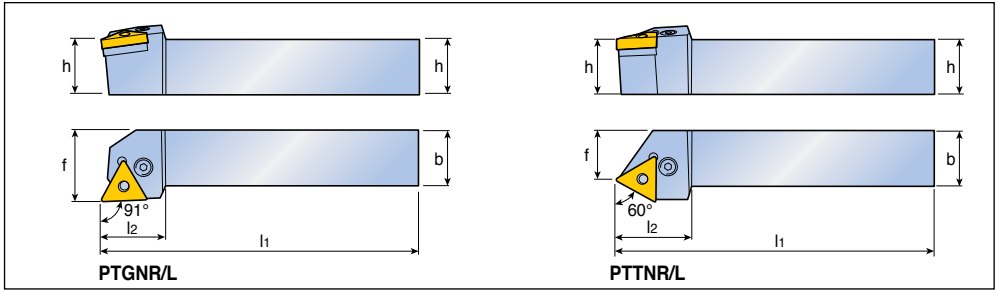
Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
	<b>PTFNR/L</b> <b>1616 H16</b> <b>2020 K16</b> <b>2525 M16</b> <b>2525 M22</b> <b>3232 P22</b> <b>4040 S27</b>	16	16	100	20	20	TN... 1604...	
		20	20	125	20	25		 <b>A235-A240</b>
		25	25	150	20	32	TN... 2204...	
		25	25	150	25	32		
		32	32	170	25	40	TN... 2706...	
		40	40	250	33	50		

### Spare parts

Designation	Lever	Screw	Shim	Shim pin	Wrench		
...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		
...27	LCL 5	LCS 5	LST 53	LSP 5	L-W 3		



## Lever lock type



Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
<b>91°</b> 	<b>PTGNR/L</b>	<b>1010 E11</b>	10	10	70	15	12	TN... 1103...  A235-A240
		<b>1212 F11</b>	12	12	80	15	16	
		<b>2525 M11</b>	25	25	150	30	32	
		<b>1616 H16</b>	16	16	100	22	20	TN... 1604...
		<b>2020 K16</b>	20	20	125	22	25	
		<b>2525 M16</b>	25	25	150	22	32	
		<b>3225 P16</b>	32	25	170	22	32	
		<b>3232 P16</b>	32	32	170	22	40	TN... 2204...
		<b>2525 M22</b>	25	25	150	29	32	
		<b>3225 P22</b>	32	25	170	29	32	
		<b>3232 P22</b>	32	32	170	29	40	
<b>60°</b> 	<b>PTTNR/L</b>	<b>4040 S27</b>	40	40	250	35	50	TN... 2706...
		<b>1616 H16</b>	16	16	100	24	13	TN... 1604...
		<b>2020 K16</b>	20	20	125	24	17	
		<b>2525 M16</b>	25	25	150	24	22	
		<b>2525 M22</b>	25	25	150	34	22	TN... 2204...

## Spare parts

Designation	Lever	Screw	Shim	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		
...27	LCL 5	LCS 5	LST 53	LSP 5	L-W 4		

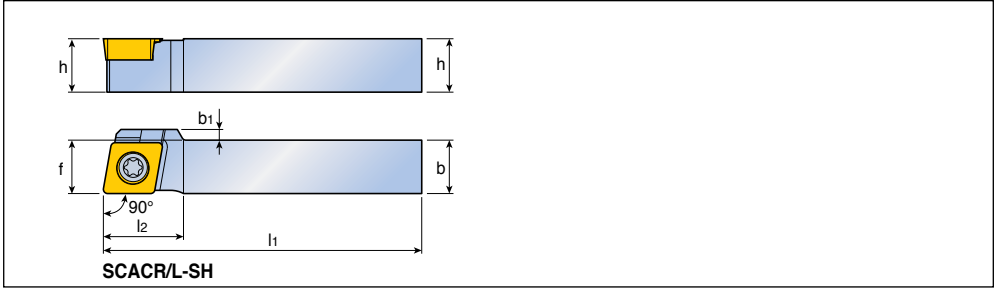
Components

• \*LSR 2B is snap ring



TA42-TA58

## Screw type



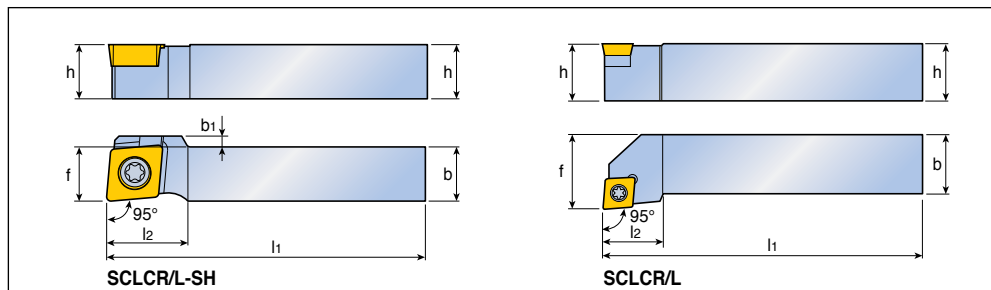
Approach angle	Designation	Dimension (mm)						Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	b <sub>1</sub>		
90°	SCACR/L	<b>0808 K06-SH</b>	8	8	125	8	8	-	CC...T 0602... A247-A248
	<b>1010 K06-SH</b>	10	10	125	10	10	-		
	<b>1010 K09-SH</b>	10	10	125	15	10	2		
	<b>1212 K09-SH</b>	12	12	125	15	12	-		
	<b>1616 K09-SH</b>	16	16	125	16	16	-		

## Spare parts

Designation	Screw	Wrench					
	...06	SO 250651	T 7				
...09	SO 350801	T 15					



## Screw type



Approach angle	Designation	Dimension (mm)						Insert	
		h	b	l1	l2	f	b1		
	<b>SCLCR/L</b>	<b>0808 K06-SH</b>	8	8	125	8	8	-	CC...T 0602... A247-A248
		<b>1010 K06-SH</b>	10	10	125	10	10	-	
		<b>1010 K09-SH</b>	10	10	125	15	10	2	
		<b>1212 K09-SH</b>	12	12	125	15	12	-	
		<b>1616 K09-SH</b>	16	16	125	16	16	-	
	<b>SCLCR/L</b>	<b>0808 F06</b>	8	8	80	10	10	-	CC...T 0602...
		<b>1010 F06</b>	10	10	80	10	12	-	CC...T 09T3...
		<b>1212 F09</b>	12	12	80	16	16	-	
		<b>1616 H09</b>	16	16	100	16	20	-	
		<b>2020 K09</b>	20	20	125	20	25	-	
		<b>2525 M09</b>	25	25	150	20	32	-	
		<b>2020 K12</b>	20	20	125	25	25	-	CC...T 1204...
		<b>2525 M12</b>	25	25	150	26	32	-	

## Spare parts

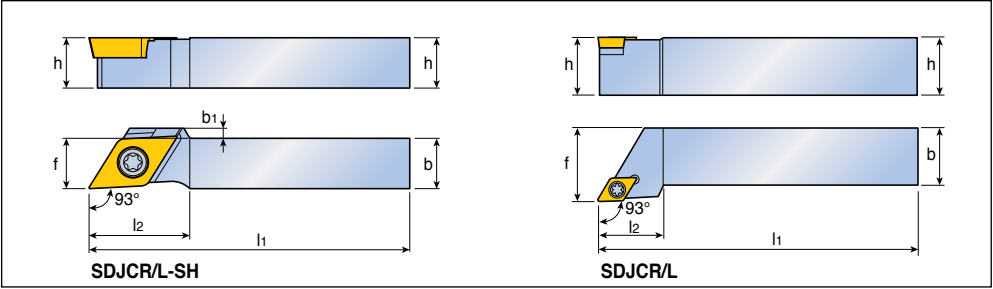
Designation	Screw	Shim	Shim screw	Wrench			
...06	SO 25065I	-	-	T 7			
...09-SH	SO 35080I	-	-	T 15			
...F09	SO 35080I	-	-	T 15			
...09	SO 35124I	SSC 32	SO 50090S	T 15			
...12	SO 45130I	SSC 43N	SO 60105S	T 20			

Components



TA42-TA58

## Screw type



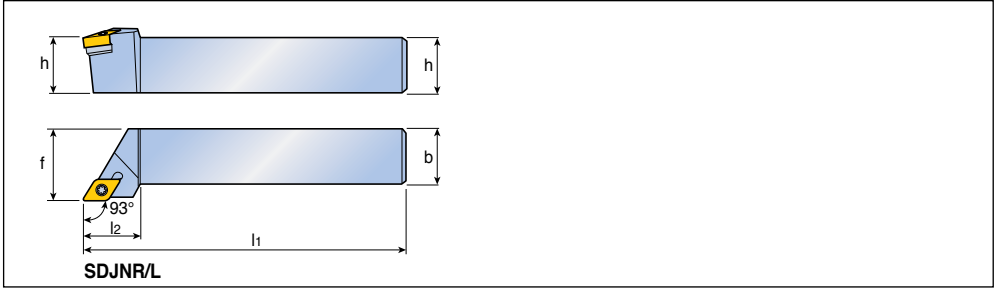
Approach angle	Designation	Dimension (mm)						Insert		
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	b <sub>1</sub>			
<b>93°</b> 	<b>SDJCR/L</b>	<b>0808 K07-SH</b>	8	8	125	12.7	8	-	DC...T 0702... 	
		<b>1010 K07-SH</b>	10	10	125	15	10	-		
		<b>1010 K11-SH</b>	10	10	125	20	10	2		DC...T 11T3...
		<b>1212 K11-SH</b>	12	12	125	20	12	-		
		<b>1616 K11-SH</b>	16	16	125	20	16	-		
<b>93°</b> 	<b>SDJCR/L</b>	<b>0808 E07</b>	8	8	70	13	10	-	DC...T 0702...	
		<b>1212 F07</b>	12	12	80	15	16	-		
		<b>1616 H07</b>	16	16	100	15	20	-		
		<b>2020 K07</b>	20	20	125	20	25	-		
		<b>1616 H11</b>	16	16	100	24	20	-	DC...T 11T3...	
		<b>2020 K11</b>	20	20	125	24	25	-		
		<b>2525 M11</b>	25	25	150	28	32	-		

## Spare parts

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



## Screw type



Approach angle	Designation	Dimension (mm)						Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	b <sub>1</sub>	
<b>93°</b>	<b>SDJNR/L 1616 H11</b>	16	16	100	25	20	-	DN... 1104... A221-A225
	<b>2020 K11</b>	20	20	125	25	25	-	
	<b>2525 M11</b>	25	25	150	25	32	-	

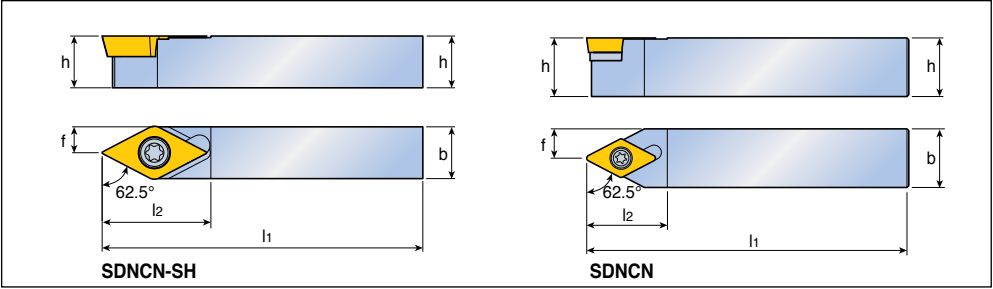
## Spare parts

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





## Screw type



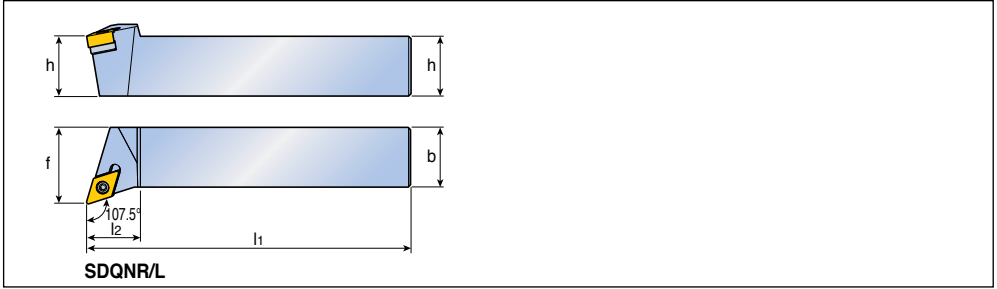
Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
<b>62.5°</b> 	<b>SDNCN-SH</b>	<b>0808 K07-SH</b>	8	8	125	15	4	DC...T 0702... A250-A251
		<b>1010 K07-SH</b>	10	10	125	15	5	
		<b>1010 K11-SH</b>	10	10	125	22	5	
		<b>1212 K11-SH</b>	12	12	125	22	6	
		<b>1616 K11-SH</b>	16	16	125	22	8	
<b>62.5°</b> 	<b>SDNCN</b>	<b>0808 F07</b>	8	8	80	15	4	DC...T 0702... DC...T 11T3...
		<b>1010 F07</b>	10	10	80	15	5	
		<b>1616 H11</b>	16	16	100	22	8	
		<b>2525 M11</b>	25	25	150	22	12.5	

## Spare parts

Designation	Screw	Shim	Shim screw	Wrench			
...07	SO 25065I	-	-	T 7			
...11-SH	SO 35080I	-	-	T 7			
...11	SO 35080I	SSD 32	SO 50090S	T 15			



## Screw type



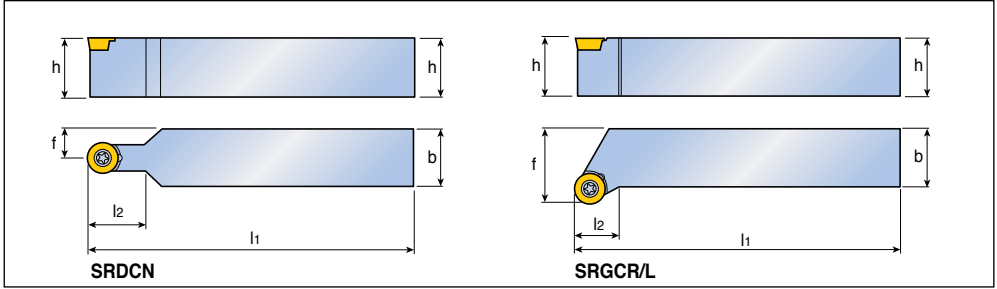
Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>107.5°</b>	<b>SDQNR/L 1616 H11</b>	16	16	100	22	20	DN... 1104... A221-A225
	<b>2020 K11</b>	20	20	125	22	25	
	<b>2525 M11</b>	25	25	150	22	32	

## Spare parts

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



## Screw type



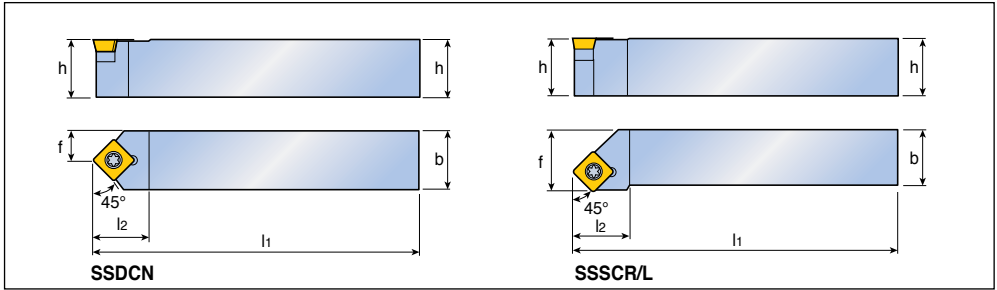
Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
<b>45°</b> 	<b>SRDCN</b>	<b>1616 H10</b>	16	16	100	17.2	8	RC...T 10T3... A252
		<b>2020 K10</b>	20	20	125	22.5	10	
		<b>2525 M10</b>	25	25	150	27.5	12.5	
		<b>2525 M12</b>	25	25	150	27.5	12.5	
<b>90°</b> 	<b>SRGCR/L</b>	<b>1616 H10</b>	16	16	100	16.7	20	RC...T 10T3...
		<b>2020 K10</b>	20	20	125	15	25	
		<b>2525 M10</b>	25	25	150	15	32	

## Spare parts

Designation	Screw	Wrench					
	...10	TS 400971	T 15				
...12	TS 400501	T 15					



## Screw type



Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
<b>45°</b> 	<b>SSDCN</b> <b>1212 F09</b> <b>1616 H09</b>	12	12	80	15.5	6	SC...T 09T3...  A253	
		16	16	100	15.5	8		
<b>45°</b> 	<b>SSSCR/L</b> <b>1212 F09</b> <b>1616 H09</b> <b>2020 K12</b> <b>2525 M12</b>	12	12	80	15.5	14	SC...T 09T3... SC...T 1204...	
		16	16	100	15.5	17		
		20	20	125	24	22		
		25	25	150	24	27		

## Spare parts

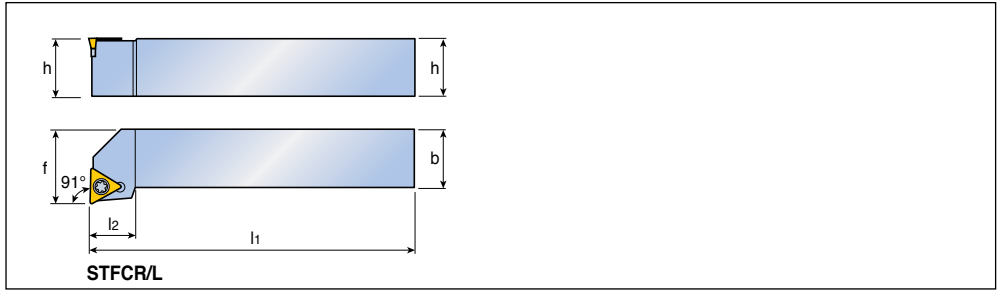
Designation	Screw	Shim	Shim screw	Wrench			
...F09	SO 35080I	-	-	T 15			
...H09	SO 35124I	SSS 32	SO 50090S	T 15			
...12	SO 45130I	SSS 43N	SO 60105S	T 20			

Components



TA42-TA58

## Screw type



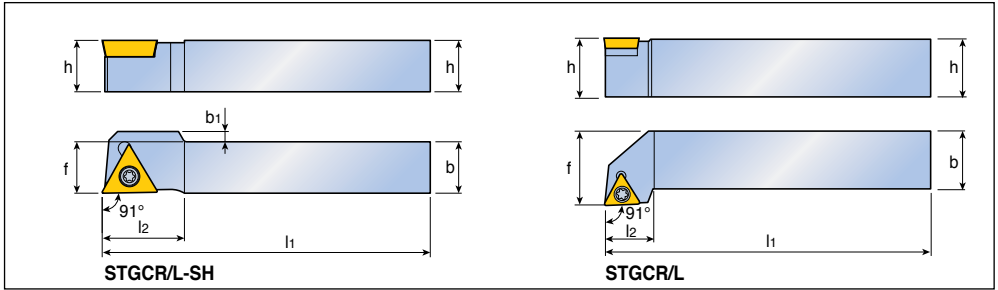
Approach angle	Designation		Dimension (mm)					Insert
			h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>91°</b>	<b>STFCR/L</b>	<b>1212 F11</b>	12	12	80	14	16	TC...T 1102...
		<b>1616 H11</b>	16	16	100	14	20	
		<b>1616 H16</b>	16	16	100	19	20	TC...T 16T3...
		<b>2020 K16</b>	20	20	125	19	25	
		<b>2525 M16</b>	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			



## Screw type



Approach angle	Designation	Dimension (mm)						Insert
		h	b	l1	l2	f	b1	
	<b>STGCR/L</b> <b>1010 K11-SH</b> <b>1212 K11-SH</b> <b>1616 K11-SH</b>	10	10	125	16	10	2	TC...T 1103... A256
		12	12	125	16	12	-	
		16	16	125	16	16	-	
	<b>STGCR/L</b> <b>1010 E09</b> <b>1212 F11</b> <b>1616 H11</b> <b>1616 H16</b> <b>2020 K16</b> <b>2525 M16</b>	10	10	70	11	12	-	TC...T 0902... TC...T 1102... TC...T 16T3...
		12	12	80	14.3	16	-	
		16	16	100	14.3	20	-	
		16	16	100	21	20	-	
		20	20	125	21	25	-	
		25	25	150	21	32	-	

## Spare parts

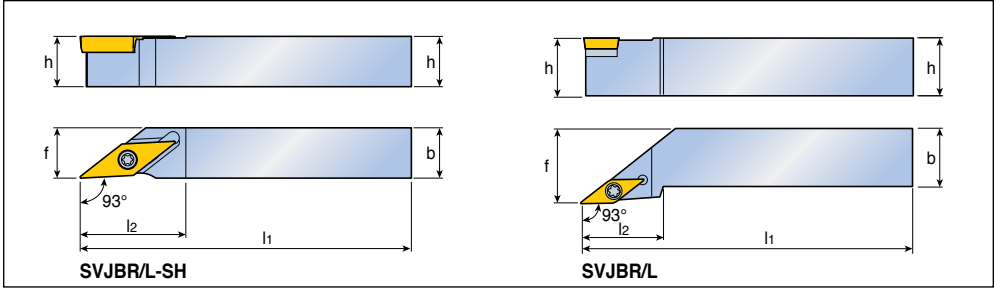
Designation	Screw	Shim	Shim screw	Wrench			
...09	SO 22050I	-	-	T 7			
...11	SO 25065I	-	-	T 7			
...16	SO 35124I	SST 32	SO 50090S	T 15			

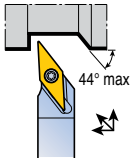

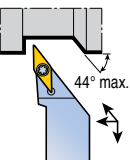
Components



TA42-TA58

## Screw type



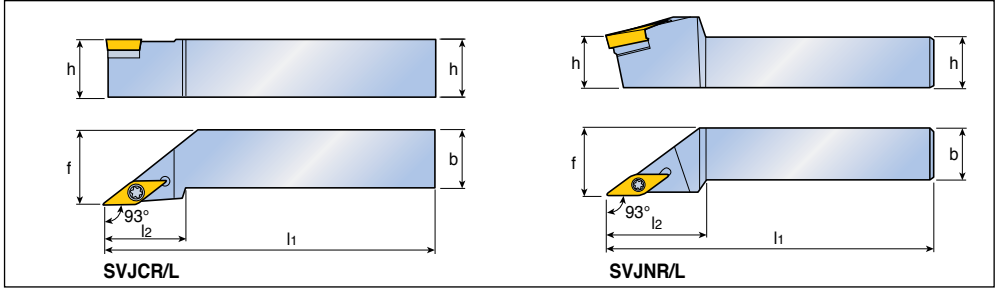
Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>93°</b> 	<b>SVJBR/L 1010 K11-SH</b>	10	10	125	21	10	VB...T 1103...  A259-A260
	<b>1212 K11-SH</b>	12	12	125	21	12	
	<b>1616 K11-SH</b>	16	16	125	21	16	
<b>93°</b> 	<b>SVJBR/L 2020 K16</b>	20	20	125	35	25	VB...T 1604...
	<b>2525 M16</b>	25	25	150	35	32	
	<b>3225 P16</b>	32	25	170	35	32	
	<b>3232 P16</b>	32	32	170	35	40	

## Spare parts

Designation	Screw	Shim	Shim screw	Wrench			
...11	SO 25065I	-	-	T 7			
...16	SO 35124I	SSV 32	TS 5035062S	T 15			



## Screw type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<p>93°</p>	<b>SVJCR/L</b> <b>2020 K16</b> <b>2525 M16</b> <b>3225 P16</b> <b>3232 P16</b>	20	20	125	35	25	VC...T 1604... A260
		25	25	150	35	32	
		32	25	170	35	32	
		32	32	170	47	40	
<p>93°</p>	<b>SVJNR/L</b> <b>1616 H13</b> <b>2020 K13</b> <b>2525 M13</b>	16	16	100	30	20	VN... 1304... A241-A242
		20	20	125	35	25	
		25	25	150	43	32	

## Spare parts

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

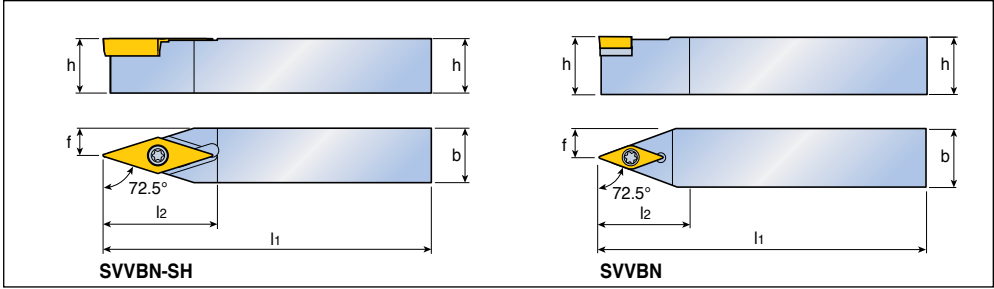
Components

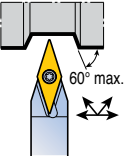

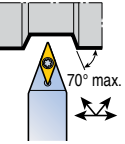


TA42-TA58



## Screw type



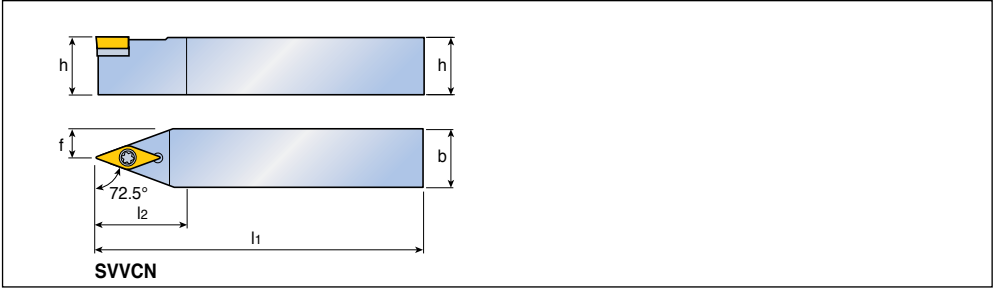
Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>72.5°</b> 	<b>SVVBN</b> <b>1010 K11-SH</b> <b>1212 K11-SH</b> <b>1616 K11-SH</b>	10	10	125	22	5	VB...T 1103...  A259-A260
		12	12	125	22	6	
		16	16	125	22	8	
<b>72.5°</b> 	<b>SVVBN</b> <b>2020 K16</b> <b>2525 M16</b> <b>3225 P16</b>	20	20	125	31.5	10.0	VB...T 1604...
		25	25	150	31.5	12.5	
		32	25	170	31.5	12.5	

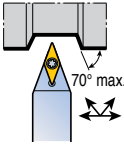

## Spare parts

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



## Screw type



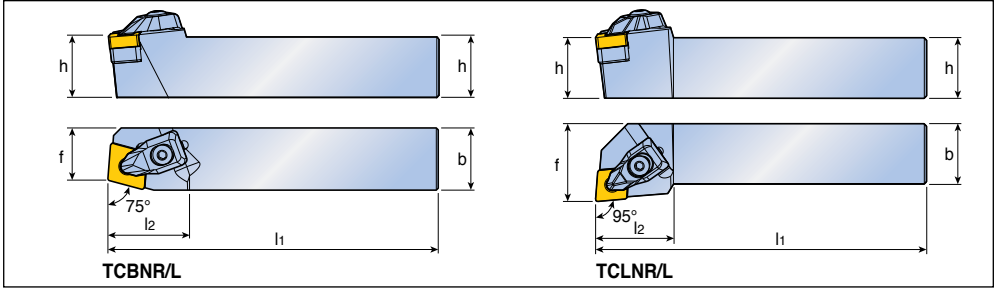
Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
<b>72.5°</b> 	<b>SVVCN</b>							VC...T 1604...  A260
	<b>2020 K16</b>	20	20	125	31.5	10.0		
	<b>2525 M16</b>	25	25	150	31.5	12.5		
	<b>3225 P16</b>	32	25	170	31.5	12.5		
	<b>3232 P16</b>	32	32	170	32	16.0		

## Spare parts

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



## T-holder type

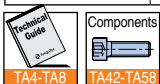


Approach angle	Designation	Dimension (mm)					Insert
		h	b	l1	l2	f	
<b>75°</b> 	✓ <b>TCBNR/L 2020 K0904</b>	20	20	125	26	18.5	CNMA 0904...
	<b>2525 M0904</b>	25	25	150	26	23.5	CNMG 0904...
	<b>TCBNR/L 2525 M12</b>	25	25	150	32	22.5	CN... 1204...
	<b>3232 P19</b>	32	32	170	42	27	CN... 1906...
<b>95°</b> 	✓ <b>TCLNR/L 2020 H0904</b>	20	20	100	25	25	CNMA 0904...
	<b>2020 K0904</b>	20	20	125	25	25	CNMG 0904...
	<b>2525 M0904</b>	25	25	150	25	32	
	<b>TCLNR/L 2020 K12</b>	20	20	125	32	25	CN... 1204...
	<b>2525 M12</b>	25	25	150	32	32	
	<b>3225 P12</b>	32	25	170	32	32	
	<b>3232 P12</b>	32	32	170	32	40	
	<b>2525 M16</b>	25	25	150	36	32	CN... 1606...
	<b>3232 P19</b>	32	32	170	42	40	CN... 1906...
	<b>4040 S19</b>	40	40	250	42	50	

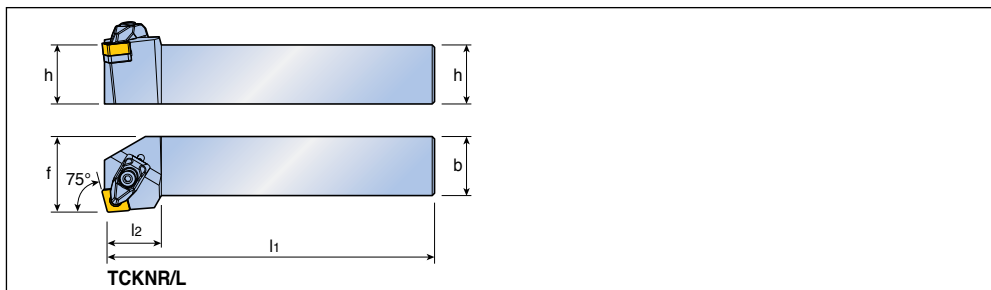
✓ Marked: For RHINORUSH insert

## Spare parts

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



## T-holder type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>75°</b>	✓ <b>TCKNR/L 2525 M0904</b>	25	25	150	23	32	CNMA 0904... CNMG 0904... A212-A220

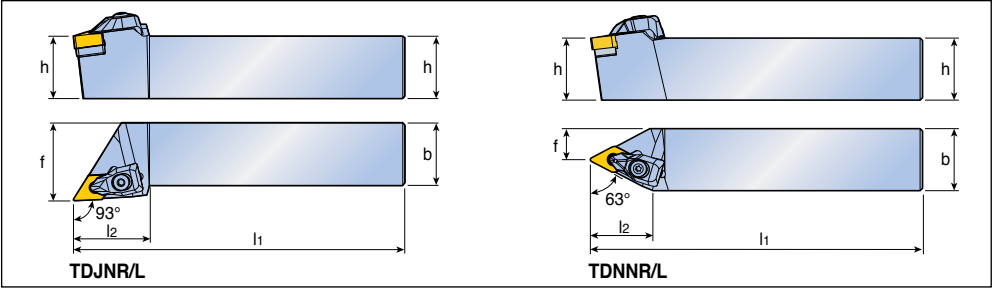
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## Spare parts

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



## T-holder type

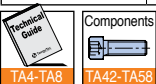


Approach angle	Designation	Dimension (mm)					Insert
		h	b	l1	l2	f	
<b>93°</b> 	TDJNR/L <b>2020 K11</b>	20	20	125	30	25	DN... 1104... A221-A225
	<b>2525 M11</b>	25	25	150	30	32	
	✓ TDJNR/L <b>2020 H1305</b>	20	20	100	33	25	DNMG 1305...
	<b>2020 K1305</b>	20	20	125	33	25	DNMX 1305...
	<b>2525 M1305</b>	25	25	150	36	32	
	TDJNR/L <b>2020 K15</b>	20	20	125	39	25	DN... 1506...
	<b>2525 M15</b>	25	25	150	39	32	
	<b>2525 M1504</b>	25	25	150	39	32	DN... 1504...
<b>63°</b> 	TDNNR/L <b>2525 M11</b>	25	25	150	30	12.5	DN... 1104...
	✓ TDNNR/L <b>2020 K1305</b>	20	20	125	34	10	DNMG 1305...
	<b>2525 M1305</b>	25	25	150	34	12.5	DNMX 1305...

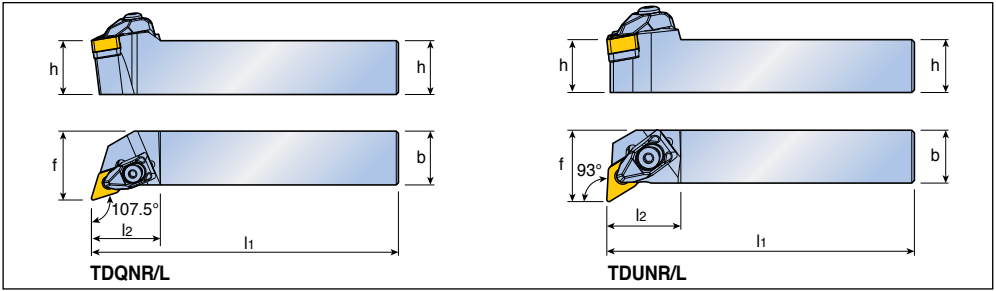
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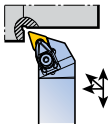

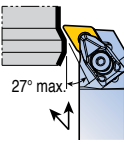
## Spare parts

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



## T-holder type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>107.5°</b> 	✓ <b>TDQNR/L 2020 K1305</b>	20	20	125	32	25	DNMG 1305... DNUG 1305...  A221-A225
	<b>2525 M1305</b>	25	25	150	32	32	
<b>93°</b> 	✓ <b>TDUNR/L 2020 K1305</b>	20	20	125	28	27	
	<b>2525 M1305</b>	25	25	150	28	32	

✓ Marked: For RHINORUSH insert

## Spare parts

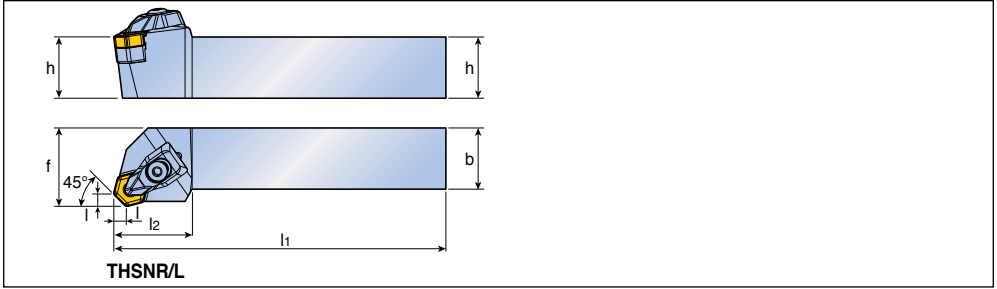
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
...1305	DLM 3.5-NX	DLS 4	LSD 3.52	SO 50090I	DSP 4	L-W 3	T 20



TA4-TA8

TA42-TA58

## T-holder type



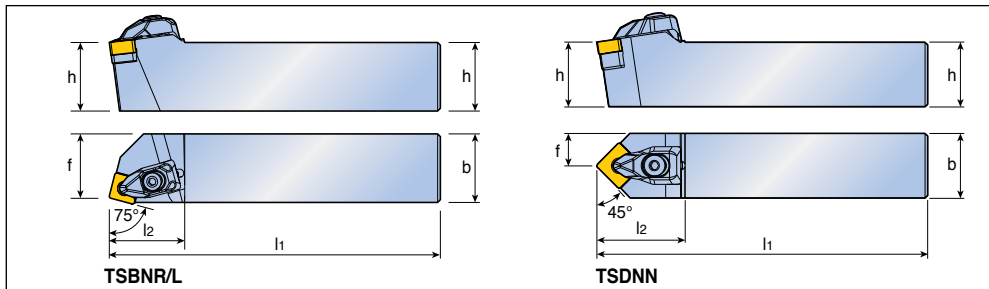
Approach angle	Designation	Dimension (mm)						Insert
		h	b	l1	l2	f	l	
45°	<b>THSNR/L 2525 M05</b>	25	25	150	32	32	4.2	HN... 0504...
	<b>2525 M10</b>	25	25	150	42	32	6.5	HN... 1006...
	<b>3232 P05</b>	32	32	170	32	40	4.2	HN... 0504...
	<b>3232 P10</b>	32	32	170	42	40	6.5	HN... 1006...

## Spare parts

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



## T-holder type

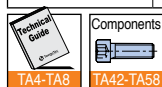


Approach angle	Designation	Dimension (mm)					Insert
		h	b	l1	l2	f	
<b>75°</b> 	✓ <b>TSBNR/L 2020 K0904</b>	20	20	125	27.5	18.5	SNMG 0904... A228-A234
	<b>2525 M0904</b>	25	25	150	27.5	23.5	
<b>45°</b> 	✓ <b>TSDNN 2020 K0904</b>	20	20	125	28	10	SN... 1204... SN... 1906...
	<b>2525 M0904</b>	25	25	150	28	12.5	
	<b>TSDNN 2525 M12</b>	25	25	150	34	12.5	
	<b>3232 P19</b>	32	32	170	44	16	

✓Marked: For RHINORUSH insert

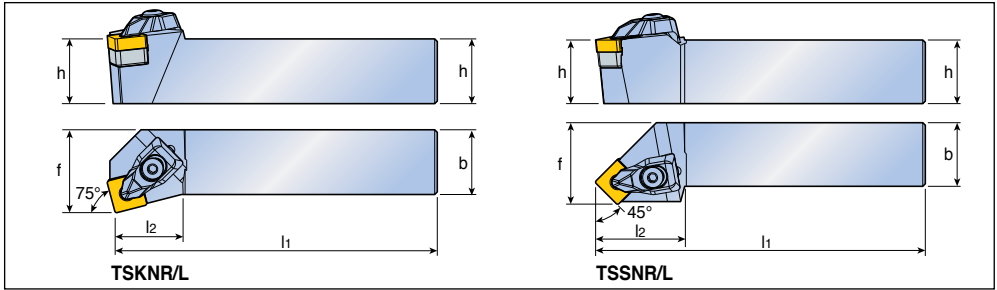
## Spare parts

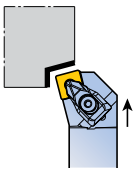

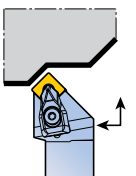
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
<b>...0904</b>	DLM 3-NX	DLS 3	LSS 32A	SO 40085I	DSP 3	L-W 2.5	T 15
<b>...12</b>	DLM 4	DLS 4	TSS 44	SO 40050I	DSP 4	L-W 3	T 15
<b>...19</b>	DLM 6	DLS 5	LSS 63	SO 80180I	DSP 5	L-W 4	-












## T-holder type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l1	l2	f	
<b>75°</b> 	✓ <b>TSKNR/L 2020 K0904</b>	20	20	125	23	25	SNMG 0904...  A228-A234
	<b>2525 M0904</b>	25	25	150	23	32	
	<b>TSKNR/L 2525 M12</b>	25	25	150	27	32	
<b>45°</b> 	✓ <b>TSSNR/L 2020 K0904</b>	20	20	125	29	25	SNMG 0904... SN... 1204...
	<b>2525 M0904</b>	25	25	150	29	32	
	<b>TSSNR/L 2525 M12</b>	25	25	150	35	32	

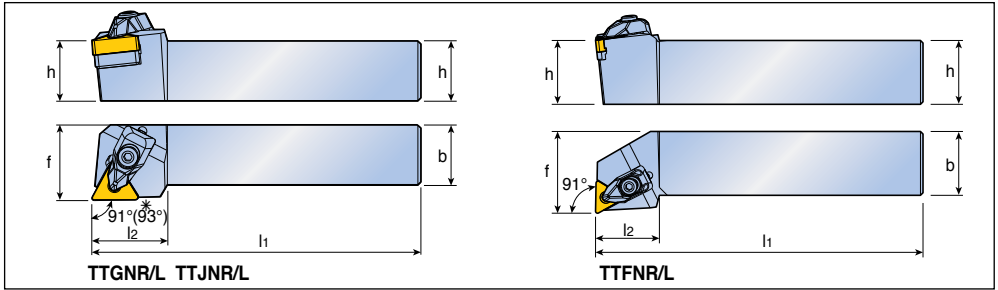
✓Marked: For RHINORUSH insert

## Spare parts

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



## T-holder type



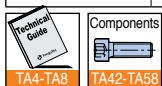
Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
91° 	✓ TTGNR/L 2020 H1304	20	20	100	25	25	TNGG 1304...
	2020 K1304	20	20	125	25	25	TNMG 1304...
	2525 M1304	25	25	150	25	32	
	TTGNR/L 2525 M16	25	25	150	25	32	TN... 1604...
	✓ TTJNR/L 2525 M1304	25	25	150	25	32	TNG(M)G 1304...
	TTJNR/L 2020 K16	20	20	125	25	25	TN... 1604...
	2525 M16	25	25	150	25	32	
91° 	✓ TTFNR/L 2020 K1304	20	20	125	25	25	TNGG 1304...
	2525 M1304	25	25	150	25	32	TNMG 1304...



✓ Marked: For RHINORUSH insert \*Approach angle of TTJNR/L is 93 degrees

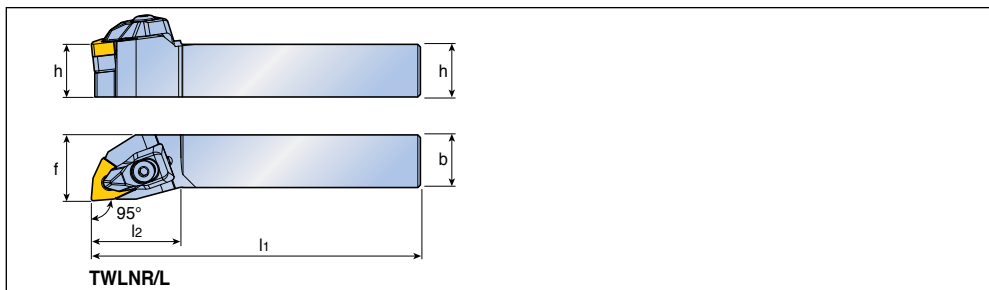
## Spare parts

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
...1304	DLM 2.5-NX	DLS 3	LST 2.52	SO 40085I	DSP 3	L-W 2.5	T 15
...16	DLM3	DLS 3	TST 33	SO 35080I	DSP 3	L-W 2.5	T 15





## T-holder type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
95° 	✓ <b>TWLNRL/L 2020 K0604</b>	20	20	125	26	25	WNMX 0604...
	<b>2525 M0604</b>	25	25	150	26	32	
	<b>TWLNRL/L 2020 K06</b>	20	20	125	26	25	WNMG 0604...
	<b>2525 M06</b>	25	25	150	26	32	
	<b>2020 K08</b>	20	20	125	34.2	25	WN... 0804...
	<b>2525 M08</b>	25	25	150	34.2	32	
	<b>3232 P08</b>	32	32	170	34.2	40	

✓Marked: For RHINORUSH insert

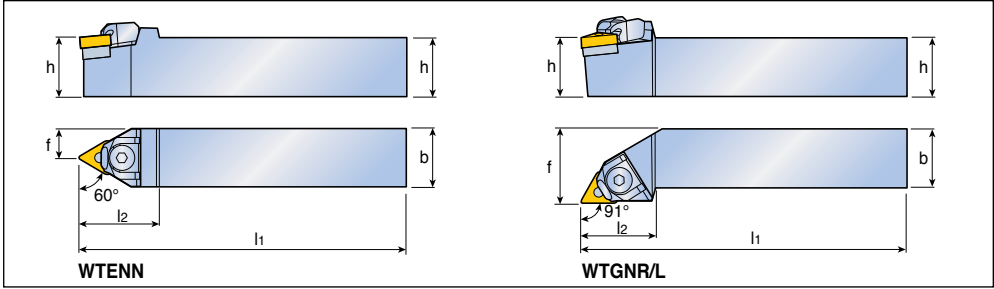
## Spare parts

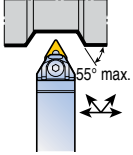

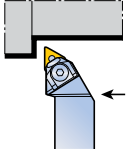
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
<b>...0604</b>	DLM 3-NX	DLS 3	LSW 32A	SO 40085I	DSP 3	L-W 2.5	T 15
<b>...06</b>	DLM 3	DLS 3	PSW 32	SO 40090I	DSP 3	L-W 2.5	T 15
<b>...08</b>	DLM 4	DLS 4	TSW 44	SO 40050I	DSP 4	L-W 3	T 15

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





## Wedge clamp type

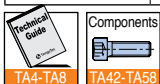


Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>60°</b> 	✓ <b>WTENN 2020 K1304</b>	20	20	125	28	10.0	TNMG 1304...
	<b>2525 M1304</b>	25	25	150	28	12.5	TNGG 1304...  A235-A240
	<b>WTENN 2020 K16</b>	20	20	125	35	10.0	TN... 1604...
	<b>2525 M16</b>	25	25	150	35	12.5	
	<b>2525 M22</b>	25	25	150	38	12.5	TN... 2204...
	<b>3225 P22</b>	32	25	170	38	12.5	
	<b>3232 P22</b>	32	32	170	38	16.0	
<b>91°</b> 	✓ <b>WTGNR/L 2020 K1304</b>	20	20	125	27	25	TNMG 1304...
	<b>2525 M1304</b>	25	25	150	27	32	TNGG 1304...
	<b>WTGNR/L 2020 K16</b>	20	20	125	32	25	TN... 1604...
	<b>2525 M16</b>	25	25	150	32	32	
	<b>2525 M22</b>	25	25	150	38	32	TN... 2204...
	<b>3232 P22</b>	32	32	170	38	40	

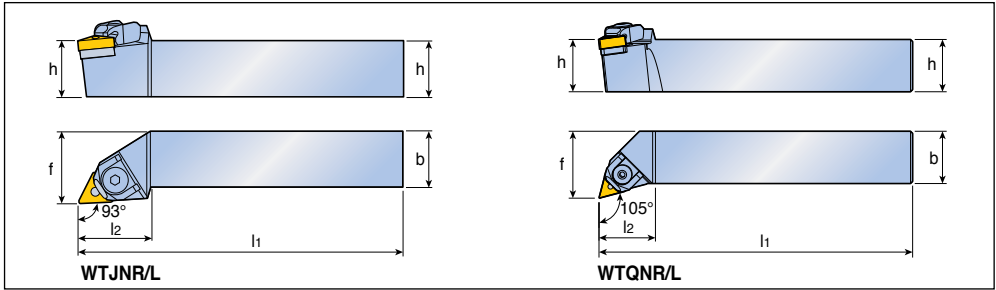
✓ Marked: For RHINORUSH insert

## 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



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
	✓ WTJNR/L 2020 K1304	20	20	125	28	10	TNMG 1304...
	2525 M1304	25	25	150	28	12.5	TNGG 1304...
	WTJNR/L 2020 K16	20	20	125	32	25	TN... 1604...
	2525 M16	25	25	150	32	32	
	3225 P16	32	25	170	32	32	
	3232 P16	32	32	170	38	40	
	2525 M22	25	25	150	38	32	TN... 2204...
	3232 P22	32	32	170	38	40	
	✓ WTQNR/L 2020 K1304	20	20	125	27	25	TNMG 1304...
	2525 M1304	25	25	150	27	32	TNGG 1304...

✓ Marked: For RHINORUSH insert

## Spare parts

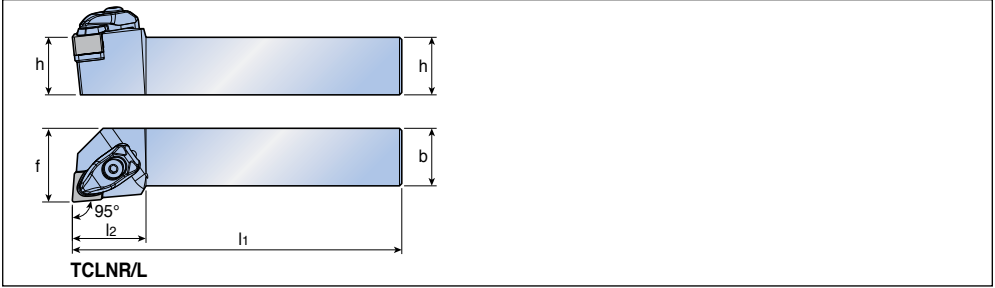
Designation	Wedge clamp	Screw	Snap ring	Shim	Pin screw	Wrench		
...1304	WC 2.53	WCS 2.5	CSR 2	WST 2.52	WSS 2.52	L-W 2.5		
...16	WC 33	WCS 4	WSR 4	WST 33	WSS 33	L-W 3, L-W 2.5		
...22	WC 43	WCS 4	WSR 4	WST 43	WSS 43	L-W 3		



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## Ceramic T-holder type



Approach angle	Designation	Dimension (mm)					Insert		
		h	b	l1	l2	f			
	<b>TCLNR/L</b>	<b>2525 M0903-F</b>	25	25	150	25	32	CN...N 0903...	 A271
	<b>2020 K1204-F</b>	20	20	125	32	25	CN...N 1204...		
	<b>2525 M1204-F</b>	25	25	150	32	32			
	<b>3232 P1204-F</b>	32	32	170	32	40			
	<b>2020 K1207-F</b>	20	20	125	32	25	CN...N 1207...		
	<b>2525 M1207-F</b>	25	25	150	32	32			
	<b>3232 P1207-F</b>	32	32	170	32	40			

## Spare parts

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

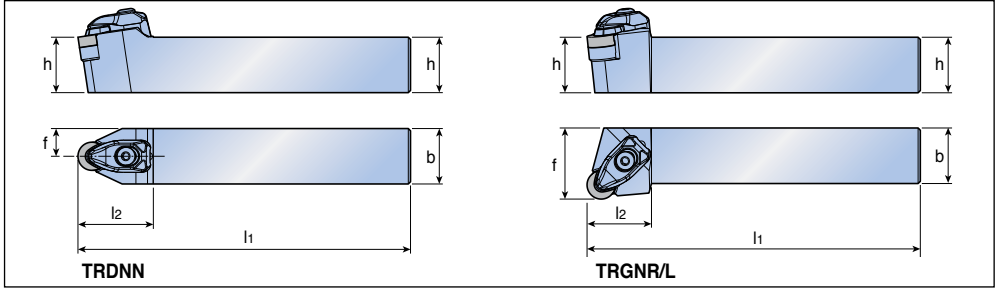








## Ceramic T-holder type



Approach angle	Designation	Dimension (mm)					Insert		
		h	b	l <sub>1</sub>	l <sub>2</sub>	f			
<b>45°</b> 	<b>TRDNN</b>	<b>2525 M1203-F</b>	25	25	150	34	10	RN...N 1203...	 <b>A275</b>
		<b>2020 K1204-F</b>	20	20	125	34	10	RN...N 1204...	
		<b>2525 M1204-F</b>	25	25	150	34	12.5		
		<b>2020 K1207-F</b>	20	20	125	34	10	RN...N 1207...	
		<b>2525 M1207-F</b>	25	25	150	34	12.5		
		<b>3225 P1207-F</b>	32	25	170	34	12.5		
<b>90°</b> 	<b>TRGNR/L</b>	<b>2020 K1204-F</b>	20	20	125	29	25	RN...N 1204...	
		<b>2525 M1204-F</b>	25	25	150	29	32		
		<b>2020 K1207-F</b>	20	20	125	29	25	RN...N 1207...	
		<b>2525 M1207-F</b>	25	25	150	29	32		
		<b>3225 P1207-F</b>	32	25	170	29	32		

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

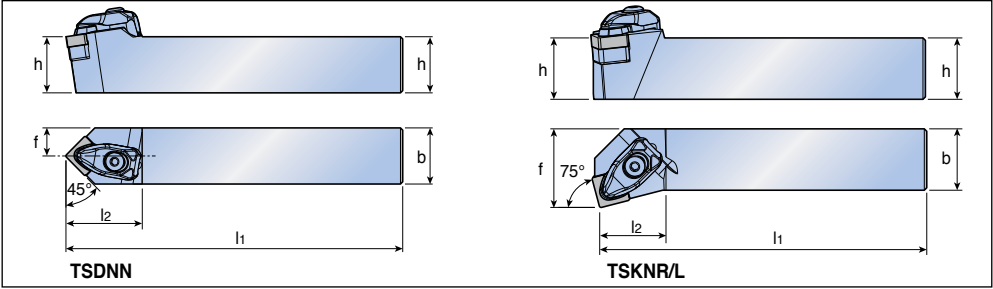
## Spare parts

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench		
...1203	DCL S-4F	DLS 4	S 43	BH M5x0.8x8	DSP 4	L-W 3		
...1204	DCL S-4F	DLS 4	S 43-T8	BH M5x0.8x10	DSP 4	L-W 3		
...1207	DCL S-4F	DLS 4	S 43	BH M5x0.8x8	DSP 4	L-W 3		

Components



## Ceramic T-holder type



Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
<b>45°</b> 	<b>TSDNN</b>	<b>2525 M0903-F</b>	25	25	150	28	12.5	SN...N 0903...
		<b>2020 K1204-F</b>	20	20	125	34	10	SN...N 1204...
		<b>2525 M1204-F</b>	25	25	150	34	12.5	SN...N 1207...
		<b>2525 M1207-F</b>	25	25	150	34	12.5	
		<b>3225 P1207-F</b>	32	25	170	34	12.5	
		<b>3232 P1207-F</b>	32	32	170	34	16	
<b>75°</b> 	<b>TSKNR/L</b>	<b>2525 M1204-F</b>	25	25	150	27	32	SN...N 1204...
		<b>3232 P1204-F</b>	32	32	170	27	40	SN...N 1207...
		<b>2525 M1207-F</b>	25	25	150	27	32	
		<b>3232 P1207-F</b>	32	32	170	27	40	

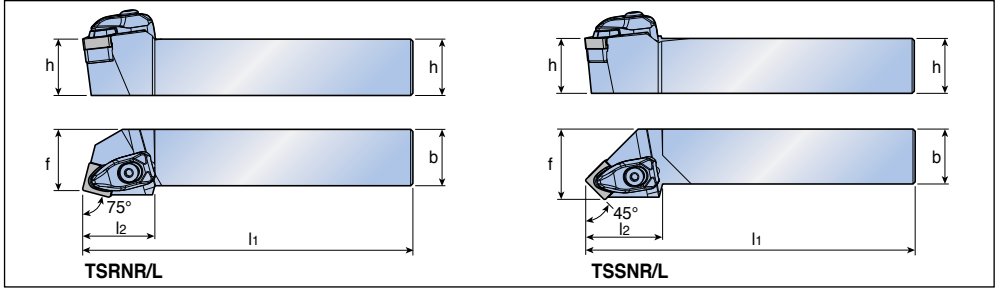
## Spare parts

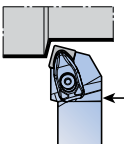
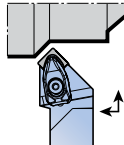
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
<b>...0903</b>	DCL S-3F	DLS 3	LSS 32	SO 40085I	DSP 3	L-W 2.5	T 15
<b>...1204</b>	DCL S-4F	DLS 4	TSS 44	SO 40050I	DSP 4	L-W 3	T 15
<b>...1207</b>	DCL S-4F	DLS 4	TSS 42	SO 40050I	DSP 4	L-W 3	T 15

















# TSRNR/L-F TSSNR/L-F

## Ceramic T-holder type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>75°</b> 	<b>TSRNR/L</b> <b>2525 M1204-F</b>	25	25	150	32	27	SN...N 1204...
	<b>3232 P1204-F</b>	32	32	170	32	35	
	<b>2525 M1207-F</b>	25	25	150	32	27	SN...N 1207...
	<b>3225 P1207-F</b>	32	25	170	32	27	
	<b>3232 P1207-F</b>	32	32	170	32	35	
<b>45°</b> 	<b>TSSNR/L</b> <b>2525 M1204-F</b>	25	25	150	35	32	SN...N 1204...
	<b>3232 P1204-F</b>	32	32	170	35	40	
	<b>2525 M1207-F</b>	25	25	150	35	32	SN...N 1207...
	<b>3232 P1207-F</b>	32	32	170	35	40	

## Spare parts

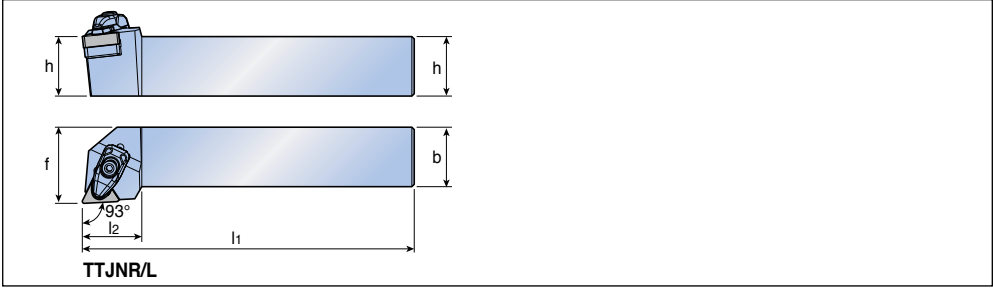
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
<b>...1204</b>	 DCL S-4F	 DLS 4	 TSS 44	 SO 40050I	 DSP 4	 L-W 3	 T 15
<b>...1207</b>	 DCL S-4F	 DLS 4	 TSS 42	 SO 40050I	 DSP 4	 L-W 3	 T 15

Components



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## Ceramic T-holder type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
93°	<b>TTJNR/L 2020 K1604-F</b>	20	20	125	25	25	TN...N 1604...
	<b>2525 M1604-F</b>	25	25	150	25	32	
	<b>2020 K1607-F</b>	20	20	125	25	25	TN...N 1607...
	<b>2525 M1607-F</b>	25	25	150	25	32	

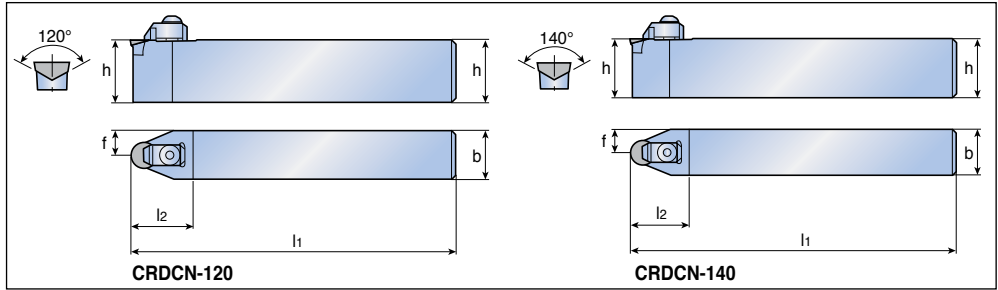
• TNGN 1604/1607 inserts are not exchangeable on same holder

## Spare parts

Designation	Clamp	Clamp Screw	Shim	Shim screw	Spring	Wrench	
...16	DCL S-3F	DLS 3	TST 33	SO 40050I	DSP 3	L-W 3	T 15



## Ceramic holder type



Approach angle	Designation	Dimension (mm)					Insert	
		h	b	l <sub>1</sub>	l <sub>2</sub>	f		
45° 	<b>CRDCN</b>	<b>2525 M06-120</b>	25	25	150	28	12.5	RCGX 060600 RCGX 090700 RCGX 120700 A281
		<b>3225 P06-120</b>	32	25	170	28	12.5	
		<b>3225 P09-120</b>	32	25	170	30	12.5	
		<b>3225 P12-120</b>	32	25	170	32	12.5	
45° 	<b>CRDCN</b>	<b>2525 M06-140</b>	25	25	150	28	12.5	RCGX 060300-FT RCGX 090300-FT RCGX 120400-FT A293
		<b>3225 P06-140</b>	32	25	170	28	12.5	
		<b>3225 P09-140</b>	32	25	170	30	12.5	
		<b>3225 P12-140</b>	32	25	170	32	12.5	

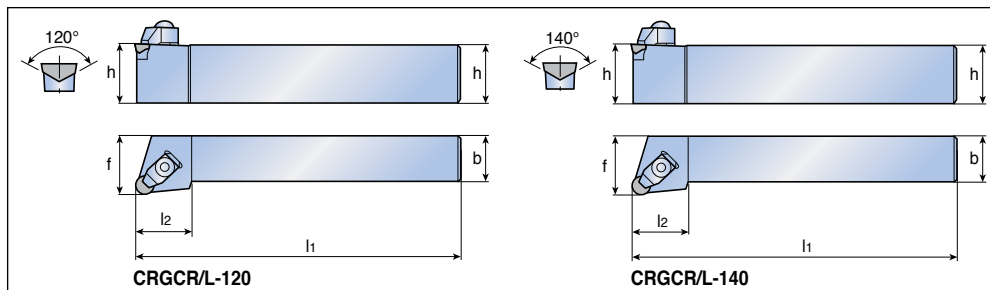
## Spare parts

Designation	Clamp	Clamp screw	Shim	Shim screw	Wrench			
...06	BCL 6-20A	BH M6x1x25	CBRS 06	SO 220501	L-W 4	T 7		
...09	BCL 6-20A	BH M6x1x25	CBRS 09	BH M2.5x0.45x10	L-W 4, L-W 1.5	-		
...12	BCL 6	BH M6x1x25	CBRS 12	BH M2.5x0.45x10	L-W 4, L-W 1.5	-		

Components



## Ceramic holder type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
	<b>CRGCR/L 2525 M06-120</b>	25	25	150	28	32	RCGX 060600
	<b>3225 P06-120</b>	32	25	170	28	32	RCGX 090700
	<b>3225 P09-120</b>	32	25	170	30	32	RCGX 120700
	<b>3225 P12-120</b>	32	25	170	32	32	
	<b>CRGCR/L 2525 M06-140</b>	25	25	150	28	32	RCGX 060300-FT
	<b>3225 P06-140</b>	32	25	170	28	32	RCGX 090300-FT
	<b>3225 P09-140</b>	32	25	170	30	32	RCGX 120400-FT
	<b>3225 P12-140</b>	32	25	170	32	32	

## Spare parts

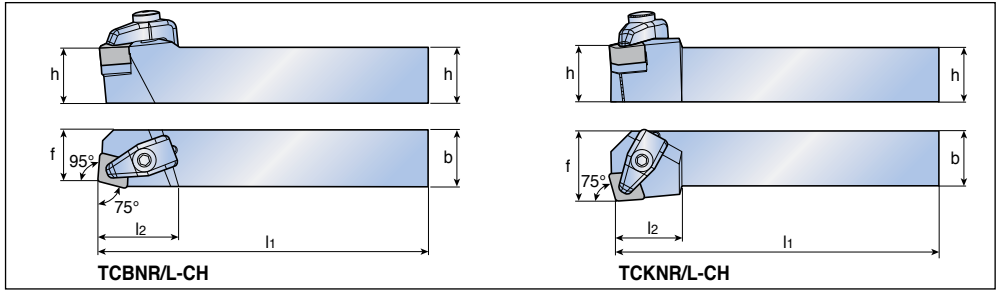
Designation	Clamp	Clamp screw	Shim	Shim screw	Wrench		
...06	BCL 6-20A	BH M6x1x25	CBRS 06	SO 22050I	L-W 4	T 7	
...09	BCL 6-20A	BH M6x1x25	CBRS 09	BH M2.5x0.45x10	L-W 4, L-W 1.5	-	
...12	BCL 6	BH M6x1x25	CBRS 12	BH M2.5x0.45x10	L-W 4, L-W 1.5	-	

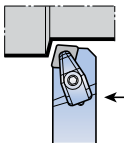

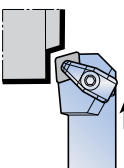


# TCBNR/L-CH TCKNR/L-CH







**T-TURN**

Ceramic dimple holder type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l1	l2	f	
75° 	<b>TCKNR/L</b>						
	<b>2525 M12-CH</b>	25	25	150	34.4	22	CNGX 1207...CH  A272
	<b>3225 P12-CH</b>	32	25	170	34	22	
75° 	<b>TCKNR/L</b>						
	<b>2525 M12-CH</b>	25	25	150	28	32	
	<b>3225 P12-CH</b>	32	25	170	28	32	

## Spare parts

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench		
...12	 CCL 4	 CSC 4	 S 48	 BH M5x0.8x10	 DSP 5	 L-W 4, L-W 3		

Components



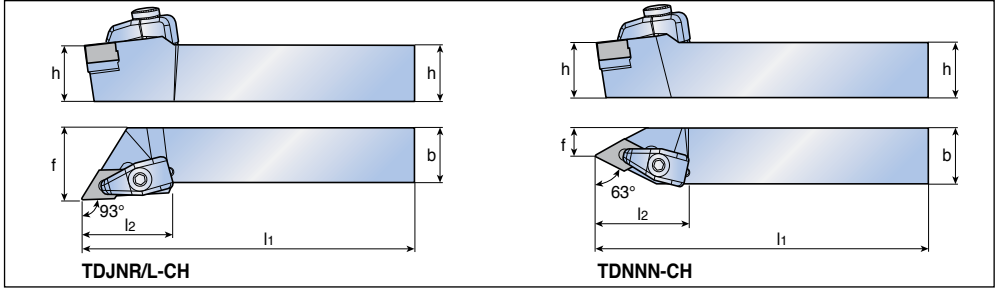





# TDJNR/L-CH TDNNN-CH







**T-TURN**

Ceramic dimple holder type



Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
93°	<b>TDJNR/L</b>						
	<b>2525 M15-CH</b>	25	25	150	38	32	DNGX 1507...CH  A273
<b>3225 P15-CH</b>	32	25	170	38	32		
63°	<b>TDNNN</b>						
	<b>2525 M15-CH</b>	25	25	150	40	12.5	
	<b>3225 P15-CH</b>	32	25	170	40	12.5	

## Spare parts

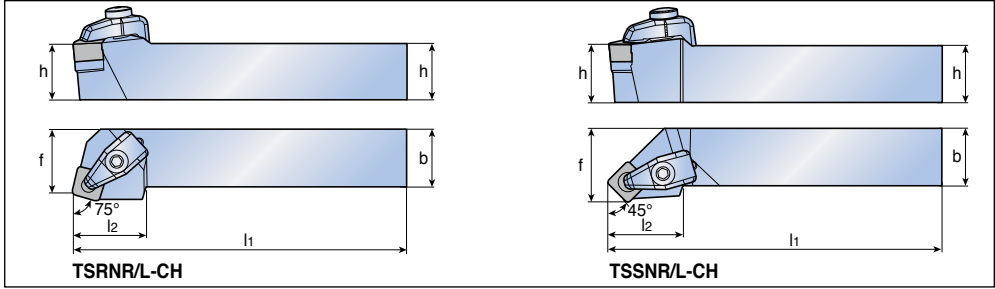
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench		
...15	 CCL 4	 CSC 4	 S 45	 BH M5x0.8x10	 DSP 5	 L-W 4, L-W 3		

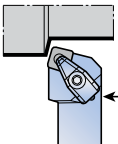

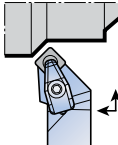
Components



TA42-TA58

## Ceramic dimple holder type



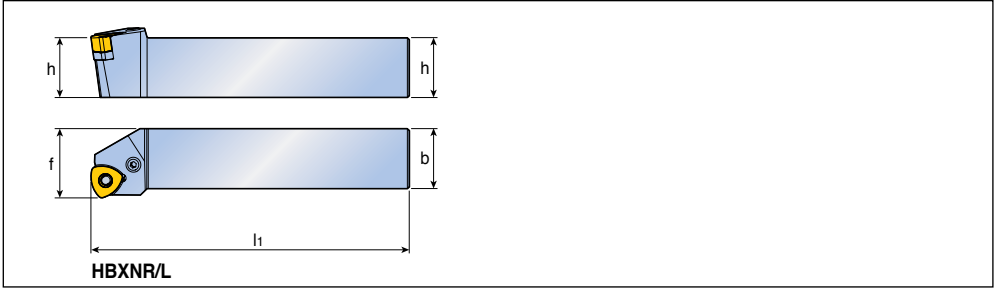
Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
<b>75°</b> 	<b>TSRNR/L 2525 M12-CH</b>	25	25	150	32	27	SNGX 1207...CH  A277
	<b>3225 P12-CH</b>	32	25	170	32	27	
<b>45°</b> 	<b>TSSNR/L 2525 M12-CH</b>	25	25	150	35	32	SNGX 1507...CH
	<b>3232 P12-CH</b>	32	32	170	35	40	
	<b>3225 P15-CH</b>	32	25	170	35	32	

## Spare parts

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench		
...12	 CCL 4	 CSC 4	 S 40	 BH M5x0.8x10	 DSP 5	 L-W 4, L-W 3		
...15	CCL 4	CSC 4	S 50	BH M5x0.8x10	DSP 5	L-W 4, L-W 3		



## TOPFEED holder



Approach angle	Designation	Dimension (mm)				Insert
		h	b	l <sub>1</sub>	f	
	<b>HBXNR/L 2525 M1507</b>	25	25	150	30	BNMX 150720R/L-HF A264
	<b>3232 P1507</b>	32	32	170	37	

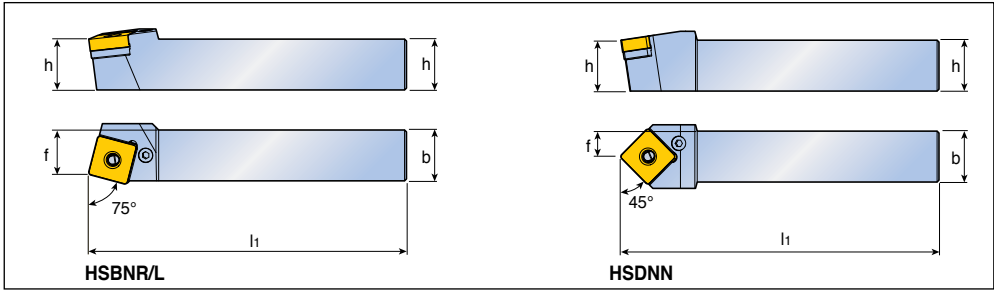
## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Shim pin punch	Wrench		
<b>...1507</b>	LCL 16-NX	LCS 5-L25.5	LSB 53 R/L	LSP 5	SPP 5-6	L-W 3		

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## TOPDUTY holder



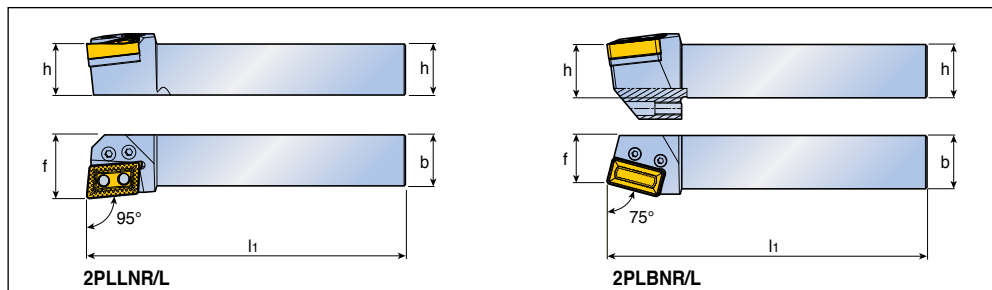
Approach angle	Designation	Dimension (mm)				Insert
		h	b	l <sub>1</sub>	f	
75°	<b>HSBNR/L 4040 S3109</b>	40	40	250	35	SNM...3109... A228-A229
	<b>5050 T3109</b>	50	50	300	43	
45°	<b>HSDNN 4040 S3109</b>	40	40	250	20	SNM...3109...
	<b>5050 T3109</b>	50	50	300	25	

## Spare parts

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



TOPDUTY holder



Approach angle	Designation	Dimension (mm)				Insert
		h	b	l <sub>1</sub>	f	
95°	<b>2PLLNR/L 4040 S4012</b>	40	40	250	50	LNMM 401224R/L-HX 
	<b>5050 T4012</b>	50	50	300	60	
75°	<b>2PLBNR/L 5050 T5014</b>	50	50	300	45	LNMX 501432 

## Spare parts

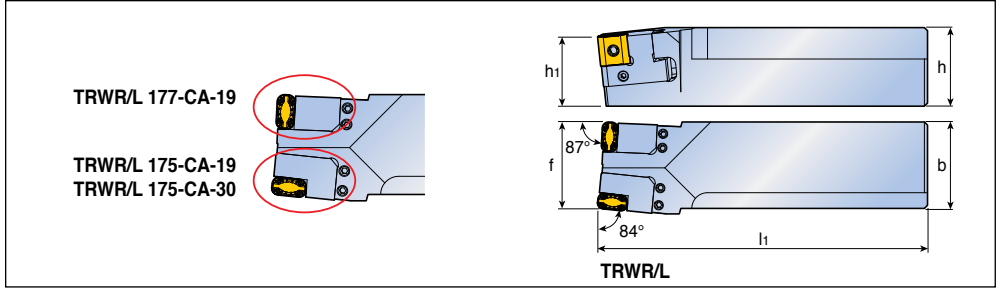
Designation	Lever	Screw	Shim	Shim pin	Set screw	Wrench		
<b>2PLLNR/L...</b>	LCL 8	LCS 8-L39	LN 4025-T6.35-R/L	LSP 8	-	L-W 5		
<b>2PLBNR/L...</b>	LCL 8	LCS 8-L43	LN 5025-T6.35	LSP 8	SS M12x1.75x25	L-W 5		



TA11-TA14

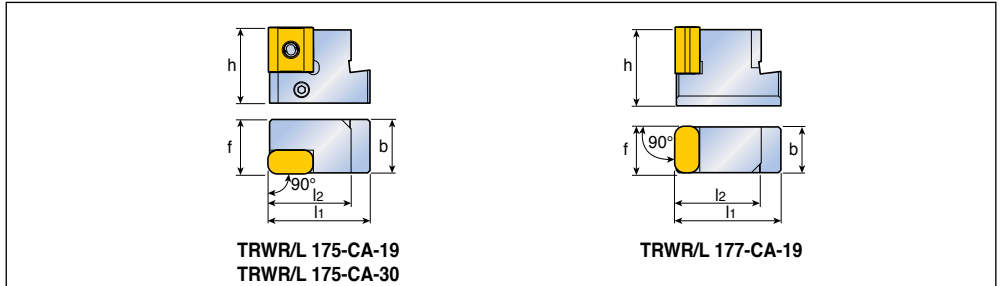
TA42-TA58

## TOPRAIL holder



Approach angle	Designation	Dimension (mm)					Cartridge
		h	h <sub>1</sub>	b	l <sub>1</sub>	f	
	TRWR/L <b>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

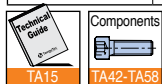
## TOPRAIL cartridge



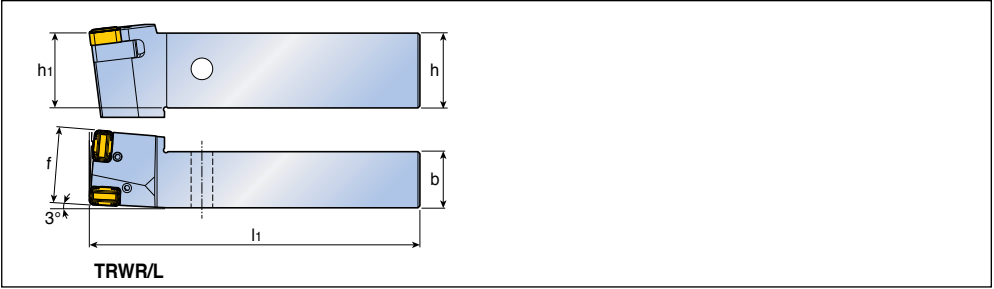
Approach angle	Designation	Dimension (mm)					Insert
		h	b	l <sub>1</sub>	l <sub>2</sub>	f	
90°	TRWR/L <b>175-CA-19</b>	32	22.6	43	35	23	LNMX 191940...
	<b>175-CA-30</b>	32	22.6	43	35	23	LNMX 301940...
	<b>177-CA-19</b>	32	18.6	43	35	19	LNMX 191940...

## 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			



## TOPRAIL holder



Approach angle	Designation	Dimension (mm)					Insert
		h	h1	b	l1	f	
	<b>TRWR/L 57.2-76.2 LD</b>	76.2	76.2	57.2	254	76.2	SRR...

• Holder can be supplied by quotation

## Spare parts

Designation	Shim1	Shim2	Screw	Wrench			
<b>...LD</b>	SRR-SHIM	SRR-SH-R/L	SRR-SCR	L-W 5			

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## C4 - T C L N R

1
2
3
4
5
6

### 1 Coupling size

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

\* TaeguTec standard

# 27 055 - 09

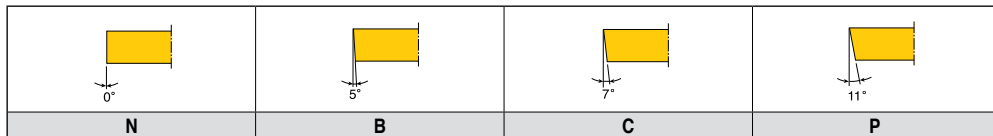
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8

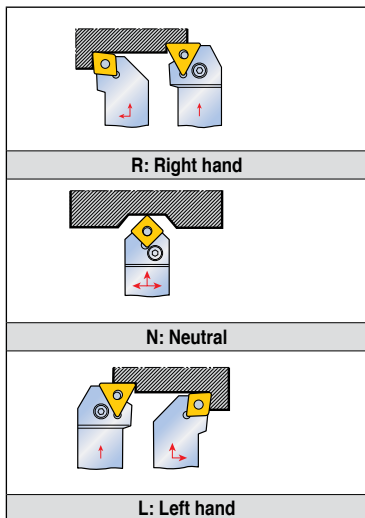
9

10

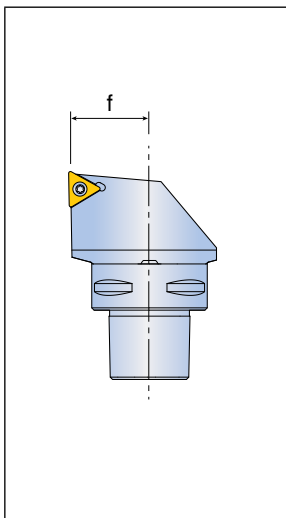
## 5 Insert clearance angle



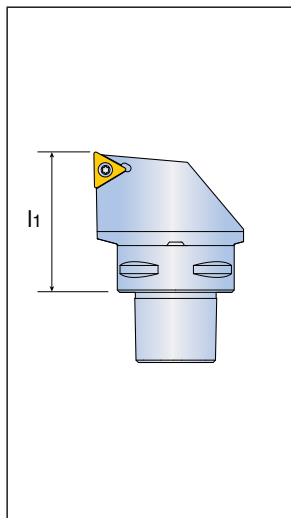
## 6 Hand of tool



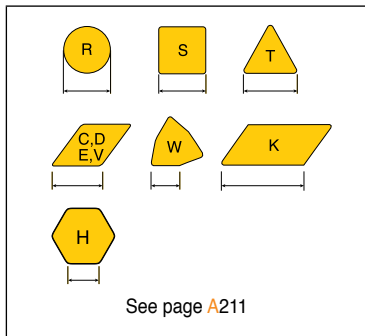
## 7 f dimension (mm)



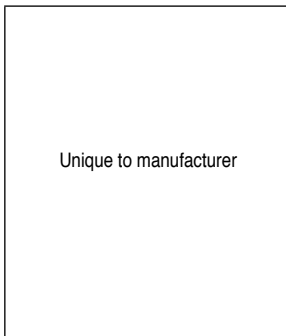
## 8 Tool length (mm)

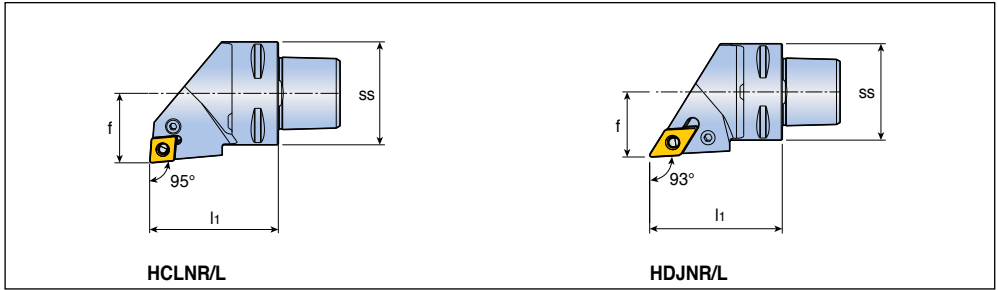


## 9 Cutting edge length



## 10 Manufacturer's type designation





Approach angle	Designation	Dimension (mm)			Insert
		ss	f	l1	
95°	✓ C4-HCLNR/L 27050-0904	40	27	50	CNMA 0904... CNMG 0904... A212-A220
93°	✓ C4-HDJNR/L 27055-1305	40	27	55	DNMG 1305... DNMX 1305... A221-A225

✓ Marked: For RHINORUSH insert

### Spare parts

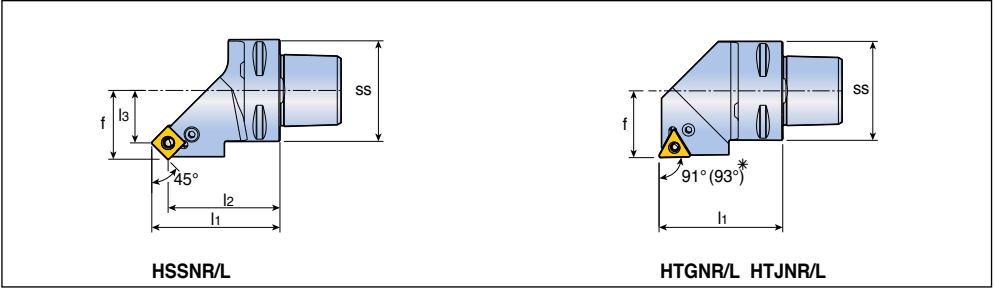
Designation	Lever	Screw	Shim		Shim pin	Shim pin punch	Nozzle	Wrench
C4 ...HCLNR/L	LCL 09-NX	LCS 3	LSC 32	-	LSP 3A	SPP 3-4	NZ 83	L-W 2.5
C4 ...HDJNR/L	LCL 11-NX	LCS 4	-	LSD 3.52	LSP 4	SPP 3-4	NZ 83	L-W 3



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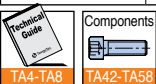


Approach angle	Designation	Dimension (mm)					Insert
		ss	f	l1	l2	l3	
45°	✓ C4-HSSNR/L 27042-0904	40	27	50.3	44	20.6	SNMG 0904... A228-A234
91°	✓ C4-HTGNR/L 27050-1304	40	27	50	-	-	TNGG 1304... TNMG 1304... A235-A240
	✓ C4-HTJNR/L 27050-1304	40	27	50	-	-	

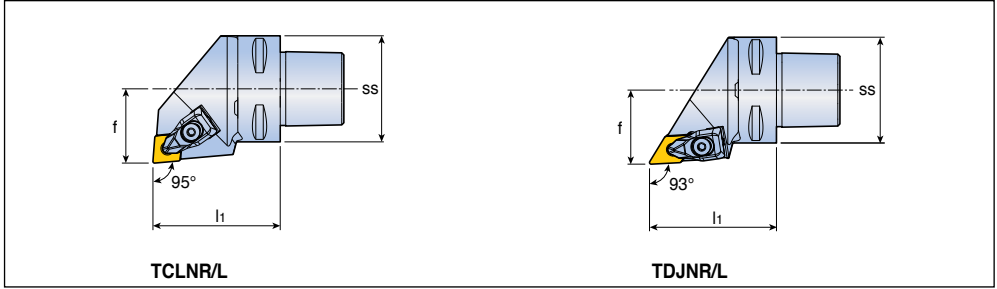
✓Marked: For RHINORUSH insert \*Approach angle of HTJNR/L is 93 degrees

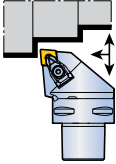

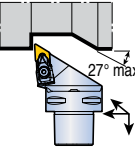

### Spare parts

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










## T-holder type



Approach angle	Designation	Dimension (mm)			Insert
		ss	f	l1	
 95°	<b>C4-TCLNR/L 27050-12</b>	40	27	50	CN...1204...  A212-A220
	<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	CN...1606...
	<b>C5-TCLNR/L 35060-19</b>	50	35	60	CN...1906...
	<b>C6-TCLNR/L 45065-19</b>	63	45	65	
 93°	<b>C4-TDJNR/L 27055-1504</b>	40	27	55	DN...1504...  A221-A225
	<b>C4-TDJNR/L 27055-1506</b>	40	27	55	DN...1506...
	<b>C5-TDJNR/L 35060-1504</b>	50	35	60	DN...1504...
	<b>C5-TDJNR/L 35060-1506</b>	50	35	60	DN...1506...
	<b>C6-TDJNR/L 45065-1504</b>	63	45	65	DN...1504...
	<b>C6-TDJNR/L 45065-1506</b>	63	45	65	DN...1506...

## Spare parts

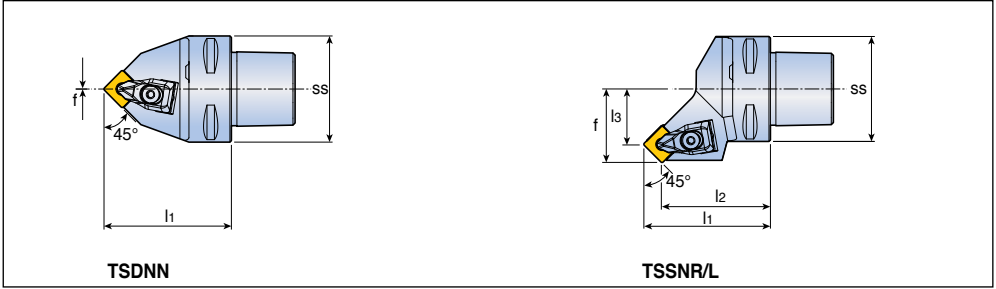
Designation	Clamp	Clamp screw	Shim		Shim screw	Spring	Nozzle	Wrench
<b>C4 ...12</b>				-				
<b>...12</b>	DLM 4	DLS 4	TSC 44	-	SO 40050I	DSP 4	NZ 83	L-W 3
<b>...1504</b>	DLM 4	DLS 4	-	TSD 44	SO 40050I	DSP 4	NZ 83	L-W 3
<b>C4 ...1506</b>	DLM 4	DLS 4	-	TSD 43	SO 40050I	DSP 4	NZ 83	L-W 3
<b>...1506</b>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

Components



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## T-holder type



Approach angle	Designation	Dimension (mm)					Insert
		ss	f	l1	l2	l3	
45°	<b>C4-TSDNN 00050-12</b>	40	-	50	-	-	SN...1204...  A228-A234
	<b>C5-TSDNN 00060-12</b>	50	-	60	-	-	
	<b>C6-TSDNN 00065-12</b>	63	-	65	-	-	
45°	<b>C4-TSSNR/L 27042-12</b>	40	27	50.3	42	18.7	
	<b>C5-TSSNR/L 35052-12</b>	50	35	60.3	52	26.7	
	<b>C6-TSSNR/L 45056-12</b>	63	45	64.3	56	36.7	

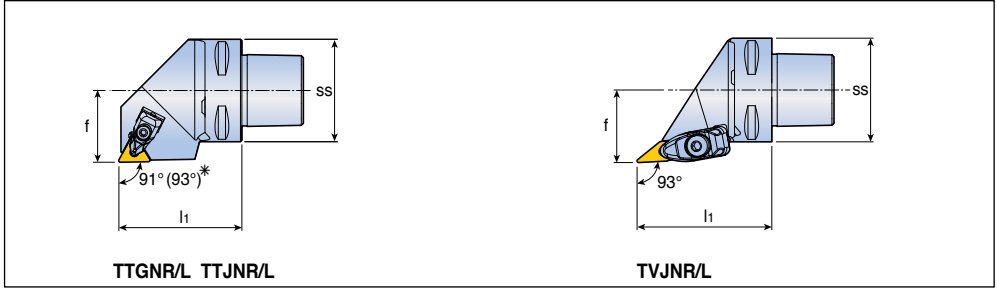
## Spare parts

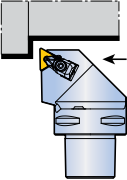

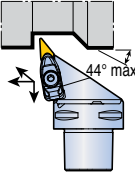

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Nozzle	Wrench	
<b>C4...12</b>	DLM 4	DLS 4	TSS 44	SO 40050I	DSP 4	NZ 83	L-W 3	
<b>...12</b>	DLM 4	DLS 4	TSS 44	SO 40050I	DSP 4	NZ 104	L-W 3	
<b>C4...16</b>	DLM 4	DLS 4	TSS 44	SO 40050I	DSP 4	NZ 83	L-W 3	
<b>...16</b>	DLM 4	DLS 4	TSS 44	SO 40050I	DSP 4	NZ 104	L-W 3	

Components












## T-holder type



Approach angle	Designation	Dimension (mm)			Insert
		ss	f	l1	
<b>91°</b> 	<b>C4-TTGNR/L 27050-16</b>	40	27	50	TN...1604...  A235-A240
	<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...  A241-A242
	<b>C5-TVJNR/L 35065-16</b>	50	35	65	
	<b>C6-TVJNR/L 45068-16</b>	63	45	68	

• \*Approach angle of TTJNR/L is 93 degrees

## Spare parts

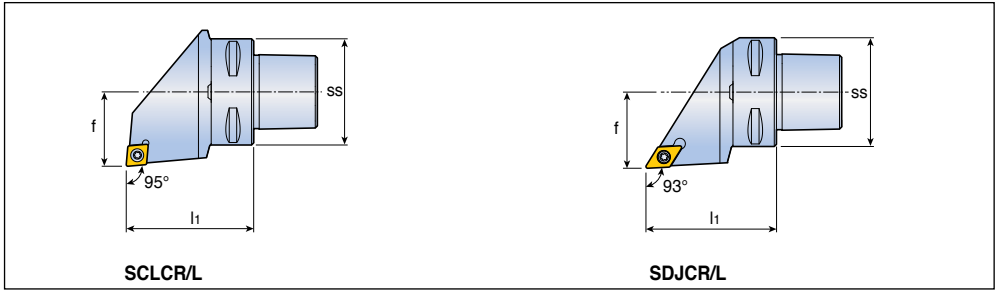
Designation	Clamp		Clamp screw	Shim		Shim screw	Spring	Nozzle	Wrench
									
<b>C4...TT...16</b>	DLM 3	-	DLS 3	TST 33	-	SO 35080I	DSP 3	NZ 83	L-W 2.5
<b>...TT...16</b>	DLM 3	-	DLS 3	TST 33	-	SO 35080I	DSP 3	NZ 104	L-W 2.5
<b>C4...TV...16</b>	-	DLM 3V	DLS 5	-	TSV 33	SO 35080I	DSP 5	NZ 83	L-W 4
<b>...TV...16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

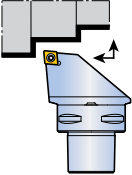

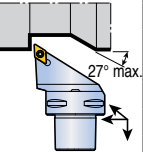

Components











## Screw type



Approach angle	Designation	Dimension (mm)			Insert	
		ss	f	l1		
<b>95°</b> 	<b>C4-SCLCR/L 27050-09</b>	40	27	50	CC...T 09T3...  A247-A248	
	<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	CC...T 1204...    
		<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...T 11T3...  A250-A251	
	<b>C5-SDJCR/L 35060-11</b>	50	35	60		
	<b>C6-SDJCR/L 45065-11</b>	63	45	65		

## Spare parts

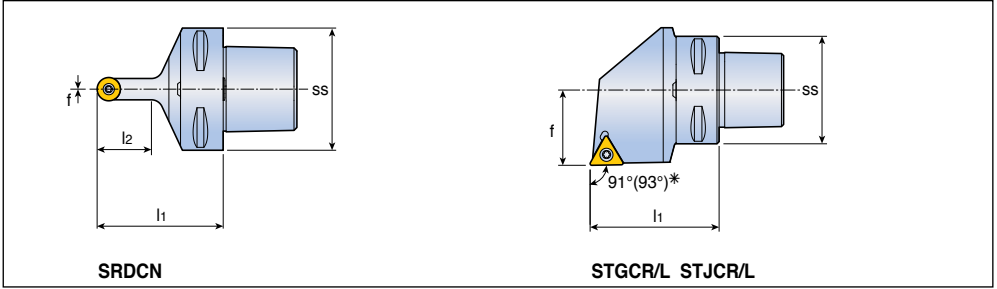
Designation	Screw	Shim		Shim screw	Nozzle	Wrench		
								
<b>C4...09</b>	SO 35124I	SSC 32	-	SO 50090S	NZ 83	T 15		
<b>...09</b>	SO 35124I	SSC 32	-	SO 50090S	NZ 104	T 15		
<b>C4...11</b>	SO 35124I	-	SSD 32	SO 50090S	NZ 83	T 15		
<b>...11</b>	SO 35124I	-	SSD 32	SO 50090S	NZ 104	T 15		
<b>C4...12</b>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

Components



TA42-TA58

## Screw type



Approach angle	Designation	Dimension (mm)				Insert	
		ss	f	l1	l2		
<b>45°</b> 	<b>C4-SRDCN 00050-10A</b>	40	-	50	25	RC...T 10T300 	
	<b>C5-SRDCN 00060-10A</b>	50	-	60	25		
	<b>C6-SRDCN 00065-10A</b>	63	-	65	25		
		<b>C4-SRDCN 00050-12A</b>	40	-	50	28	RC...T 120400
		<b>C5-SRDCN 00060-12A</b>	50	-	60	28	
		<b>C6-SRDCN 00065-12A</b>	63	-	65	28	
<b>91°</b> 	<b>C4-STGCR/L 27050-16</b>	40	27	50	-	TC...T 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	-		

• \*Approach angle of STJCR/L is 93 degrees

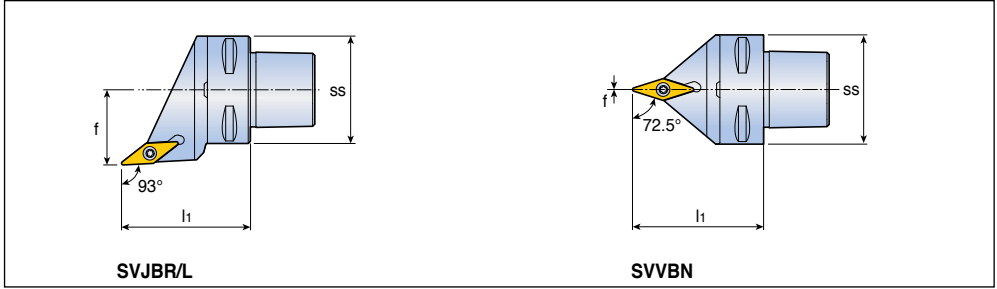
## Spare parts

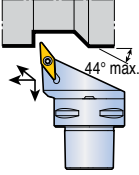

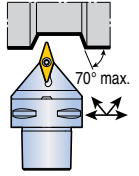
Designation	Screw	Shim		Shim screw	Nozzle	Wrench		
<b>C4...10A</b>	TS 400971	TRC 3-0	-	SR TC-3	NZ 83	T 15		
<b>...10A</b>	TS 400971	TRC 3-0	-	SR TC-3	NZ 104	T 15		
<b>C4...12A</b>	SO 40050I	TRC 4-0	-	SR TC-4S	NZ 83	T 15		
<b>...12A</b>	SO 40050I	TRC 4-0	-	SR TC-4S	NZ 104	T 15		
<b>C4...16</b>	SO 35124I	-	SST 32	SO 50090S	NZ 83	T 15		
<b>...16</b>	SO 35124I	-	SST 32	SO 50090S	NZ 104	T 15		

Components



## Screw type



Approach angle	Designation	Dimension (mm)			Insert
		ss	f	l1	
<b>93°</b> 	<b>C4-SVJBR/L 27050-16</b>	40	27	50	VB...T 1604...  A259-A260
	<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	-	50	
	<b>C5-SVVBN 00060-16</b>	50	-	60	
	<b>C6-SVVBN 00065-16</b>	63	-	65	

## Spare parts

Designation	Screw	Shim	Shim screw	Nozzle	Wrench		
<b>C4...16</b>	SO 35124I	SSV 32	TS 5035062S	NZ 83	T 15		
<b>...16</b>	SO 35124I	SSV 32	TS 5035062S	NZ 104	T 15		

Components



TA42-TA58

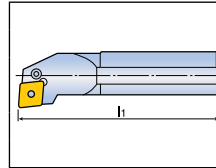
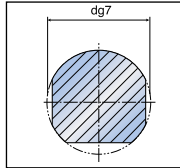


## S 32 S - C T F P R - 16 -

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



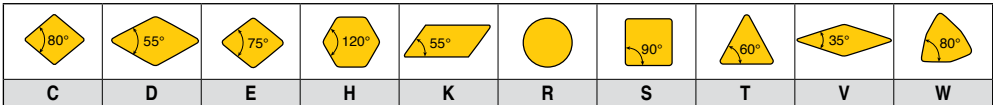
K	125	U	350
M	150	V	400
Q	180	W	450
R	200	Y	500
S	250	X	Special
T	300		

### 2 Bar diameter 3 Tool length

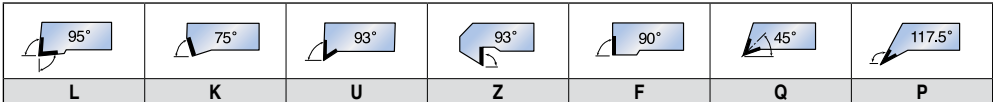
### 4 Clamping system



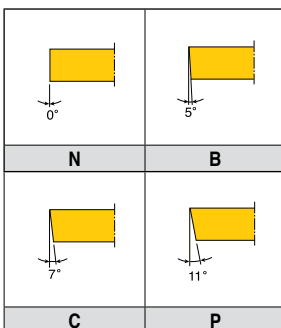
### 5 Insert shape



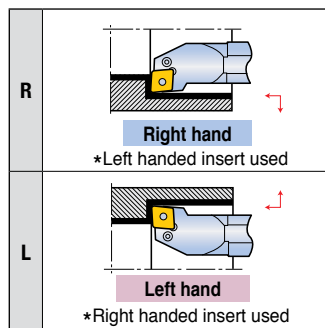
### 6 Approach angle



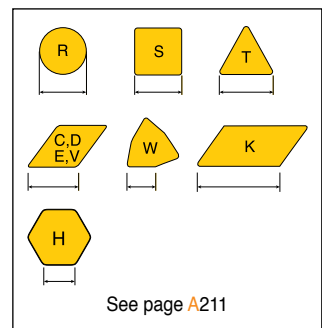
### 7 Insert clearance angle



### 8 Hand of tool



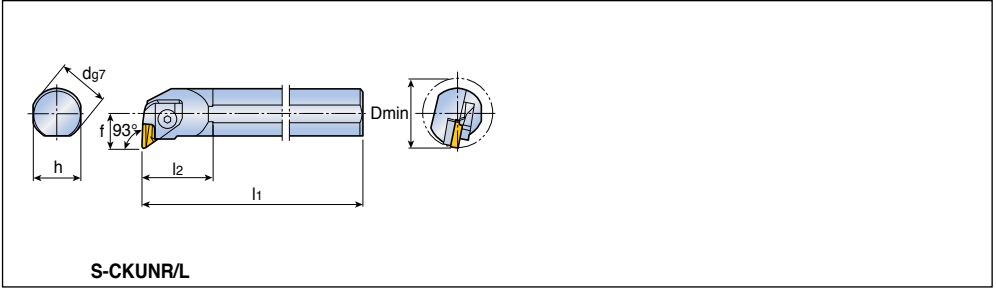
### 9 Cutting edge length



### 10 Manufacturer's type designation

Unique to manufacturer

## Top clamp type



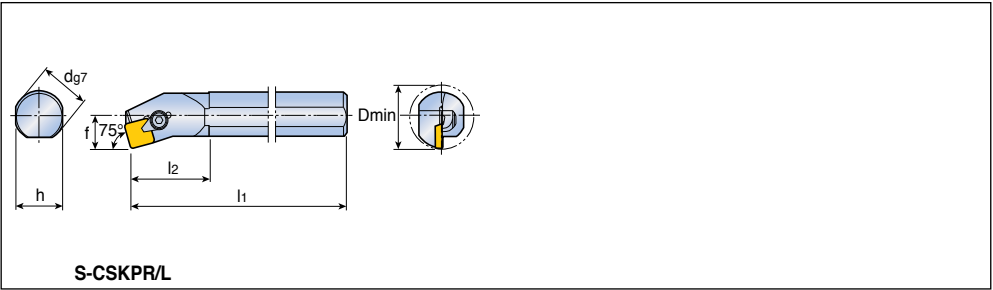
Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
93°	<b>S32T CKUNR/L 16</b>	32	30	300	45	22	44	KNUX 1604...R/L  A226
	<b>S40T CKUNR/L 16</b>	40	38	300	55	27	54	
	<b>S40V CKUNR/L 16</b>	40	38	400	55	27	54	
	<b>S50U CKUNR/L 16</b>	50	48	350	60	35	67.2	

## Spare parts

Designation	Clamp	Screw	Clamp spring	Shim	Shim screw	Pin & spring	Wrench	
...16	CL 16KR/L	CLS 16K	KSP 90	CSK 1604R/L	FH M3 X 0.5 X 10	KSP 48 KP 48S	L-W 4	



## Top clamp type



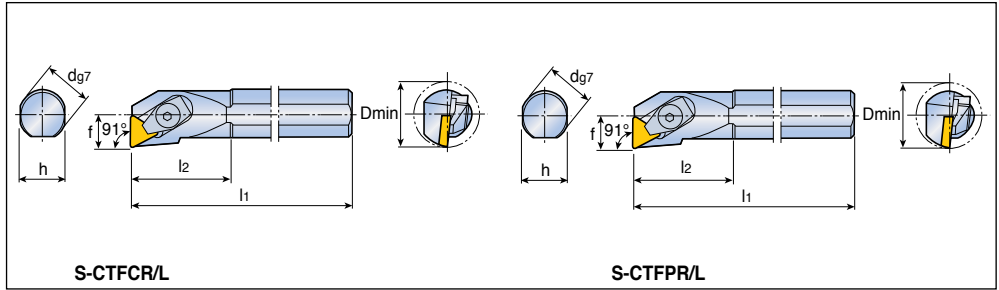
Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
<b>75°</b>	<b>S16R CSKPR/L 09</b>	16	15	200	30	11	20	SPMR, SP...N 0903... A254
	<b>S20S CSKPR/L 09</b>	20	18	250	32	13	25	
	<b>S20R CSKPR/L 12</b>	20	18	200	34	13	25	SPMR, SP...N 1203...
	<b>S25T CSKPR/L 12</b>	25	23	300	42	17	32	
	<b>S32U CSKPR/L 12</b>	32	30	350	45	22	40	

## Spare parts

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



## Top clamp type



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
91°	<b>S10K CTFCR/L 06</b>	10	9	125	25	6.5	12	TCGR 0601... A256-A258
91°	<b>S10K CTFPR/L 06</b>	10	9	125	25	6.5	12	TPGR 0601... A257-A258
	<b>S12M CTFPR/L 06</b>	12	11	150	30	9	16	TPGN, TP...R 0902... 
	<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>S16M CTFPR/L 11</b>	16	15	150	30	11	20	TPMR, TP...N 1603... 
	<b>S16R CTFPR/L 11</b>	16	15	200	30	11	20	TPMR, TP...N 1603... 
	<b>S20S CTFPR/L 11</b>	20	18	250	35	13	25	TPMR, TP...N 1603... 
	<b>S16R CTFPR/L 16</b>	16	15	200	40	11	20	TPMR, TP...N 1603... 
	<b>S20S CTFPR/L 16</b>	20	18	250	50	13	25	TPMR, TP...N 1603... 
	<b>S25T CTFPR/L 16</b>	25	23	300	40	17	32	TPMR, TP...N 1603... 
	<b>S32T CTFPR/L 16</b>	32	30	300	45	22	40	TPMR, TP...N 1603... 
	<b>S40T CTFPR/L 16</b>	40	37	300	70	27	50	TPMR, TP...N 1603... 
	<b>S50U CTFPR/L 16</b>	50	47	350	70	35	63	TPMR, TP...N 1603... 
	<b>S40T CTFPR/L 22</b>	40	37	300	60	27	50	TPMR, TP...N 2204... 
	<b>S50U CTFPR/L 22</b>	50	47	350	70	35	63	TPMR, TP...N 2204... 

## Spare parts

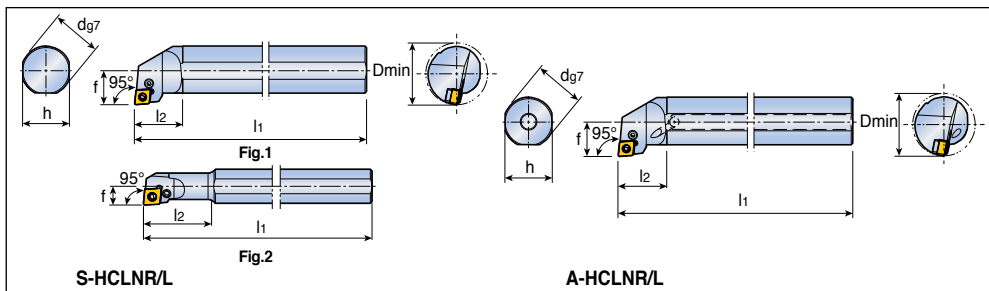
Designation	Clamp	Screw	Snap ring	Shim	Shim pin	Wrench		
...06								
...09	CL 1.25	CLS 1.25	CSR 1.25	-	-	L-W 1.5		
...11	CL 2C	CLS 2C	CSR 2C	-	-	L-W 2.5		
<b>S16R...16</b>	CL 3C	CLS 3C	CSR 2	-	-	L-W 3		
<b>S20S...16</b>	CL 3C	CLS 3C	CSR 2	-	-	L-W 3		
<b>S25T...16</b>	CL 3	CLS 3S	WSR 4	-	-	L-W 3		
...16	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		

Components



TA42-TA58

## Hook lever type



Approach angle	Designation	Dimension (mm)						Fig	Insert	
		dg7	h	l1	l2	f	Dmin			
 95°	✓ S16Q HCLNR/L 0904	16	15	180	25	11	20	1	CNMA 0904... CNMG 0904... CNMX 1205...HB	
	✓ S20Q HCLNR/L 0904	20	18	180	28	13	25	1		
	✓ S20Q HCLNR/L 0904-D20	20	18	180	28	11	20	2		
	✓ S25R HCLNR/L 0904	25	23	200	31	17	32	1		
	✓ S32S HCLNR/L 0904	32	30	250	31	22	40	1		
	✓ S40T HCLNR/L 0904	40	37	300	55	27	50	1		
	* S32S HCLNR/L 1205	32	30	250	45	22	40	1		
	* S40T HCLNR/L 1205	40	37	300	55	27	50	1		
 95°	✓ A16Q HCLNR/L 0904	16	15	180	25	11	20	1	CNMA 0904... CNMG 0904... CNMX 1205...HB	
	✓ A20Q HCLNR/L 0904	20	18	180	28	13	25	1		
	✓ A25R HCLNR/L 0904	25	23	200	31	17	32	1		
	✓ A32S HCLNR/L 0904	32	30	250	31	22	40	1		
	* A32S HCLNR/L 1205	32	30	250	45	22	40	1		
	* A40T HCLNR/L 1205	40	37	300	55	27	50	1		

✓Marked: For RHINORUSH insert \*Marked: For TURNRUSH insert

## Spare parts

Designation	Lever	Screw	Shim		Shim pin	Shim pin punch	Snap ring	Wrench
<b>S</b> ...0904	LCL 09B-NX	LCS 3B	-	-	-	-	LSR 3B	L-W 2
<b>S</b> ...0904...D	LCL 09B-NX	LCS 3B	-	-	-	-	LSR 3B	L-W 2
<b>S32S</b> ...0904	LCL 09-NX	LCS 3	LSC 32	-	LSP 3A	-	-	L-W 2.5
<b>S40T</b> ...0904	LCL 09-NX	LCS 3	LSC 32	-	LSP 3A	-	-	L-W 2.5
<b>A</b> ...0904	LCL 09B-NX	LCS 3B	-	-	-	-	LSR 3B	L-W 2
<b>A32S</b> ...0904	LCL 09-NX	LCS 3	LSC 32	-	LSP 3A	-	-	L-W 2.5
...1205	LCL 12-NX	LCS 5	-	LSC 42-NXS	LSP 4	SPP 3-4	-	L-W 3



## Hook lever type



Approach angle	Designation	Dimension (mm)							Insert
		dg7	h	l1	l2	f	Dmin		
93°	✓ S32S HDUNR/L 1305	32	30	250	45	22	40	DNMG 1305... DNUX 1305... A221-A225	
	✓ S40T HDUNR/L 1305	40	37	300	55	27	50		
93°	✓ A32S HDUNR/L 1305	32	30	250	45	22	40		
	✓ A40T HDUNR/L 1305	40	37	300	55	27	50		

✓ Marked: For RHINORUSH insert

## Spare parts

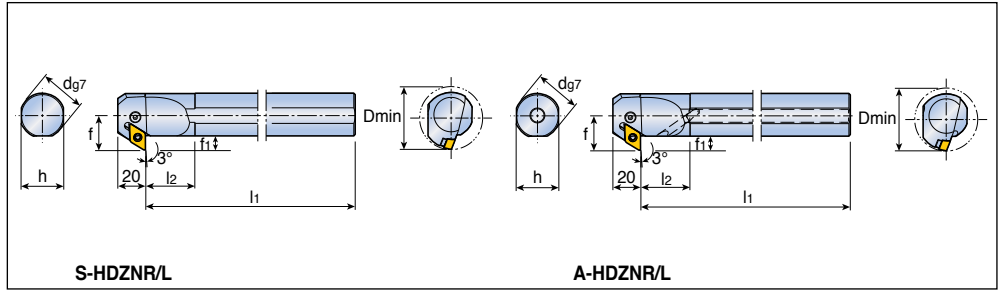
Designation	Lever	Screw	Shim	Shim pin	Wrench		
...1305	LCL 11-NX	LCS 4S	LSD 3.52B	LSP 4	L-W 3		



TA4-TA8

TA42-TA58

## Hook lever type

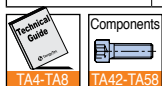


Approach angle	Designation	Dimension (mm)								Insert
		dg7	h	l1	l2	f	f1	Dmin		
93°	✓ S32S HDZNR/L 1305	32	30	250	35	25	10.5	45	DNMG 1305... A221-A225	
	✓ S40T HDZNR/L 1305	40	37	300	40	29	10.5	50		
93°	✓ A32S HDZNR/L 1305	32	30	250	35	25	10.5	45		
	✓ A40T HDZNR/L 1305	40	37	300	40	29	10.5	50		

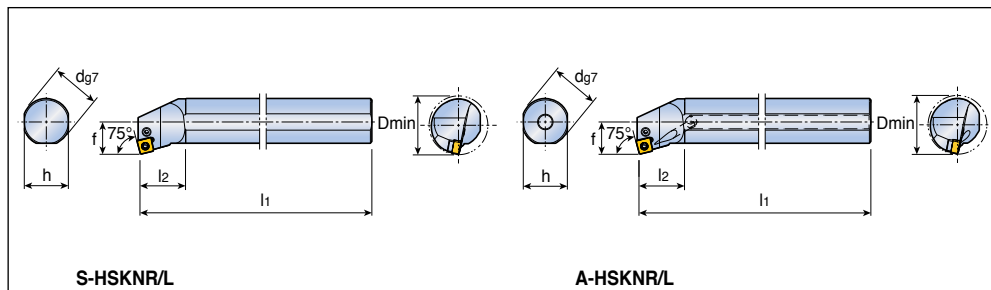
✓Marked: For RHINORUSH insert

## 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

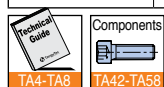


Approach angle	Designation	Dimension (mm)							Insert
		dg7	h	l1	l2	f	Dmin		
75°	✓ S25R HSKNR/L 0904	25	23	200	31	17	32	SNMG 0904...	
	✓ S32S HSKNR/L 0904	32	30	250	31	22	40		
75°	✓ A25R HSKNR/L 0904	25	23	200	31	17	32	A228-A234	
	✓ A32S HSKNR/L 0904	32	30	250	31	22	40		

✓ Marked: For RHINORUSH insert

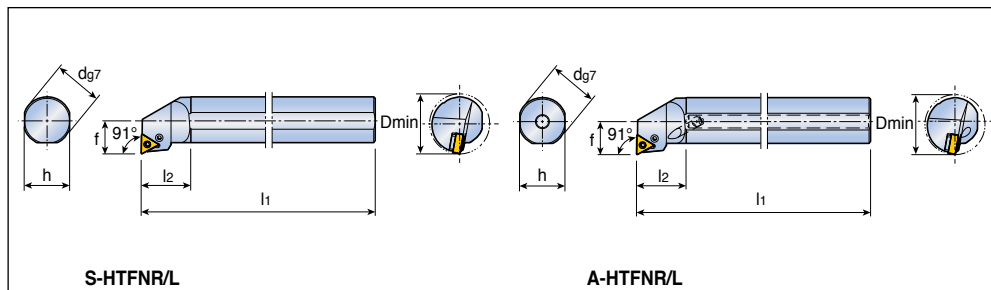
## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Snap ring	Wrench		
...25R ...0904	LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2		
...32S ...0904	LCL 09-NX	LCS 3	LSS 32	LSP 3A	-	L-W 2.5		





## Hook lever type

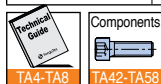


Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
91°	✓ <b>S16Q HTFNR/L 1304</b>	16	15	180	25	11	20	TNGG 1304... TNMG 1304... A235-A240
	✓ <b>S20Q HTFNR/L 1304</b>	20	18	180	28	13	25	
	✓ <b>S25R HTFNR/L 1304</b>	25	23	200	33	17	32	
	✓ <b>S32S HTFNR/L 1304</b>	32	30	250	33	22	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	

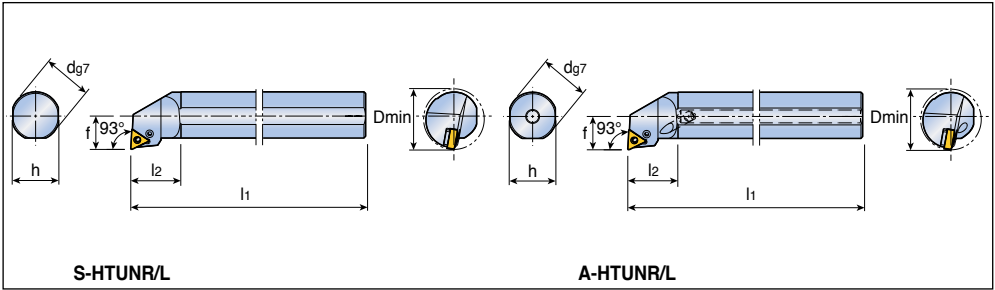
✓Marked: For RHINORUSH insert

## 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



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
 93°	✓ <b>S16Q HTUNR/L 1304</b>	16	15	180	25	11	20	TNGG 1304... TNMG 1304... A235-A240
	✓ <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	

✓ Marked: For RHINORUSH insert

## Spare parts

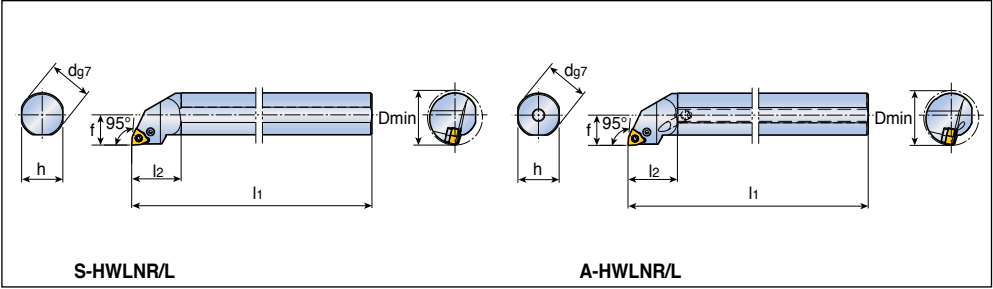
Designation	Lever	Screw	Shim	Shim pin	Snap ring	Wrench		
...1304	LCL 08B-NX	LCS 3B	-	-	LSR 3B	L-W 2		
...32S ...1304	LCL 08-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	L-W 2.5		






TA4-TA8

TA42-TA58







## Hook lever type



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
 95°	✓ <b>S16Q HWLNRL/L 0604</b>	16	15	180	30	11	20	WNMX 0604...  A243-A245
	✓ <b>S20Q HWLNRL/L 0604</b>	20	18	180	33	13	25	
	✓ <b>S25R HWLNRL/L 0604</b>	25	23	200	36	17	32	
	✓ <b>S32S HWLNRL/L 0604</b>	32	30	250	36	22	40	
 95°	✓ <b>A16Q HWLNRL/L 0604</b>	16	15	180	30	11	20	
	✓ <b>A20Q HWLNRL/L 0604</b>	20	18	180	33	13	25	
	✓ <b>A25R HWLNRL/L 0604</b>	25	23	200	36	17	32	
	✓ <b>A32S HWLNRL/L 0604</b>	32	30	250	36	22	40	

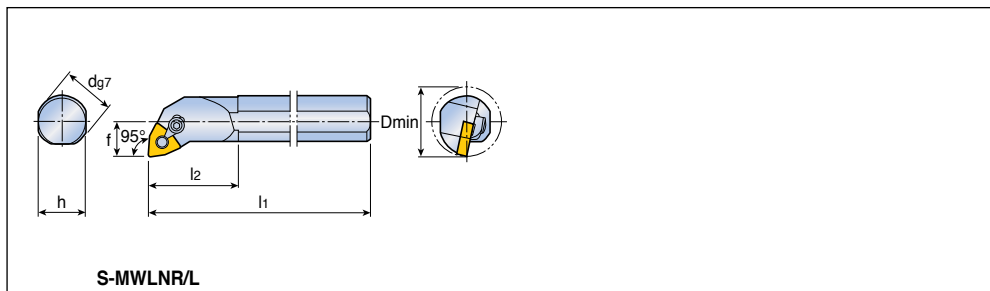
✓Marked: For RHINORUSH insert

## Spare parts

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



## Multi lock type



S-MWLNR/L

Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
95°	S25R MWLNR/L 08	25	23	200	42	17	32	WN... 0804...  A243-A245
	S32S MWLNR/L 08	32	30	250	45	22	44	

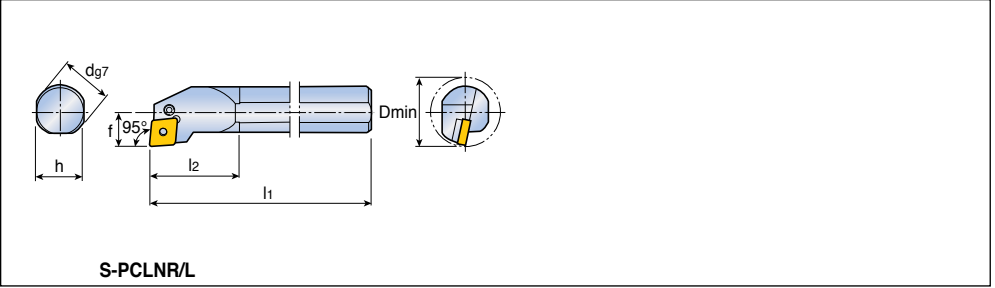
## Spare parts

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

Components



## Lever lock type



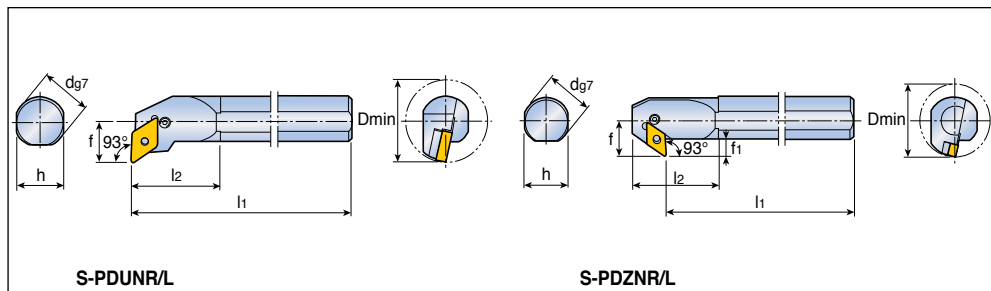
Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
95°	<b>S25T PCLNR/L 12</b>	25	23	300	40	17	32	CN...1204...  A212-A220
	<b>S32S PCLNR/L 12</b>	32	30	250	45	22	40	
	<b>S32T PCLNR/L 12</b>	32	30	300	45	22	40	
	<b>S40T PCLNR/L 12</b>	40	37	300	55	27	50	
	<b>S50U PCLNR/L 12</b>	50	47	350	70	35	63	
	<b>S50U PCLNR/L 16</b>	50	47	350	70	35	63	
	<b>S50U PCLNR/L 19</b>	50	47	350	70	35	63	CN...1906...

## 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		



## Lever lock type



Approach angle	Designation	Dimension (mm)							Insert
		dg7	h	l1	l2	f	f1	Dmin	
93°	<b>S32T PDUNR/L 15</b>	32	30	300	45	22	-	40	DN...1506... A221-A225
	<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	
93°	<b>S32T PDZNR/L 15</b>	32	30	300	30	25	9	45	DN...1504...
	<b>S40T PDZNR/L 15</b>	40	37	300	35	29	9	50	
	<b>S50U PDZNR/L 15</b>	50	47	350	40	35	10	63	

## Spare parts

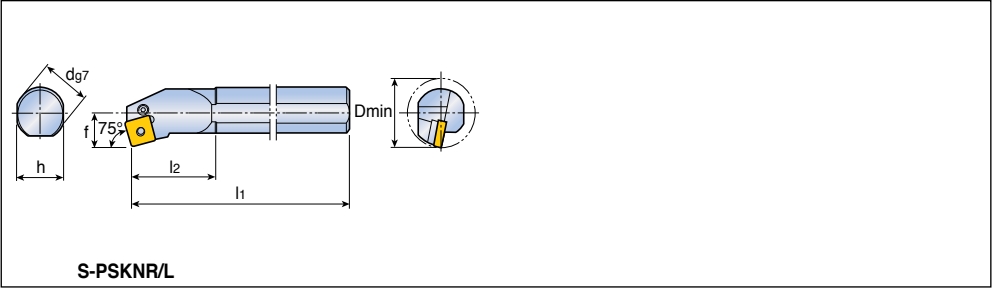
Designation	Lever	Screw	Shim	Shim pin	Wrench			
	<b>S32T ...15</b>	LCL 4A	LCS 4S	LSD 42	LSP 4	L-W 3		
<b>S40T PDZ...15</b>	LCL 4A	LCS 4S	LSD 42	LSP 4	L-W 3			
<b>...15</b>	LCL 4A	LCS 4	LSD 42	LSP 4	L-W 3			
<b>...15A</b>	LCL 4A	LCS 4S	LSD 42	LSP 4	L-W 3			

Components



TA42-TA58

## Lever lock type



S-PSKNR/L

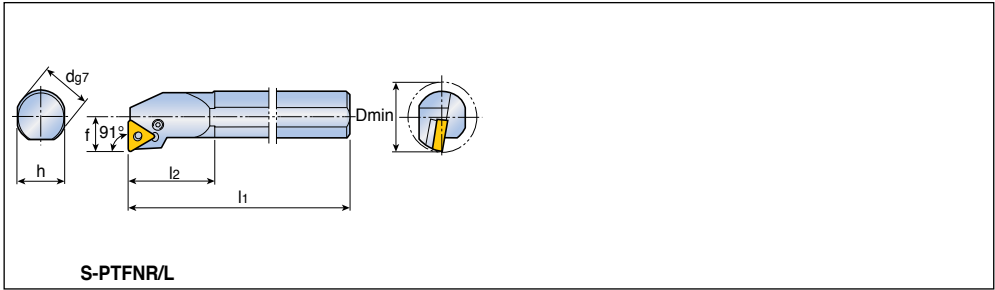
Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
75°	<b>S25T PSKNR/L 12</b>	25	23	300	39	17	32	SN...1204...  A228-A234
	<b>S32T PSKNR/L 12</b>	32	30	300	45	22	40	
	<b>S40T PSKNR/L 12</b>	40	37	300	55	27	50	
	<b>S50U PSKNR/L 19</b>	50	47	350	66	35	63	
								SN...1906...

## 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



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
91°	S20Q PTFNR/L 11	20	18	180	40	13	25	TN...1103... TN...1604... A235-A240
	S25T PTFNR/L 16	25	23	300	40	17	32	
	S32T PTFNR/L 16	32	30	300	45	22	40	
	S40T PTFNR/L 16	40	37	300	60	27	50	
	S50U PTFNR/L 16	50	47	350	70	35	63	
	S40T PTFNR/L 22	40	37	300	70	27	50	TN...2204...
	S50U PTFNR/L 22	50	47	350	70	35	63	

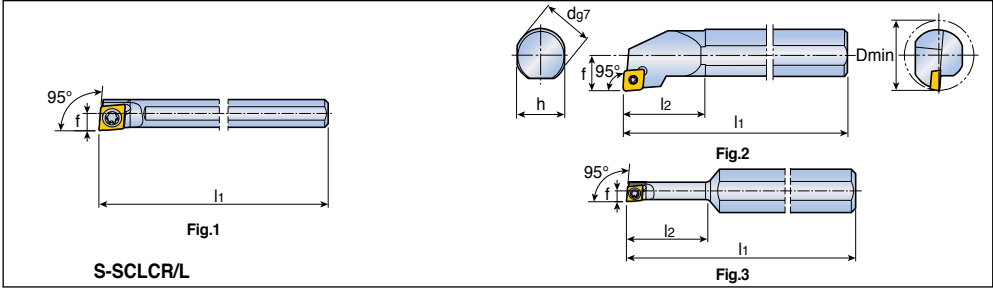
## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Snap ring	Wrench		
...11	LCL 2B	LCS 2B	-	-	LSR 2B	L-W 2		
S25T ...16	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



Approach angle	Designation	Dimension (mm)							Fig	Insert
		dg7	h	l1	l2	f	Dmin			
95°	<b>S04F SCLCR/L 03-D05</b>	4	3.75	80	-	2.5	5	1	CC...T 0301...	
	<b>S05G SCLCR/L 03-D06</b>	5	4.75	90	-	3	6	1	CC...T 0401...	
	<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	CC...T 0401...	
	<b>S10H SCLCR/L 03-D05</b>	10	9	100	15	2.5	5	3	CC...T 0301...	
	<b>S08K SCLCR/L 06</b>	8	7	125	18	6	11	2	CC...T 0602...	
	<b>S10K SCLCR/L 06</b>	10	9	125	20	7	13	2	CC...T 0602...	
	<b>S12M SCLCR/L 06</b>	12	11	150	25	9	16	2	CC...T 0602...	
	<b>S16R SCLCR/L 06</b>	16	15	200	30	11	20	2	CC...T 0602...	
	<b>S12M SCLCR/L 09</b>	12	11	150	23	9	16	2	CC...T 09T3...	
	<b>S16M SCLCR/L 09</b>	16	15	150	30	11	20	2	CC...T 09T3...	
	<b>S16R SCLCR/L 09</b>	16	15	200	30	11	20	2	CC...T 09T3...	
	<b>S20R SCLCR/L 09</b>	20	18	200	32	13	25	2	CC...T 09T3...	
	<b>S20S SCLCR/L 09</b>	20	18	250	32	13	25	2	CC...T 09T3...	
	<b>S25T SCLCR/L 12</b>	25	23	300	42	17	32	2	CC...T 1204...	
	<b>S32T SCLCR/L 12</b>	32	30	300	45	22	40	2	CC...T 1204...	
<b>S40T SCLCR/L 12</b>	40	37	300	55	27	50	2	CC...T 1204...		

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

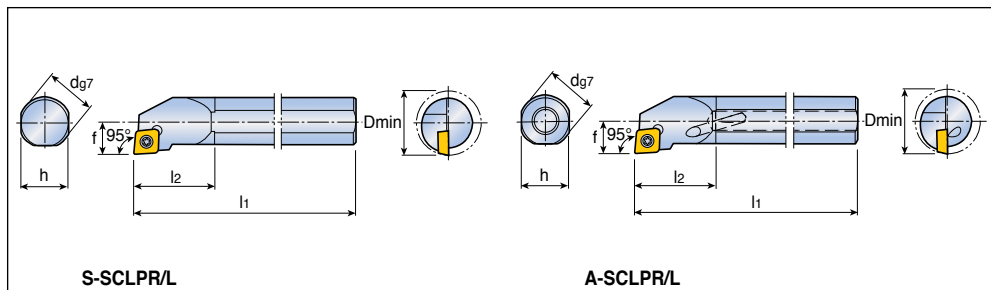
## Spare parts

Designation	Screw	Shim	Shim screw	Wrench			
...03	TS 160311	-	-	T 6			
...04	TS 200381/HG-P	-	-	T 6P			
<b>S...K ...06</b>	SO 250501	-	-	T 7			
...06	SO 250651	-	-	T 7			
...09	SO 350801	-	-	T 15			
<b>S25T ...12</b>	SO 451001	-	-	T 20			
...12	SO 451301	SSC 43N	SO 60105S	T 20			





## Screw type



Approach angle	Designation	Dimension (mm)						Insert	
		dg7	h	l1	l2	f	Dmin		
 95°	<b>S10K SCLPR/L 08</b>	10	9	125	20	6	12	CP...T 0802... A249	
	<b>S10M SCLPR/L 08</b>	10	9	150	20	6	12		
	<b>S12M SCLPR/L 08</b>	12	11	150	23	8	16		
	 95°	<b>S16N SCLPR/L 09</b>	16	15	160	30	10	20	CP...T 0903...
		<b>S16R SCLPR/L 09</b>	16	15	200	30	10	20	
		<b>S20N SCLPR/L 09</b>	20	18	160	32	12.5	25	
		<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	21.5	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	20	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

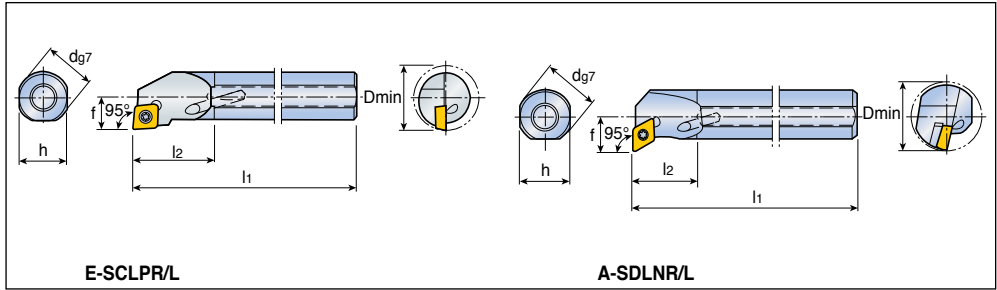
Designation	Screw	Wrench					
<b>...06</b>	SO 250501	T 7					
<b>...08</b>	SO 300551	T 9					
<b>...09</b>	SO 350801	T 15					
<b>...0903, 09T3</b>	TS 350701/HG	T 15					

Components



TA42-TA58

## Screw type



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
 95°	✓ E08K SCLPR/L 06	8	7	125	15	6	11	CP...T 0602... A249
	✓ E10K SCLPR/L 06	10	9	125	15	7	13	
	✓ E12M SCLPR/L 0903	12	11	150	19	9	16	CP...T 0903...
	✓ E16R SCLPR/L 0903	16	15	200	21.73	11	20	CP...T 09T3... A221-A225
	✓ E12M SCLPR/L 09T3	12	11	150	19	9	16	
	✓ E16R SCLPR/L 09T3	16	15	200	21.5	11	20	
 95°	A20S SDLNR/L 11	20	18	250	31	13	24	DN...1104... A221-A225
	A25T SDLNR/L 11	25	23	300	30	17	31	

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

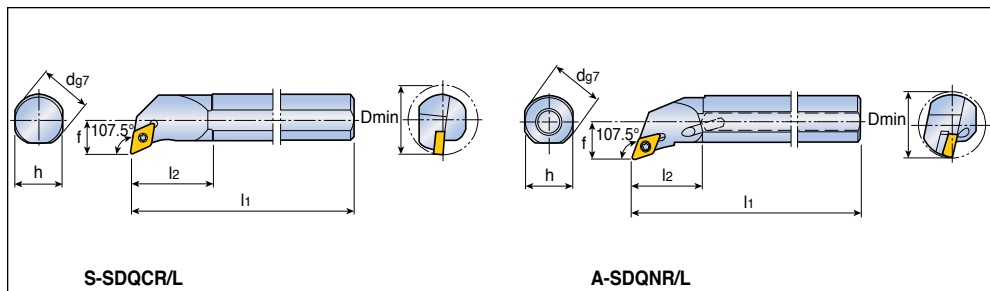
## Spare parts

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

Components



## Screw type



Approach angle	Designation	Dimension (mm)						Insert	
		dg7	h	l1	l2	f	Dmin		
 107.5°	<b>S10K SDQCR/L 07</b>	10	9	125	20	7	13	DC...T 0702... A250-A251	
	<b>S10M SDQCR/L 07</b>	10	9	150	20	7	13		
	<b>S12M SDQCR/L 07</b>	12	11	150	22	9	16		
	 15° max.	<b>S16R SDQCR/L 07</b>	16	15	200	27	11	20	DC...T 11T3... 
		<b>S20N SDQCR/L 11</b>	20	18	160	40	13	25	
		<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... A221-A225	
	<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

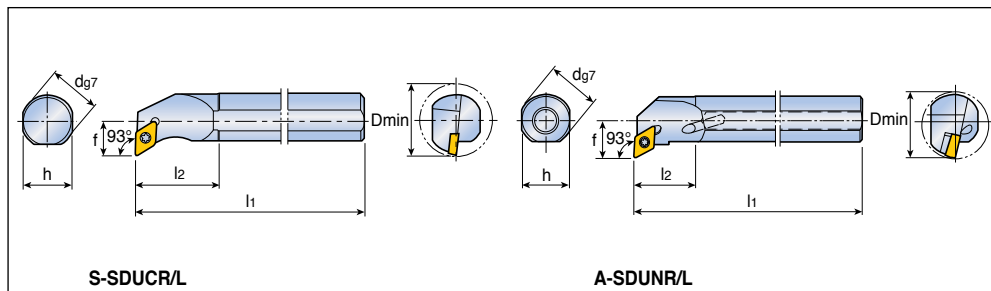
## Spare parts

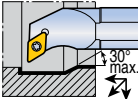

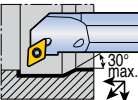

Designation	Screw	Shim	Shim screw	Wrench	Seal		
<b>S10 ...07</b>	SO 25050I	-	-	T 7	-		
<b>S ...07</b>	SO 25065I	-	-	T 7	-		
<b>S ...11</b>	SO 35080I	-	-	T 15	-		
<b>A16S...11</b>	SO 35120I	-	-	T 10	PL 16		
<b>A20S...11</b>	SO 35120I	SSD 32	SO 50090S	T 10	PL 20		
<b>A25T ...11</b>	SO 35120I	SSD 32	SO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

Components



## Screw type



Approach angle	Designation	Dimension (mm)						Insert	
		dg7	h	l1	l2	f	Dmin		
<b>93°</b> 	<b>S10K SDUCR/L 07</b>	10	9	125	20	7	13	DC...T 0702...  A250-A251	
	<b>S12M SDUCR/L 07</b>	12	11	150	23	9	16		
	<b>S16M SDUCR/L 07</b>	16	15	150	30	11	20		
	<b>S16R SDUCR/L 07</b>	16	15	200	30	11	20		
	<b>S16R SDUCR/L 11</b>	16	15	200	27	11	20		DC...T 11T3...
	<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		
<b>93°</b> 	<b>A20S SDUNR/L 11</b>	20	18	250	30	15	27	DN... 1104...  A221-A225	
	<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>S10K...06</b>	SO 25050I	-	-	T 7	-		
<b>S ...11</b>	SO 35080I	-	-	T 15	-		
<b>A20S...11</b>	SO 35120I	-	-	T 10	PL 20		
<b>A25T ...11</b>	SO 35120I	SSD 32	SO 50090S	T 10	PL 25		
<b>A32T...11</b>	SO 35120I	SSD 32	SO 50090S	T 10	PL 32		

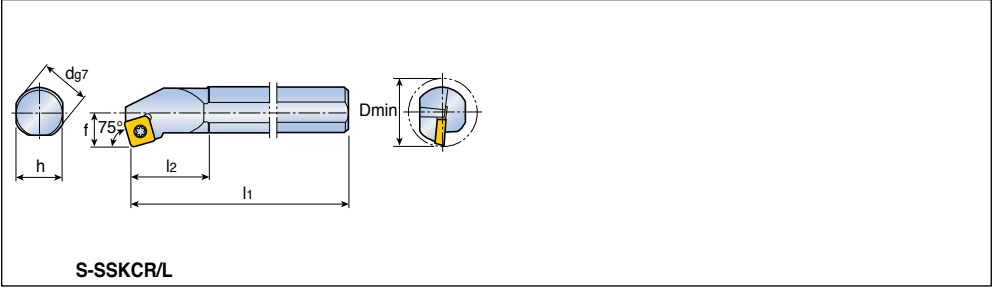
Components



TA42-TA58



## Screw type



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
75°	<b>S16R SSKCR/L 09</b>	16	15	200	28	11	20	SC...T 09T3... A253
	<b>S20S SSKCR/L 09</b>	20	18	250	30	13	25	
	<b>S25T SSKCR/L 12</b>	25	23	300	39	17	32	

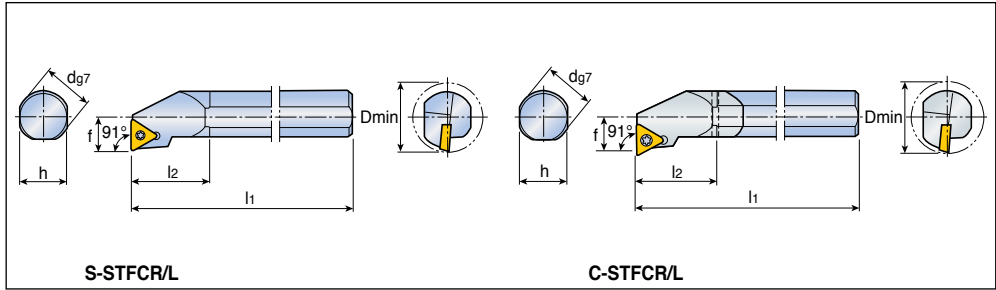
## Spare parts

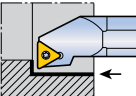
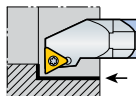
Designation	Screw	Wrench					
...09	SO 35080I	T 15					
...12	SO 45100I	T 20					





## Screw type



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	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...T 0902...
	<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...T 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...T 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...T 0902...
	✓ <b>C10K STFCR/L 11</b>	10	9	125	15	7	13	TC...T 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

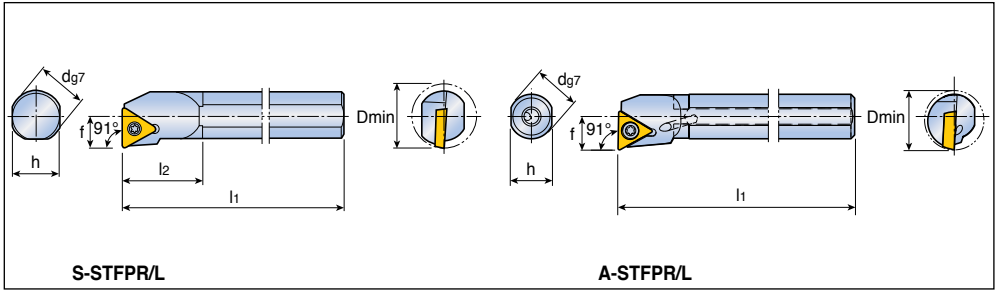
## Spare parts

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				
<b>S40T...16</b>	SO 35124I	SST 32	SO 50090S	T 15				

Components



## Screw type



Approach angle	Designation	Dimension (mm)							Insert
		dg7	h	l1	l2	f	Dmin		
	<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...	
	<b>S10K STFPR/L 11</b>	10	9	125	25	6	12	TP...T 1103...	
	<b>S10M STFPR/L 11</b>	10	9	150	25	6	12		
	<b>S12M STFPR/L 11</b>	12	11	150	30	8	16		
	<b>S16N STFPR/L 11</b>	16	15	160	35	10	20		
	<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>S20N STFPR/L 16</b>	20	18	160	35	12.5	25		
	<b>S20S STFPR/L 16</b>	20	18	250	36	12.5	25		
	<b>A08H STFPR/L 09</b>	8	7	100	-	6	11	TP...T 0902...	
	<b>A10K STFPR/L 1102</b>	10	9	125	-	7	13	TP...T1102...	
	<b>A12M STFPR/L 1102</b>	12	11	150	-	9	16		
	<b>A16Q STFPR/L 1102</b>	16	15	180	-	11	20		
	<b>A12M STFPR/L 1103</b>	12	11	150	-	9	16	TP...T1103...	
	<b>A16Q STFPR/L 1103</b>	16	15	180	-	11	20		
	<b>A20R STFPR/L 16T3</b>	20	18	200	-	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

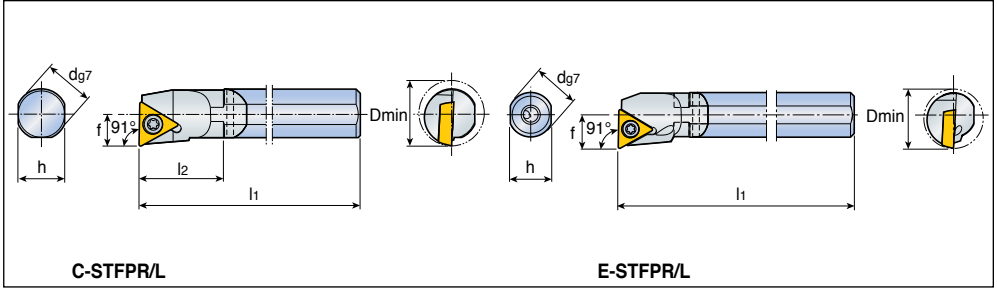
Designation	Screw	Wrench					
<b>...09-X01</b>	SO 250611	T 8					
<b>...09</b>	TS 220461	T 7					
<b>S10 ...11</b>	SO 300551	T 9					
<b>...11</b>	SO 301001	T 9					
<b>S16R ...11</b>	SO 300401	T 9					
<b>...1102</b>	SO 250501	T 7					
<b>...1103</b>	SO 300551	T 9					
<b>...16T3</b>	TS 350701/HG	T 15					
<b>...16</b>	SO 351241	T 15					

Components



TA42-TA58

## Screw type



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
91°	✓ C10K STFPR/L 11	10	9	125	15	6	12	TPGT 1103...  A257-A258
	✓ C12M STFPR/L 11	12	11	150	20	8	16	
91°	✓ E08K STFPR/L 09	8	7	125	-	6	11	TP...T 0902...
	✓ E10K STFPR/L 1102	10	9	125	-	7	13	TP...T 1102...
	✓ E12M STFPR/L 1102	12	11	150	-	9	16	
	✓ E16R STFPR/L 1102	16	15	200	-	11	20	
	✓ E12M STFPR/L 1103	12	11	150	-	9	16	TP...T 1103...
	✓ E16R STFPR/L 1103	16	15	200	-	11	20	

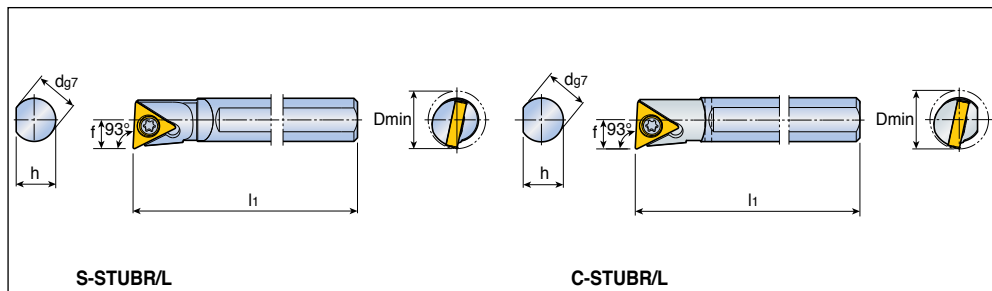
✓ Marked: Designates carbide shank • L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

## Spare parts

Designation	Screw	Wrench					
...09	TS 22046l	T 7					
C10K ...11	SO 30055l	T 9					
C12M ...11	SO 30100l	T 9					
...1102	SO 25050l	T 7					
...1103	SO 30055l	T 9					



## Screw type



Approach angle	Designation	Dimension (mm)					Insert
		dg7	h	l1	f	Dmin	
93°	<b>S06H STUBR/L 06-D08</b>	6	5.5	100	4	8	TB...T 0601...  A255
93°	✓ <b>C06J STUBR/L 06-D08</b>	6	5.5	110	4	8	

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

## Spare parts

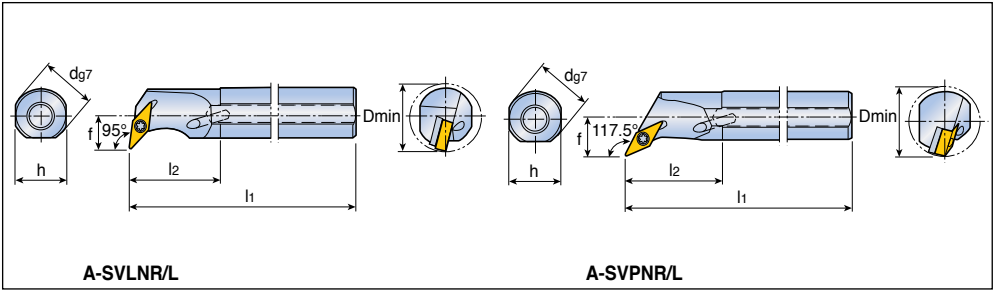
Designation	Screw	Wrench					
	...06-D08	 TS 20043I/HG-P	 T 6P				

Components



TA42-TA58

## Screw type



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
95°	<b>A25T SVLNR/L 13</b>	25	23	300	40	16	31	VN... 1304... A241-A242
	<b>A32T SVLNR/L 13</b>	32	30	300	45	20	38	
117.5°	<b>A25T SVPCR/L 13</b>	25	23	300	45	19	33	
	<b>A32T SVPCR/L 13</b>	32	30	300	47	26	44	

## Spare parts

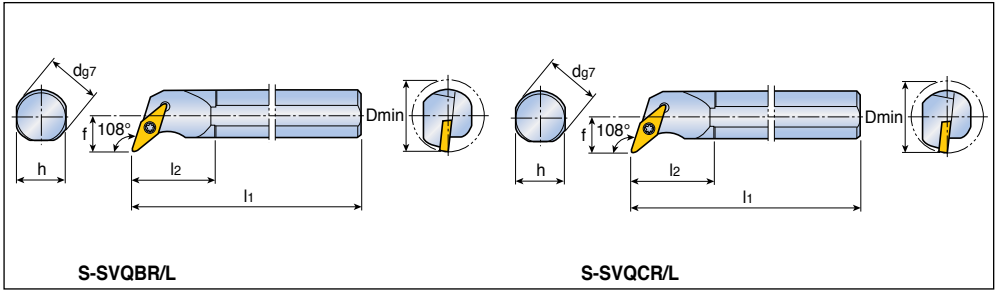
Designation	Screw	Shim	Shim screw	Wrench	Seal			
<b>A25T ...13</b>	SO 35120I	SSVN 2.523	TS 5035062S	T 10	PL 25			
<b>A32T ...13</b>	SO 35120I	SSVN 2.523	TS 5035062S	T 10	PL 32			



# S-SVQBR/L S-SVQCR/L

T-TURN

## Screw type



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
 108°	<b>S25T SVQBR/L 16</b>	25	23	300	40	17	32	VB...T 1604...  A259-A260
	<b>S32T SVQBR/L 16</b>	32	30	300	45	22	40	
	<b>S40T SVQBR/L 16</b>	40	38	300	55	27	50	
 108°	<b>S32T SVQCR/L 16</b>	32	30	300	45	22	40	
	<b>S40T SVQCR/L 16</b>	40	38	300	55	27	50	

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

## Spare parts

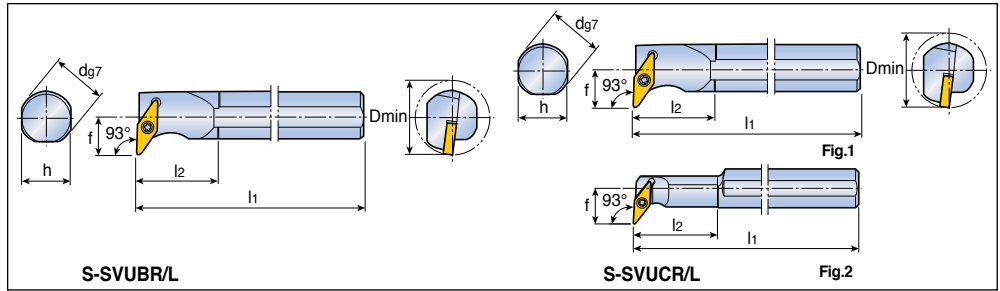
Designation	Screw	Shim	Shim screw	Wrench			
<b>S25T ...16</b>	SO 35080I	-	-	T 15			
<b>...16</b>	SO 35124I	SSV 32	SO 50090S	T 15			

Components



TA42-TA58

## Screw type



Approach angle	Designation	Dimension (mm)						Fig	Insert
		dg7	h	l1	l2	f	Dmin		
93°	<b>S32T SVUBR/L 16</b>	32	30	300	45	22	40		VB...T 1604... A259-A260
	<b>S40T SVUBR/L 16</b>	40	38	300	55	27	50		
93°	<b>S12M SVUCR/L 08-D16</b>	12	11	150	26	11	16	2	VC...T 0802... A260
	<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	
	<b>S32T SVUCR/L 16</b>	32	30	300	45	22	40	1	VC...T 1604...
	<b>S40T SVUCR/L 16</b>	40	38	300	60	27	50	1	

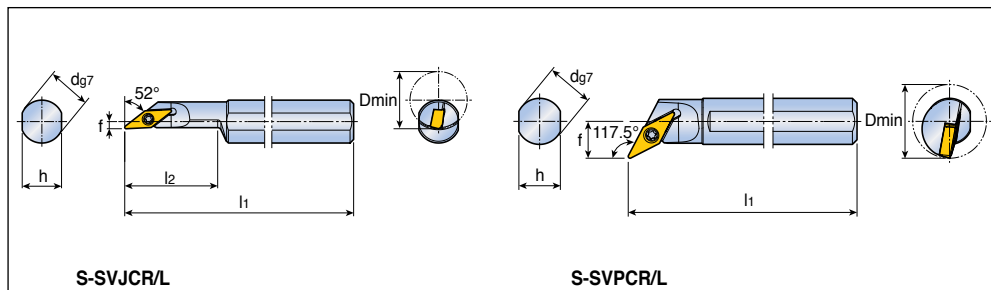
• L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

## Spare parts

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



## Screw type



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
52°	<b>S12M SVJCR/L 08-D16</b>	12	11	150	26	2	16	VC...T 0802... 
	<b>S16Q SVJCR/L 08-D20</b>	16	15	180	36	2	20	
117.5°	<b>S10K SVPCR/L 08-D16</b>	10	9	125	-	8	16	VC...T 1103...
	<b>S12M SVPCR/L 11-D20</b>	12	11	150	-	10	20	

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

## Spare parts

Designation	Screw	Wrench					
	...08-...	TS 200381/HG-P	T 6P				
...11-...	SO 25065I	T 7					

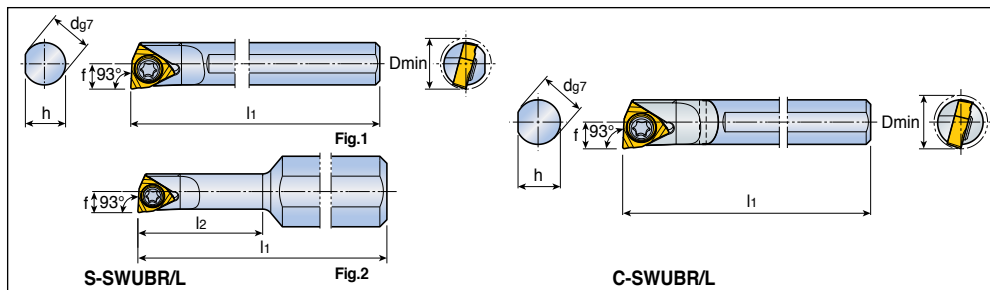
Components



TA42-TA58



## Screw type



Approach angle	Designation	Dimension (mm)						Fig	Insert
		dg7	h	l1	l2	f	Dmin		
93°	S05G SWUBR/L 06-D06	5	4.75	90	-	3	6	1	WB...T 0601... A261
	S06H SWUBR/L 06-D07	6	5.5	100	-	3.5	7	1	
	S07J SWUBR/L 06-D08	7	6.5	110	-	4	8	1	
	S10H SWUBR/L 06-D06	10	9	100	18	3	6	2	
93°	✓ C05H SWUBR/L 06-D06	5	4.75	100	-	3	6		
	✓ C06J SWUBR/L 06-D07	6	5.5	110	-	3.5	7		
	✓ C07K SWUBR/L 06-D08	7	6.5	125	-	4	8		

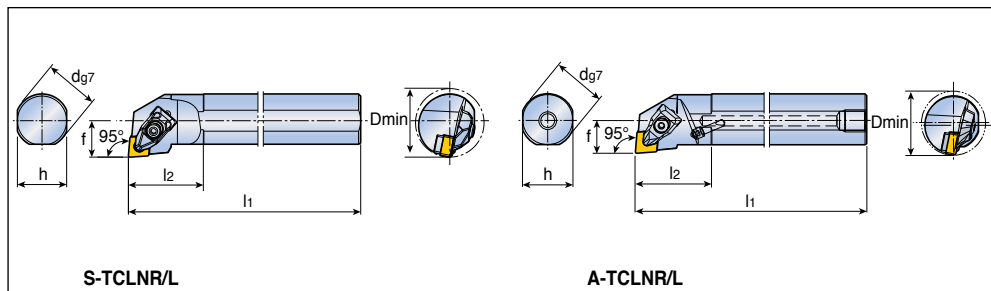
✓Marked: Designates carbide shank • L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

## Spare parts

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



## T-holder type



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
95°	✓ S25R TCLNR/L 0904	25	23	200	35	17	32	CNMA 0904... CNMG 0904... A212-A220
	✓ S32S TCLNR/L 0904	32	30	250	35	22	40	
	✓ S40T TCLNR/L 0904	40	37	300	45	27	50	
95°	✓ A25R TCLNR/L 0904	25	23	200	35	17	32	CN... 1204...
	✓ A32S TCLNR/L 0904	32	30	250	35	22	40	
	A25T TCLNR/L 12	25	23	300	45	17	32	
	A32T TCLNR/L 12	32	30	300	45	22	40	
	A40T TCLNR/L 12	40	37	300	45	27	50	
	A50U TCLNR/L 12	50	47	350	45	35	63	

✓ Marked: For RHINORUSH insert

## Spare parts

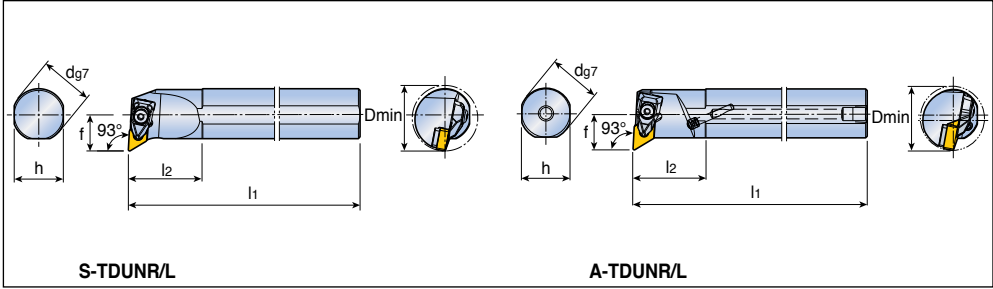
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Nozzle	Wrench	
S25R...0904							L-W 2.5	T 15
S32S,S40T...0904	DLM 3-NX	DLS 3	LSC 32	SO 40073I	DSP 3	-	L-W 2.5	T 15
A25R...0904	DLM 3-NX	DLS 3	LSC 32	SO 40073I	DSP 3	NZ 62	L-W 2.5	T 15
A32S...0904	DLM 3-NX	DLS 3	LSC 32	SO 40085I	DSP 3	NZ 62	L-W 2.5	T 15
A25T...12	DLM 4	DLS 4	LSC 42	TS 50A105I	DSP 4	NZ 62	L-W 3	T 20
A32T...12	DLM 4	DLS 4	LSC 42	TS 50A105I	DSP 4	NZ 62	L-W 3	T 20
A40T...12	DLM 4	DLS 4	TSC 44	SO 40050I	DSP 4	NZ 62	L-W 3	T 15
A50U...12	DLM 4	DLS 4	TSC 44	SO 40050I	DSP 4	NZ 62	L-W 3	T 15



TA4-TA8

TA42-TA58

## T-holder type



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
93°	✓ S32S TDUNR/L 1305	32	30	250	45	22	40	DNMG 1305... A221-A225
	✓ S40T TDUNR/L 1305	40	37	300	55	27	50	
93°	✓ A32S TDUNR/L 1305	32	30	250	45	22	40	DN... 1506... 
	✓ A40T TDUNR/L 1305	40	37	300	55	27	50	
	A32T TDUNR/L 15	32	30	300	45	22	40	
	A40T TDUNR/L 15	40	37	300	45	27	50	
	A50U TDUNR/L 15	50	47	350	45	35	63	

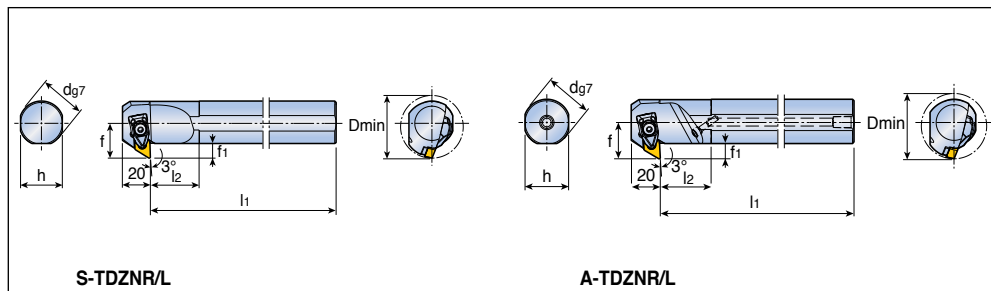
✓Marked: For RHINORUSH insert

## Spare parts

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



## T-holder type

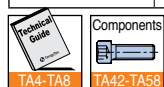


Approach angle	Designation	Dimension (mm)							Insert
		dg7	h	l1	l2	f	f1	Dmin	
93°	✓ S32S TDZNR/L 1305	32	30	250	35	25	10.5	45	DNMG 1305... A221-A225
	✓ S40T TDZNR/L 1305	40	37	300	40	29	10.5	50	
93°	✓ A32S TDZNR/L 1305	32	30	250	35	25	10.5	45	
	✓ A40T TDZNR/L 1305	40	37	300	40	29	10.5	50	

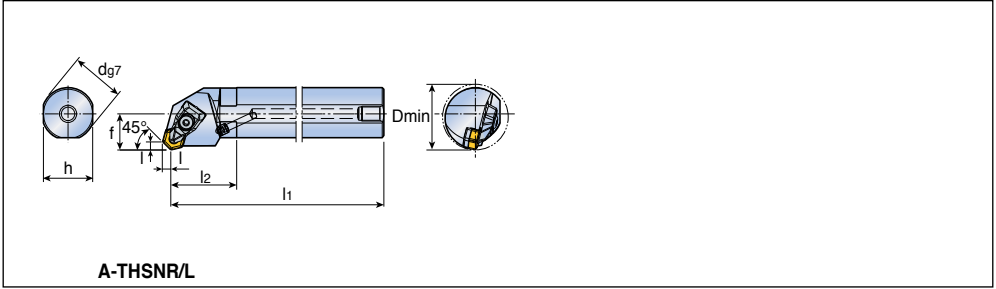
✓ Marked: For RHINORUSH insert

## Spare parts

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

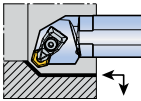


## T-holder type



A-THSNR/L

Approach angle	Designation	Dimension (mm)							Insert
		dg7	h	l1	l2	f	Dmin	l	
45°	A32T THSNR/L 05	32	30	300	40	22	40	4.2	HN...G 0504... A226
	A40T THSNR/L 05	40	37	300	45	27	50	4.2	
	A50U THSNR/L 05	50	47	350	45	35	63	4.2	

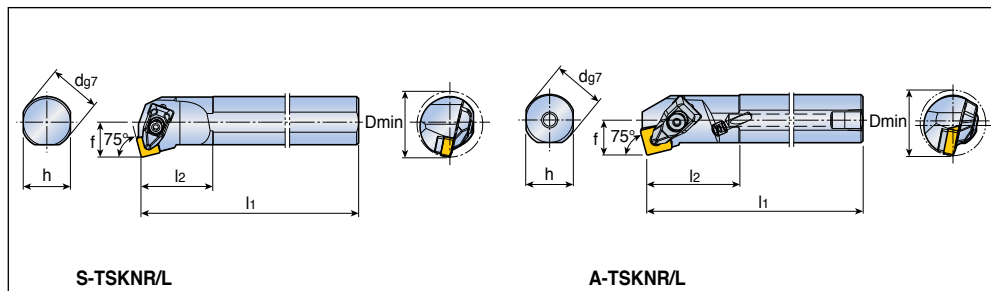


## Spare parts

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



## T-holder type

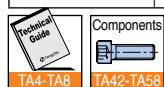


Approach angle	Designation	Dimension (mm)						Insert	
		dg7	h	l1	l2	f	Dmin		
75°	✓ S25R TSKNR/L 0904	25	23	200	35	17	32	SNMG 0904... A228-A234	
	✓ S32S TSKNR/L 0904	32	30	250	35	22	40		
75°	✓ A25R TSKNR/L 0904	25	23	200	35	17	32		SN... 1204...
	✓ A32S TSKNR/L 0904	32	30	250	35	22	40		
	A25T TSKNR/L 12	25	23	300	45	17	32		

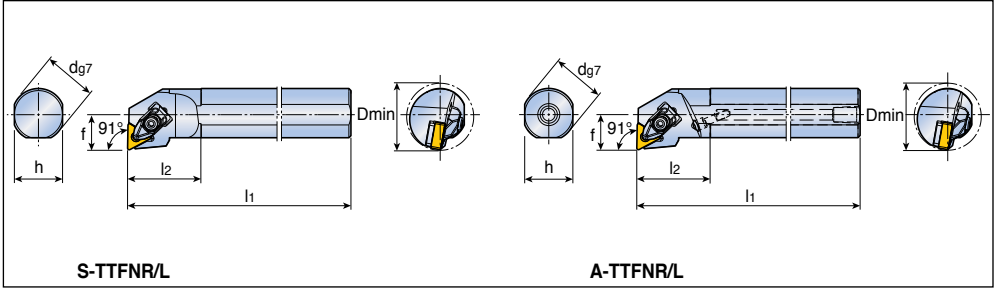
✓ Marked: For RHINORUSH insert • L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder

## Spare parts

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



## T-holder type



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
91°	✓ S25R TTFNR/L 1304	25	23	200	35	17	32	TNMG 1304...  A235-A240
	✓ S32S TTFNR/L 1304	32	30	250	35	22	40	
91°	✓ A25R TTFNR/L 1304	25	23	200	35	17	32	
	✓ A32S TTFNR/L 1304	32	30	250	35	22	40	

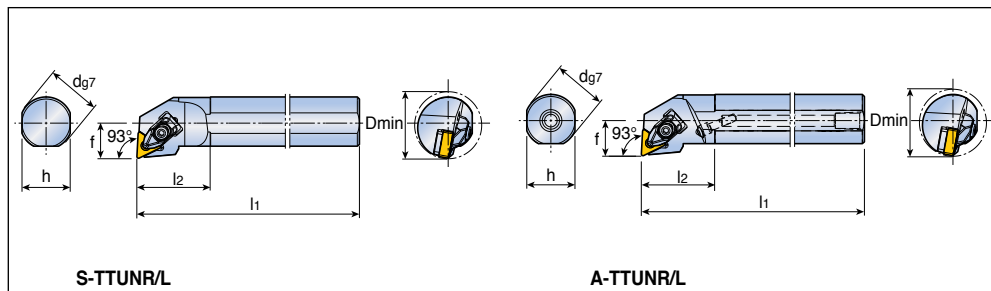
✓Marked: For RHINORUSH insert

## Spare parts

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



## T-holder type

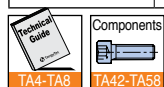


Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
93°	✓ S25R TTUNR/L 1304	25	23	200	35	17	32	TNMG 1304...  A235-A240
	✓ S32S TTUNR/L 1304	32	30	250	35	22	40	
93°	✓ A25R TTUNR/L 1304	25	23	200	35	17	32	
	✓ A32S TTUNR/L 1304	32	30	250	35	22	40	

✓ Marked: For RHINORUSH insert

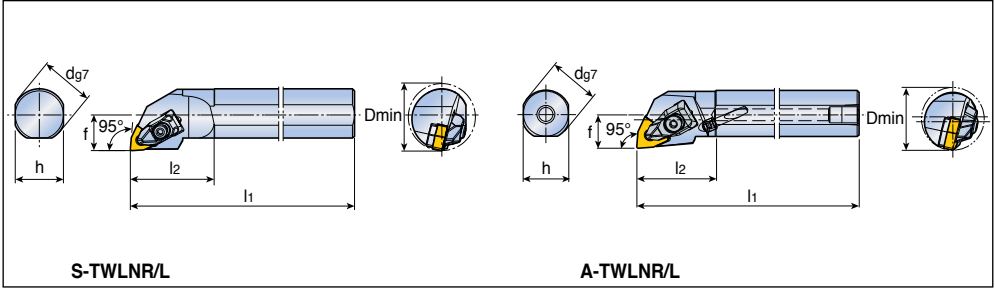
## Spare parts

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Nozzle	Wrench	
S25R...1304		DLM 2.5-NX		SO 40073I		-	L-W 2.5	T 15
S32S...1304		DLS 3		SO 40085I		-	L-W 2.5	T 15
A25R...1304		DLS 3		SO 40073I		NZ 62	L-W 2.5	T 15
A32S...1304		DLS 3		SO 40085I		NZ 62	L-W 2.5	T 15





## T-holder type



Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
95°	✓ S25R TWLNRL/L 0604	25	23	200	40	17	32	WNNMX 0604... A243-A245
	✓ S32S TWLNRL/L 0604	32	30	250	45	22	40	
95°	✓ A25R TWLNRL/L 0604	25	23	200	40	17	32	WN...0604...
	✓ A32S TWLNRL/L 0604	32	30	250	45	22	40	
	A20S TWLNRL/L 06	20	18	250	35	13	25	
	A25T TWLNRL/L 06	25	23	300	40	17	32	
	A32T TWLNRL/L 06	32	30	300	45	22	40	WN...0804...
	A25T TWLNRL/L 08	25	23	300	40	17	32	
	A32T TWLNRL/L 08	32	30	300	45	22	40	
	A40T TWLNRL/L 08	40	37	300	45	27	50	

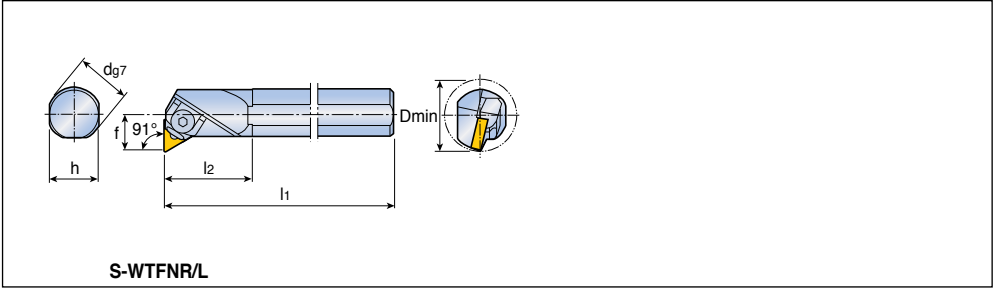
✓ Marked: For RHINORUSH insert

## Spare parts

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



## Wedge clamp type



S-WTFNR/L

Approach angle	Designation	Dimension (mm)						Insert
		dg7	h	l1	l2	f	Dmin	
91°	✓ S25R WTFNR/L 1304	25	23	200	40	17	32	TN... 1304... A235-A240
	✓ S32S WTFNR/L 1304	32	30	250	45	22	40	
	S25T WTFNR/L 16	25	23	300	50	17	32	TN... 1604...
	S32T WTFNR/L 16	32	30	300	55	22	40	
	S40T WTFNR/L 16	40	37	300	60	27	50	
	S40T WTFNR/L 22	40	37	300	60	27	50	TN... 2204...
	S50U WTFNR/L 22	50	47	350	65	35	63	

✓ Marked: For RHINORUSH insert

## Spare parts

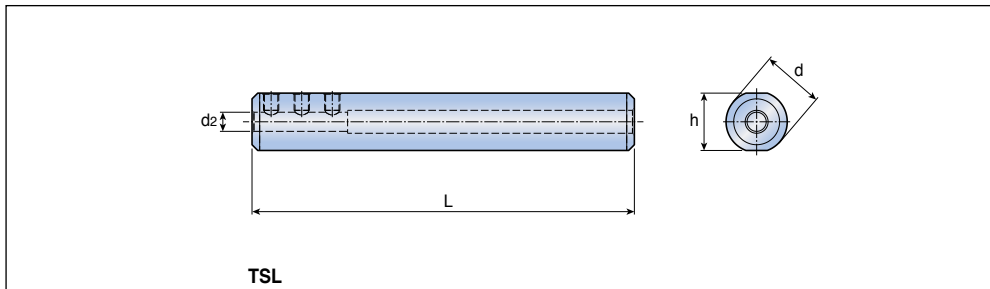
Designation	Wedge clamp	Screw	Snap ring	Shim	Pin screw	Wrench		
S25R...1304	WC 2.53	WCS 2.5	CSR 2	-	WSS 2.52-1	L-W 2.5		
S32S...1304	WC 2.53	WCS 2.5	CSR 2	WST 2.52	WSS 2.52	L-W 2.5		
S25T...16	WC 33	WCS 4B	WSR 4	-	WSS 33-1	L-W 3		
...16	WC 33	WCS 4	WSR 4	WST 33	WSS 33	L-W 3		
...22	WC 43	WCS 4	WSR 4	WST 43	WSS 43	L-W 3		

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## Sleeve



Designation	Dimension (mm)			
	d <sub>2</sub>	h	L	d
<b>TSL 16-04</b>	4	15	100	16
<b>TSL 16-05</b>	5	15	100	16
<b>TSL 16-06</b>	6	15	100	16
<b>TSL 16-07</b>	7	15	100	16

## Spare parts

Designation	Set screw	Wrench					
<b>TSL...</b>	SS M4 X 0.7 X 4	L-W 2					



**HE - D32 - PCLNR 12**

1

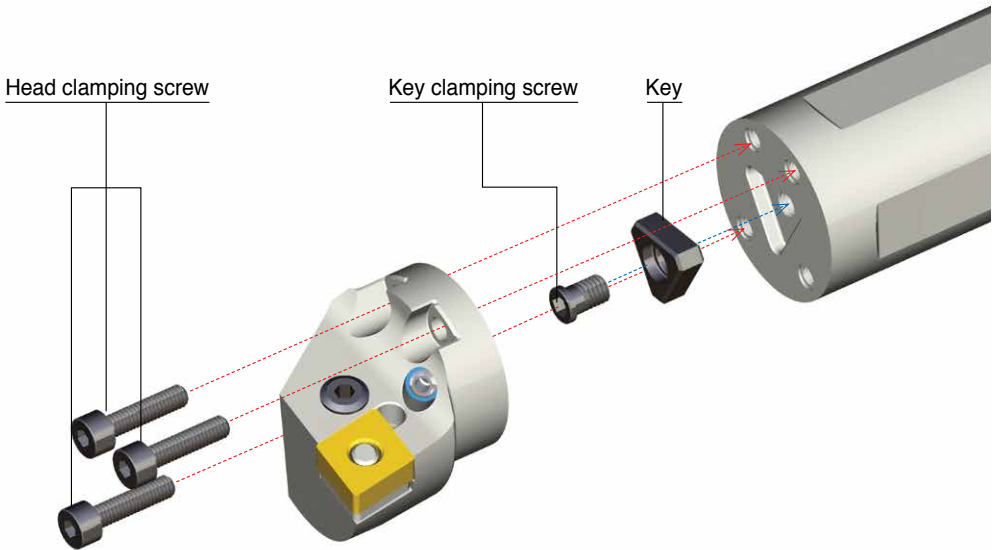
2

3

1 Head

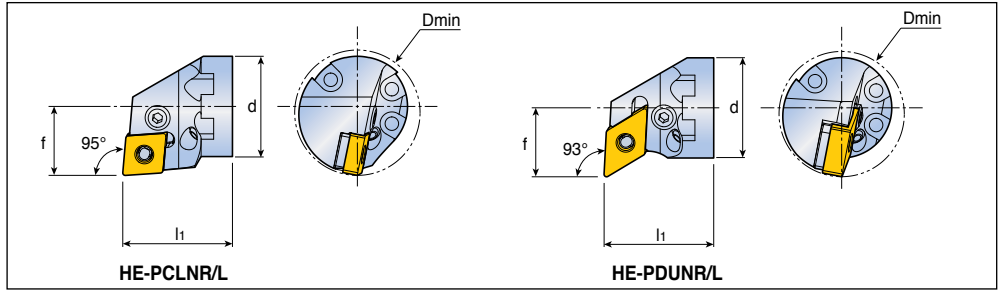
2 Shank diameter


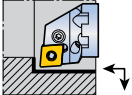

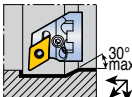
3 Designation follows boring bar system, see page A139










- Triangular detachable anti-rotator induces auto-centering and durability
- High repeatability during head change
- Possibility of inner coolant
- Head for ISO turning

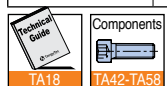
## Lever lock type



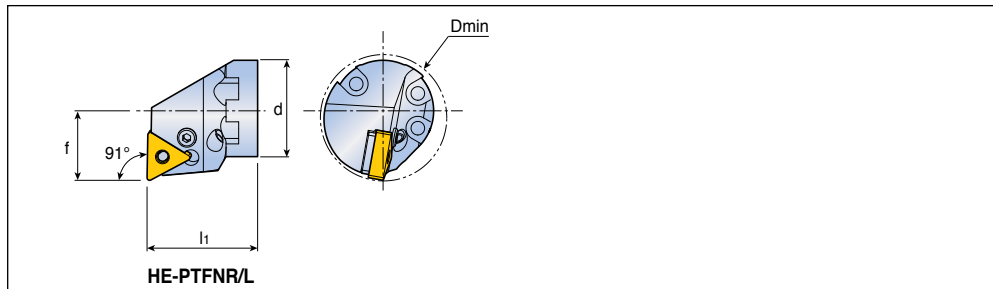
Approach angle	Designation	Dimension (mm)				Insert
		d	l1	f	Dmin	
95°	<b>HE-D32-PCLNR/L 12</b>	32	35	22	40	CN...1204...  A212-A220
						
93°	<b>HE-D32-PDUNR/L 15</b>	32	35	22	40	DN...1506...  A221-A225
						

## Spare parts

Designation	Lever	Screw	Shim		Shim pin	Nozzle	Wrench	
								
...12	LCL 4	LCS 4S	LSC 42	-	LSP 4	NZ 62	L-W 3	
...15	LCL 4A	LCS 4S	-	LSD 42	LSP 4	NZ 62	L-W 3	



## Lever lock type



Approach angle	Designation	Dimension (mm)				Insert
		d	l1	f	Dmin	
<b>91°</b>	<b>HE-D32-PTFNR/L 16</b>	32	35	22	40	TN...1604... A235-A240

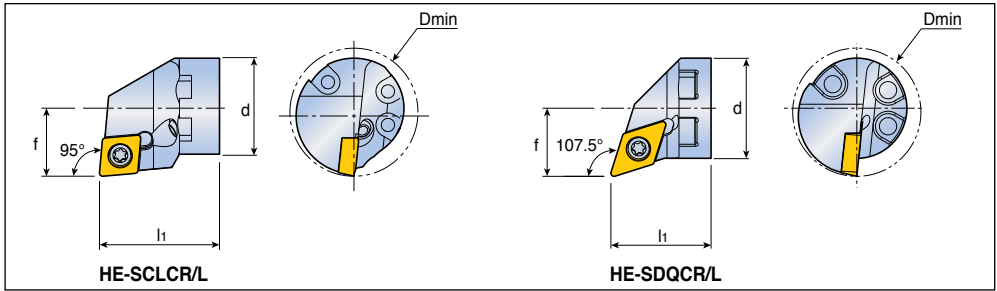
## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Nozzle	Wrench		
<b>...16</b>	LCL 3	LCS 3	LST 31.8	LSP 3A	NZ 62	L-W 2.5		

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## Screw type



Approach angle	Designation	Dimension (mm)				Insert
		d	l1	f	Dmin	
95°	HE-D25-SCLCR/L 09	25	23	300	45	CC...T 09T3...
	HE-D32-SCLCR/L 12	32	30	300	45	CC...T 1204...  A247-A248
107.5°	HE-D25-SDQCR/L 11	25	25	17	32	DC...T 11T3...  A250-A251

## Spare parts

Designation	Screw	Shim	Shim screw	Nozzle	Wrench		
...09	SO 35080I	-	-	-	T 15		
...11	SO 35080I	-	-	-	T 15		
...12	SO 45130I	SSC 43N	SO 60105S	NZ 62	T 20		

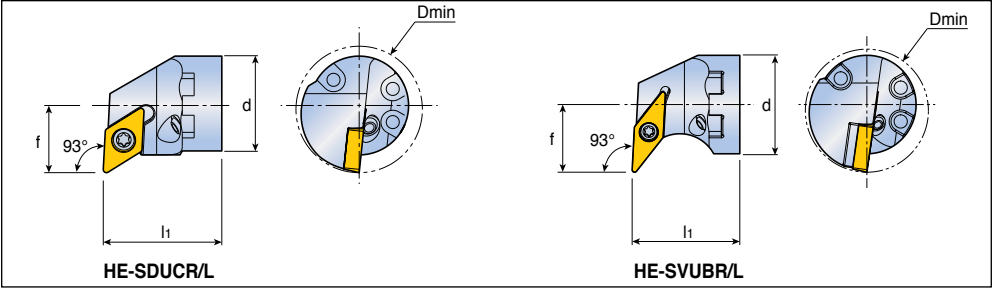


TA18

TA42-TA58



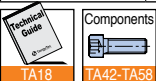
## Screw type

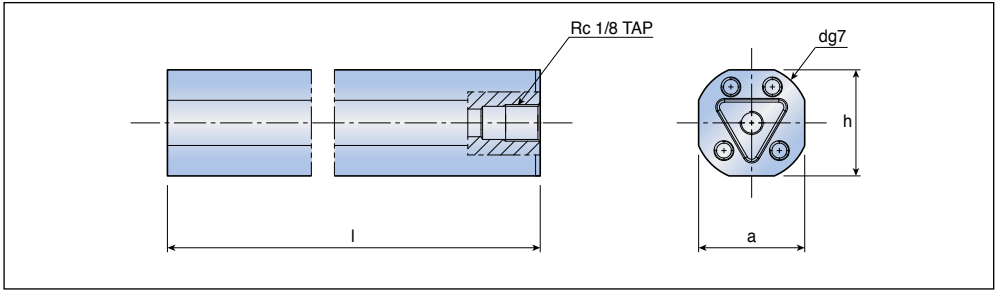


Approach angle	Designation	Dimension (mm)				Insert
		d	l1	f	Dmin	
93°	HE-D25-SDUCR/L 11	25	25	17	32	DC...T 11T3... A250-A251
	HE-D32-SDUCR/L 11	32	35	22	40	
93°	HE-D32-SVUBR/L 16	32	35	22	40	VB...T 1604... A259-A260

## Spare parts

Designation	Screw	Shim	Shim screw	Nozzle	Wrench			
...D25...11	SO 35080I	-	-	-	T 15			
...D32...11	SO 35080I	-	-	NZ 62	T 15			
...16	SO 35124I	SSV 32	SO 50090S	NZ 62	T 15			





Designation	Dimension (mm)			
	d	l	h	a
<b>SK-D25</b>	25	170	23	23
<b>SK-D32</b>	32	215	30	30

### Spare parts

Designation	Key	Key screw	Clamp screw	Wrench				
<b>SK...</b>	SDK T10-5	SO 50090S	SH M4x0.7x16	L-W 3				

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# P C L N R - 16 C A - 12

1 2 3 4 5 6 7 8 9

## 1 Clamping system

<b>P</b>		Lever lock
<b>C</b>		Top clamp
<b>S</b>		Screw clamp
<b>H</b>		Hook lever

## 2 Insert shape

	T
	C
	S

## 3 Approach angle

	95°		45°
L		S	
	90°		75°
F		R	
	75°		90°
K		G	
	60°		60°
W		T	

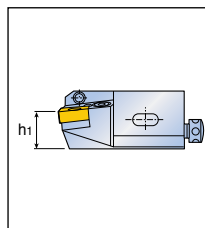
## 4 Insert clearance angle

	7°	C
	11°	P
	0°	N

## 5 Hand of tool

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

## 6 Shank height



## 7 Type of tool

C: Cartridge

## 8 Type of design

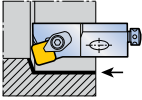
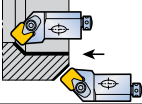
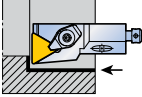
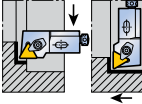
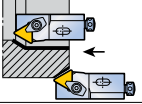
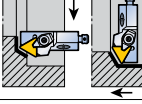
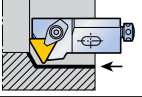
A: Letter for alternative designs

## 9 Cutting edge length

	T
	S
	C

See page A211

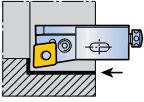
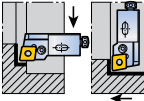
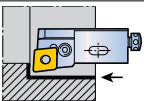
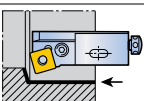
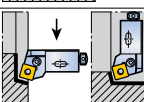
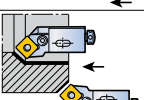
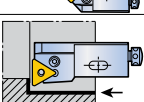
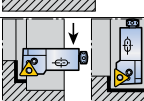
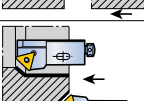

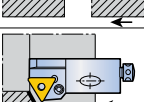
## Top clamp type

Approach angle	Style	Cartridge size				
		10CA	12CA	16CA	20CA	25CA
75°	 <b>CSKPR/L</b>	10CA 09	12CA 12	16CA 12		
45°	 <b>CSSPR/L</b>		12CA 12	16CA 12		
90°	 <b>CTFPR/L</b>	10CA 11	12CA 16	16CA 16		
90°	 <b>CTGPR/L</b>	10CA 11	12CA 16	16CA 16		
45°	 <b>CTSPR/L</b>	10CA 11	12CA 16	16CA 16		
60°	 <b>CTTPR/L</b>	10CA 11	12CA 16	16CA 16		
60°	 <b>CTWPR/L</b>	10CA 11	12CA 16	16CA 16		

## Hook lever lock type

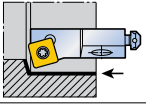
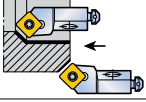
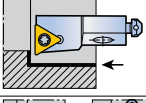
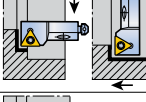
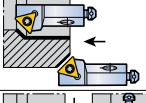
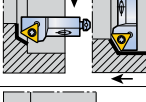
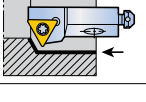
Approach angle	Style	Cartridge size				
		10CA	12CA	16CA	20CA	25CA
90°				16CA 0904		
90°				16CA 0904		
95°			12CA 0904	16CA 0904		
75°		10CA 0904	12CA 0904			
75°				16CA 0904		
45°			12CA 0904	16CA 0904		
85°		10CA 0904	12CA 0904			
90°			12CA 1304	16CA 1304		
90°			12CA 1304	16CA 1304		
45°			12CA 1304	16CA 1304		
60°			12CA 1304			
60°			12CA 1304			

## Lever lock type

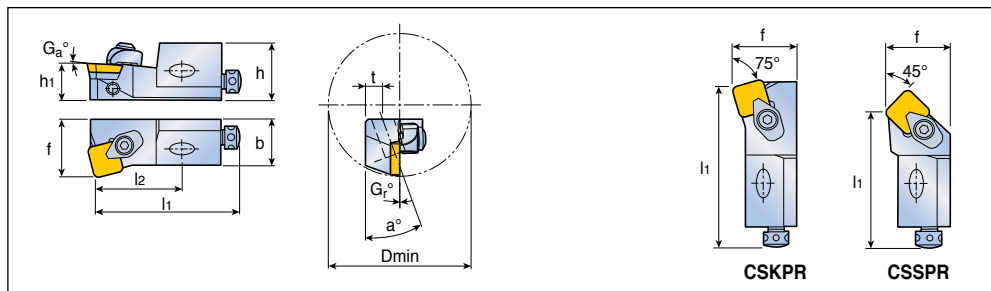
Approach angle	Style	Cartridge size				
		10CA	12CA	16CA	20CA	25CA
90°	 PCFNR/L			16CA 12		25CA 19
90°	 PCGNR/L			16CA 12		25CA 19
95°	 PCLNR/L			16CA 12		25CA 19
75°	 PSKNR/L		12CA 12	16CA 12	20CA 15	25CA 19
75°	 PSRNR/L			16CA 12	20CA 15	
45°	 PSSNR/L		12CA 12	16CA 12	20CA 15	
90°	 PTFNR/L	10CA 11	12CA 16	16CA 16	20CA 22	25CA 27
90°	 PTGNR/L	10CA 11	12CA 16	16CA 16	20CA 22	
45°	 PTSNR/L	10CA 11	12CA 16	16CA 16	20CA 22	
60°	 PTTNR/L	10CA 11	12CA 16	16CA 16	20CA 22	
60°	 PTWNR/L	10CA 11	12CA 16	16CA 16	20CA 22	

# Cartridge Program

## Screw clamp type

Approach angle	Style	Cartridge size				
		10CA	12CA	16CA	20CA	25CA
75°	 <b>SSKCR/L</b>	10CA 09	12CA 09			
45°	 <b>SSSCR/L</b>	10CA 09	12CA 12			
90°	 <b>STFCL/L</b>	10CA 11	12CA 16	16CA 16		
90°	 <b>STGCR/L</b>	10CA 11	12CA 16	16CA 16		
45°	 <b>STSCR/L</b>	10CA 11	12CA 16	16CA 16		
60°	 <b>STTCR/L</b>	10CA 11	12CA 16	16CA 16		
60°	 <b>STWCR/L</b>	10CA 11	12CA 16	16CA 16		

## Top clamp type



Approach angle	Designation	Dimension (mm)											Insert
		h	h1	b	l1	l2	f	G <sub>a</sub> °	G <sub>r</sub> °	t	a°	Dmin	
75°	<b>CSKPR/L 10CA 09</b>	15	10	11	50	30	14	6	2	5	20	40	SPMR, SP...N 0903...
	<b>12CA 12</b>	20	12	15	55	35	20	6	2	6	20	50	SPMR, SP...N 1203...
	<b>16CA 12</b>	21	16	20	63	38	25	6	2	-	45	55	
45°	<b>CSSPR/L 12CA 12</b>	20	12	15	47	27	20	4	4	6	20	50	
	<b>16CA 12</b>	21	16	20	53	28	25	3	3	-	45	55	

• All cartridges are to be ordered as specials

## Spare parts

Designation	Clamp	Screw	Shim	Shim pin	Snap ring	Axial adj. screw	Radial adj. screw	Mounting screw	Washer	Wrench
<b>...10CA 09</b>	CL 2C	CLS 2C	-	-	CSR 2C	AJM 5F	RSS M4	BH M6x1x20	-	L-W 2.5
<b>...12CA 12</b>	CL 3C	CLS 3C	-	-	CSR 2	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 3
<b>...16CA 12</b>	CL 3C	CLS 3C	CSS 42	CSP 3	CSR 2	ASM 6	RSS M5	BH M8x1.25x30	MW 8.4x18	L-W 3

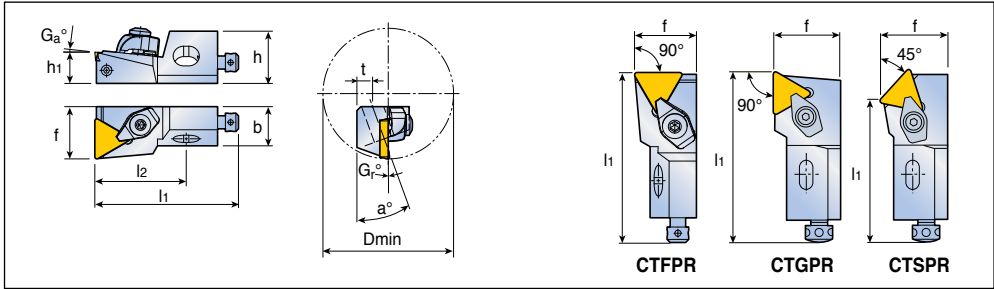
Components



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## Top clamp type



Approach angle	Designation	Dimension (mm)											Insert	
		h	h1	b	l1	l2	f	Ga°	Gr°	t	a°	Dmin		
 90°	<b>CTFPR/L</b>	<b>10CA 11</b>	15	10	11	50	30	14	6°	0°	5	20°	40	TPMR 1103...
		<b>12CA 16</b>	20	12	15	55	35	20	6°	0°	6	20°	50	TPMR 1603...
		<b>16CA 16</b>	21	16	20	63	38	25	6°	0°	-	45°	55	
 90°	<b>CTGPR/L</b>	<b>10CA 11</b>	15	10	11	50	30	14	0°	4°	5	20°	40	TPMR 1103...
		<b>12CA 16</b>	20	12	15	55	35	20	0°	4°	6	20°	50	TPMR 1603...
		<b>16CA 16</b>	21	16	20	63	38	25	0°	4°	-	45°	60	
 45°	<b>CTSPR/L</b>	<b>10CA 11</b>	15	10	11	44	24	14	3°	3°	5	20°	40	TPMR 1103...
		<b>12CA 16</b>	20	12	15	47	27	20	3°	3°	6	20°	50	TPMR 1603...
		<b>16CA 16</b>	21	16	20	53	28	25	3°	3°	-	45°	55	

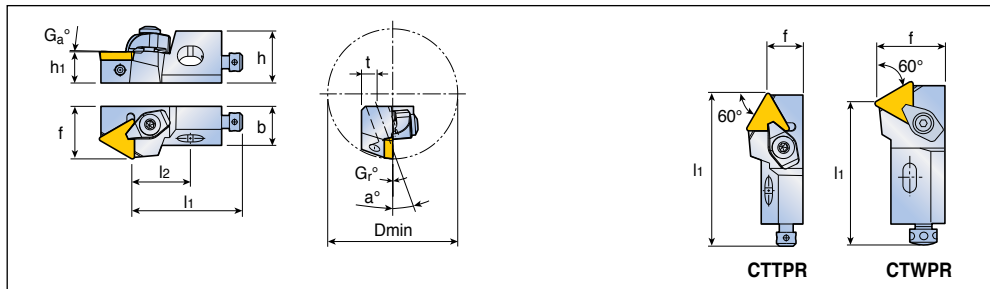
• All cartridges are to be ordered as specials

## Spare parts

Designation	Clamp	Screw	Shim	Shim pin	Snap ring	Axial adj. screw	Radial adj. Screw	Mounting screw	Washer	Wrench
...10CA 11	CL 2C	CLS 2C	-	-	CSR 2C	AJM 5F	RSS M4	BH M6x1x20	-	L-W 2.5
...12CA 16	CL 3C	CLS 3C	-	-	CSR 2	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 3
...16CA 16	CL 3C	CLS 3C	CST 32	CSP 3	CSR 2	ASM 6	RSS M5	BH M8x1.25x30	MW 8.4x18	L-W 3



## Top clamp type



Approach angle	Designation	Dimension (mm)											Insert	
		h	h1	b	l1	l2	f	Ga°	Gr°	t	a°	Dmin		
60° 	<b>CTTPR/L</b>	<b>10CA 11</b>	15	10	11	50	30	9	3°	4°	5	20°	40	TPMR 1103...
		<b>12CA 16</b>	20	12	15	55	35	13	3°	4°	6	20°	50	TPMR 1603...
		<b>16CA 16</b>	21	16	20	63	38	15	2°	3°	-	45°	60	A257-A258
60° 	<b>CTWPR/L</b>	<b>10CA 11</b>	15	10	11	44	24	14	5°	3°	5	20°	40	TPMR 1103...
		<b>12CA 16</b>	20	12	15	47	27	20	5°	3°	6	20°	50	TPMR 1603...
		<b>16CA 16</b>	21	16	20	53	28	25	3°	2°	-	45°	55	

• All cartridges are to be ordered as specials

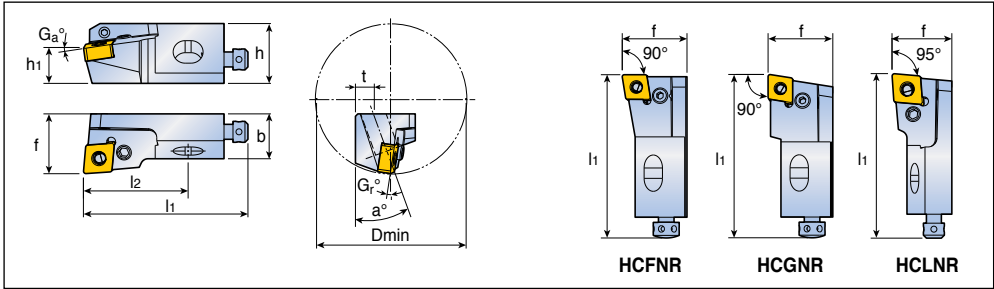
## Spare parts

Designation	Clamp	Screw	Shim	Shim pin	Snap ring	Axial adj.screw	Radial adj.screw	Mounting screw	Washer	Wrench
...10CA 11										
...10CA 11	CL 2C	CLS 2C	-	-	CSR 2C	AJM 5F	RSS M4	BH M6x1x20	-	L-W 2.5
...12CA 16	CL 3C	CLS 3C	-	-	CSR 2	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 3
...16CA 16	CL 3C	CLS 3C	CST 32	CSP 3	CSR 2	ASM 6	RSS M5	BH M8x1.25x30	MW 8.4x18	L-W 3

Components



## Hook lever type



Approach angle	Designation	Dimension (mm)											Insert
		h	h1	b	l1	l2	f	Ga°	Gr°	t	a°	Dmin	
90°	✓ HCFNR/L 16CA 0904	25	16	20	63	38	25	-6°	-8°	-	45°	55	CNMA 0904... CNMG 0904...
90°	✓ HCGNR/L 16CA 0904	25	16	20	63	38	25	-10°	-8°	-	45°	55	A212-A220
		25	16	20	63	38	25	-8°	-8°	-	45°	55	
95°	✓ HCLNR/L 12CA 0904 16CA 0904	20	12	15	55	35	20	-8°	-8°	6	20°	50	
		25	16	20	63	38	25	-8°	-8°	-	45°	55	

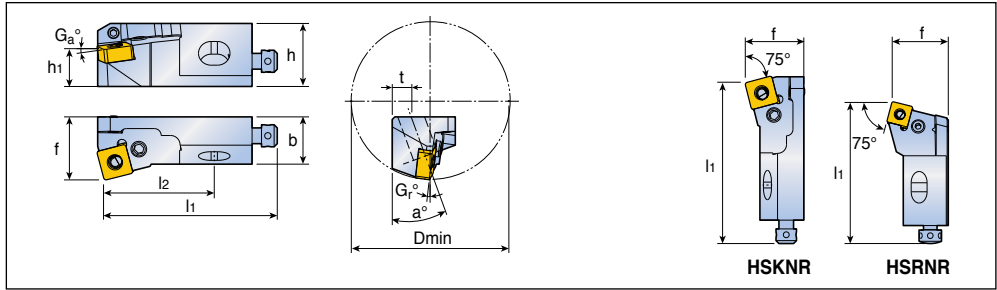
✓ Marked: For RHINORUSH insert • All cartridges are to be ordered as specials

## Spare parts

Designation	Hook lever	Screw	Shim	Shim pin	Snap ring	Axial adj. screw	Radial adj. screw	Mounting screw	Washer	Wrench
...12CA 0904	LCL 09B-NX	LCS 3B	-	-	LSR 3B	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 2
...16CA 0904	LCL 09-NX	LCS 3	LSC 32	LSP 3A	-	ASM 6	RSS M5	BH M8x1.25x30	MW 8.4x18	L-W 2.5



## Hook lever type

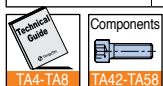


Approach angle	Designation	Dimension (mm)											Insert
		h	h1	b	l1	l2	f	Ga°	Gr°	t	a°	Dmin	
75°	✓ <b>HSKNR/L 10CA 0904</b>	17	10	11	50	30	14	-4°	-9°	5	20°	40	SNMG 0904... A228-A234
	<b>12CA 0904</b>	20	12	15	55	35	20	-4°	-9°	6	20°	50	
75°	✓ <b>HSRNR/L 16CA 0904</b>	25	16	20	63	38	25	-11°	-3°	-	45°	60	

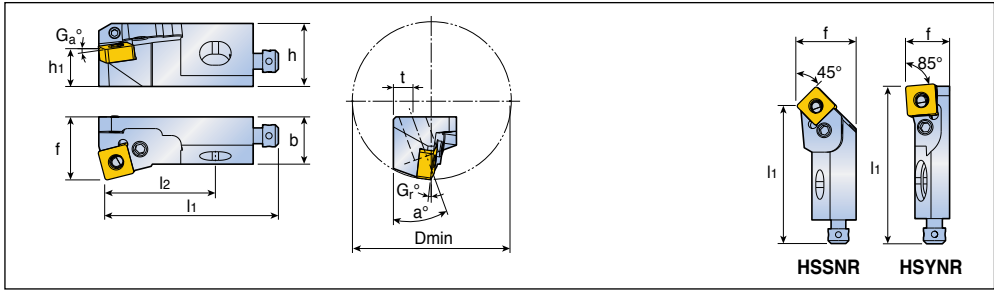
✓ Marked: For RHINORUSH insert • All cartridges are to be ordered as specials

## Spare parts

Designation	Hook lever	Screw	Shim	Shim pin	Snap ring	Axial adj.screw	Radial adj.screw	Mounting screw	Washer	Wrench
...10CA 0904 ...12CA 0904	LCL 09B-NX	LCS 3B	-	-	LSR 3B	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 2
...16CA 0904	LCL 09-NX	LCS 3	LSS 32	LSP 3A	-	ASM 6	RSS M5	BH M8x1.25x30	MW 8.4x18	L-W 2.5



## Hook lever type

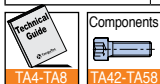


Approach angle	Designation	Dimension (mm)										Insert	
		h	h1	b	l1	l2	f	G <sub>a</sub> °	G <sub>r</sub> °	t	a°		Dmin
45°	✓ HSSNR/L <b>12CA 0904</b>	20	12	15	47	27	20	-9°	-8°	6	20°	50	SNMG 0904... A228-A234
	<b>16CA 0904</b>	25	16	20	53	28	25	-8°	-8°	-	45°	55	
85°	✓ HSYNR/L <b>10CA 0904</b>	17	10	11	50	30	14	-5°	-9°	5	20°	40	
	<b>12CA 0904</b>	20	12	15	55	35	20	-4°	-9°	6	20°	50	

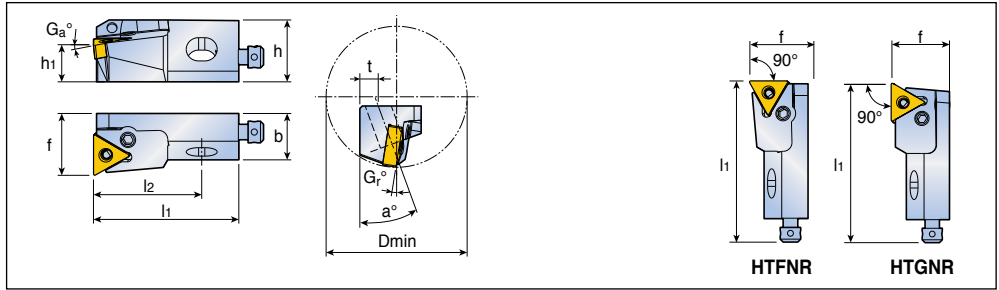
✓Marked: For RHINORUSH insert • All cartridges are to be ordered as specials

## Spare parts

Designation	Hook lever	Screw	Shim	Shim pin	Snap ring	Axial adj.screw	Radial adj.screw	Mounting screw	Washer	Wrench
...10CA 0904 ...12CA 0904	LCL 09B-NX	LCS 3B	-	-	LSR 3B	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 2
...16CA 0904	LCL 09-NX	LCS 3	LSS 32	LSP 3A	-	ASM 6	RSS M5	BH M8x1.25x30	MW 8.4x18	L-W 2.5



## Hook lever type

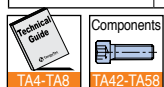


Approach angle	Designation	Dimension (mm)											Insert
		h	h1	b	l1	l2	f	Ga°	Gr°	t	a°	Dmin	
90°	✓ HTFNR/L <b>12CA 1304</b>	20	12	15	55	35	20	-6°	-9°	6	20°	50	TN...1304... A235-A240
	<b>16CA 1304</b>	25	16	20	63	38	25	-6°	-8°	-	45°	55	
90°	✓ HTGNR/L <b>12CA 1304</b>	20	12	15	55	35	20	-10°	-8°	6	20°	50	
	<b>16CA 1304</b>	25	16	20	63	38	25	-10°	-8°	-	45°	60	

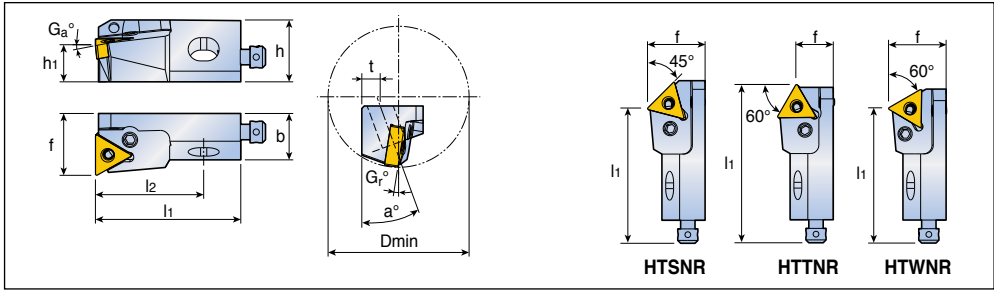
✓ Marked: For RHINORUSH insert • All cartridges are to be ordered as specials

## Spare parts

Designation	Hook lever	Screw	Shim	Shim pin	Snap ring	Axial adj.screw	Radial adj.screw	Mounting screw	Washer	Wrench
...12CA 1304	LCL 08B-NX	LCS 3B	-	-	LSR 3B	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 2
...16CA 1304	LCL 08-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	ASM 6	RSS M5	BH M8x1.25x30	MW 8.4x18	L-W 2.5



## Hook lever type



Approach angle	Designation	Dimension (mm)										Insert
		h	h1	b	l1	l2	f	G <sub>a</sub> °	G <sub>r</sub> °	t	a°	
45°	✓ HTSNR/L 12CA 1304	20	12	15	47	27	20	-5° -9°	6	20°	50	TN...1304...  A235-A240
	16CA 1304	25	16	20	53	28	25	-8° -8°	-	45°	55	
60°	✓ HTTNR/L 12CA 1304	20	12	15	55	35	13	-6° -7°	6	20°	50	
60°	✓ HTWNR/L 12CA 1304	20	12	15	47	27	20	-3° -9°	6	20°	50	

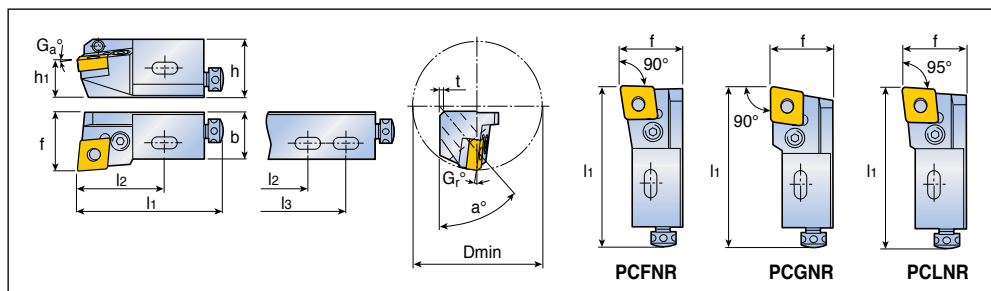
✓ Marked: For RHINORUSH insert • All cartridges are to be ordered as specials

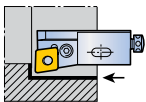

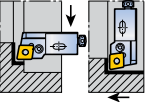
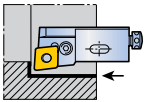
## Spare parts

Designation	Hook lever	Screw	Shim	Shim pin	Snap ring	Axial adj. screw	Radial adj. screw	Mounting screw	Washer	Wrench
...12CA 1304	LCL 08B-NX	LCS 3B	-	-	LSR 3B	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 2
...16CA 1304	LCL 08-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	ASM 6	RSS M5	BH M8x1.25x30	MW 8.4x18	L-W 2.5




















## Lever lock type



Approach angle	Designation	Dimension (mm)											Insert			
		h	h <sub>1</sub>	b	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	f	G <sub>a</sub> <sup>°</sup>	G <sub>r</sub> <sup>°</sup>	t	a <sup>°</sup>		D <sub>min</sub>		
<b>90°</b> 	<b>PCFNR/L</b>	<b>16CA 12</b>	25	16	20	63	38	-	25	-6°	-8°	-	45°	55	CN... 1204...	 A212-A220
		<b>25CA 19</b>	38	25	25	100	50	70	32	-6°	-8°	-	45°	100	CN... 1906...	
<b>90°</b> 	<b>PCGNR/L</b>	<b>16CA 12</b>	25	16	20	63	38	-	25	-10°	6°	-	45°	55	CN... 1204...	
		<b>25CA 19</b>	38	25	25	100	50	70	32	-8°	6°	-	45°	100	CN... 1906...	
<b>95°</b> 	<b>PCLNR/L</b>	<b>16CA 12</b>	25	16	20	63	38	-	25	-8°	-8°	-	45°	55	CN... 1204...	
		<b>25CA 19</b>	38	25	25	100	50	70	32	-8°	-8°	-	45°	100	CN... 1906...	

• All cartridges are to be ordered as specials

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Axial adj. screw	Radial adj. screw	Mounting screw	Washer	Wrench
	... <b>16CA 12</b>	LCL 4 	LCS 4S 	LSC 42 	LSP 4 	ASM 6 	RSS M5 	BH M8x1.25x30 	MW 8.4x18 
... <b>25CA 19</b>	LCL 6D 	LCS 6 	LSC 63 	LSP 6 	ASM 6 	RSS M5 	BH M10x1.5x40 	MW 10.4x21 	L-W 4 

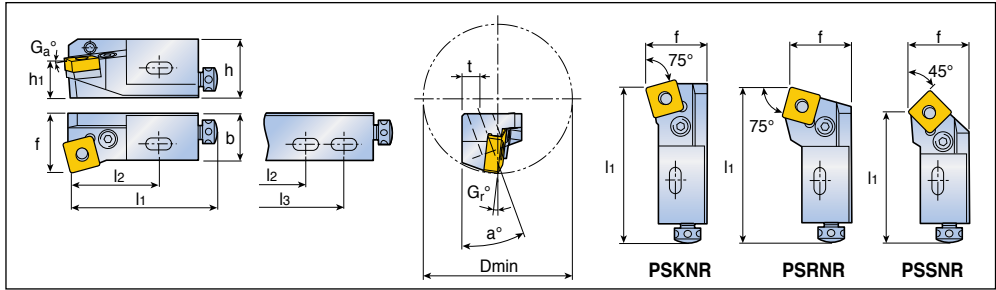
Components



TA42-TA58



## Lever lock type



Approach angle	Designation	Dimension (mm)											Insert	
		h	h1	b	l1	l2	l3	f	Ga°	Gr°	t	a°		Dmin
 75°	<b>PSKNR/L 12CA 12</b>	20	12	15	55	35	-	20	-4°	-9°	6	20°	50	SN...1204...
	<b>16CA 12</b>	25	16	20	63	38	-	25	-4°	-8°	-	45°	55	SN...1506...
	<b>20CA 15</b>	30	20	20	70	40	-	25	-4°	-9°	-	45°	70	SN...1506...
	<b>25CA 19</b>	38	25	25	100	50	70	32	-4°	-8°	-	45°	100	SN...1906...
 75°	<b>PSRRN/L 16CA 12</b>	25	16	20	63	38	-	25	-11°	-3°	-	45°	60	SN...1204...
	<b>20CA 15</b>	30	20	20	70	40	-	25	-11°	-3°	-	45°	70	SN...1506...
 45°	<b>PSSNR/L 12CA 12</b>	20	12	15	47	27	-	20	-9°	-5°	6	20°	50	SN...1204...
	<b>16CA 12</b>	25	16	20	53	28	-	25	-9°	-5°	-	45°	55	SN...1506...
	<b>20CA 15</b>	30	20	20	60	30	-	25	-9°	-5°	-	45°	70	SN...1506...

A228-A234

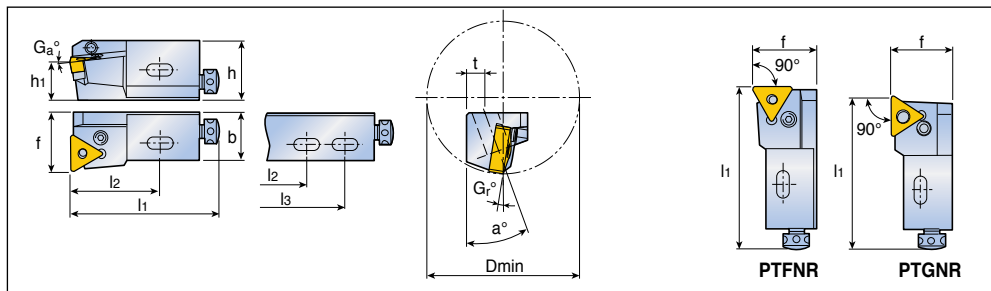
• All cartridges are to be ordered as specials

## Spare parts

Designation	Lever	Screw	Shim	Shim pin	Snap ring	Axial adj. screw	Radial adj. screw	Mounting screw	Washer	Wrench
<b>...12CA 12</b>	LCL 4B	LCS 4B	-	-	LSR 4B	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 2.5
<b>...16CA 12</b>	LCL 4	LCS 4S	LSS 42	LSP 4	-	ASM 6	RSS M5	BH M8x1.25x30	MW 8.4x18	L-W 3
<b>...20CA 15</b>	LCL 5	LCS 5	LSS 53	LSP 5	-	ASM 6	RSS M5	BH M8x1.25x35	MW 8.4x18	L-W 3
<b>...25CA 19</b>	LCL 5	LCS 5	LSS 53	LSP 5	-	ASM 6	RSS M5	BH M10x1.5x40	MW 10.4x20	L-W 3



## Lever lock type



Approach angle	Designation	Dimension (mm)												Insert	
		h	h1	b	l1	l2	l3	f	Ga°	Gr°	t	a°	Dmin		
	<b>PTFNR/L</b>	<b>10CA 11</b>	17	10	11	50	30	-	14	-6°	-8°	5	20°	40	TN...1103...
		<b>12CA 16</b>	20	12	15	55	35	-	20	-6°	-9°	6	20°	50	TN...1604...
		<b>16CA 16</b>	25	16	20	63	38	-	25	-6°	-8°	-	45°	55	
		<b>20CA 22</b>	30	20	20	70	40	-	25	-6°	-8°	-	45°	70	TN...2204...
		<b>25CA 27</b>	38	25	25	100	50	70	32	-6°	-9°	-	45°	100	TN...2706...
	<b>PTGNR/L</b>	<b>10CA 11</b>	17	10	11	50	30	-	14	-10°	-6°	5	20°	40	TN...1103...
		<b>12CA 16</b>	20	12	15	55	35	-	20	-10°	-6°	6	20°	50	TN...1604...
		<b>16CA 16</b>	25	16	20	63	38	-	25	-10°	-6°	-	45°	60	
		<b>20CA 22</b>	30	20	20	70	40	-	25	-8°	-6°	-	45°	70	TN...2204...

• All cartridges are to be ordered as specials

## Spare parts

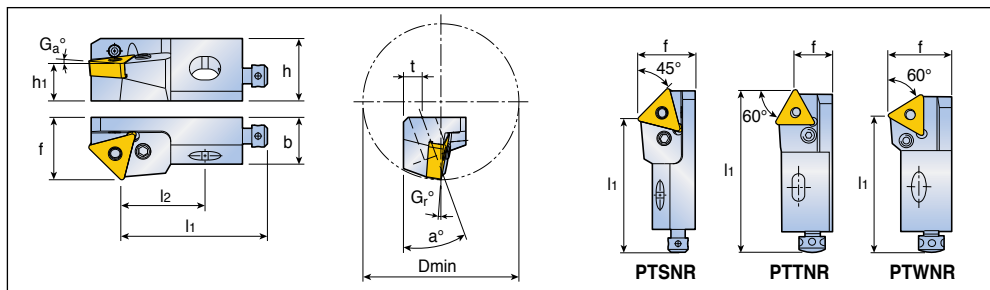
Designation	Lever	Screw	Shim	Shim pin	Snap ring	Axial adj. screw	Radial adj. screw	Mounting screw	Washer	Wrench
<b>...10CA 11</b>	LCL 2B	LCS 2B	-	-	LSR 2B	AJM 5F	RSS M4	BH M6x1x20	-	L-W 2
<b>...12CA 16</b>	LCL 3BH	LCS 3B	-	-	LSR 3B	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 2
<b>...16CA 16</b>	LCL 3	LCS 3	LST 31.8	LSP 3A	-	ASM 6	RSS M5	BH M8x1.25x30	MW 8.4x18	L-W 2.5
<b>...20CA 22</b>	LCL 4	LCS 4	LST 42	LSP 4	-	ASM 6	RSS M5	BH M8x1.25x35	MW 8.4x18	L-W 3
<b>...25CA 27</b>	LCL 5	LCS 5	LST 53	LSP 5	-	ASM 6	RSS M5	BH M10x1.5x40	MW 10.4x20	L-W 3

Components



TA42-TA58

## Lever lock type



Approach angle	Designation	Dimension (mm)											Insert
		h	h1	b	l1	l2	f	GA°	Gr°	t	a°	Dmin	
	<b>PTSNR/L</b>	<b>10CA 11</b>	17	10	11	44	24	14	-5° - 9°	5	20°	40	TN...1103...
		<b>12CA 16</b>	20	12	15	47	27	20	-5° - 9°	6	20°	50	TN...1604...
		<b>16CA 16</b>	25	16	20	53	28	25	-8° - 8°	-	45°	55	
		<b>20CA 22</b>	30	20	20	60	30	25	-8° - 8°	-	45°	70	TN...2204...
	<b>PTTNR/L</b>	<b>10CA 11</b>	17	10	11	50	30	9	-6° - 7°	5	20°	40	TN...1103...
		<b>12CA 16</b>	20	12	15	55	35	13	-6° - 7°	6	20°	50	TN...1604...
		<b>16CA 16</b>	25	16	20	63	38	15	-7° - 8°	-	45°	60	
		<b>20CA 22</b>	30	20	20	70	40	15	-7° - 8°	-	45°	70	TN...2204...
	<b>PTWNR/L</b>	<b>10CA 11</b>	17	10	11	44	24	14	-1° - 10°	5	20°	40	TN...1103...
		<b>12CA 16</b>	20	12	15	47	27	20	-3° - 9°	6	20°	50	TN...1604...
		<b>16CA 16</b>	25	16	20	53	28	25	-2° - 8°	-	45°	55	
		<b>20CA 22</b>	30	20	20	60	30	25	-2° - 8°	-	45°	70	TN...2204...

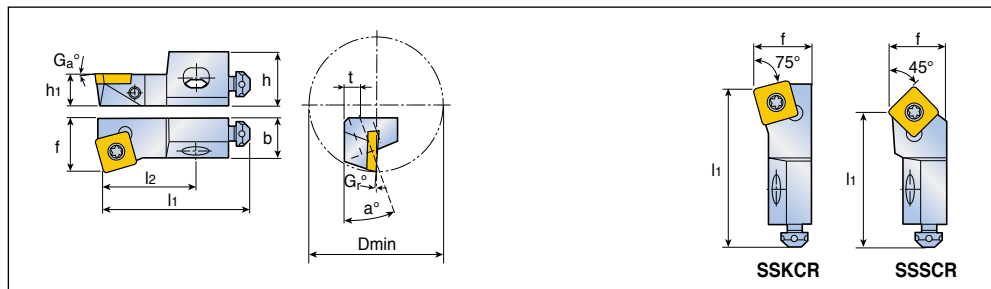
• All cartridges are to be ordered as specials

## Spare parts

Designation	Lever	Screw	Shim	Shim Pin	Snap ring	Axial adj. screw	Radial adj. screw	Mounting screw	Washer	Wrench
<b>...10CA 11</b>	LCL 2B	LCS 2B	-	-	LSR 2B	AJM 5F	RSS M4	BH M6x1x20	-	L-W 2
<b>...12CA 16</b>	LCL 3BH	LCS 3B	-	-	LSR 3B	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 2
<b>...16CA 16</b>	LCL 3	LCS 3	LST 31.8	LSP 3A	-	ASM 6	RSS M5	BH M8x1.25x30	MW 8.4x18	L-W 2.5
<b>...20CA 22</b>	LCL 4	LCS 4	LST 42	LSP 4	-	ASM 6	RSS M5	BH M8x1.25x35	MW 8.4x18	L-W 3



## Screw type



Approach angle	Designation	Dimension (mm)											Insert	
		h	h1	b	l1	l2	f	Ga°	Gr°	t	a°	Dmin		
75°	<b>SSKCR/L</b>	<b>10CA 09</b>	15	10	11	50	30	14	-1°	-4°	5	20°	40	SC...T 09T3...
		<b>12CA 12</b>	20	12	15	55	35	20	-1°	-4°	6	20°	50	SC...T 1204...
45°	<b>SSSCR/L</b>	<b>10CA 09</b>	15	10	11	44	24	14	-4°	-4°	5	20°	40	SC...T 09T3...
		<b>12CA 12</b>	20	12	15	47	27	20	-4°	-4°	6	20°	50	SC...T 1204...

• All cartridges are to be ordered as specials

## Spare parts

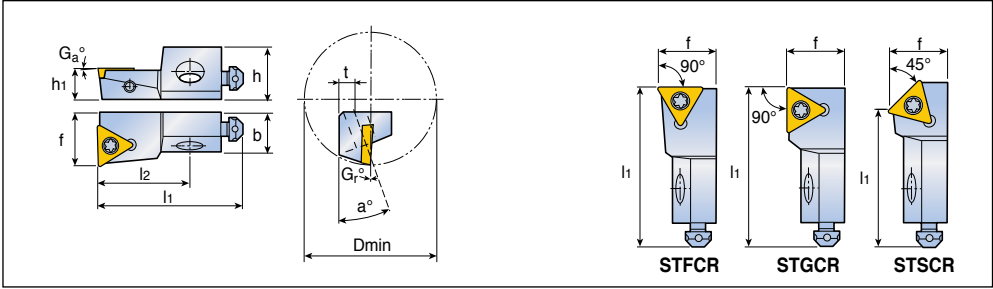
Designation	Screw	Axial adj.screw	Radial adj.screw	Mounting screw	Washer	Wrench
...10CA 09	SO 350801	AJM 5F	RSS M4	BH M6x1x16	-	T 15
...12CA 12	SO 451001	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	T 20

Components



TA42-TA58

## Screw type



Approach angle	Designation	Dimension (mm)											Insert	
		h	h1	b	l1	l2	f	G <sub>a</sub> °	G <sub>r</sub> °	t	a°	Dmin		
<b>90°</b> 	<b>STFCR/L 10CA 11</b>	15	10	11	50	30	14	0°	-3°	5	20°	40	TC...T 1102...	 A256
	<b>12CA 16</b>	20	12	15	55	35	20	0°	-3°	6	20°	50	TC...T 16T3...	
	<b>16CA 16</b>	21	16	20	63	38	25	0°	-6°	-	45°	55		
<b>90°</b> 	<b>STGCR/L 10CA 11</b>	15	10	11	50	30	14	0°	-3°	5	20°	40	TC...T 1102...	
	<b>12CA 16</b>	20	12	15	55	35	20	0°	-3°	6	20°	50	TC...T 16T3...	
	<b>16CA 16</b>	21	16	20	63	38	25	-3°	-5°	-	45°	60		
<b>45°</b> 	<b>STSCR/L 10CA 11</b>	15	10	11	44	24	14	-3°	-3°	5	20°	40	TC...T 1102...	
	<b>12CA 16</b>	20	12	15	47	27	20	-4°	-4°	6	20°	50	TC...T 16T3...	
	<b>16CA 16</b>	21	16	20	53	28	25	-2°	-6°	-	45°	55		

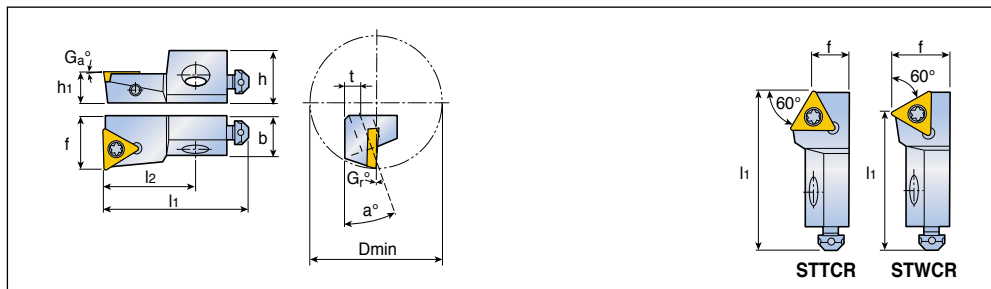
• All cartridges are to be ordered as specials

## Spare parts

Designation	Screw	Shim	Shim pin	Axial adj. screw	Radial adj. screw	Mounting screw	Washer	Wrench
<b>...10CA 11</b>	SO 250651	-	-	AJM 5F	RSS M4	BH M6x1x16	-	T 7
<b>...12CA 16</b>	SO 350801	-	-	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	T 15
<b>...16CA 16</b>	SO 351241	SST 32	SO 50090S	ASM 6	RSS M5	BH M8x1.25x30	MW 8.4x18	T 15



## Screw type



Approach angle	Designation	Dimension (mm)											Insert	
		h	h1	b	l1	l2	f	Gr°	Gr°	t	a°	Dmin		
60°	<b>STTCR/L</b>	<b>10CA 11</b>	15	10	11	50	30	9	-3°	-4°	5	20°	40	TC...T 1102...
		<b>12CA 16</b>	20	12	15	55	35	13	-3°	-2°	6	20°	50	TC...T 16T3...
		<b>16CA 16</b>	21	16	20	63	38	15	-4°	-3°	-	45°	60	
60°	<b>STWCR/L</b>	<b>10CA 11</b>	15	10	11	44	24	14	-2°	-3°	5	20°	40	TC...T 1102...
		<b>12CA 16</b>	20	12	15	47	27	20	-4°	-2°	6	20°	50	TC...T 16T3...
		<b>16CA 16</b>	21	16	20	53	28	25	-5°	-3°	-	45°	55	

• All cartridges are to be ordered as specials

## Spare parts

Designation	Screw	Shim	Shim pin	Axial adj.screw	Radial adj.screw	Mounting screw	Washer	Wrench
<b>...10CA 11</b>	SO 25065I	-	-	AJM 5F	RSS M4	BH M6x1x16	-	T 7
<b>...12CA 16</b>	SO 35080I	-	-	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	T 15
<b>...16CA 16</b>	SO 35124I	SST 32	SO 50090S	ASM 6	RSS M5	BH M8x1.25x30	MW 8.4x18	T 15

Components



TA42-TA58

# Turning Inserts



## C N M G

1
2
3
4

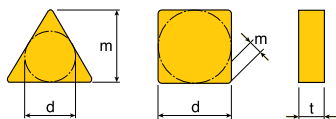
### 1 Shape

<b>C</b>	<b>D</b>	<b>E</b>	<b>H</b>	<b>K</b>	<b>R</b>	<b>S</b>	<b>T</b>	<b>V</b>	<b>W</b>

### 2 Clearance angle

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

### 3 Tolerance



Class	m	t	d
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 d	
	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

<b>A</b>	<b>G</b>	<b>M</b>	<b>R</b>	<b>B, W</b>	<b>T, H</b>



# 12 04 08 ( R ) MP

5          6          7          8          9

## 5 Cutting edge length

I.C(mm)	C	D	E	R	S	T	V	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	04		
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

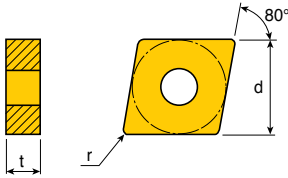
## 8 Hand of insert

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

## 9 Chip breaker

For chip breakers, see page [A36-A42](#)

## Negative 80° rhombic inserts



Size	Dimension (mm)		
	d	t	r
09	9.52	4.76	0.8-1.2
12	12.7	4.76	0.1-1.6
16	15.88	6.35	1.2-1.6
19	19.05	6.35	0.4-1.6
25	25.4	9.52	2.4

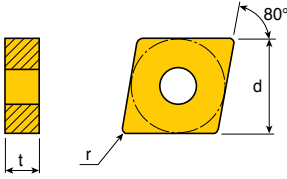
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated		Uncoated								
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20			
 Medium	<b>CNGG 120401 ML</b>	0.03-0.10	0.1-3.5																							
		<b>CNGG 120402 ML</b>	0.05-0.15	0.2-3.5																						
			<b>CNGG 120404 ML</b>	0.10-0.30	0.8-3.5																					
				<b>CNGG 120408 ML</b>	0.12-0.35	1.0-3.5																				
 RHINO-RUSH Roughing	<b>CNMA 090408</b>	0.15-0.60	1.0-3.5			●	●																			
		<b>CNMA 090412</b>	0.15-0.70	1.0-3.5			●	●																		
 Roughing	<b>CNMA 120404</b>		0.15-0.50	1.0-5.0			●	●	○															●		
		<b>CNMA 120408</b>	0.15-0.60	1.0-6.0			●	●	○																●	
			<b>CNMA 120412</b>	0.15-0.70	1.5-6.0			●	●	○	●															
				<b>CNMA 120416</b>	0.20-0.80	2.0-6.0			●	●	○															
					<b>CNMA 160612</b>	0.15-0.70	2.0-8.0			●	●	○														
			<b>CNMA 160616</b>	0.20-0.80	2.0-8.0						●															
				<b>CNMA 190604</b>	0.15-0.50	2.0-10.0																				
			<b>CNMA 190608</b>	0.15-0.70	2.0-10.0						○															
				<b>CNMA 190612</b>	0.15-0.70	2.0-10.0						●	○													
			<b>CNMA 190616</b>		0.15-1.00	3.0-10.0			●	●	○															
 wiper Roughing	<b>CNMA 120408 WT</b>	0.15-0.80	0.7-5.0			●																				
 TOP DUTY Roughing	<b>CNMD 250924 HD</b>	Roughing	0.55-1.50	4.0-15.0						●	●	●														
		Finishing	0.40-0.80	2.0-5.0																						
 Roughing																										
 Finishing																										

A54, A55, A56, A69, A70, A93,  
 A94, A123, A130, A132, A143,  
 A151, A172, A184, A197

● : Standard items  
 ○ : Semi standard items



## Negative 80° rhombic inserts



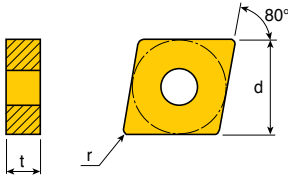
Size	Dimension (mm)		
	d	t	r
<b>09</b>	9.52	4.76	0.4-1.2
<b>12</b>	12.7	4.76	0.4-1.6
<b>16</b>	15.88	4.76-6.35	0.4-1.6
<b>19</b>	19.05	6.35	0.4-1.6

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated			Uncoated								
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20				
<b>RHINO-RUSH</b>  Medium	<b>CNMG 090404</b> <b>090408</b> <b>090412</b>	0.10-0.45	0.5-3.5			●	●																				
		0.10-0.50	0.5-3.5			●	●																				
		0.10-0.55	0.5-3.5			●	●																				
 Medium	<b>CNMG 120404</b> <b>120408</b> <b>120412</b> <b>120416</b> <b>160408</b> <b>160604</b> <b>160608</b> <b>160612</b> <b>160616</b> <b>190604</b> <b>190608</b> <b>190612</b> <b>190616</b>	0.17-0.45	1.0-5.0	●	●	●	○	●	●	●		●			●									●			
		0.23-0.60	1.5-5.0	●	●	●	○	●	●	●		●			●	●	●							●		●	
		0.25-0.60	2.0-5.0			●	●	○	●	●																	
		0.27-0.60	2.5-5.0												●												
		0.25-0.60	2.0-6.5																								
		0.20-0.45	2.0-6.5								●																
		0.25-0.60	2.0-6.5							●	●				●												
		0.27-0.60	2.0-6.5																								
		0.29-0.60	2.0-6.5																								
		0.20-0.45	3.0-8.0								●	●				●											
		0.25-0.60	3.0-8.0						●	●	○	●	●			●											
		0.30-0.60	3.0-8.0						●	●		●	●	●		●	●										
		0.35-0.70	3.0-8.0									●	●	●		●											
<b>RHINO-RUSH</b>  Finishing	<b>CNMG 090404 EA</b> <b>090408 EA</b>	0.05-0.30	0.20-1.5											●	●	●											
		0.07-0.40	0.30-1.5												●	●	●										
 Finishing	<b>CNMG 120404 EA</b> <b>120408 EA</b>	0.05-0.30	0.15-1.5							●	●	●	●		●	●	●										
		0.07-0.40	0.15-1.5	●					●			●	●	●		●											






A54, A55, A56, A69, A70, A93,  
 A94, A123, A130, A132, A143,  
 A151, A172, A184, A197

● : Standard items  
 ○ : Semi standard items

## Negative 80° rhombic inserts



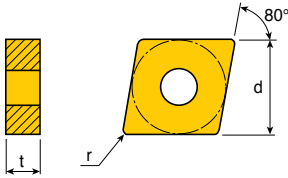
Size	Dimension (mm)		
	d	t	r
<b>09</b>	9.52	4.76	0.8-1.2
<b>12</b>	12.7	4.76	0.4-1.6
<b>16</b>	15.88	6.35	0.8-1.6
<b>19</b>	19.05	6.35	0.8-1.6

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermat		CVD coated							PVD coated			Uncoated										
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20			
 Medium	<b>CNMG 090408 EM</b> <b>090412 EM</b>	0.13-0.40	0.5-3.0												●											
		0.15-0.40	0.7-3.0													●										
 Medium	<b>CNMG 120404 EM</b> <b>120408 EM</b> <b>120412 EM</b> <b>120416 EM</b> <b>160608 EM</b> <b>160612 EM</b> <b>160616 EM</b> <b>190608 EM</b> <b>190612 EM</b> <b>190616 EM</b>	0.11-0.50	0.5-5.0												●											
		0.13-0.50	0.5-5.0													●										
		0.15-0.55	0.5-5.0													●										
		0.17-0.60	0.5-5.0													●										
		0.13-0.50	0.5-6.5													●										
		0.15-0.55	0.5-6.5													●										
		0.17-0.60	0.5-6.5													●										
		0.13-0.50	0.5-8.0													●										
		0.15-0.55	0.5-8.0													●										
		0.17-0.60	0.5-8.0													●										
 Roughing	<b>CNMG 120408 ET</b> <b>120412 ET</b> <b>160608 ET</b> <b>160612 ET</b> <b>190608 ET</b> <b>190612 ET</b> <b>190616 ET</b>	0.17-0.55	1.2-5.5												●											
		0.20-0.60	1.2-5.5													●										
		0.20-0.60	2.5-7.0																							
		0.25-0.60	2.5-7.0													●										
		0.20-0.60	3.0-9.0													●										
		0.25-0.60	3.0-9.0													●										
		0.30-0.65	3.0-9.0													●										
 Finishing	<b>CNMG 120404 FA</b> <b>120408 FA</b>	0.05-0.20	0.2-2.0		●																					
		0.05-0.25	0.3-2.0		●																					
 Finishing	<b>CNMG 120404 FC</b> <b>120408 FC</b> <b>120412 FC</b>	0.05-0.30	0.2-2.5	●	●																					
		0.08-0.35	0.3-2.5	●																						
		0.10-0.40	0.3-2.5																							









 A54, A55, A56, A69, A70, A93,  
 A94, A123, A130, A132, A143,  
 A151, A172, A184, A197


● : Standard items  
 ○ : Semi standard items

## Negative 80° rhombic inserts



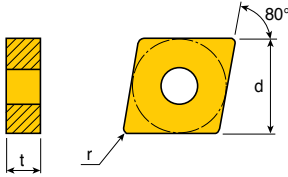
Size	Dimension (mm)		
	d	t	r
09	9.52	4.76	0.4-1.2
12	12.7	4.76	0.4-1.6

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermat		CVD coated								PVD coated			Uncoated							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20	
<b>RHINO-RUSH</b> 	<b>CNMG 090404 FG</b>	0.07-0.30	0.2-2.0						●	●				●										
	<b>090408 FG</b>	0.10-0.35	0.5-2.0						●	●				●										
	<b>090412 FG</b>	0.15-0.40	0.5-2.0						●	●				●										
Finishing																								
	<b>CNMG 120404 FG</b>	0.05-0.30	0.2-2.5	●	●				●	●				●										
	<b>120408 FG</b>	0.08-0.35	0.3-2.5	●	●				●	●				●										
Finishing																								
<b>RHINO-RUSH</b> 	<b>CNMG 090404 FM</b>	0.07-0.30	0.25-2.0	●					●	●	●			●										
	<b>090408 FM</b>	0.10-0.35	0.3-2.0	●					●	●	●			●										
	<b>090412 FM</b>	0.15-0.40	0.35-2.0	●					●	●	●			●										
Finishing																								
<b>RHINO-RUSH</b> 	<b>CNMG 090404 FT</b>	0.07-0.30	0.4-3.0						●	●	●			●										
	<b>090408 FT</b>	0.10-0.40	0.5-3.0						●	●	●			●										
	<b>090412 FT</b>	0.15-0.50	0.6-3.0						●	●	●			●										
Finishing																								
	<b>CNMG 120408 KT</b>	0.19-0.53	0.38-7.0			●	●																	
	<b>120412 KT</b>	0.25-0.70	0.50-7.0			●	●																	
	<b>120416 KT</b>	0.28-0.85	0.75-7.0			●	●																	
Roughing																								
	<b>CNMG 120404 MC</b>	0.10-0.30	0.5-3.5	●					●	●				●										
	<b>120408 MC</b>	0.12-0.35	0.7-3.5	●		●	○		●	●				●	●									
	<b>120412 MC</b>	0.15-0.40	0.7-3.5						●	●				●										
Medium																								
	<b>CNMG 120404 ML</b>	0.10-0.30	0.8-3.5	●					●	●				●										●
	<b>120408 ML</b>	0.12-0.35	1.0-3.5	●					●	●				●										●
	<b>120412 ML</b>	0.15-0.35	1.3-3.5											●										
Medium																								

 A54, A55, A56, A69, A70, A93,  
A94, A123, A130, A132, A143,  
A151, A172, A184, A197

● : Standard items  
○ : Semi standard items

## Negative 80° rhombic inserts



Size	Dimension (mm)		
	d	t	r
<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	0.8-1.6
<b>19</b>	19.05	6.35	0.8-1.6

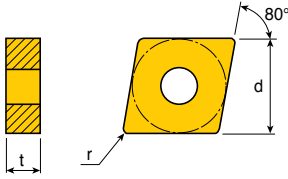
Insert	Designation	Feed (mm/rev)	ap (mm)	Cemet		CVD coated								PVD coated			Uncoated								
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20		
<b>RHINO-RUSH</b>  Medium	<b>CNMG 090404 MM</b>	0.15-0.45	0.4-3.5							●	●	●	●	●	●								●		
	<b>090408 MM</b>	0.20-0.50	0.5-3.5							●	●	●	●	●	●								●		
	<b>090412 MM</b>	0.23-0.50	0.7-3.5							●	●	●	●	●	●								●		
 Medium <b>OLD</b>	<b>CNMG 120404 MP</b>	0.10-0.30	0.8-4.0							●	●		●	●	●	●	●	●							
	<b>120408 MP</b>	0.12-0.40	1.0-4.0							●	●		●	●	●	●	●	●	●				●		
	<b>120412 MP</b>	0.15-0.50	1.5-4.0							●	●		●	●	●	●	●	●	●						
	<b>160612 MP</b> ✓	0.15-0.50	2.5-6.0									●													
<b>RHINO-RUSH</b>  Medium	<b>CNMG 090404 MT</b>	0.10-0.35	0.8-4.0												●										
	<b>090408 MT</b>	0.15-0.45	1.0-4.0												●										
	<b>090412 MT</b>	0.20-0.55	1.2-4.0												●										
 Medium <b>OLD</b>	<b>CNMG 120404 MT</b>	0.15-0.40	1.0-5.0	●	●	●	○	●	●						●										
	<b>120408 MT</b>	0.17-0.55	1.2-5.0	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●				●		
	<b>120412 MT</b>	0.20-0.55	1.5-5.0			●	○	●	●	●	●	●	●	●	●	●	●	●	●						
	<b>160608 MT</b> ✓	0.20-0.55	2.0-6.5			●			●																
	<b>160612 MT</b> ✓	0.25-0.55	2.0-6.5			●			●							●	●								
	<b>160616 MT</b> ✓	0.30-0.55	2.0-6.5						●																
	<b>190608 MT</b>	0.23-0.55	3.0-8.0			●			●	●	●	●	●	●	●	●	●	●	●						
	<b>190612 MT</b>	0.25-0.55	3.0-8.0						●	●	●	●	●	●	●	●	●	●	●						
<b>190616 MT</b> ✓	0.30-0.55	3.0-8.0							●																

A54, A55, A56, A69, A70, A93,  
 A94, A123, A130, A132, A143,  
 A151, A172, A184, A197






✓ Marked: Old type chip breaker


● : Standard items  
 ○ : Semi standard items

## Negative 80° rhombic inserts



Size	Dimension (mm)		
	d	t	r
<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
<b>25</b>	25.4	9.52	2.4

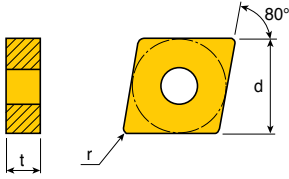
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated			Uncoated						
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20		
 Medium	<b>CNMG 090404 PC</b>	0.10-0.30	0.4-3.5						●	●				●											
		<b>090408 PC</b>	0.15-0.40	0.5-3.5						●	●	●			●										
		<b>090412 PC</b>	0.18-0.50	0.6-3.5						●	●														
 Medium	<b>CNMG 120404 PC</b>	0.10-0.40	0.4-5.0						●	●			●	●	●	●									
		<b>120408 PC</b>	0.15-0.50	0.5-5.0						●	●	●			●	●	●							●	
		<b>120412 PC</b>	0.17-0.55	0.6-5.0						●	●				●	●								●	
		<b>120416 PC</b>	0.20-0.60	0.8-5.0						●	●					●									●
		<b>160608 PC</b>	0.20-0.55	2.0-6.5						●	●						●								
		<b>160612 PC</b>	0.25-0.55	2.0-6.5						●	●														
		<b>160616 PC</b>	0.30-0.55	2.0-6.5						●	●														
		<b>190608 PC</b>	0.23-0.55	3.0-8.0							●	●													
		<b>190612 PC</b>	0.25-0.55	3.0-8.0							●	●													
		<b>190616 PC</b>	0.30-0.55	3.0-8.0								●													
 Roughing	<b>CNMG 120408 RT</b>	0.25-0.70	2.5-6.0				●	●	○	●	●	●	●	●	●	●	●								
		<b>120412 RT</b>	0.25-0.70	2.5-6.0				●	●	○	●	●	●	●	●	●	●	●							
		<b>120416 RT</b>	0.30-0.70	2.5-6.0					●	○	●														
		<b>160612 RT</b>	0.25-0.70	3.0-7.0					●	●	○	●	●	●		●	●								
		<b>160616 RT</b>	0.30-0.85	3.0-7.0					●	●	○	●	●												
		<b>190608 RT</b>	0.25-0.70	3.0-9.0								●	●			●									
		<b>190612 RT</b>	0.25-0.70	3.0-9.0						●	●	○	●	●	●	●	●	●							
		<b>190616 RT</b>	0.30-0.85	3.0-9.0						●	●	○	●	●	●		●	●							
		<b>250924 RT</b>	0.45-1.00	5.0-12.0									●	●											
 Finishing	<b>CNMG 120404 SF</b>	0.08-0.25	0.5-1.5		●									●		●	●								
		<b>120408 SF</b>	0.10-0.30	0.7-1.5		●					●	●			●		●	●							
 Finishing	<b>CNMG 120404 WS</b>	0.05-0.35	0.5-2.0		●					●															


 A54, A55, A56, A69, A70, A93,  
 A94, A123, A130, A132, A143,  
 A151, A172, A184, A197

● : Standard items  
 ○ : Semi standard items



## Negative 80° rhombic inserts



Size	Dimension (mm)		
	d	t	r
12	12.7	4.76	0.8-1.2
16	15.88	6.35	0.8-1.6
19	19.05	6.35	0.8-2.4
25	25.4	7.94-9.52	2.4-3.2

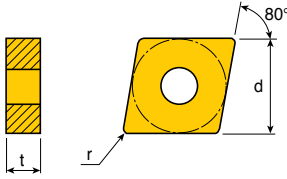
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermets		CVD coated								PVD coated			Uncoated								
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20		
	<b>CNMG 120408 WT</b>	0.15-0.60	1.0-5.0	●	●	●																			
	<b>120412 WT</b>	0.20-0.80	1.0-5.0																						
Medium																									
	<b>CNMM 250924 EH</b>	0.45-1.2	2.5-15.0								●	●	●												
Heavy																									
	<b>CNMM 190612 HT</b>	0.35-0.9	4.0-9.0																						
	<b>190616 HT</b>	0.45-1.0	4.0-9.0																						
	<b>190624 HT</b>	0.55-1.2	4.0-9.0																						
	<b>250724 HT</b>	0.55-1.3	5.0-12.0																						
	<b>250924 HT</b>	0.55-1.3	5.0-12.0																						
	<b>250932 HT</b>	0.65-1.3	5.0-13.0																						
Heavy																									
	<b>CNMM 190624 HY</b>	0.50-1.10	4.0-12.0																						
	<b>250924 HY</b>	0.55-1.50	4.0-15.0																						
Heavy																									
	<b>CNMM 250924 HZ</b>	0.55 - 1.50	4.0 - 15.0																						
Heavy																									







A69, A70, A93, A94,  
A123, A130, A132,  
A151, A172, A184


● : Standard items  
○ : Semi standard items

## Negative 80° rhombic inserts



Size	Dimension (mm)		
	d	t	r
12	12.7	4.76-5.56	0.8-1.2
16	15.88	6.35-7.94	0.8-2.4
19	19.05	6.35	0.8-2.4
25	25.4	7.94-9.52	2.4

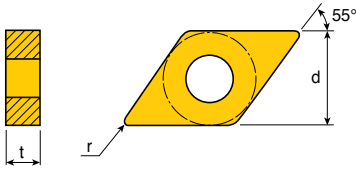
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermat		CVD coated								PVD coated			Uncoated							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20	
 RH(N)  RH Roughing	<b>CNMM 120408 RH</b>	0.30 - 0.70	2.5 - 6.0						●	●			●											
	<b>120408 RH(N)</b>	0.25 - 0.60	2.0 - 5.0																					
	<b>120412 RH</b>	0.30 - 0.80	2.5 - 6.0						●	●			●											
	<b>160608 RH</b>	0.30 - 0.70	3.0 - 8.0																					
	<b>160612 RH</b>	0.30 - 0.80	3.0 - 8.0																					
	<b>160616 RH</b>	0.45 - 1.00	4.0 - 8.0																					
	<b>190608 RH *</b>	0.30 - 0.70	3.0 - 9.0																					
	<b>190612 RH</b>	0.35 - 0.80	4.0 - 9.0							●	●			●										
	<b>190612 RH(N)</b>	0.30 - 0.70	3.0 - 8.0																					
	<b>190616 RH</b>	0.45 - 1.00	4.0 - 9.0							●	●		●	●										
	<b>190616 RH(N)</b>	0.45 - 0.90	3.0 - 8.0																					
	<b>190624 RH</b>	0.55 - 1.20	4.0 - 9.0							●	●			●										
<b>250724 RH *</b>	0.55 - 1.20	5.0 - 12.0																						
<b>250924 RH *</b>	0.55 - 1.20	5.0 - 12.0								●														
 Roughing	<b>CNMM 120408 RX</b>	0.20-0.55	0.7-7.0						●	●														
	<b>120412 RX</b>	0.25-0.70	1.0-7.0						●	●														
	<b>160612 RX</b>	0.25-0.70	1.0-9.0						●															
	<b>160616 RX</b>	0.30-0.90	1.5-9.0																					
	<b>160624 RX</b>	0.35-1.20	2.0-9.0																					
	<b>190608 RX</b>	0.20-0.55	0.7-10.0																					
	<b>190612 RX</b>	0.25-0.70	1.0-10.0							●	●													
	<b>190616 RX</b>	0.30-0.90	1.5-10.0																					
	<b>190624 RX</b>	0.35-1.10	2.0-10.0							●	●													
	<b>250724 RX</b>	0.35-1.20	2.0-12.0																					
<b>250924 RX</b>	0.35-1.20	2.0-12.0																						
 Semi-heavy	<b>CNMX 120508 HB</b>	0.25-0.80	1.5-6.0						●	●	●													
	<b>120512 HB</b>	0.25-0.80	1.5-6.0						●	●	●	●												
	<b>160712 HB</b>	0.30-0.80	1.5-8.0						●	●			●											
	<b>160716 HB</b>	0.30-0.80	1.5-8.0						●	●														


 A54, A55, A56, A69, A70, A93, A94, A123, A130, A132, A143, A151, A172, A184

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

● : Standard items  
 ○ : Semi standard items

## Negative 55° rhombic inserts



Size	Dimension (mm)		
	d	t	r
<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	0.1-1.6

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated			Uncoated				
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
 Medium	<b>DNGG</b>	<b>150401 ML</b>	0.03-0.10	0.1-1.0														●				●	
		<b>150402 ML</b>	0.05-0.15	0.2-1.2															●				●
		<b>150404 ML</b>	0.10-0.30	0.8-3.5															●				●
		<b>150408 ML</b>	0.12-0.35	1.0-3.5															●				●
 Roughing	<b>DNMA</b>	<b>110408 *</b>	0.15-0.50	0.8-3.0																			
		<b>110412 *</b>	0.15-0.50	0.8-3.0			○																
		<b>150404</b>	0.15-0.50	0.4-4.0																			
		<b>150604</b>	0.15-0.50	0.4-4.0																			
		<b>150408</b>	0.15-0.65	0.8-4.0				●	●	○													
		<b>150608</b>	0.15-0.65	0.8-4.0					●	○													
		<b>150412</b>	0.15-0.65	1.2-4.0					●	○													
		<b>150612</b>	0.15-0.65	1.2-4.0						○													
 Medium	<b>DNMG</b>	<b>130504</b>	0.10-0.45	0.5-3.5			●	●															
		<b>130508</b>	0.10-0.50	0.5-3.5			●	●															
		<b>130512</b>	0.10-0.55	0.5-3.5			●	●															
		<b>150404</b>	0.17-0.45	1.0-4.0					●			●											
 Medium	<b>DNMG</b>	<b>150604</b>	0.17-0.45	1.0-4.0	●	●	●	●	●	●				●									
		<b>150408</b>	0.17-0.55	1.5-4.0							●												
		<b>150608</b>	0.17-0.55	1.5-4.0	●	●	●	○	●	●	●				●								
		<b>150412</b>	0.25-0.55	1.5-4.0																			
		<b>150612</b>	0.25-0.55	1.5-4.0			●	○	●	●					●								
		<b>150416</b>	0.25-0.65	2.5-4.0																			
		<b>150616</b>	0.25-0.65	2.5-4.0							●												

A57, A58, A63, A64, A71, A82, A84, A95, A96, A124, A130, A132, A144, A145, A152, A158, A159, A160, A173, A174, A184

\* Marked: Insert with screw hole

● : Standard items  
○ : Semi standard items

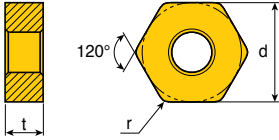






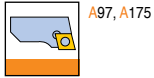


## Negative 120° hexagonal inserts



Size	Dimension (mm)		
	d	t	r
<b>05</b>	12.7	4.76	0.8
<b>10</b>	19.05	6.35	1.2

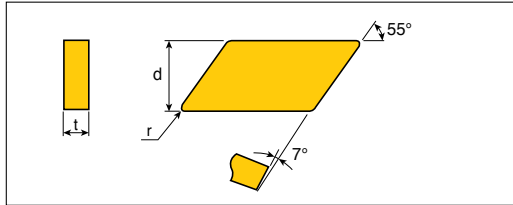
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermets		CVD coated								PVD coated			Uncoated						
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
 Medium	<b>HNMG 050408 GU</b>	0.15-0.60	0.5-3.5			●	●	○		●				●									
	<b>100612 GU</b>	0.25-0.70	1.0-5.0					○															
 Medium	<b>HNMG 050408 SU</b>	0.15-0.50	0.5-3.5											●		●							
	<b>100612 SU</b>	0.25-0.70	1.0-5.0													●							



● : Standard items  
○ : Semi standard items

# KNUX

## Negative 55° rhombic inserts



Size	Dimension (mm)		
	d	t	r
<b>16</b>	9.52	4.76	0.5-1.0

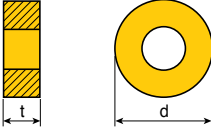
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermets		CVD coated								PVD coated			Uncoated						
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
 Right hand Medium	<b>KNUX 160405 L11</b>	0.15-0.35	1.5-5.0																				
	<b>160405 R11</b>	0.15-0.35	1.5-5.0	●	●				●	●							●						
	<b>160410 L11</b>	0.21-0.45	2.0-5.0																				
	<b>160410 R11</b>	0.21-0.45	2.0-5.0																				
 Right hand Medium	<b>KNUX 160405 L12</b>	0.24-0.50	2.0-5.0																				
	<b>160405 R12</b>	0.24-0.50	2.0-5.0																				
	<b>160410 L12</b>	0.30-0.60	2.5-6.0																				
	<b>160410 R12</b>	0.30-0.60	2.5-6.0																				



● : Standard items  
○ : Semi standard items



## Negative round inserts



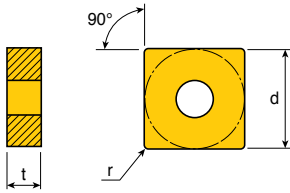
Size	Dimension (mm)	
	d	t
12	12.7	4.76
15	15.88	6.35
19	19.05	6.35
25	25.4	9.52
31	31.75	9.52

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated								PVD coated			Uncoated											
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20					
 Roughing	<b>RNMG 120400</b>	0.30-0.60	2.0-5.0																									
	<b>150600</b>	0.35-0.70	3.5-7.0																									
	<b>190600</b>	0.45-0.80	4.5-9.0																									
	<b>250900</b>	0.55-1.20	4.0-12.0																									
	<b>310900</b>	0.65-1.20	5.5-14.0																									



● : Standard items  
 ○ : Semi standard items

## Negative square inserts



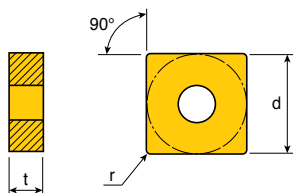
Size	Dimension (mm)		
	d	t	r
12	12.7	4.76	0.4-1.6
19	19.05	6.35	1.2-1.6
25	25.4	7.94-9.52	1.6-2.4
31	31.75	9.52	2.4

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated		Uncoated								
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20			
 Right hand Medium	<b>SNGG</b>	<b>120404 L</b>	0.15-0.35	1.0-4.0	●																					
		<b>120404 R</b>	0.12-0.35	1.0-4.0	●																					
		<b>120408 L</b>	0.15-0.40	1.0-4.0																						
		<b>120408 R</b>	0.15-0.35	1.0-4.0	●																		●			
 Roughing	<b>SNMA</b>	<b>120408</b>	0.15-0.70	1.0-6.0			●	●	○															●		
		<b>120412</b>	0.20-0.80	1.5-6.0			●	●	○																	
		<b>120416</b>	0.30-1.00	2.0-6.0			●	●	○																	
		<b>150612</b>	0.20-0.80	2.0-8.0			●																			
		<b>150616</b>	0.30-1.00	2.0-8.0																						
		<b>190612</b>	0.20-0.80	2.0-10.0			●	●	○																●	
		<b>190616</b>	0.30-1.00	2.0-10.0				●	○																	
		<b>250716</b>	0.30-1.00	3.0-13.0																						
 Roughing Finishing	<b>SNMD</b>	<b>250924 HD</b>								●	●	●														
		Roughing	0.55-1.50	4.0-15.0																						
		Finishing	0.40-0.80	2.0-5.0																						
 Heavy Finishing	<b>SNMD</b>	<b>310924 HD</b>								●	●			●												
		Roughing	0.60-1.50	7.0-25.0																						
		Finishing	0.40-0.80	2.0-5.0																						

A59, A60, A75, A76, A98,  
 A99, A119, A131, A133,  
 A146, A153, A176

● : Standard items  
 ○ : Semi standard items

## Negative square inserts



Size	Dimension (mm)		
	d	t	r
<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

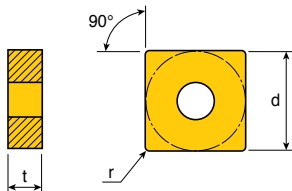
Insert	Designation	Feed (mm/rev)	ap (mm)	Cemet		CVD coated								PVD coated			Uncoated							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20	
<b>TOPDUTY</b>	<b>SNMD 190624 HT</b>	Roughing	0.55-1.20	4.0-9.0							•	•												
		Finishing	0.40-0.80	2.0-5.0																				
Roughing																								
Finishing																								
<b>TOPDUTY</b>	<b>SNMD 310924 HT</b>	Roughing	0.50-1.40	6.0-22.0							•	•		•										
		Finishing	0.40-0.80	2.0-5.0																				
Heavy																								
Finishing																								
<b>TOPDUTY</b>	<b>SNMD 190624 HY</b>	Roughing	0.50-1.10	4.0-12.0							•	•												
		Finishing	0.40-0.80	2.0-5.0																				
Roughing																								
Finishing																								
<b>TOPDUTY</b>	<b>SNMD 250924 HZ</b>	Roughing	0.55-1.50	4.0-15.0								•	•	•										
		Finishing	0.40-0.80	2.0-5.0																				
Roughing																								
Finishing																								



A75, A76, A98,  
A99, A119

• : Standard items  
○ : Semi standard items

## Negative square inserts



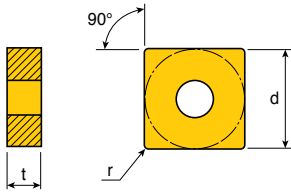
Size	Dimension (mm)		
	d	t	r
<b>09</b>	9.52	4.76	0.4-1.2
<b>12</b>	12.7	4.76	0.4-1.6
<b>15</b>	15.88	6.35	0.8-1.6
<b>19</b>	19.05	6.35	0.4-1.6
<b>25</b>	25.4	7.94-9.52	1.6-2.4

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated			Uncoated					
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20	
<b>RHINO-RUSH</b>  Medium	<b>SNMG 090404</b>	0.10-0.45	0.5-3.5			●	●																	
	<b>090408</b>	0.10-0.50	0.5-3.5			●	●																	
	<b>090412</b>	0.10-0.55	0.5-3.5			●	●																	
 Medium	<b>SNMG 120404</b>	0.17-0.45	1.0-5.0												●									
	<b>120408</b>	0.23-0.60	1.5-5.0	●	●	●	○	●	●	●					●							●		
	<b>120412</b>	0.25-0.60	2.0-5.0			●	○			●					●									
	<b>120416</b>	0.35-0.70	2.0-5.0							●					●									
	<b>150608</b>	0.25-0.60	1.5-6.0							●					●									
	<b>150612</b>	0.25-0.60	2.0-6.0							●														
	<b>150616</b>	0.35-0.70	2.0-6.0							●														
	<b>190604</b>	0.17-0.45	3.0-8.0							●														
	<b>190608</b>	0.25-0.60	3.0-8.0			●		○	●	●					●		●							
	<b>190612</b>	0.30-0.60	3.0-8.0			●	●	○	●	●	●				●									
	<b>190616</b>	0.35-0.70	3.0-8.0							●	●	●			●									
	<b>250716</b>	0.35-0.70	4.0-12.0							●					●									
	<b>250724</b>	0.50-1.00	5.0-12.0							●	●				●									
<b>250924</b>	0.50-1.00	5.0-12.0							●															
<b>RHINO-RUSH</b>  Finishing	<b>SNMG 090404 EA</b>	0.05-0.30	0.2-1.5												●	●	●						●	●
	<b>090408 EA</b>	0.07-0.40	0.3-1.5												●	●	●							●
 Finishing	<b>SNMG 120404 EA</b>	0.05-0.20	0.1-1.5																					
	<b>120408 EA</b>	0.10-0.40	0.1-1.5												●									
<b>RHINO-RUSH</b>  Medium	<b>SNMG 090408 EM</b>	0.13-0.40	0.5-3.0												●	●	●						●	●
	<b>090412 EM</b>	0.15-0.40	0.7-3.0												●	●	●							●

A59, A60, A75, A76, A98,  
 A99, A119, A131, A133,  
 A146, A153, A176, A198

● : Standard items  
 ○ : Semi standard items

## Negative square inserts



Size	Dimension (mm)		
	d	t	r
<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	1.2-1.6
<b>19</b>	19.05	6.35	0.8-1.6

Insert	Designation	Feed (mm/rev)	ap (mm)	Cemet		CVD coated										PVD coated			Uncoated							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20			
 Medium	<b>SNMG</b>	<b>120408 EM</b>	0.13-0.50	0.8-5.0																						
		<b>120412 EM</b>	0.15-0.55	0.8-5.0																						
		<b>150612 EM</b>	0.15-0.55	0.8-6.5																						
		<b>150616 EM</b>	0.17-0.60	0.8-6.5																						
		<b>190612 EM</b>	0.15-0.55	0.8-8.0																						
		<b>190616 EM</b>	0.17-0.60	0.8-8.0																						
 Roughing	<b>SNMG</b>	<b>120408 ET</b>	0.25-0.70	2.0-7.0																						
		<b>120412 ET</b>	0.30-0.70	2.0-7.0																						
		<b>190608 ET</b>	0.30-0.75	3.0-9.0																						
		<b>190612 ET</b>	0.35-0.75	3.0-9.0																						
 Finishing	<b>SNMG</b>	<b>120404 FC</b>	0.05-0.30	0.2-2.5																						
		<b>120408 FC</b>	0.08-0.35	0.2-2.5																						
		<b>120412 FC</b>	0.10-0.40	0.3-2.5																						
 Finishing	<b>SNMG</b>	<b>090404 FG</b>	0.07-0.30	0.2-2.0																						
		<b>090408 FG</b>	0.10-0.35	0.5-2.0																						
		<b>090412 FG</b>	0.15-0.40	0.5-2.0																						
 Finishing	<b>SNMG</b>	<b>120404 FG</b> ✓	0.07-0.20	0.5-3.0			•																			
		<b>120408 FG</b> ✓	0.10-0.25	0.7-3.0	•	•			•	•																
 Finishing	<b>SNMG</b>	<b>090404 FM</b>	0.07-0.30	0.25-2.0		•					•	•														
		<b>090408 FM</b>	0.10-0.35	0.3-2.0		•						•	•	•												
		<b>090412 FM</b>	0.15-0.40	0.35-2.0		•						•	•	•												
 Roughing	<b>SNMG</b>	<b>120408 KT</b>	0.19-0.53	0.38-7.0							•	•														
		<b>120412 KT</b>	0.28-0.70	0.50-7.0								•	•													

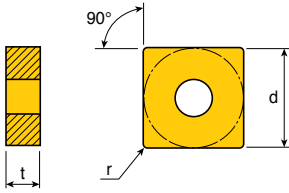


A59, A60, A75, A76, A98,  
A99, A119, A131, A133,  
A146, A153, A176, A198









✓ Marked: Old type chip breaker

• : Standard items  
○ : Semi standard items

## Negative square inserts



Size	Dimension (mm)		
	d	t	r
09	9.52	4.76	0.4-1.2
12	12.7	4.76	0.4-1.2
15	15.88	6.35	0.8-1.2
19	19.05	6.35	0.8-1.2

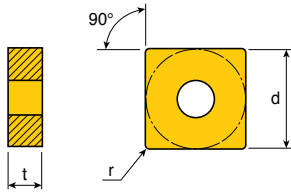
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated								PVD coated		Uncoated							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
 Medium	<b>SNMG 120408 MC</b>	0.12-0.35	0.7-3.5							●	●			●		●							
	<b>120412 MC</b>	0.15-0.40	0.7-3.5																				
 Medium	<b>SNMG 120408 ML</b>	0.12-0.35	1.0-3.5							●	●			●		●							●
	<b>120412 ML</b>	0.15-0.35	1.0-3.5																				
 Medium	<b>SNMG 090404 MM</b>	0.15-0.45	0.4-3.5							●	●	●	●	●	●	●							
	<b>090408 MM</b>	0.20-0.50	0.5-3.5							●	●	●	●	●	●	●							
	<b>090412 MM</b>	0.23-0.50	0.7-3.5								●	●	●	●	●	●							
  Medium	<b>SNMG 120404 MP</b> ✓	0.10-0.30	0.8-4.0																				
	<b>120408 MP</b>	0.12-0.40	1.0-4.0							●	●			●	●	●							
	<b>120412 MP</b>	0.15-0.40	1.3-4.0																				
	<b>150608 MP</b>	0.25-0.60	1.5-6.0								●												
 Medium	<b>SNMG 090404 MT</b>	0.10-0.35	0.8-3.5							●	●			●									
	<b>090408 MT</b>	0.15-0.45	1.0-3.5							●	●			●									
	<b>090412 MT</b>	0.20-0.55	1.2-3.5								●	●			●								
  Medium	<b>SNMG 120404 MT</b> ✓	0.12-0.40	1.0-5.0		●						●			●									
	<b>120408 MT</b>	0.17-0.55	1.2-5.0		●	●	●	○	●	●	●			●	●	●							
	<b>120412 MT</b> ✓	0.20-0.55	1.5-5.0			●				●	●			●	●								
	<b>150612 MT</b> ✓	0.30-0.65	2.0-7.0								●	●											
	<b>190608 MT</b>	0.17-0.55	3.0-8.0								●			●									
	<b>190612 MT</b>	0.20-0.55	3.0-8.0								●			●	●	●							

 A59, A60, A75, A76, A98, A99, A119, A131, A133, A146, A153, A176, A198

✓ Marked: Old type chip breaker

● : Standard items  
○ : Semi standard items

## Negative square inserts



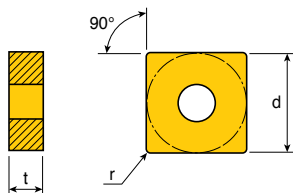
Size	Dimension (mm)		
	d	t	r
09	9.52	4.76	0.4-1.2
12	12.7	4.76	0.4-1.6
15	15.88	6.35	1.2
19	19.05	6.35	1.2-2.4
25	25.4	7.94-9.52	2.4-3.2

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated								PVD coated			Uncoated							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20	
 Medium	<b>SNMG 090404 PC</b>	0.10-0.30	0.4-3.0							●	●	●												
	<b>090408 PC</b>	0.15-0.40	0.5-3.0							●	●	●			●									
	<b>090412 PC</b>	0.18-0.50	0.6-3.0							●	●	●			●									
 Medium	<b>SNMG 120404 PC</b>	0.12-0.40	0.4-5.0									●												
	<b>120408 PC</b>	0.15-0.50	0.5-5.0							●	●			●	●				●					
	<b>120412 PC</b>	0.15-0.50	0.6-5.0							●	●													
 Roughing	<b>SNMG 120408 RT</b>	0.25-0.70	2.5-6.0			●	●			●	●					●								
	<b>120412 RT</b>	0.30-0.70	2.5-6.0			●	●	○		●	●			●										
	<b>120416 RT</b>	0.40-0.70	2.5-6.0							●	●													
	<b>150612 RT</b>	0.30-0.70	3.0-7.0					●											●					
	<b>190612 RT</b>	0.30-0.75	3.0-9.0							●	●	●			●	●			●	●				
	<b>190616 RT</b>	0.40-0.90	3.0-9.0							●	●	●			●	●			●	●				
	<b>250724 RT</b>	0.40-1.00	5.0-12.0											●	●									
 Heavy	<b>SNMM 250924 EH</b>	0.45-1.2	2.8-18.0											●	●	●								
 Heavy	<b>SNMM 190612 HT</b>	0.35-0.9	4.0-9.0							●	●													
	<b>190616 HT</b>	0.45-1.0	4.0-9.0							●	●				●									
	<b>190624 HT</b>	0.55-1.2	4.0-9.0							●														
	<b>250724 HT</b>	0.55-1.3	5.0-12.0							●	●			●	●	●	●							
	<b>250924 HT</b>	0.55-1.3	5.0-12.0							●									●					
	<b>250932 HT</b>	0.65-1.3	5.0-13.0																●					

- A59, A60, A75, A76, A98,  
 A99, A119, A131, A133,  
 A146, A153, A176, A198

- : Standard items  
 ○ : Semi standard items

## Negative square inserts



Size	Dimension (mm)		
	d	t	r
12	12.7	4.76	0.8-1.2
15	15.88	6.35	1.2-1.6
19	19.05	6.35	0.8-2.4
25	25.4	7.94-9.52	1.6-2.4

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermat		CVD coated										PVD coated			Uncoated								
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20				
Heavy	<b>SNMM 190624 HY</b>	0.50-1.10	4.0-12.0																								
	<b>250924 HY</b>	0.55-1.50	4.0-15.0							•	•																
Heavy	<b>SNMM 250924 HZ</b>	0.55-1.50	4.0-15.0							•	•																
RH(N)	<b>SNMM 120408 RH</b>	0.30-0.70	2.5-6.0								•																
	<b>120408 RH(N)</b>	0.25-0.60	2.5-5.0																								
	<b>120412 RH</b>	0.30-0.80	2.5-6.0								•																
	<b>120412 RH(N)</b>	0.30-0.70	3.0-5.0									•															
	<b>150612 RH</b>	0.30-0.80	3.0-7.0									•															
	<b>190608 RH *</b>	0.30-0.70	3.0-9.0										•														
	<b>190612 RH</b>	0.30-0.80	4.0-9.0										•	•													
	<b>190612 RH(N)</b>	0.30-0.70	3.0-8.0																								
	<b>190616 RH</b>	0.45-1.00	4.0-9.0																								
	<b>190616 RH(N)</b>	0.40-0.90	3.0-8.0																								
	<b>190624 RH</b>	0.55-1.20	4.0-9.0																								
	<b>250716 RH *</b>	0.55-1.00	5.0-12.0																								
	<b>250724 RH *</b>	0.55-1.20	5.0-12.0																								
<b>250924 RH *</b>	0.55-1.20	5.0-12.0																									
Roughing	<b>SNMM 120408 RX</b>	0.20-0.55	0.7-7.0									•	•	•													
	<b>120412 RX</b>	0.25-0.70	1.0-7.0									•	•	•													
	<b>150612 RX</b>	0.25-0.70	1.0-9.0									•	•	•													
	<b>190612 RX</b>	0.25-0.70	1.0-10.0									•	•														
	<b>190616 RX</b>	0.30-0.90	1.5-10.0											•													
	<b>190624 RX</b>	0.35-1.10	2.0-10.0											•													
	<b>250724 RX</b>	0.35-1.20	2.0-12.0											•													
	<b>250924 RX</b>	0.35-1.20	2.0-12.0											•	•												
Semi-heavy	<b>SNMX 150712 HB</b>	0.30-0.80	1.5-8.0																								
	<b>150716 HB</b>	0.30-0.80	1.5-8.0																								

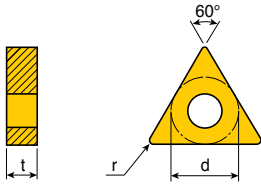
A59, A60, A75, A76, A98, A99, A119, A131, A133, A146, A153, A176

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

● : Standard items  
○ : Semi standard items



## Negative triangular inserts



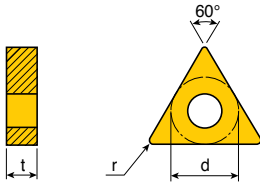
Size	Dimension (mm)		
	d	t	r
11	6.35	3.18	0.4
13	7.94	4.76	0.2-1.2
16	9.52	4.76	0.4-1.6
22	12.7	4.76	0.4-1.6

Insert	Designation	Feed (mm/rev)	ap (mm)	Cemet		CVD coated								PVD coated			Uncoated										
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20				
<b>RHINO-RUSH</b>  Left hand Finishing	<b>TNGG</b>	<b>130402 L</b>	0.10-0.30	0.8-3.5	●																						
		<b>130402 R</b>	0.10-0.30	0.8-3.5	●																						
		<b>130404 L</b>	0.12-0.30	1.0-3.5	●																						
		<b>130408 R</b>	0.15-0.35	1.3-3.5	●																						
		<b>130408 L</b>	0.15-0.35	1.3-3.5	●																						
		<b>130408 R</b>	0.15-0.35	1.3-3.5	●																						
 Left hand Medium	<b>TNGG</b>	<b>160404 L</b>	0.12-0.30	1.0-3.5	●																				●		
		<b>160404 R</b>	0.12-0.30	1.0-3.5	●																					●	
		<b>160408 L</b>	0.15-0.35	1.3-3.5	●																						●
		<b>160408 R</b>	0.15-0.35	1.3-3.5	●																						●
		<b>220404 L</b>	0.12-0.30	1.0-5.0	●																						●
		<b>220404 R</b>	0.12-0.30	1.0-5.0	●																						●
		<b>220408 L</b>	0.15-0.35	1.3-5.0	●																						
		<b>220408 R</b>	0.15-0.35	1.3-5.0	●																						
 Roughing	<b>TNMA</b>	<b>110304</b>	0.15-0.30	0.5-2.0																					○		
		<b>160404</b>	0.15-0.30	1.0-4.0			●	●	○																		
		<b>160408</b>	0.15-0.40	1.0-4.0			●	●	○																		
		<b>160412</b>	0.20-0.50	1.5-4.5					●	○																	
		<b>160416</b>	0.20-0.50	1.0-4.5			●																				
		<b>220404</b>	0.15-0.30	1.5-5.0																							
		<b>220408</b>	0.15-0.40	1.5-5.0					●	○																	
		<b>220412</b>	0.20-0.50	1.5-5.0			●	●																			
		<b>220416</b>	0.20-0.61	2.0-5.0																							
<b>RHINO-RUSH</b>  Medium	<b>TNMG</b>	<b>130404</b>	0.10-0.45	0.5-3.5			●	●																			
		<b>130408</b>	0.10-0.50	0.5-3.5			●	●																			
		<b>130412</b>	0.10-0.55	0.5-3.5			●	●																			






A61, A65, A77, A78, A100, A103,  
 A104, A131, A134, A147, A148,  
 A154, A177, A178, A180, A185


● : Standard items  
 ○ : Semi standard items

## Negative triangular inserts



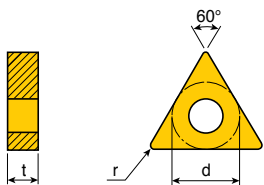
Size	Dimension (mm)		
	d	t	r
<b>11</b>	6.35	3.18	0.4-0.8
<b>13</b>	7.94	4.76	0.4-1.2
<b>16</b>	9.52	4.76	0.4-1.2
<b>22</b>	12.7	4.76	0.4-1.6
<b>27</b>	15.88	6.35	0.8-1.6
<b>33</b>	19.05	7.94-9.52	1.6-2.4

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermert		CVD coated								PVD coated			Uncoated						
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
 Medium	<b>TNMG 110304</b>	0.15-0.40	1.2-3.0						○	○													
	<b>110308</b>	0.17-0.40	1.5-3.0						○														
	<b>160404</b>	0.17-0.45	1.5-3.5		●	●	●	○	●	●			●			●							
	<b>160408</b>	0.17-0.55	2.0-3.5		●	●	●	○	●	●			●			●							
	<b>160412</b>	0.25-0.55	2.0-3.5						●														
	<b>220404</b>	0.17-0.45	1.5-5.0						●	●				●									
	<b>220408</b>	0.17-0.55	2.0-5.0				●		●	●				●	●								
	<b>220412</b>	0.25-0.55	2.0-5.0						●	●													
	<b>220416</b>	0.30-0.60	2.0-5.0							●													
	<b>270608</b>	0.17-0.55	2.0-5.0																				
	<b>270612</b>	0.25-0.55	3.0-7.0								●												
<b>270616</b>	0.30-0.60	3.0-7.0								●													
<b>330716</b>	0.35-0.70	3.0-9.0								●				●									
<b>330924</b>	0.40-0.80	3.0-9.0																					
<b>RHINO-RUSH</b>  Finishing	<b>TNMG 130404 EA</b>	0.05-0.30	0.2-1.5									●	●	●		●		●					
	<b>130408 EA</b>	0.07-0.40	0.3-1.5									●	●	●		●		●					
 Finishing	<b>TNMG 160404 EA</b>	0.05-0.20	0.1-1.5									●	●			●		●					
	<b>160408 EA</b>	0.10-0.40	0.1-1.5													●		●					
<b>RHINO-RUSH</b>  Medium	<b>TNMG 130408 EM</b>	0.13-0.40	0.5-3.0									●	●	●		●		●					
	<b>130412 EM</b>	0.15-0.40	0.7-3.0									●	●	●		●		●					
 Medium	<b>TNMG 160408 EM</b>	0.13-0.50	0.8-4.5									●	●			●		●					
	<b>160412 EM</b>	0.15-0.55	0.8-4.5													●		●					
	<b>220408 EM</b>	0.13-0.50	0.8-6.0										●	●		●		●					
	<b>220412 EM</b>	0.15-0.55	0.8-6.0															●					


 A61, A65, A77, A78, A100, A103, A104, A131, A134, A147, A148, A154, A177, A178, A180, A185

● : Standard items  
 ○ : Semi standard items

## Negative triangular inserts



Size	Dimension (mm)		
	d	t	r
11	6.35	3.18	0.4
13	7.94	4.76	0.4-1.2
16	9.52	4.76	0.4-1.2
22	12.7	4.76	0.8-1.2

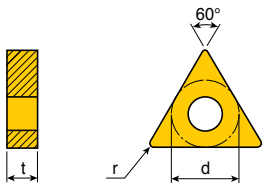
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermat		CVD coated									PVD coated			Uncoated								
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT95100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20				
 Roughing	<b>TNMG 160408 ET</b>	0.25-0.65	2.0-5.0												●											
	<b>160412 ET</b>	0.25-0.65	2.0-5.0																							
	<b>220408 ET</b>	0.25-0.65	2.5-7.0													●		●								
	<b>220412 ET</b>	0.25-0.65	2.5-7.0													●		●								
 Finishing	<b>TNMG 160404 FC</b>	0.05-0.30	0.2-2.5	●	●					●	●				●											
	<b>160408 FC</b>	0.08-0.35	0.2-2.5	●	●					●	●				●	●										
	<b>160412 FC</b>	0.10-0.40	0.3-2.5							●																
<b>RHINO-RUSH</b>  Finishing	<b>TNMG 130404 FG</b>	0.07-0.30	0.25-1.5							●	●				●											
	<b>130408 FG</b>	0.10-0.35	0.3-1.5							●	●				●											
	<b>130412 FG</b>	0.15-0.40	0.35-1.5							●	●				●											
 Finishing	<b>TNMG 110304 FG</b>	0.07-0.20	0.5-1.5		○										○											
	<b>160404 FG</b>	0.07-0.20	0.5-2.0	●	●					●	●				●											
	<b>160408 FG</b>	0.10-0.25	0.7-2.0	●	●					●	●				●											
	<b>160412 FG</b>	0.13-0.30	0.7-2.0	●																						
	<b>220408 FG</b>	0.10-0.25	0.7-2.0																							
<b>RHINO-RUSH</b>  Finishing	<b>TNMG 130404 FM</b>	0.07-0.30	0.25-1.5	●						●	●	●			●											
	<b>130408 FM</b>	0.10-0.35	0.3-1.5	●						●	●	●			●											
	<b>130412 FM</b>	0.15-0.40	0.35-1.5	●						●	●	●			●											
<b>RHINO-RUSH</b>  Finishing	<b>TNMG 130404 FT</b>	0.07-0.30	0.25-2.5							●	●	●			●											
	<b>130408 FT</b>	0.10-0.40	0.3-2.5							●	●	●			●											
	<b>130412 FT</b>	0.15-0.50	0.35-2.5							●	●	●			●											
 Right hand Medium	<b>TNMG 160404 L-FS</b>	0.15-0.30	0.8-3.0	●						●				●												
	<b>160404 R-FS</b>	0.15-0.30	0.8-3.0	●						●				●			●									
	<b>160408 L-FS</b>	0.20-0.40	1.0-3.5											●												
	<b>160408 R-FS</b>	0.20-0.40	1.0-3.5											●					●							



A61, A65, A77, A78, A100, A103, A104, A131, A134, A147, A148, A154, A177, A178, A180, A185

● : Standard items  
○ : Semi standard items

## Negative triangular inserts



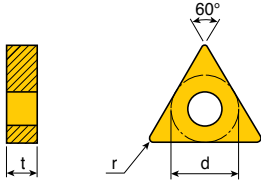
Size	Dimension (mm)		
	d	t	r
<b>13</b>	7.94	4.76	0.4-1.2
<b>16</b>	9.52	4.76	0.4-1.2
<b>22</b>	12.7	4.76	0.4-1.2

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermets		CVD coated										PVD coated		Uncoated						
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20	
 Roughing	<b>TNMG 160408 KT</b>	0.17-0.42	0.34-6.2			●	●																	
		0.20-0.56	0.45-6.3			●	●																	
		0.19-0.53	0.38-7.0			●	●																	
		0.25-0.70	0.50-7.0			●	●																	
 Medium	<b>TNMG 160408 MC</b>	0.17-0.40	0.7-3.5					●	●			●												
 Medium	<b>TNMG 160404 ML</b>	0.10-0.30	0.8-3.5					●	●			●		●	●						●			
		0.12-0.35	1.0-3.5					●	●	●		●		●	●							●		
		0.15-0.35	1.5-3.5																					
		0.10-0.30	1.0-4.0											●										
		0.12-0.35	1.0-4.0											●										
 Medium	<b>TNMG 130404 MM</b>	0.15-0.45	0.4-3.0					●	●	●	●	●	●	●										
		0.20-0.50	0.5-3.0					●	●	●	●	●	●	●										
		0.23-0.50	0.7-3.0					●	●	●	●	●	●	●										
 Medium	<b>TNMG 160404 MP</b>	0.10-0.30	0.8-3.5					●				●		●	●						●			
		0.12-0.40	1.0-3.5					●	●			●	●	●	●									
		0.15-0.40	1.5-3.5					●					●											
		0.12-0.35	1.0-3.5																					
		0.12-0.40	1.0-4.0																					
		0.15-0.40	1.0-4.0																					

A61, A65, A77, A78, A100, A103,  
 A104, A131, A134, A147, A148,  
 A154, A177, A178, A180, A185

● : Standard items  
 ○ : Semi standard items

## Negative triangular inserts



Size	Dimension (mm)		
	d	t	r
11	6.35	3.18	0.8
13	7.94	4.76	0.4-1.2
16	9.52	4.76	0.4-1.2
22	12.7	4.76	0.4-1.2
27	15.88	6.35	1.2
33	19.05	9.52	2.4

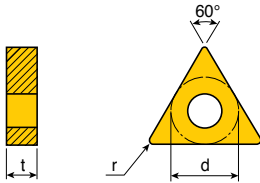
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermat		CVD coated						PVD coated			Uncoated									
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20	
<b>RHINO-RUSH</b>  Medium	<b>TNMG</b> <b>130404 MT</b> <b>130408 MT</b> <b>130412 MT</b>	0.10-0.35	0.8-3.0						●	●	●		●											
		0.15-0.45	1.0-3.0						●	●	●		●											
		0.20-0.55	1.2-3.0						●	●	●		●											
<b>OLD</b>  Medium	<b>TNMG</b> <b>110308 MT</b> <b>160404 MT</b> <b>160408 MT</b> <b>160412 MT</b> <b>220404 MT</b> ✓ <b>220408 MT</b> ✓ <b>220412 MT</b> <b>270612 MT</b> ✓	0.17-0.40	1.0-3.0						○	○			○											
		0.17-0.40	1.0-3.5	●	●	●	○	●	●				●		●	●								
		0.17-0.50	1.2-3.5	●	●	●	○	●	●			●		●		●	●							
		0.20-0.50	1.5-3.5	●			●	●					●											
		0.15-0.40	1.2-5.0					●	●															
		0.17-0.50	1.2-5.0					●						●										
		0.20-0.50	1.5-5.0											●										
		0.20-0.50	3.0-7.0												●									
<b>RHINO-RUSH</b>  Medium	<b>TNMG</b> <b>130404 PC</b> <b>130408 PC</b> <b>130412 PC</b>	0.10-0.30	0.4-3.0						●	●			●											
		0.15-0.40	0.5-3.0						●	●	●			●										
		0.18-0.50	0.6-3.0						●	●	●			●										
 Medium	<b>TNMG</b> <b>160404 PC</b> <b>160408 PC</b> <b>160412 PC</b> <b>220408 PC</b> <b>220412 PC</b>	0.15-0.40	1.0-3.5						●	●			●											
		0.15-0.50	0.5-4.5						●	●			●	●	●	●								●
		0.17-0.55	0.6-4.5						●	●			●	●	●	●								
		0.17-0.50	1.2-5.0						●	●			●	●	●	●								
		0.20-0.50	1.5-5.0						●	●			●	●										
 Roughing	<b>TNMG</b> <b>160408 RT</b> <b>160412 RT</b> <b>220408 RT</b> <b>220412 RT</b> <b>330924 RT</b>	0.25-0.65	2.0-5.0				●	●	○	●														
		0.25-0.65	2.0-5.0				●		○	●														
		0.25-0.65	2.0-7.0										●	●										
		0.25-0.65	2.5-7.0						●															
		0.35-0.70	3.0-9.0																					

A61, A65, A77, A78, A100, A103, A104, A131, A134, A147, A148, A154, A177, A178, A180, A185





✓ Marked: Old type chip breaker


● : Standard items  
 ○ : Semi standard items

## Negative triangular inserts



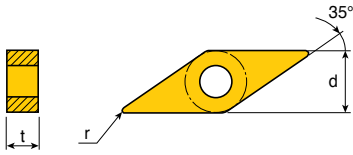
Size	Dimension (mm)		
	d	t	r
<b>16</b>	9.52	4.76	0.4-1.2
<b>22</b>	12.7	4.76	0.8-1.6
<b>27</b>	15.88	6.35	1.2

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermat		CVD coated										PVD coated		Uncoated							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20		
 Finishing	<b>TNMG 160408 SF</b>	0.10-0.30	0.7-1.5	●																					
 Right hand Medium	<b>TNMG 160404 L-VF</b>	0.10-0.30	0.7-3.5	●					●	●					●										
	<b>160404 R-VF</b>	0.10-0.30	0.7-3.5	●	●				●	●					●		●								
	<b>160408 L-VF</b>	0.12-0.35	1.0-3.5													●									
	<b>160408 R-VF</b>	0.12-0.35	1.0-3.5													●									
 Roughing	<b>TNMM 160408 RH</b>	0.30-0.70	2.0-7.0																						
	<b>220408 RH</b>	0.30-0.70	2.0-7.0																						
	<b>220412 RH</b>	0.30-0.70	2.5-7.0																						
	<b>220416 RH</b>	0.40-0.85	3.0-7.0																						
	<b>270612 RH</b>	0.30-0.80	3.0-8.0																						
 Roughing	<b>TNMM 160408 RX</b>	0.20-0.55	0.7-6.0																						
	<b>160412 RX</b>	0.25-0.70	1.0-7.0																						
	<b>220408 RX</b>	0.20-0.55	0.7-7.5																						
	<b>220412 RX</b>	0.25-0.70	1.0-7.5																						
	<b>220416 RX</b>	0.30-0.90	1.5-7.5																						


 A65, A77, A78, A100,  
 A103, A104, A134, A154,  
 A177, A178, A180, A185

● : Standard items  
 ○ : Semi standard items

## Negative 35° rhombic inserts



Size	Dimension (mm)		
	d	t	r
13	7.94	4.76	0.4-0.8
16	9.52	4.76	0.1-1.2

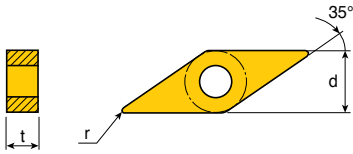
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermets		CVD coated								PVD coated			Uncoated							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20	
 Medium	<b>VNGG 160401 ML</b>	0.03-0.10	0.1-1.0																					
	<b>160402 ML</b>	0.05-0.15	0.2-1.2												●									
	<b>160404 ML</b>	0.10-0.27	0.8-3.0												●							●		
	<b>160408 ML</b>	0.10-0.30	0.8-3.5																					
 Medium	<b>VNMG 160404</b>	0.17-0.40	1.0-3.0	●	●	●	○	●	●					●										
	<b>160408</b>	0.17-0.50	1.5-3.0	●	●	●	○	●	●					●										
	<b>160412</b>	0.20-0.50	1.5-3.0			●	●		●															
 Finishing	<b>VNMG 160404 EA</b>	0.05-0.2	0.1-1.5											●	●						●			
	<b>160408 EA</b>	0.08-0.3	0.2-2.5												●									
 Medium	<b>VNMG 160408 EM</b>	0.13-0.50	0.8-3.5											●								●		
 Finishing	<b>VNMG 160408 FA</b>	0.05-0.25	0.3-2.0						●					●		●								
 Finishing	<b>VNMG 130404 FC *</b>	0.08-0.20	0.5-1.5		○				○	○			○											
	<b>130408 FC *</b>	0.10-0.23	0.5-2.0							○														
	<b>160404 FC</b>	0.05-0.30	0.3-2.5		●				●	●			●											
	<b>160408 FC</b>	0.08-0.35	0.3-2.5		●				●	●			●											
 Finishing	<b>VNMG 130404 FG *</b>	0.08-0.20	0.5-1.5		●				●	●			●		●		●							
	<b>130408 FG *</b>	0.10-0.23	0.5-2.0		●				●	●			●											
	<b>160404 FG</b>	0.08-0.20	0.5-2.0		●	●			●	●			●	●	●	●		●	●					
	<b>160408 FG</b>	0.10-0.23	0.5-2.0		●	●			●	●			●	●	●	●		●	●					



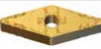



\* Marked: Insert with screw hole

● : Standard items  
○ : Semi standard items

## Negative 35° rhombic inserts



Size	Dimension (mm)		
	d	t	r
13	7.94	4.76	0.4-0.8
16	9.52	4.76	0.4-0.8

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated			Uncoated						
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20		
 Finishing	<b>VNMG 160404 FX</b>	0.05-0.20	0.2-2.0	●																					
	<b>160408 FX</b>	0.07-0.20	0.2-2.0	●						●	●														
 Medium	<b>VNMG 130404 MT *</b>	0.15-0.36	0.8-2.5	●		●																			
	<b>130408 MT *</b>	0.17-0.36	1.0-2.5			●				●	●														
	<b>160404 MT ✓</b>	0.15-0.36	0.8-3.0	●						●	●														
	<b>160408 MT</b>	0.17-0.36	1.0-2.5	●		●	●	○		●	●														
 Medium	<b>VNMG 160404 PC</b>	0.15-0.36	0.4-3.0																						
	<b>160408 PC</b>	0.17-0.36	0.5-3.0																						
 Medium	<b>VNMM 160404 ML</b>	0.10-0.27	0.8-3.0																					●	
	<b>160408 ML</b>	0.12-0.32	1.0-3.0																					●	

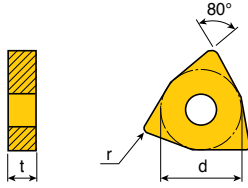


✓ Marked: Old type chip breaker  
 \* Marked: Insert with screw hole

● : Standard items  
 ○ : Semi standard items



## Negative 80° trigon inserts



Size	Dimension (mm)		
	d	t	r
<b>06</b>	9.52	4.76	0.4-1.2
<b>08</b>	12.7	4.76	0.4-1.2

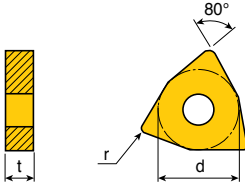
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated			Uncoated																					
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20																	
Roughing	<b>WNMA 060408</b>	0.15-0.70	1.0-4.0				○																																	
	<b>060412</b>	0.20-0.80	1.5-4.0			○																																		
	<b>080408</b>	0.15-0.70	1.0-5.0			● ● ○																																		
	<b>080412</b>	0.20-0.80	1.5-5.0			● ● ○																																		
	<b>080416</b>	0.20-0.80	1.5-5.0																																					
Finishing	<b>WNMG 080404 EA</b>	0.05-0.20	0.1-1.5															●																						
	<b>080408 EA</b>	0.10-0.40	0.1-1.5															●																						
Medium	<b>WNMG 060408 EM</b>	0.13-0.50	0.8-3.0													○																								
	<b>060412 EM</b>	0.15-0.55	0.8-3.0																																					
	<b>080404 EM</b>	0.10-0.45	0.8-4.0																																					
	<b>080408 EM</b>	0.12-0.45	0.8-4.0																																					
	<b>080412 EM</b>	0.12-0.45	0.8-4.0																																					
Roughing	<b>WNMG 060408 ET</b>	0.15-0.50	0.8-4.0																																					
	<b>060412 ET</b>	0.15-0.50	0.8-4.0																																					
	<b>080408 ET</b>	0.15-0.55	0.8-4.5																																					
	<b>080412 ET</b>	0.20-0.50	0.8-4.5																																					
Finishing	<b>WNMG 060404 FC</b>	0.07-0.20	0.5-2.0		○																																			
	<b>060408 FC</b>	0.10-0.25	0.5-2.0		○				○ ○							○																								
	<b>080404 FC</b>	0.07-0.20	0.5-2.0																																					
	<b>080408 FC</b>	0.07-0.20	0.5-2.0			●																																		
	<b>080412 FC</b>	0.10-0.25	0.5-2.0																																					
Finishing	<b>WNMG 060404 FG</b>	0.07-0.20	0.5-2.0		○ ○																																			
	<b>060408 FG</b>	0.10-0.25	0.7-2.0		○ ○					○																														
	<b>080404 FG</b>	0.07-0.20	0.5-2.0			● ●																																		
	<b>080408 FG</b>	0.10-0.25	0.7-2.0			● ●																																		



A62, A68, A102,  
A127, A135, A149,  
A150, A179

● : Standard items  
○ : Semi standard items

## Negative 80° trigon inserts



Size	Dimension (mm)		
	d	t	r
<b>06</b>	9.52	4.76	0.4-1.2
<b>08</b>	12.7	4.76	0.4-1.6

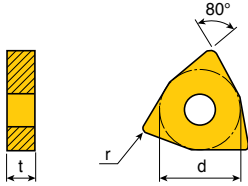
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated			Uncoated				
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
 Roughing	<b>WNMG 080408 KT</b>	0.17-0.47	0.29-5.5			●	●																
	<b>080412 KT</b>	0.23-0.63	0.39-5.5			●	●																
 Medium	<b>WNMG 060404 MC</b>	0.10-0.30	0.5-2.5																				
	<b>060408 MC</b>	0.12-0.35	0.7-3.0																				
	<b>080408 MC</b>	0.12-0.35	0.7-3.5																				
	<b>080412 MC</b>	0.15-0.40	0.7-3.5																				
 Medium	<b>WNMG 080408 ML</b>	0.12-0.35	1.0-3.5																				
	<b>080412 ML</b>	0.15-0.35	1.3-3.5																				
 Medium	<b>WNMG 060408 MP</b>	0.12-0.35	1.0-3.0																				
	<b>060412 MP</b>	0.15-0.40	1.3-3.0																				
	<b>080404 MP</b> ✓	0.10-0.35	1.0-4.0																				
	<b>080408 MP</b>	0.12-0.40	1.0-4.0																				
	<b>080412 MP</b>	0.15-0.40	1.3-4.0																				
 Medium	<b>WNMG 060404 MT</b>	0.12-0.40	1.0-3.0																				
	<b>060408 MT</b>	0.15-0.45	1.2-3.0																				
	<b>060412 MT</b>	0.23-0.50	1.5-3.0																				
	<b>080404 MT</b> ✓	0.12-0.40	1.0-4.0																				
	<b>080408 MT</b>	0.17-0.55	1.2-4.0																				
 Medium	<b>WNMG 080412 MT</b>	0.25-0.55	1.5-4.0																				
	<b>WNMG 060408 PC</b>	0.15-0.50	0.5-4.0																				
	<b>060412 PC</b>	0.17-0.50	0.6-4.0																				
	<b>080408 PC</b>	0.15-0.50	0.5-4.0																				
	<b>080412 PC</b>	0.17-0.50	0.6-4.0																				
	<b>080416 PC</b>	0.20-0.50	0.8-4.0																				

A62, A68, A102,  
A127, A135, A149,  
A150, A179

✓ Marked: Old type chip breaker

● : Standard items  
○ : Semi standard items

## Negative 80° trigon inserts



Size	Dimension (mm)		
	d	t	r
06	9.52	4.76	0.4-1.2
08	12.7	4.76	0.8-1.2

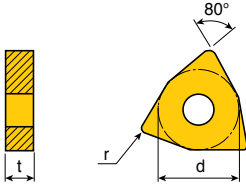
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated			Uncoated					
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20	
 Roughing	<b>WNUMG 080408 RT</b>	0.25-0.70	2.5-4.0			●	●	○	●	●	●	●	●	●	●									
	<b>080412 RT</b>	0.25-0.70	2.5-4.0			●	●	○	●	●			●											
	<b>080416 RT</b>	0.30-0.75	2.5-4.0			●			●	●														
 Finishing	<b>WNUMG 080408 WS</b>	0.07-0.35	0.5-2.0				●		●															
 Medium	<b>WNUMG 060408 WT</b>	0.15-0.60	0.7-3.5							○														
	<b>060412 WT</b>	0.20-0.80	0.7-3.5					○	○	○														
	<b>080408 WT</b>	0.15-0.60	1.0-4.0		●					●	●			●										
	<b>080412 WT</b>	0.20-0.80	1.0-4.0					●	○	●	●	●												
 Medium	<b>WNUMX 060404 EM</b>	0.10-0.35	0.4-3.0									●	●	●		●						●		
	<b>060408 EM</b>	0.13-0.40	0.5-3.0									●	●	●		●						●		
	<b>060412 EM</b>	0.15-0.40	0.7-3.0									●	●	●		●						●		
 Medium	<b>WNUMX 060404 FG</b>	0.07-0.30	0.2-2.0		●	●				●	●			●		●								
	<b>060408 FG</b>	0.10-0.35	0.5-2.0		●	●				●	●													
 Medium	<b>WNUMX 060404 FM</b>	0.07-0.30	0.25-2.0		●					●	●			●										
	<b>060408 FM</b>	0.10-0.35	0.3-2.0		●					●	●			●										
	<b>060412 FM</b>	0.15-0.40	0.35-2.0		●					●	●			●										



A62, A68, A102,  
A127, A135, A149,  
A150, A179

● : Standard items  
○ : Semi standard items

## Negative 80° trigon inserts



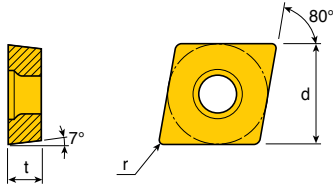
Size	Dimension (mm)		
	d	t	r
<b>06</b>	9.52	4.76	0.4-1.2

Insert	Designation	Feed (mm/rev)	ap (mm)	Coating																			
				Cermet		CVD coated										PVD coated		Uncoated					
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
<b>RHINO-RUSH</b>  Medium	<b>WNMX 060404 MM</b>	0.15-0.45	0.4-3.0									●	●	●			●		●				
	<b>060408 MM</b>	0.20-0.50	0.5-3.0							●		●	●	●			●	●	●				
	<b>060412 MM</b>	0.23-0.50	0.7-3.0										●	●	●			●		●			
<b>RHINO-RUSH</b>  Medium	<b>WNMX 060404 MT</b>	0.10-0.35	0.8-3.0						●	●		●	●	●	●		●						
	<b>060408 MT</b>	0.15-0.45	1.0-3.0			●	●		●	●		●	●	●	●		●						
	<b>060412 MT</b>	0.20-0.55	1.2-3.0			●	●		●	●					●								
<b>RHINO-RUSH</b>  Medium	<b>WNMX 060404 PC</b>	0.10-0.30	0.4-3.0						●	●													
	<b>060408 PC</b>	0.15-0.40	0.5-3.0						●	●											●		
	<b>060412 PC</b>	0.18-0.50	0.6-3.0						●	●											●		

A62, A68, A102,  
 A135, A149,  
 A150, A179

● : Standard items  
 ○ : Semi standard items

## Positive 7° clearance 80° rhombic inserts



Size	Dimension (mm)		
	d	t	r
<b>03</b>	3.97	1.59	0.03-0.4
<b>04</b>	4.76	1.59	0.03-0.4
<b>06</b>	6.35	2.38	0.03-0.4
<b>09</b>	9.52	3.97	0.03-0.4

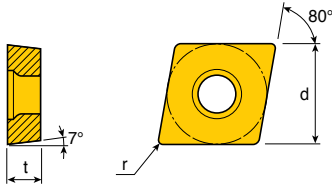
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated								PVD coated		Uncoated							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20	
 Right hand Finishing	<b>CCET 060201 L-GF</b>	0.02-0.15	0.2-1.5																				
	<b>060201 R-GF</b>	0.02-0.15	0.2-1.5																				
	<b>060202 L-GF</b>	0.03-0.17	0.3-1.5															●					
	<b>060202 R-GF</b>	0.03-0.17	0.3-1.5																				
	<b>060204 L-GF</b>	0.05-0.20	0.3-1.5																				
	<b>060204 R-GF</b>	0.05-0.20	0.3-1.5																				
	<b>09T301 L-GF</b>	0.02-0.15	0.2-2.5																				
	<b>09T301 R-GF</b>	0.02-0.15	0.2-2.5																●				
	<b>09T302 L-GF</b>	0.03-0.17	0.3-2.5																				
	<b>09T302 R-GF</b>	0.03-0.17	0.3-2.5																				
	<b>09T304 L-GF</b>	0.05-0.20	0.3-2.5																				
	<b>09T304 R-GF</b>	0.05-0.20	0.3-2.5																				
 Right hand Finishing	<b>CCET 0602003 L-GW*</b>	0.02-0.15	0.1-1.5																				
	<b>0602003 R-GW*</b>	0.02-0.15	0.1-1.5																				
	<b>09T3003 L-GW*</b>	0.02-0.15	0.1-2.5																				
	<b>09T3003 R-GW*</b>	0.02-0.15	0.1-2.5																				
 Finishing	<b>CCGT 0301003 R-FF</b>	0.03-0.10	0.05-0.3																				
	<b>0301003 L-FF</b>	0.03-0.10	0.05-0.3																				
	<b>030101 R-FF</b>	0.03-0.12	0.08-0.4																				
	<b>030101 L-FF</b>	0.03-0.12	0.08-0.4																			●	
	<b>030102 R-FF</b>	0.03-0.15	0.1-0.4																			●	
	<b>030102 L-FF</b>	0.03-0.15	0.1-0.4																			●	
	<b>030104 R-FF</b>	0.05-0.20	0.1-0.4																			●	
	<b>030104 L-FF</b>	0.05-0.20	0.1-0.4																			●	
	<b>0401003 R-FF</b>	0.03-0.10	0.05-0.4																				
	<b>0401003 L-FF</b>	0.03-0.10	0.05-0.4																				
	<b>040101 R-FF</b>	0.03-0.12	0.1-0.5																				
	<b>040101 L-FF</b>	0.03-0.12	0.1-0.5																				●
	<b>040102 R-FF</b>	0.03-0.15	0.1-0.5																				●
	<b>040102 L-FF</b>	0.03-0.15	0.1-0.5																				●
	<b>040104 R-FF</b>	0.05-0.20	0.1-0.5																				●
	<b>040104 L-FF</b>	0.05-0.20	0.1-0.5																				●



\* Marked: Can be applied only to toolholders with 95° approach angle

● : Standard items  
○ : Semi standard items

## Positive 7° clearance 80° rhombic inserts



Size	Dimension (mm)		
	d	t	r
<b>06</b>	6.35	2.38	0.1-0.8
<b>09</b>	9.52	3.97	0.1-0.8
<b>12</b>	12.7	4.76	0.4-1.2

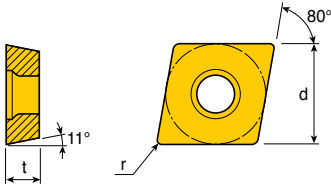
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated			Uncoated				
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
 Finishing	<b>CCGT</b>	<b>060201 SA</b>	0.02-0.15	0.1-1.5													●	●					
		<b>060202 SA</b>	0.02-0.15	0.1-1.5														●	●				
		<b>060204 SA</b>	0.03-0.20	0.1-2.4														●	●				
		<b>09T301 SA</b>	0.02-0.15	0.1-2.5														●	●				
		<b>09T302 SA</b>	0.02-0.15	0.1-2.5														●	●				
		<b>09T304 SA</b>	0.03-0.20	0.1-2.5														●	●				
 Finishing	<b>CCMT</b>	<b>060202 FA</b>	0.05-0.15	0.1-1.5	●	●											●						
		<b>060204 FA</b>	0.05-0.15	0.1-1.5	●	●				●								●	●				
		<b>09T302 FA</b>	0.05-0.15	0.1-2.0	●	●												●					
		<b>09T304 FA</b>	0.05-0.20	0.1-2.0	●	●												●	●				
 Finishing	<b>CCMT</b>	<b>060204 FG</b>	0.05-0.15	0.3-1.5	●	●					●						●	●					
		<b>09T304 FG</b>	0.07-0.20	0.4-2.0	●	●	●				●						●	●	●			●	
		<b>09T308 FG</b>	0.10-0.25	0.6-2.0	●	●												●	●				
		<b>120408 FG</b> ✓	0.10-0.25	0.6-2.0														●					
 Medium	<b>CCMT</b>	<b>060204 MT</b>	0.07-0.20	0.5-2.0	●	●	●	●	○	●	●						●	●				●	
		<b>060208 MT</b>	0.13-0.30	0.7-2.0		●	●	●	○	●	●	●						●				●	
		<b>09T304 MT</b>	0.10-0.25	0.7-3.5	●	●	●	●	○	●	●							●	●				
		<b>09T308 MT</b>	0.13-0.30	1.0-3.5		●	●	●	○	●	●	●						●	●				
		<b>120404 MT</b>	0.10-0.25	1.0-5.0		●	●	●	○	●	●							●	●				
		<b>120408 MT</b>	0.13-0.30	1.3-5.0		●	●	○	●	●	●	●						●	●				
		<b>120412 MT</b>	0.17-0.35	1.5-5.0			●				●	●											
 Semi finishing	<b>CCMT</b>	<b>060204 PC</b>	0.06-0.18	0.3-2.0		●					●										●		
		<b>060208 PC</b>	0.08-0.25	0.4-2.0		●						●										●	
		<b>09T304 PC</b>	0.08-0.25	0.35-3.0		●						●										●	
		<b>09T308 PC</b>	0.10-0.28	0.5-3.0								●										●	
		<b>120404 PC</b>	0.08-0.25	0.4-4.0		●						●										●	
		<b>120408 PC</b>	0.10-0.30	0.7-4.0		●						●										●	
 Medium	<b>CCMT</b>	<b>09T308 WT</b>	0.10-0.40	0.7-3.0			●			●	●												



✓ Marked: Old type chip breaker

● : Standard items  
○ : Semi standard items

## Positive 11° clearance 80° rhombic inserts



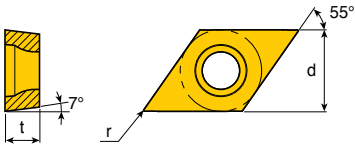
Size	Dimension (mm)		
	d	t	r
<b>06</b>	6.35	2.38	0.4-0.8
<b>08</b>	7.94	2.38	0.4-0.8
<b>09</b>	9.52	3.18-3.97	0.4-0.8

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermat		CVD coated										PVD coated			Uncoated						
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20		
 Finishing	<b>CPGT 080204 C</b> <b>090304 C</b>	0.05-0.20	0.4-1.5																						
		0.05-0.20	0.4-2.0																						
 Finishing	<b>CPMT 080204 FG</b> <b>080208 FG</b> <b>090304 FG</b> <b>090308 FG</b>	0.07-0.20	0.4-1.5			●																			
		0.10-0.25	0.6-1.5			●																			
		0.07-0.20	0.4-2.0			●																			
		0.10-0.25	0.6-2.0			●																			
 Semi finishing	<b>CPMT 060204 PC</b> <b>060208 PC</b> <b>090304 PC</b> <b>090308 PC</b> <b>09T304 PC</b> <b>09T308 PC</b>	0.06-0.18	0.3-2.0																						
		0.08-0.25	0.4-2.0																						
		0.08-0.25	0.45-3.0																						
		0.10-0.30	0.6-3.0																						
		0.08-0.25	0.45-3.0																						
		0.10-0.30	0.6-3.0																						



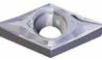




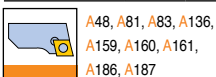
● : Standard items  
○ : Semi standard items

## Positive 7° clearance 55° rhombic inserts



Size	Dimension (mm)		
	d	t	r
07	6.35	2.38	0.03-0.8
11	9.52	3.97	0.03-0.8

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated								PVD coated		Uncoated						
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10
 Right hand Finishing	DCET 070201 L-GF	0.02-0.15	0.2-1.5																			
	070201 R-GF	0.02-0.15	0.2-1.5															•				
	070202 L-GF	0.03-0.17	0.3-1.5															•				
	070202 R-GF	0.03-0.17	0.3-1.5															•				
	070204 L-GF	0.05-0.20	0.3-1.5																			
	070204 R-GF	0.05-0.20	0.3-1.5																			
	11T301 L-GF	0.02-0.15	0.2-2.5																			
	11T301 R-GF	0.02-0.15	0.2-2.5															•				
	11T302 L-GF	0.03-0.17	0.3-2.5															•				
	11T302 R-GF	0.03-0.17	0.3-2.5															•				
	11T304 L-GF	0.05-0.20	0.3-2.5															•				
11T304 R-GF	0.05-0.20	0.3-2.5															•	•				
 Right hand Finishing	DCET 0702003 L-GW*	0.02-0.15	0.1-1.5																			
	0702003 R-GW*	0.02-0.15	0.1-1.5																			
	11T3003 L-GW*	0.02-0.15	0.1-2.5																			
	11T3003 R-GW*	0.02-0.15	0.1-1.5																			
 Finishing	DCGT 070201 SA	0.02-0.15	0.1-1.5																			
	070202 SA	0.02-0.15	0.1-1.5														•		•			
	070204 SA	0.03-0.20	0.1-1.5														•		•			
	11T301 SA	0.01-0.05	0.1-2.5														•		•			
	11T302 SA	0.02-0.15	0.1-2.5														•		•			
	11T304 SA	0.03-0.20	0.1-2.5														•		•			
 Finishing	DCMT 070202 FA	0.05-0.15	0.1-1.5	•	•									•		•		•				
	11T302 FA	0.05-0.15	0.1-1.5	•	•									•		•		•				
 Finishing	DCMT 070204 FG	0.07-0.20	0.4-1.5	•	•				•	•				•	•	•		•				
	070208 FG	0.07-0.20	0.4-2.0	•	•				•	•					•	•		•				
	11T304 FG	0.10-0.25	0.6-1.5	•	•				•	•					•	•		•				
	11T308 FG	0.10-0.25	0.6-2.0	•	•				•	•					•	•		•				



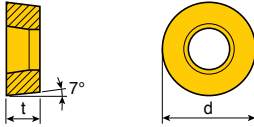
\* Marked: Can be applied only to toolholders with 95° approach angle

• : Standard items  
○ : Semi standard items



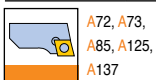


## Positive 7° clearance round inserts



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

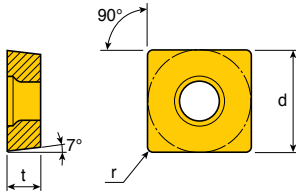
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated								PVD coated		Uncoated							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
 Medium	<b>RCMT 080300 MT</b>	0.15-0.40	0.5-3.0																				
	<b>10T300 MT</b>	0.20-0.50	1.0-4.0			●			●	●			●										
	<b>120400 MT</b>	0.30-0.60	2.0-5.0			●	●	○	●	●													
	<b>160600 MT</b>	0.40-0.80	3.0-7.0							●													
 Semi finishing	<b>RCMT 120400 PC</b>	0.20-0.60	1.3-4.5						●	●						●							
 Roughing	<b>RCMX 100300</b>	0.25-0.50	1.5-4.0				●	○	●	●			●										
	<b>120400</b>	0.30-0.60	2.5-5.0						●	●			●										
	<b>160600</b>	0.40-0.75	3.0-7.0			●	●		●	●			●									●	
	<b>200600</b>	0.48-0.90	3.5-9.0			●	●	○	●	●	●												
	<b>250700</b>	0.55-1.20	4.0-12.0			●	●	○	●	●			●										
	<b>320900</b>	0.65-1.50	5.0-15.0							●	●												
 Roughing	<b>RCMX 100300 RA</b>	0.20-0.50	1.0-4.0						●	●													
	<b>120400 RA</b>	0.25-0.60	2.0-5.0						●	●	●												
	<b>160600 RA</b>	0.35-0.75	2.5-7.0						●	●	●												
	<b>200600 RA</b>	0.40-0.90	3.0-9.0						●	●													
	<b>250700 RA</b>	0.50-1.20	3.5-12.0						●	●													
	<b>320900 RA</b>	0.60-1.50	4.0-15.0							●													



A72, A73,  
A85, A125,  
A137

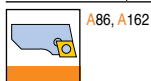
● : Standard items  
○ : Semi standard items

## Positive 7° clearance square inserts



Size	Dimension (mm)		
	d	t	r
<b>09</b>	9.52	3.97	0.4-0.8
<b>12</b>	12.7	4.76	0.4-1.2

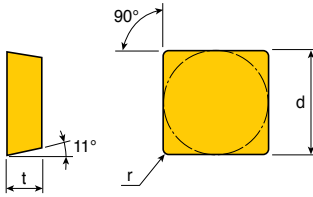
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated			Uncoated																							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20																			
	<b>SCMT 09T304 FG</b>	0.08-0.25	0.60-2.0																																							
	<b>09T308 FG</b>	0.10-0.25	0.60-2.0																																							
	<b>SCMT 09T304 MT</b>	0.10-0.25	0.70-3.5		●		●	○	●	●		●	●		●	●		●																								
	<b>09T308 MT</b>	0.13-0.30	1.00-3.5		●	●	●	○	●	●		●	●	●		●	●		●	●																						
	<b>120404 MT</b>	0.10-0.25	1.00-5.0		●	●			●	●					●																											
	<b>120408 MT</b>	0.13-0.30	1.00-5.0		●		●	○	●	●		●	●	●		●	●		●	●																						
	<b>120412 MT</b>	0.15-0.35	1.00-5.0																																							
	<b>SCMT 09T304 PC</b>	0.08-0.25	0.35-3.0		●					●																																
	<b>09T308 PC</b>	0.10-0.28	0.50-3.0		●					●		●																														
	<b>120404 PC</b>	0.08-0.25	0.40-4.0																																							
	<b>120408 PC</b>	0.10-0.30	0.70-4.0							●																																
	<b>120412 PC</b>	0.12-0.35	1.00-4.0																																							



A86, A162

● : Standard items  
○ : Semi standard items

## Positive 11° clearance square inserts



Size	Dimension (mm)		
	d	t	r
<b>09</b>	9.52	3.18	0.4-0.8
<b>12</b>	12.7	3.18-4.76	0.4-1.6
<b>15</b>	15.88	4.76	0.4-1.2
<b>19</b>	19.05	4.76	0.4-1.2

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated		Uncoated					
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	P20	P30	K10	K20
	<b>SPGN 090304</b>	0.08-0.20	0.7-3.5																				●
	<b>090308</b>	0.10-0.25	0.7-3.5																				●
	<b>120304</b>	0.08-0.20	1.0-5.0																			●	●
	<b>120308</b>	0.10-0.25	1.0-5.0						●	●												●	●
	<b>120312</b>	0.15-0.30	1.0-5.0																				
	<b>120404</b>	0.08-0.20	1.0-5.0																				●
	<b>120408</b>	0.10-0.25	1.0-5.0																				
	<b>120412</b>	0.15-0.30	1.0-5.0																				
	<b>120416</b>	0.18-0.33	1.0-5.0																				
	<b>150404</b>	0.08-0.20	1.5-7.0							●													●
	<b>150408</b>	0.10-0.25	1.5-7.0																				●
	<b>150412</b>	0.15-0.30	1.5-7.0																				●
<b>190404</b>	0.08-0.20	1.5-9.0																				●	
<b>190408</b>	0.10-0.25	1.5-9.0																				●	
	<b>SPMR 090304</b>	0.10-0.25	0.7-3.5																				
	<b>090308</b>	0.13-0.30	1.0-3.5							●													
	<b>120304</b>	0.10-0.25	1.0-5.0							●						●							
	<b>120308</b>	0.13-0.30	1.0-5.0							●	●					●							
	<b>SPUN 090304</b>	0.10-0.30	1.0-3.5																				
	<b>090308</b>	0.15-0.40	1.0-3.5																				
	<b>120304</b>	0.10-0.30	1.0-5.0								●											●	
	<b>120308</b>	0.15-0.40	1.0-5.0		●					●	●												●
	<b>120312</b>	0.20-0.50	1.0-5.0																				
	<b>150404</b>	0.10-0.30	1.5-7.0																				
	<b>190412</b>	0.20-0.50	1.5-9.0																				

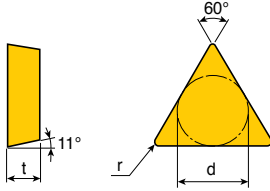


● : Standard items  
○ : Semi standard items





## Positive 11° clearance triangular inserts



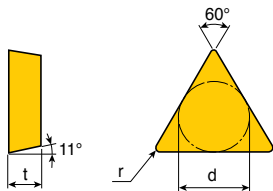
Size	Dimension (mm)		
	d	t	r
09	5.56	2.38	0.2-0.8
11	6.35	3.18	0.2-0.8
16	9.52	3.18-4.76	0.2-1.2
22	12.7	4.76	0.4-3.0
27	15.88	6.35	0.8

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated								PVD coated		Uncoated								
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	P20	P30	K10	K20	
 Finishing	TPGN	090204	0.07-0.20	0.5-3.0																		●		
		110304	0.07-0.20	0.7-3.0	●																		●	
		110308	0.10-0.25	1.0-3.0						●													●	
		160302	0.05-0.18	1.0-5.0																				
		160304	0.07-0.20	1.0-5.0	●					●													●	
		160308	0.10-0.25	1.0-5.0	●		●			●	●												●	
		160312	0.15-0.30	1.0-5.0																				
		220404	0.07-0.20	1.5-7.0																			●	
		220408	0.10-0.25	1.5-7.0																				●
		220412	0.15-0.30	1.5-7.0																				●
		220416	0.20-0.35	1.5-7.0																				●
		220425	0.25-0.40	1.5-7.0																				●
		220430	0.30-0.45	1.5-7.0																				●
270608	0.15-0.25	3.0-8.0																				●		
 Right hand Finishing	TPGT	090204 L-C	0.05-0.20	0.3-1.5	●																			
		110304 L-C	0.05-0.20	0.5-2.0	●																			
		110304 R-C	0.05-0.20	0.5-2.0	●																		●	
		110308 L-C	0.07-0.25	0.5-2.0	●																			
		160404 L-C	0.05-0.20	0.7-3.0	●																			
		160404 R-C	0.05-0.20	0.7-3.0	●																			
 Left hand Finishing	TPGX	090202 L	0.05-0.15	0.4-1.5	●																			
		090204 L	0.08-0.20	0.6-1.5	●																		●	
		110302 L	0.08-0.20	0.5-1.5	●																			
		110302 R	0.08-0.20	0.5-1.5																				
		110304 L	0.08-0.20	0.6-2.0	●																		●	
		110304 R	0.08-0.20	0.6-2.0	●																			



- : Standard items
- : Semi standard items

## Positive 11° clearance triangular inserts



Size	Dimension (mm)		
	d	t	r
<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	0.4-1.6
<b>22</b>	12.7	4.76	0.4-1.6

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated										PVD coated		Uncoated								
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	P20	P30	K10	K20			
 OLD Medium	<b>TPMR</b>	<b>090204</b>	0.10-0.25	0.5-2.0																						
		<b>090208</b>	0.13-0.30	0.7-2.0																						
		<b>110304</b> ✓	0.10-0.25	0.7-3.0		•										•		•								
		<b>110308</b>	0.13-0.30	1.0-3.0		•										•		•								
		<b>160304</b> ✓	0.10-0.25	1.0-5.0		•			○	•						•		•								
		<b>160308</b>	0.13-0.30	1.0-5.0		•	•									•		•								
		<b>160312</b>	0.15-0.35	1.0-5.0																						
		<b>220404</b> ✓	0.10-0.25	1.0-7.0												•										
		<b>220408</b> ✓	0.13-0.30	1.5-7.0			•											•								
<b>220412</b> ✓	0.15-0.35	1.5-7.0																								
 Finishing	<b>TPMT</b>	<b>110304 FG</b>	0.07-0.20	0.4-1.5	•	•																				
 Semi finishing	<b>TPMT</b>	<b>090204 PC</b>	0.06-0.18	0.3-2.0		•									•		•									
		<b>110204 PC</b>	0.06-0.2	0.4-2.5		•																				
		<b>110208 PC</b>	0.1-0.26	0.5-2.5																						
		<b>110304 PC</b>	0.06-0.2	0.4-2.5			•												•							
		<b>110308 PC</b>	0.1-0.26	0.5-2.5			•												•							
		<b>16T304 PC</b>	0.08-0.25	0.45-3.0															•							
		<b>16T308 PC</b>	0.1-0.3	0.5-3.0															•							
 Medium	<b>TPUN</b>	<b>110304</b>	0.10-0.30	1.0-3.0																			•	•		
		<b>110308</b>	0.15-0.40	1.0-3.0																						
		<b>160304</b>	0.10-0.30	1.0-5.0																				•	•	
		<b>160308</b>	0.15-0.40	1.0-5.0																				•		
		<b>160312</b>	0.20-0.50	1.5-5.0																						
		<b>160316</b>	0.25-0.55	1.5-5.0																						
		<b>220404</b>	0.10-0.30	1.5-7.0																						
		<b>220408</b>	0.15-0.40	1.5-7.0																						
		<b>220412</b>	0.20-0.50	1.5-7.0																					•	
		<b>220416</b>	0.25-0.55	1.5-7.0																						



✓ A52, A53, A142, A164, A165

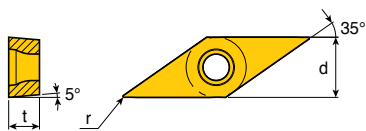
✓ Marked: Old type chip breaker

● : Standard items  
○ : Semi standard items



# VBET VBGT VBMT

## Positive 5° clearance 35° rhombic inserts



Size	Dimension (mm)		
	d	t	r
11	6.35	3.18	0.03-0.4
16	9.52	4.76	0.1-1.2

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated								PVD coated			Uncoated							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20	
	<b>VBET 110301 L-GF</b>	0.02-0.15	0.2-1.5																					
	<b>110301 R-GF</b>	0.02-0.15	0.2-1.5																•					
	<b>110302 L-GF</b>	0.03-0.17	0.3-1.5																					
	<b>110302 R-GF</b>	0.03-0.17	0.3-1.5																	•				
	<b>110304 L-GF</b>	0.05-0.20	0.3-1.5																					
	<b>110304 R-GF</b>	0.05-0.20	0.3-1.5																		•			
	<b>VBET 1103003 L-GW*</b>	0.02-0.15	0.1-1.5																					
	<b>1103003 R-GW*</b>	0.02-0.15	0.1-1.5																					
	<b>VBGT 110301 SA</b>	0.01-0.20	0.1-1.5																•					
	<b>110302 SA</b>	0.02-0.20	0.2-1.5																•		•			
	<b>110304 SA</b>	0.05-0.20	0.2-1.5																•		•			
	<b>160401 SA</b>	0.01-0.20	0.1-1.5																					
	<b>160402 SA</b>	0.02-0.20	0.2-1.5																	•		•		
	<b>VBMT 160408 FA</b>	0.05-0.25	0.3-2.0	•	•				•	•								•						
	<b>VBMT 160404 FG</b>	0.07-0.20	0.5-1.5	•	•				•	•			•	•				•		•				
	<b>160408 FG</b>	0.10-0.25	0.7-2.0	•	•				•	•			•					•						
	<b>VBMT 160404 FX</b>	0.05-0.20	0.2-2.0			•			•	•														
	<b>160408 FX</b>	0.07-0.20	0.2-2.0			•			•	•														
	<b>VBMT 160404 MT</b>	0.10-0.25	0.6-3.0	•	•	•	•	○	•	•			•	•				•		•				
	<b>160408 MT</b>	0.13-0.30	0.9-3.0	•	•	•	•	○	•	•			•	•				•		•				
	<b>160412 MT</b>	0.15-0.30	1.2-3.0						•	•					•									

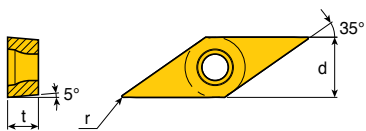


A49, A89, A91,  
A126, A138, A168,  
A169, A187

\* Marked: Can be applied only to toolholders with 95° approach angle

• : Standard items  
○ : Semi standard items

## Positive 5° clearance 35° rhombic inserts



Size	Dimension (mm)		
	d	t	r
<b>16</b>	9.52	4.76	0.4-1.2

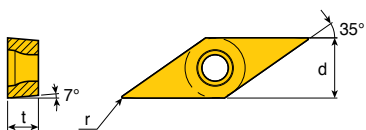
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated								PVD coated		Uncoated							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
	<b>VBMT 160404 PC</b>	0.07-0.22	0.5-2.8	●					●	●		●						●					
	<b>160408 PC</b>	0.10-0.27	0.5-2.8	●					●	●		●						●					
	<b>160412 PC</b>	0.10-0.28	0.5-2.8																				
Semi finishing																							



● : Standard items  
○ : Semi standard items

# VCGT VCMT

## Positive 7° clearance 35° rhombic inserts



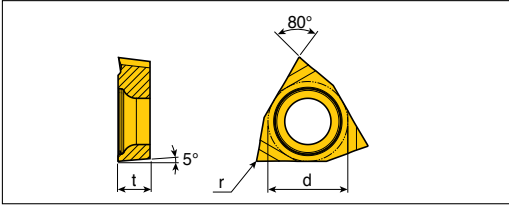
Size	Dimension (mm)		
	d	t	r
<b>08</b>	4.76	2.38	0.2-0.4
<b>11</b>	6.35	3.18	0.1-0.4
<b>16</b>	9.52	4.76	0.4-0.8

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated								PVD coated		Uncoated							
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
	<b>VCGT 110301 SA</b>	0.01-0.20	0.1-1.5															●					
	<b>110302 SA</b>	0.02-0.20	0.2-1.5															●	●				
	<b>110304 SA</b>	0.05-0.20	0.2-1.5															●	●				
Finishing																							
	<b>VCMT 080202 PC</b>	0.02-0.15	0.2-1.5	●						●		●											
	<b>080204 PC</b>	0.05-0.20	0.2-1.5	●	●					●	●	●											
	<b>110304 PC</b>	0.05-0.20	0.1-1.7	●						●	●	●								●			
	<b>160404 PC</b>	0.05-0.20	0.3-2.0	●						●	●	●	●							●			
	<b>160408 PC</b>	0.07-0.20	0.3-2.0	●						●	●	●							●				
Semi finishing																							



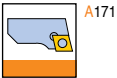
● : Standard items  
○ : Semi standard items

## Positive 5° clearance 80° trigon inserts



Size	Dimension (mm)		
	d	t	r
<b>06</b>	3.97	1.59	0.03-0.4

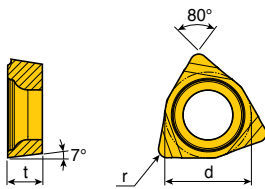
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated							PVD coated			Uncoated									
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20		
 Finishing	<b>WBGT 0601003 R-FF</b>	0.03-0.10	0.05-0.3																						
	<b>0601003 L-FF</b>	0.03-0.10	0.05-0.3																						
	<b>060101 R-FF</b>	0.03-0.12	0.08-0.4		●																				
	<b>060101 L-FF</b>	0.03-0.12	0.08-0.4		●																				
	<b>060102 R-FF</b>	0.03-0.15	0.1-0.4		●																				
	<b>060102 L-FF</b>	0.03-0.15	0.1-0.4		●																				
	<b>060104 R-FF</b>	0.05-0.20	0.1-0.4		●																				
	<b>060104 L-FF</b>	0.05-0.20	0.1-0.4		●																				
	<b>WBMT 060102 R-C</b>	0.03-0.15	0.1-0.4		●																				
	<b>060102 L-C</b>	0.03-0.15	0.1-0.4		●																				



- : Standard items
- : Semi standard items

# WCGT

## Positive 7° clearance 80° trigon inserts



Size	Dimension (mm)		
	d	t	r
<b>02</b>	3.97	1.59	0.2-0.4

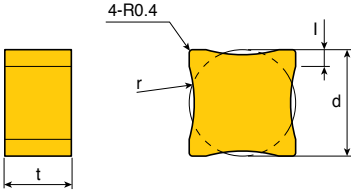
Insert	Designation	Feed (mm/rev)	ap (mm)	Cermet		CVD coated							PVD coated			Uncoated									
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9030	TT9080	P20	K10	K20		
 Finishing	<b>WCGT 020102 L-FF</b>	0.03-0.15	0.1-0.4		●																				
	<b>020104 L-FF</b>	0.05-0.20	0.1-0.4		●																				
	<b>WCGT 020102L *</b>	0.03-0.15	0.1-0.4																				●		
	<b>020104L *</b>	0.05-0.20	0.1-0.4																					●	




\* Marked: Fine boring tool insert

- : Standard items
- : Semi standard items

**Negative square insert for pipe skiving**



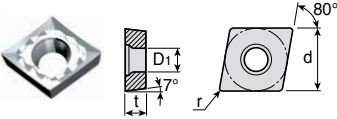
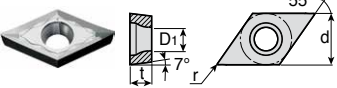
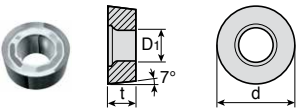
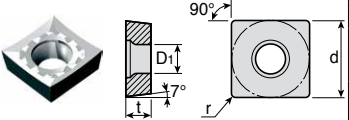
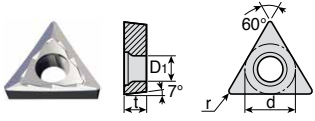
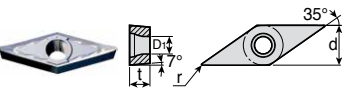
Size	Dimension (mm)			
	l	d	t	r
<b>SNG 452</b>	2	12.70	7.94	10-70

Insert	Designation	Coated					
		TT5100					
 <p>Pipe skiving</p>	<b>SNG 452 10R</b>	●					
	<b>16R</b>	●					
	<b>20R</b>	●					
	<b>25R</b>	●					
	<b>30R</b>	●					
	<b>40R</b>	●					
	<b>50R</b>	●					
	<b>60R</b>	●					
	<b>70R</b>	●					

● : Standard items

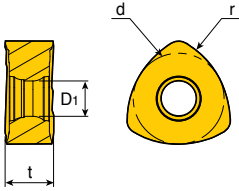
# Inserts for Aluminum

## Positive 7° clearance inserts for aluminum machining

Insert	Designation	Dimension (mm)				Uncoated	
		d	t	r	D <sub>1</sub>	K10	
	<b>CCGT 060202 FL</b>	6.35	2.38	0.2	2.8	●	
	<b>060204 FL</b>	6.35	2.38	0.4	2.8	●	
	<b>09T302 FL</b>	9.52	3.97	0.2	4.4	●	
	<b>09T304 FL</b>	9.52	3.97	0.4	4.4	●	
	<b>09T308 FL</b>	9.52	3.97	0.8	4.4	●	
	<b>120402 FL</b>	12.7	4.76	0.2	5.5	●	
	<b>120404 FL</b>	12.7	4.76	0.4	5.5	●	
	<b>DCGT 070202 FL</b>	6.35	2.38	0.2	2.8	●	
	<b>070204 FL</b>	6.35	2.38	0.4	2.8	●	
	<b>11T302 FL</b>	9.52	3.97	0.2	4.4	●	
	<b>11T304 FL</b>	9.52	3.97	0.4	4.4	●	
	<b>11T308 FL</b>	9.52	3.97	0.8	4.4	●	
	<b>RCGT 0803MO FL</b>	8.0	3.18	-	3.4	●	
	<b>1003MO FL</b>	10.0	3.18	-	4.4	●	
	<b>10T3MO FL</b>	10.0	3.97	-	4.4	●	
	<b>SCGT 09T308 FL</b>	9.52	3.97	0.8	4.4	●	
	<b>120402 FL</b>	12.7	4.76	0.2	5.5	●	
	<b>120404 FL</b>	12.7	4.76	0.4	5.5	●	
	<b>120408 FL</b>	12.7	4.76	0.8	5.5	●	
	<b>TCGT 090204 FL</b>	5.56	2.38	0.4	2.5	●	
	<b>110204 FL</b>	6.35	2.38	0.4	2.8	●	
	<b>16T304 FL</b>	9.52	3.97	0.4	4.4	●	
	<b>16T308 FL</b>	9.52	3.97	0.8	4.4	●	
	<b>VCGT 110302 FL</b>	6.35	3.18	0.2	2.8	●	
	<b>110304 FL</b>	6.35	3.18	0.4	2.8	●	
	<b>160402 FL</b>	9.52	4.76	0.2	4.4	●	
	<b>160404 FL</b>	9.52	4.76	0.4	4.4	●	
	<b>160408 FL</b>	9.52	4.76	0.8	4.4	●	
	<b>160412 FL</b>	9.52	4.76	1.2	5.5	●	
	<b>220530 FL</b>	12.7	5.56	3.0	5.5	●	

● : Standard items

## TOPFEED inserts



Size	Dimension (mm)			
	d	t	r	D1
15	15	8	15	6.2

Insert	Designation	Feed (mm/rev)	ap (mm)	Cermets		CVD coated										PVD coated			Uncoated									
				PV3010	CT3000	TT7005	TT7015	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20					
	<b>BNMX 150720 L-HF</b>	0.5-2.5	0.5-2.5																									
	<b>150720 R-HF</b>	0.5-2.5	0.5-2.5																									



● : Standard items







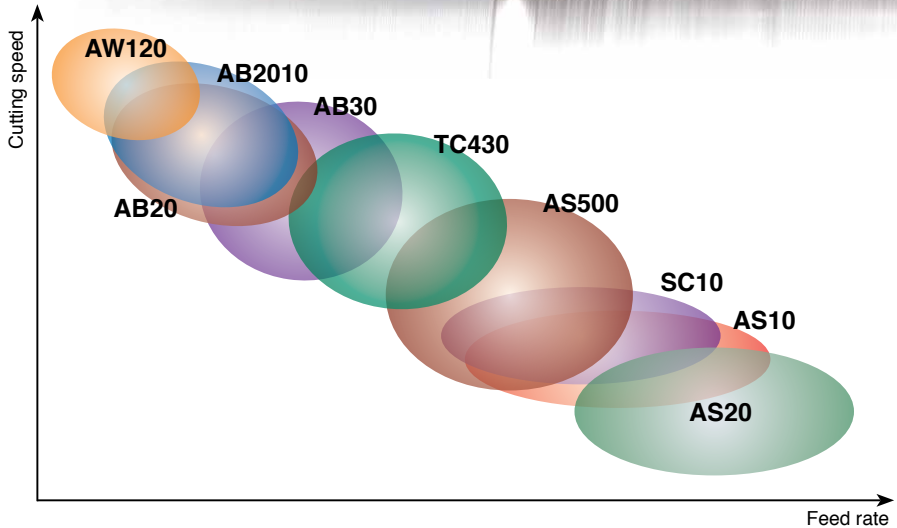




## Physical properties

Grade	AW120	AB2010	AB20	AB30	TC430	AS500	
<b>Composition</b>	Al <sub>2</sub> O <sub>3</sub> ZrO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub> - Ti(C,N)	Al <sub>2</sub> O <sub>3</sub> - Ti(C,N)	Al <sub>2</sub> O <sub>3</sub> - TiC	SiC Whisker	SiAlON	
<b>Density (g/cm<sup>3</sup>)</b>	4.05	4.30	4.30	4.25	3.74	3.21	
<b>Hardness</b>	<b>HRA</b>	94.0	94.5	94.5	94.5	95.1	94.3
	<b>Vickers</b>	1,800	2,050	2,050	2,050	2,100	1,800
<b>Bending strength (MPa)</b>	600	650	650	700	700	850	

Application map of ceramic grades



## Edge preparation for ceramic inserts

### 1. Common style (no designation)

Grade	Land specification	
	Width (mm)	Angle ( ° )
<b>AB2010, AB20, AB30, TC430, AS500, SC10, AS10, AS20</b>	0.2	25
<b>AW120</b>	0.2	20

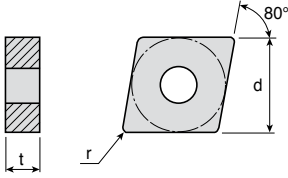
### 2. Others (single T-land)

Designation	Land specification	
	Width (mm)	Angle ( ° )
<b>T2</b>	0.10	30
<b>T3</b>	0.15	30
<b>T4</b>	0.20	30
<b>T5</b>	0.30	30
<b>T6</b>	0.10	20
<b>T7</b>	0.20	20

### 3. Edge preparation "E" is only honing without T-land

### 4. Various special edge preparations such as "Double Land" or "S" can be made upon request

## Negative 80° rhombic inserts



Size	Dimension (mm)		
	d	t	r
<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

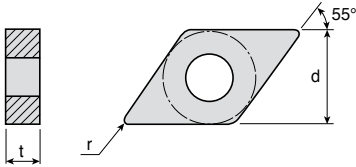
Insert	Designation	Ceramic															
		AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	AS20							
	<b>CNGA 120404</b>	●	●	●													
	<b>120408</b>	●	●	●	●	●	●	●									
	<b>120408 E</b>									●							
	<b>120408 T7</b>					●											
	<b>120412</b>	●	●	●			●	●									
	<b>120412 E</b>									●							
	<b>120412 T7</b>					●											
	<b>120416</b>		●	●			●	●									
	<b>160408</b>			●													
	<b>160608</b>		●														
	<b>160612</b>		●	●				●									
	<b>160616</b>		●	●													
	<b>160624</b>			●													
	<b>190608</b>		●	●													
	<b>190612</b>		●	●													
	<b>190616</b>			●													
	<b>190624</b>			●					●								
	<b>190716 U3</b>								●								
	<b>CNGN 120404</b>			●													
	<b>120404 T6</b>								●								
	<b>120408</b>	●	●	●				●									
	<b>120408 E</b>							●			●						
	<b>120408 T6</b>								●								
	<b>120412</b>		●				●	●									
	<b>120412 E</b>										●						
	<b>120412 T6</b>								●								
	<b>120416</b>		●					●									
	<b>120416 T6</b>								●	●							
	<b>120708</b>	●	●	●													
	<b>120708 E</b>										●						
	<b>120708 T6</b>									●							
	<b>120712</b>			●					●								
	<b>120712 E</b>								●			●					
	<b>120712 T6</b>									●							
	<b>120716</b>			●			●	●									
	<b>120716 E</b>										●						

A69, A70, A93,  
 A94, A105, A132,  
 A151, A172, A184

●: Standard items



## Negative 55° rhombic inserts



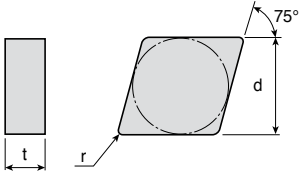
Size	Dimension (mm)		
	d	t	r
12	10	7.94	0.4-1.6
15	12.7	4.76-6.35	0.4-1.6

Insert	Designation	Ceramic										
		AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	AS20		
	<b>DNGA 150404</b>		●	●								
	<b>150404 T6</b>		●									
	<b>150408</b>	●	●	●								
	<b>150408 T6</b>			●								
	<b>150412</b>	●	●	●								
	<b>150416</b>		●									
	<b>150416 T7</b>		●									
	<b>150604</b>	●	●	●								
	<b>150606</b>			●								
	<b>150608</b>	●	●	●		●		●				
	<b>150612</b>	●	●	●				●				
<b>150616</b>		●	●									
	<b>DNGN 150408</b>		●	●								
	<b>150704</b>			●								
	<b>150708</b>			●	●							
	<b>150712</b>				●							
	<b>150712 U2</b>			●								
	<b>150716</b>		●									
	<b>150716 U2</b>			●								
	<b>DNGX 120708 T7-CH</b>							●				
	<b>120712 T7-CH</b>							●				
	<b>150708 T7-CH</b>							●				
	<b>150712 CH</b>						●	●				
	<b>150712 T7-CH</b>					●		●				
	<b>150716 CH</b>						●	●				
	<b>150716 T7-CH</b>							●				
	<b>DNMG 150608 CE</b>			●								

A63, A64, A71, A95, A96,  
 A106, A116, A132, A152,  
 A173, A174, A184

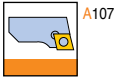
●: Standard items

## Negative 75° rhombic inserts



Size	Dimension (mm)		
	d	t	r
<b>13</b>	12.7	7.94	0.8-1.6

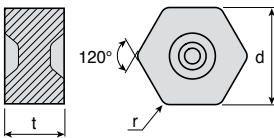
Insert	Designation	Ceramic										
		AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	AS20		
	<b>ENGN 130708</b>	●	●	●								
	<b>130712</b>		●									
	<b>130716</b>		●	●								
	<b>130716 U2</b>			●								



● : Standard items

# HNGX

## Negative 120° hexagonal inserts



Size	Dimension (mm)		
	d	t	r
<b>05</b>	12.7	7.94	1.2-1.6

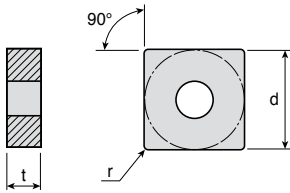
Insert	Designation	Ceramic										
		AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	AS20		
	<b>HNGX 050712 CH</b>							●				
	<b>050712 T7-CH</b>					●						
	<b>050716 CH</b>							●				
	<b>050716 T7-CH</b>					●						

● : Standard items





## Negative square inserts



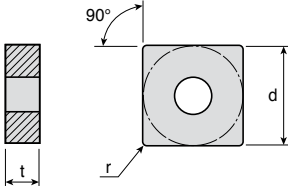
Size	Dimension (mm)		
	d	t	r
<b>09</b>	9.52	4.76	1.2
<b>12</b>	12.7	4.76-7.94	0.4-1.6
<b>15</b>	15.88	6.35-7.94	1.2-1.6
<b>19</b>	19.05	7.94	0.8-1.6
<b>25</b>	25.4	7.94	2.4

Insert	Designation	Ceramic										
		AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	AS20		
	<b>SNGA</b> 120404	●	●	●								
	120408	●	●	●				●				
	120408 E									●		
	120412	●	●	●			●	●				
	120412 T6									●		
	120412 T7							●				
	120416		●				●	●				
	150616						●					
	190608			●								
	190612			●								
190616			●									
	<b>SNGN</b> 090412			●								
	120404	●	●	●								
	120408	●	●	●				●				
	120408 E									●		
	120408 T6								●			
	120412	●	●	●	●	●	●					
	120412 T6								●			
	120412 T7					●		●				
	120416	●	●	●		●	●					
	120416 T6									●		
	120704		●	●								
	120708	●	●	●	●		●	●				
	120708 T6								●			
	120712	●	●	●	●		●	●				
	120712 T6			●					●			
	120712 U2			●								
	120716	●		●	●		●	●				
	120720 U2			●								
	120725						●					
	150612		●									
	150712 T6								●			
	150716			●				●				
	190716			●								
	190716 U3			●								
	250924			●								
250924 U3			●									

A75, A76, A98, A99,  
 A109, A110, A133,  
 A153, A176

● : Standard items

## Negative square inserts



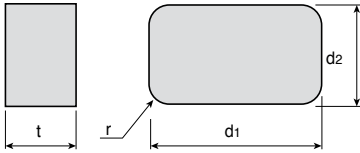
Size	Dimension (mm)		
	d	t	r
12	12.7	4.76-7.94	0.8-1.6
15	15.88	7.94	1.6

Insert	Designation	Ceramic										
		AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	AS20		
	<b>SNGX 120712 CH</b>						●	●				
	<b>120712 T7-CH</b>					●		●				
	<b>120712 T7-CHX *</b>					●						
	<b>120716 CH</b>						●	●				
	<b>120716 T7-CH</b>					●		●				
	<b>120716 T7-CHX *</b>					●		●				
	<b>150716 T7-CH</b>							●				
	<b>SNMX 120716 CH</b>						●	●				
	<b>SNMG 120408 CE</b>			●								

- A75, A76, A98, A99,
- A109, A110, A117,
- A133, A153, A176

\* Marked: Marked insert is applied only to DCL S-4D clamp ●: Standard items

## Negative square inserts

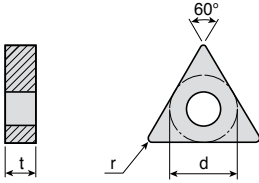


Size	Dimension (mm)		
	d1	d2	r
<b>LNU</b>	38.1	19.05	3.2
<b>T32</b>	31.75	19.05	2

Insert	Designation	Ceramic										
		AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	AS20		
	<b>LNU 6688 T</b>		●	●					●			
	<b>T32- 32-R2</b>		●					●				

● : Standard items

## Negative triangular inserts



Size	Dimension (mm)		
	d	t	r
11	6.35	3.18	0.8-1.2
16	9.52	3.18-4.76	0.4-1.6
22	12.7	4.76	0.4-1.6
27	15.88	6.35-7.94	1.2-1.6

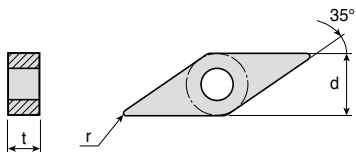
Insert	Designation	Ceramic										
		AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	AS20		
	<b>TNGA 160304</b>			•								
	<b>160308</b>			•								
	<b>160404</b>	•	•	•								
	<b>160408</b>	•	•	•			•	•				
	<b>160408 E</b>								•			
	<b>160412</b>	•	•				•	•				
	<b>160416</b>		•									
	<b>220404</b>		•	•								
	<b>220408</b>	•		•								
	<b>220412</b>		•	•								
	<b>220416</b>		•	•								
		<b>TNGN 110308</b>			•							
<b>110312</b>								•				
<b>160404</b>			•	•								
<b>160408</b>		•	•	•			•	•				
<b>160408 E</b>									•			
<b>160408 T6</b>									•			
<b>160412</b>			•	•	•	•	•	•				
<b>160412 T7</b>						•						
<b>160416</b>				•								
<b>160704</b>				•								
<b>160708</b>				•								
<b>160712</b>				•				•				
<b>220408</b>			•									
<b>220412</b>				•								
<b>220712 T6</b>									•			
<b>270616</b>				•								
	<b>TNMG 160408 CE</b>			•								



A65, A77, A78, A100,  
A103, A104, A111, A177,  
A178, A180, A185

•: Standard items

## Negative 35° rhombic inserts



Size	Dimension (mm)		
	d	t	r
<b>16</b>	9.52	4.76-7.94	0.4-1.6
<b>22</b>	12.7	4.76	1.2

Insert	Designation	Ceramic										
		AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	AS20		
	<b>VNGA 160404</b>	●	●	●			●					
	<b>160408</b>	●	●	●				●				
	<b>160408 E</b>									●		
	<b>160412</b>		●	●								
	<b>220412</b>			●								
	<b>VNGX 160712 CH</b>											
	<b>160712 T7-CH</b>							●				
	<b>160716 CH</b>											

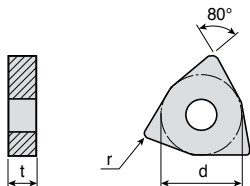


A66, A67,  
A101, A134

● : Standard items

# WNGA

## Negative 80° trigon inserts



Size	Dimension (mm)		
	d	t	r
<b>08</b>	12.7	4.76	0.8-1.6

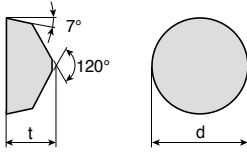
Insert	Designation	Ceramic										
		AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	AS20		
	<b>WNGA 080408</b>	●	●	●			●	●				
	<b>080412</b>	●	●	●			●	●				
	<b>080412 T7</b>					●						
	<b>080416</b>		●	●			●					




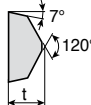



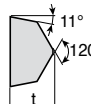

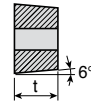
A68, A102, A135,  
A150, A179

● : Standard items

## Positive round inserts



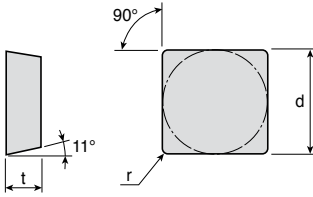
Size	Dimension (mm)		
	d	t	
<b>06</b>	6.35	6.35	
<b>09</b>	9.52	3.18-8	
<b>12</b>	12.7	4.76-8	
<b>15</b>	15.88	8	
<b>19</b>	19.05	10.3	
<b>25</b>	25.4	12.3	
<b>T11</b>	31.9	19.05	

Insert	Designation	Ceramic											
		AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	AS20			
 	<b>RCGX 060600 T6</b>								●	●			
	<b>060600 U1</b>			●									
	<b>090700 T6</b>								●	●			
	<b>090700 U1</b>		●	●									
	<b>120700</b>			●									
	<b>120700 T6</b>								●	●			
	<b>120700 U2</b>		●	●									
	<b>151000 U2</b>		●	●									
	<b>191000 U2</b>		●	●									
	<b>251200 U3</b>		●	●									
 	<b>RPGN 090300 E</b>								●				
	<b>120400 T6</b>								●				
 	<b>RPGX 090700 T6</b>								●	●			
	<b>120700 T6</b>								●	●			
 	<b>T11- 3219</b>		●										



● : Standard items

## Positive square inserts



Size	Dimension (mm)		
	d	t	r
<b>12</b>	12.7	3.18-4.76	0.8-1.2

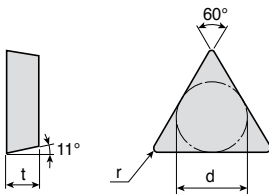
Insert	Designation	Ceramic										
		AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	AS20		
	<b>SPGN 120308</b>			●				●				
	<b>120312</b>			●								
	<b>120412</b>			●			●	●				



● : Standard items

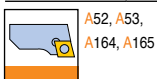
# TPGN

## Positive triangular inserts



Size	Dimension (mm)		
	d	t	r
<b>11</b>	6.35	3.18	0.2-0.8
<b>16</b>	9.52	3.18	0.4-1.2
<b>22</b>	12.7	4.76	0.4-1.2

Insert	Designation	Ceramic										
		AB2010	AB20	AB30	AW120	AS500	SC10	AS10	TC430	AS20		
	<b>TPGN 110302</b>		●	●								
	<b>110304</b>	●	●	●								
	<b>110308</b>	●	●	●								
	<b>160304</b>	●	●	●								
	<b>160308</b>	●	●	●				●				
	<b>160308 T6</b>								●			
	<b>160312</b>		●	●								
	<b>220404</b>		●									
	<b>220408</b>			●								
	<b>220412</b>		●	●								



● : Standard items



## Edge preparation for CBN inserts

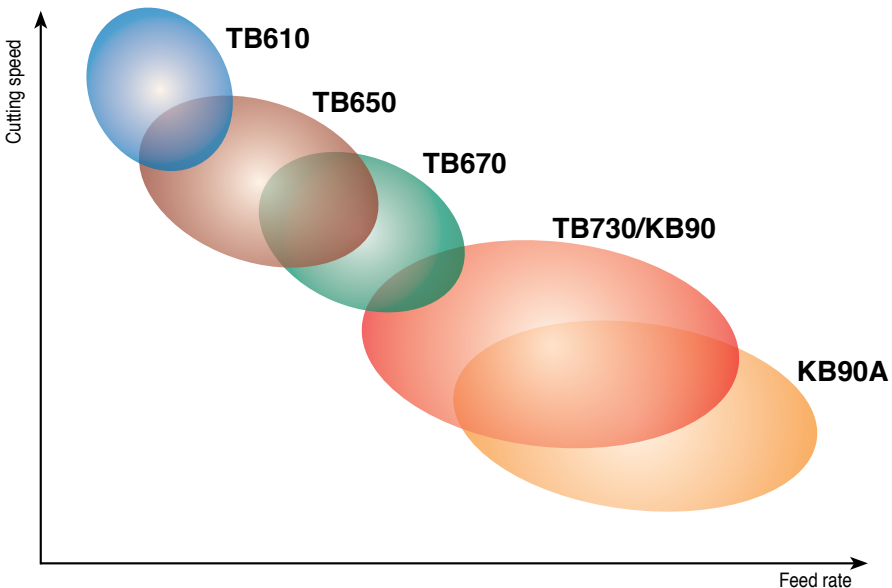
### Common style (no designation)

Grade	Land specification		
	Width (mm)	Angle ( ° )	Honing (mm)
<b>TB610, TB650, TB670</b>	0.13	20	0.015
<b>TB730, KB90</b>	0.13	20	-
<b>KB90A</b>	0.2	20	0.015

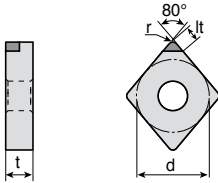
## Technical information for CBN inserts

- CNMA 120408 **LN** : Regular size CBN tip
- CNMA 120408 **LS** : Small size CBN tip
- CNMA 120408 **LS2** : Small size CBN tip with two corners
- RCGX 090300 **FT** : Full top CBN
- CNMM 090308 **SD** : Solid CBN
- CNGA 120408 **WZ-LS2**: Wiper geometry

## Application map of CBN grades

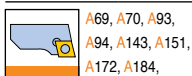


## Negative 80° rhombic inserts



Size	Dimension (mm)		
	d	t	r
09	9.52	3.18	0.4-1.6
12	12.7	4.76	0.8-1.6

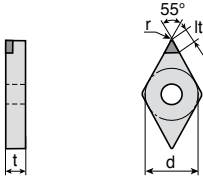
Insert	Designation	Dimension (mm)		CBN						PCD			
		lt		TB610	TB650	TB670	TB730	KB90	KB90A	KP500	TD810	KP300	KP100
	<b>CNGA 120404 WZ-LS</b>	2.1			●								
	<b>120404 WZ-LS2</b>	2.1		●	●	●							
	<b>120404 WZ-LS4</b>	2.1				●							
	<b>120408 WZ-LS</b>	2.1			●			●					
	<b>120408 WZ-LS2</b>	2.1		●	●	●	●						
	<b>120408 WZ-LS4</b>	2.1		●		●							
	<b>120412 WZ-LS</b>	2.5			●			●					
	<b>120412 WZ-LS2</b>	2.5			●	●	●	●					
	<b>120412 WZ-LS4</b>	2.5				●							
	<b>CNMA 120404 LN</b>	4.2		●	●	●		●					
	<b>120404 LS</b>	2.2			●			●					
	<b>120404 LS2</b>	2.2		●	●	●	●	●					
	<b>120404 LS4</b>	2.2			●	●							
	<b>120408 LN</b>	4.0		●	●	●	●	●					
	<b>120408 LS</b>	2.1			●			●					
	<b>120408 LS2</b>	2.1		●	●	●	●	●					
	<b>120408 LS4</b>	2.1		●	●	●	●	●					
	<b>120412 LN</b>	3.9		●	●	●		●					
	<b>120412 LS</b>	2.5			●			●					
	<b>120412 LS2</b>	2.5			●	●	●	●					
		<b>120412 LS4</b>	2.5				●	●					
	<b>CNMN 090308 SD</b>	-							●				
	<b>090312 SD</b>	-							●				
	<b>090316 SD</b>	-							●				
	<b>120416 SD</b>	-							●				
	<b>CNMA 120404 LN-10</b>	4.0									●	●	
	<b>120408 LN-10</b>	3.9									●	●	
	<b>120412 LN-10</b>	3.8										●	



A69, A70, A93,  
A94, A143, A151,  
A172, A184,

● : Standard items

## Negative 55° rhombic inserts



Size	Dimension (mm)		
	d	t	r
15	12.7	4.76-6.35	0.4-1.2

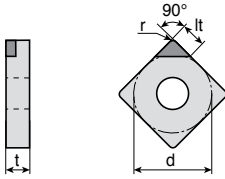
Insert	Designation	Dimension (mm)		CBN						PCD				
		lt		TB610	TB650	TB670	TB730	KB90	KB90A	KP500	TD810	KP300	KP100	
	<b>DNMA 150404 LN</b>	4.2		●	●	●								
	<b>150404 LS</b>	2.6			●			●						
	<b>150404 LS2</b>	2.6		●	●	●	●							
	<b>150404 LS4</b>	2.6		●	●	●								
	<b>150408 LN</b>	3.9		●	●	●		●						
	<b>150408 LS</b>	2.3			●				●					
	<b>150408 LS2</b>	2.3		●	●	●	●							
	<b>150408 LS4</b>	2.3				●								
	<b>150412 LN</b>	3.5			●	●		●						
	<b>150412 LS2</b>	2.2				●	●							
	<b>150412 LS4</b>	2.2					●							
	<b>150604 LN</b>	4.2		●	●	●	●	●						
	<b>150604 LS</b>	2.6			●									
	<b>150604 LS2</b>	2.6		●	●	●	●							
	<b>150608 LN</b>	3.9		●	●	●	●	●						
	<b>150608 LS2</b>	2.3		●	●	●	●	●						
	<b>150608 LS4</b>	2.3				●								
	<b>150612 LN</b>	3.4							●					
	<b>150612 LS2</b>	2.2				●								
		<b>DNMA 150404 LN-10</b>	4.0									●	●	
<b>150408 LN-10</b>		3.7									●	●		
<b>150412 LN-10</b>		3.47										●		
<b>150604 LN-10</b>		4.0									●	●		
<b>150608 LN-10</b>		3.7									●	●		

A63, A64, A71, A82, A84, A95, A96,  
 A132, A144, A145, A152, A158,  
 A159, A160, A173, A174, A184

●: Standard items



## Negative square inserts



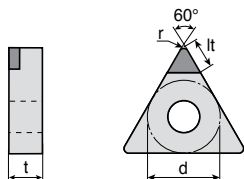
Size	Dimension (mm)		
	d	t	r
09	9.52	3.18	0.8-1.6
12	12.7	3.18-4.76	0.4-1.2

Insert	Designation	Dimension (mm)		CBN						PCD			
		lt		TB610	TB650	TB670	TB730	KB90	KB90A	KP500	TD810	KP300	KP100
	<b>SNMA 120404 LN</b>	4.2			●	●							
	<b>120404 LS</b>	2.5			●			●					
	<b>120404 LS2</b>	2.5					●	●					
	<b>120404 LS4</b>	2.5					●						
	<b>120408 LN</b>	4.2		●	●	●	●	●					
	<b>120408 LS</b>	2.5			●				●				
	<b>120408 LS2</b>	2.5		●		●	●	●					
	<b>120408 LS4</b>	2.5				●							
	<b>120408 LS8</b>	2.5					●						
	<b>120412 LS</b>	2.7			●								
	<b>SNMN 090308 SD</b>	-							●				
	<b>090312 SD</b>	-							●				
	<b>090316 SD</b>	-							●				
	<b>120312 SD</b>	-							●				
	<b>120316 SD</b>	-							●				
	<b>SNMA 120408 LN-10</b>	4.0										●	
	<b>120412 LN-10</b>	4.0										●	

A75, A76, A98,  
A99, A146, A153,  
A176

●: Standard items

## Negative triangular inserts



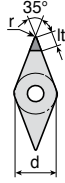
Size	Dimension (mm)		
	d	t	r
16	9.52	4.76	0.4-1.6
22	12.7	4.76	0.4-0.8

Insert	Designation	Dimension (mm)		CBN						PCD			
		lt		TB610	TB650	TB670	TB730	KB90	KB90A	KP500	TD810	KP300	KP100
	<b>TNMA 160404 LN</b>	4.3			●	●		●					
	<b>160404 LS</b>	2.2			●			●					
	<b>160404 LS3</b>	2.2		●		●	●	●					
	<b>160404 LS6</b>	2.2			●	●							
	<b>160408 LN</b>	4				●	●		●				
	<b>160408 LS</b>	2.1			●				●				
	<b>160408 LS3</b>	2.1		●	●	●	●	●					
	<b>160408 LS6</b>	2.1					●						
	<b>160412 LN</b>	3.4							●				
	<b>160412 LS</b>	2.5				●							
	<b>160412 LS3</b>	2.5					●	●					
	<b>160416 LN</b>	3.1				●							
	<b>160416 LS</b>	2.4				●			●				
	<b>220404 LN</b>	4.1				●							
<b>220408 LS</b>	2.6				●								
	<b>TNMA 160404 LN-10</b>	4.3									●	●	
	<b>160408 LN-10</b>	4.0										●	

A61, A65, A77, A78, A100, A103,  
 A104, A131, A134, A147, A148,  
 A154, A177, A178, A185

● : Standard items

## Negative 35° rhombic inserts



Size	Dimension (mm)		
	d	t	r
16	9.52	4.76	0.4-1.2

Insert	Designation	Dimension (mm)		CBN						PCD			
		lt		TB610	TB650	TB670	TB730	KB90	KB90A	KP500	TD810	KP300	KP100
	<b>VNGA 160404 LN</b>	5.0			●	●							
	<b>160404 LS</b>	3.2			●			●					
	<b>160404 LS2</b>	3.2		●		●	●						
	<b>160408 LN</b>	4.1			●	●		●					
	<b>160408 LS</b>	2.4			●			●					
	<b>160408 LS2</b>	2.4		●	●	●	●						
	<b>160408 LS4</b>	2.4				●		●					
	<b>VNGA 160404 LN-10</b>	5.0									●	●	
	<b>160408 LN-10</b>	4.1									●	●	
	<b>160412 LN-10</b>	3.7										●	

A67, A90, A101,  
A134, A167

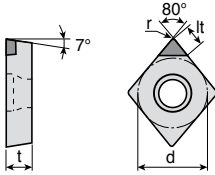
●: Standard items







## Positive 80° rhombic inserts



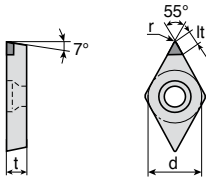
Size	Dimension (mm)		
	d	t	r
<b>06</b>	6.35	2.38	0.2-0.8
<b>09</b>	9.52	3.97	0.4-0.8
<b>12</b>	12.7	4.76	0.4-0.8

Insert	Designation	Dimension (mm)		CBN						PCD				
		lt		TB610	TB650	TB670	TB730	KB90	KB90A	KP500	TD810	KP300	KP100	
	<b>CCGW 060202 LS</b>	2.4			●				●					
	<b>060202 LS2</b>	2.2				●	●							
	<b>060204 LS</b>	2.4			●				●					
	<b>060204 LS2</b>	2.1		●		●	●							
	<b>060208 LS2</b>	2.1		●		●	●							
	<b>09T304 LS</b>	2.4			●				●					
	<b>09T304 LS2</b>	2.4		●	●	●	●		●					
	<b>09T304 WZ-LS</b>	2.8			●									
	<b>09T304 WZ-LS2</b>	2.4		●	●	●	●							
	<b>09T308 LS</b>	2.3			●				●					
	<b>09T308 LS2</b>	2.3		●		●	●							
	<b>09T308 WZ-LS</b>	2.3			●				●					
	<b>09T308 WZ-LS2</b>	2.3			●	●	●							
	<b>120404 LS</b>	2.6							●					
	<b>120404 LS2</b>	2.1						●						
<b>120408 LS</b>	2.5							●						
<b>120408 LS2</b>	2.1						●							
  PCD chip breaker	<b>CCGT 060204 CB</b>	3.1											●	
	<b>09T302 CB</b>	4.15												●
	<b>09T304 CB</b>	4.1												●
	<b>09T308 CB</b>	4.0												●
	<b>120404 CB</b>	4.1												●
	<b>120408 CB</b>	4.0												●
 	<b>CCGW 060202 LN-7</b>	3.1										●	●	
	<b>060204 LN-7</b>	3.1										●	●	
	<b>060208 LN-7</b>	3.0										●		
	<b>09T304 LN-7</b>	4.0										●	●	
	<b>09T308 LN-7</b>	3.9										●	●	
	<b>120404 LN-7</b>	4.0										●	●	
	<b>120408 LN-7</b>	3.9										●	●	

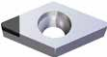
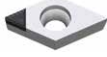

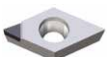

A47, A79, A80,  
 A136, A155,  
 A156, A186

●: Standard items


## Positive 55° rhombic inserts



Size	Dimension (mm)		
	d	t	r
07	6.35	2.38	0.2-0.8
11	9.52	3.97	0.2-0.8

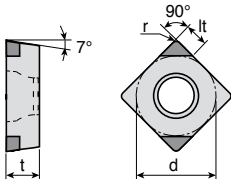
Insert	Designation	Dimension (mm)		CBN						PCD			
		lt		TB610	TB650	TB670	TB730	KB90	KB90A	KP500	TD810	KP300	KP100
	<b>DCGW 070202 LS</b>	2.6			●				●				
	<b>070202 LS2</b>	2.6		●		●	●						
	<b>070204 LS</b>	2.4			●				●				
	<b>070204 LS2</b>	2.4		●		●	●						
	<b>070208 LS</b>	2.1							●				
	<b>070208 LS2</b>	2.6						●					
	<b>11T304 LS</b>	2.6			●				●				
	<b>11T304 LS2</b>	3.4		●		●	●						
	<b>11T308 LS</b>	2.2			●				●				
	<b>11T308 LS2</b>	2.2		●		●	●						
  PCD chip breaker	<b>DCGT 070202 CB</b>	3.4										●	
	<b>070204 CB</b>	3.3											●
	<b>11T302 CB</b>	4.9											●
	<b>11T304 CB</b>	4.7											●
	<b>11T308 CB</b>	4.4											●
 	<b>DCGW 070202 LN-7</b>	3.4										●	●
	<b>070204 LN-7</b>	3.3										●	●
	<b>11T302 LN-7</b>	3.9										●	●
	<b>11T304 LN-7</b>	3.7										●	●
	<b>11T308 LN-7</b>	3.3										●	●

● : Standard items





 A48, A81, A83,  
 A136, A159, A160,  
 A161, A186, A187



## Positive square inserts



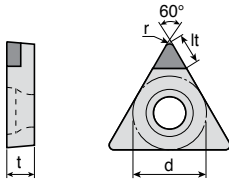
Size	Dimension (mm)		
	d	t	r
<b>09</b>	9.52	3.18-3.97	0.4-0.8
<b>12</b>	12.7	3.18	0.8

Insert	Designation	Dimension (mm)		CBN						PCD			
		lt		TB610	TB650	TB670	TB730	KB90	KB90A	KP500	TD810	KP300	KP100
	<b>SCGW 09T304 LS2</b>	2.7					●						
	<b>09T308 LS2</b>	2.7					●						
 	<b>SPGW 090308 LN-7</b>	3.9										●	
	<b>120308 LN-7</b>	3.9											●

● : Standard items



## Positive triangular inserts



Size	Dimension (mm)		
	d	t	r
<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	0.4-0.8
<b>16</b>	9.52	2.38-3.97	0.4-0.8
<b>22</b>	12.7	4.76	0.8

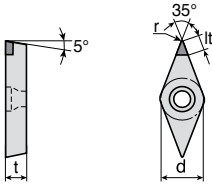
Insert	Designation	Dimension (mm)		CBN						PCD			
		lt		TB610	TB650	TB670	TB730	KB90	KB90A	KP500	TD810	KP300	KP100
	<b>TCGW 090204 LS3</b>	2.3		●		●	●						
	<b>090208 LS3</b>	2.1				●							
	<b>110204 LS</b>	2.3			●			●					
	<b>110204 LS3</b>	2.3		●		●	●						
	<b>110208 LS</b>	2.1			●			●					
	<b>110208 LS3</b>	2.1			●	●	●	●					
	<b>16T304 LS</b>	2.8			●				●				
	<b>16T304 LS3</b>	2.8		●		●	●						
	<b>16T308 LS</b>	2.5			●	●			●				
<b>16T308 LS3</b>	2.5		●		●	●	●						
	<b>TPGN 090204 LS3</b>	2.3		●									
	<b>110302 LS3</b>	2.8					●						
	<b>110304 LS</b>	2.6			●			●					
	<b>110304 LS3</b>	2.6		●		●	●						
	<b>110308 LS</b>	2.3			●			●					
	<b>110308 LS3</b>	2.3		●		●	●						
	<b>160304 LS</b>	2.8			●				●				
	<b>160304 LS3</b>	2.8		●		●	●						
	<b>160308 LS</b>	2.5			●				●				
	<b>160308 LS3</b>	2.5		●		●	●						
<b>220408 LS</b>	2.6			●				●					
	<b>TPGW 080204 LS3</b>	2.1				●							
	<b>090204 LS3</b>	2.3				●	●						
	<b>090208 LS3</b>	2				●							
	<b>110302 LS3</b>	2.8		●			●						
	<b>110304 LS</b>	2.6			●	●	●						
	<b>110304 LS3</b>	2.6		●			●						
	<b>110308 LS3</b>	2.3		●		●	●						
	<b>160404 LS3</b>	2.8				●							
	<b>160408 LS3</b>	2.5				●							



●: Standard items



## Positive 35° rhombic inserts



Size	Dimension (mm)		
	d	t	r
<b>11</b>	6.35	3.18	0.2-0.8
<b>16</b>	9.52	4.76	0.2-1.2
<b>22</b>	12.7	5.56	3

Insert	Designation	Dimension (mm)		CBN						PCD			
		lt		TB610	TB650	TB670	TB730	KB90	KB90A	KP500	TD810	KP300	KP100
	<b>VBGW 110304 LS2</b>	3.2				●							
	<b>110308 LS2</b>	2.4				●							
	<b>160402 LS2</b>	3.6				●							
	<b>160404 LS</b>	3.2			●			●					
	<b>160404 LS2</b>	3.2		●		●	●						
	<b>160408 LS</b>	2.3			●			●					
	<b>160408 LS2</b>	2.3		●		●	●						
	<b>VBGW 160402 LN-7</b>	5.2									●	●	
	<b>160404 LN-7</b>	5.0									●	●	
	<b>160408 LN-7</b>	4.2									●	●	
	<b>VCGT 110302 CB</b>	4.7											●
	<b>110304 CB</b>	5.0											●
	<b>160404 CB</b>	7.3											●
	<b>160408 CB</b>	6.4											●
	<b>160412 CB</b>	6.2											●
	<b>220530 CB</b>	6.4											●
	<b>VCGW 110304 LN-7</b>	5.0										●	
	<b>110308 LN-7</b>	4.1										●	
	<b>160404 LN-7</b>	5.0										●	●
	<b>160408 LN-7</b>	4.1										●	●

A49, A89, A90, A91,  
 A92, A138, A168,  
 A169, A170, A187

●: Standard items

# 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)		Annealed	600	200	6
			Quenched and tempered	930	275	7
				1000	300	8
				1200	350	9
	High alloy steel, cast steel and tool steel		Annealed	680	200	10
			Quenched and tempered	1100	325	11
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12	
		Martensitic	820	240	13	
		Austenitic	600	180	14	
K	Gray cast iron (GG)	Ferritic		160	15	
		Pearlitic		250	16	
	Cast iron nodular (GGG)	Ferritic		180	17	
		Pearlitic		260	18	
	Malleable cast iron	Ferritic		130	19	
	Pearlitic		230	20		
N	Aluminum - wrought alloy	Not cureable		60	21	
		Cured		100	22	
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23
			Cured		90	24
		>12% Si	High temp.		130	25
	Copper alloys		>1% Pb	Free cutting	110	26
			Brass		90	27
			Electrolitic copper		100	28
	Non-metallic		Duroplastics, fiber plastics			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 Technical Guide "material conversion table".

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





# 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)	Annealed		600	200	6
				930	275	7
		Quenched and tempered		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		
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 Technical Guide "material conversion table".

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



# 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)		Annealed	600	200	6
			Quenched and tempered	930	275	7
				1000	300	8
				1200	350	9
	High alloy steel, cast steel and tool steel		Annealed	680	200	10
			Quenched and tempered	1100	325	11
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12	
		Martensitic	820	240	13	
		Austenitic	600	180	14	
K	Gray cast iron (GG)	Ferritic		160	15	
		Pearlitic		250	16	
	Cast iron nodular (GGG)	Ferritic		180	17	
		Pearlitic		260	18	
	Malleable cast iron	Ferritic		130	19	
	Pearlitic		230	20		
N	Aluminum - wrought alloy	Not cureable		60	21	
		Cured		100	22	
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23
			Cured		90	24
		>12% Si	High temp.		130	25
	Copper alloys		>1% Pb	Free cutting	110	26
			Brass		90	27
			Electrolitic copper		100	28
	Non-metallic		Duroplastics, fiber plastics			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 Technical Guide "material conversion table".

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

# Recommended Cutting Conditions

## Machining data for turning grades

Cutting speed Vc(m/min)						
Cermet		Uncoated	Ceramic			
PV3010	CT3000	K10	AW120	AB2010	AB20	AB30
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					
230-330	220-320	110-180	600-1200			600-1200
215-290	205-280	95-140	500-900			500-900
170-265	160-255	95-135				450-610
180-240	170-230	90-125				350-510
145-220	135-200	110-140	600-800			600-800
105-150	95-140	90-125	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				
		40-65				
		32-55				
		21-40				
		16-26				
		50-75				
		45-70				
				95-145	90-140	50-100
						60-120
						50-100

# 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)	Annealed		600	200	6	
				930	275	7	
		Quenched and tempered		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		
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 Technical Guide "material conversion table".

■ Steel   
 ■ Stainless steel   
 ■ Cast iron   
 ■ Nonferrous   
 ■ High temp. alloys   
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# Recommended Cutting Conditions

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