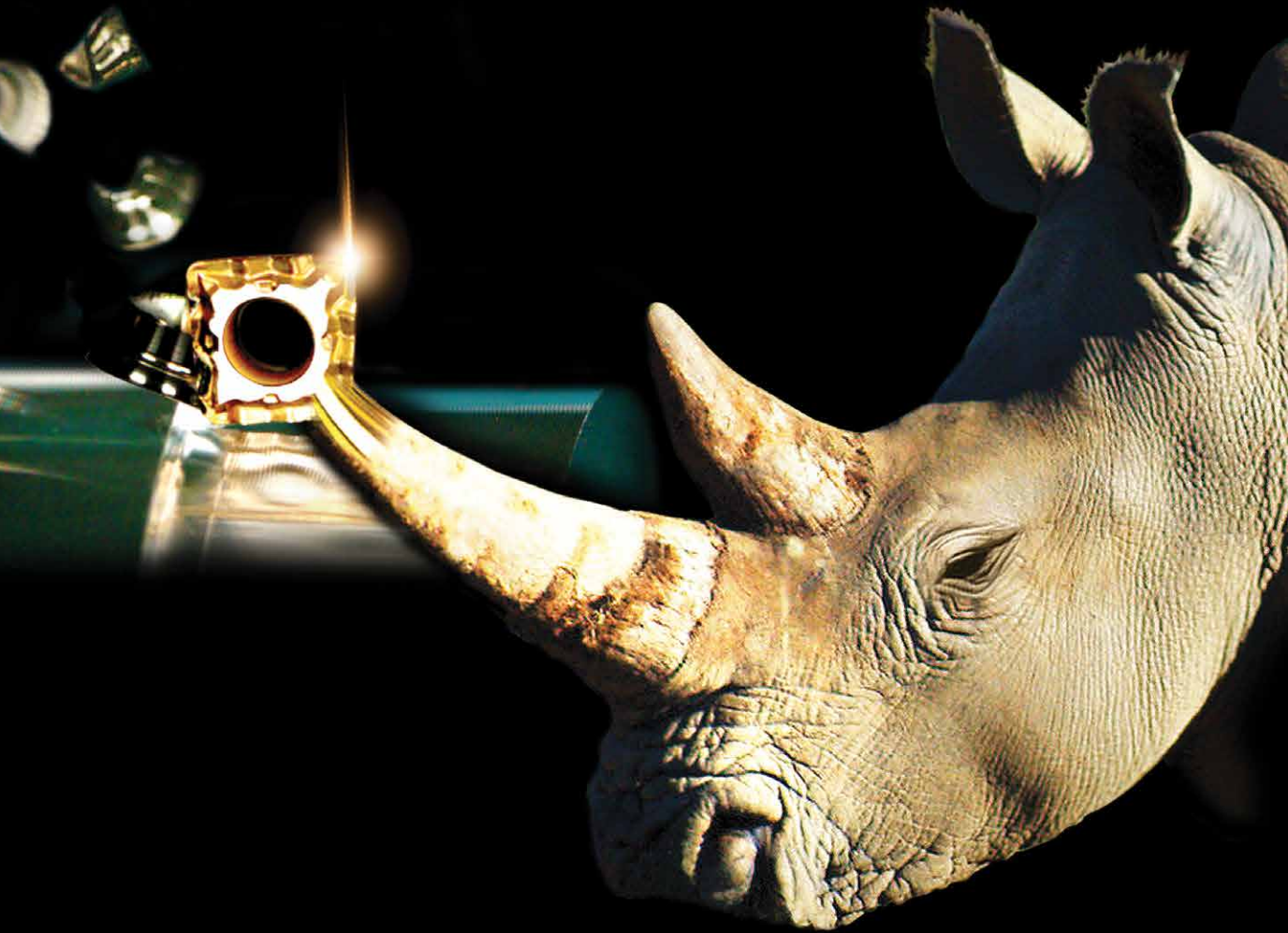




RHINO RUSH



SIZE TECHNOLOGY



SMALLER inserts with superior durability and the **SAME THICKNESS** as ISO inserts

ISO TURN
(CNMG 12)

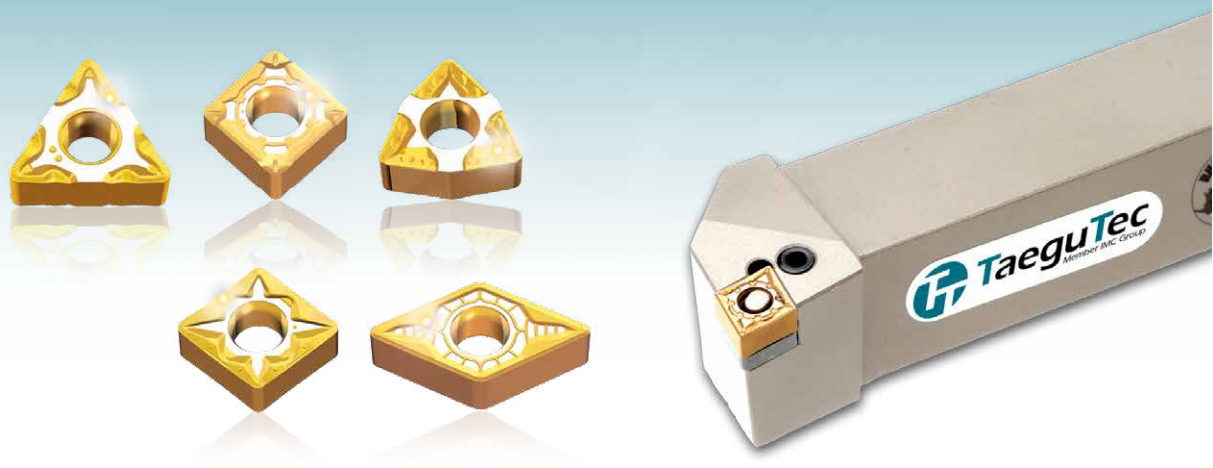
RHINO-RUSH



Smaller & Stronger

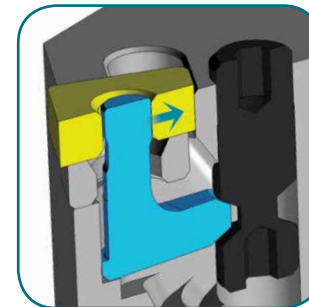


Actual size of insert



Clamping system

Smaller insert size and stronger clamping forces due to RHINORUSH's superior lever system



VS



Conventional ISO
One directional clamping force

RHINO-RUSH
Two directional clamping forces

Performance test

Offers stable tool life even during high feed machining, interrupted cutting and old machine set-ups

ISO holder

CNMG 120408 + PCLNR 2525 M12 holder
(ISO conventional holder)

RHINORUSH holder

CNMG 090408 + HCLNR 2525 M0904
(RHINORUSH holder)

VS

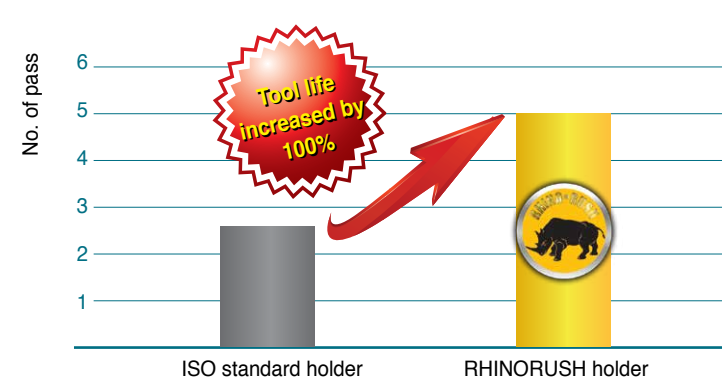
Interrupted cut

- Workpiece: Medium carbon alloy steel
- Process: Interrupted face turning
- Cutting condition: V=100 m/min, f=0.6 mm/rev, ap=4 mm, Dry

* In both tests the same chip breaker and grade were used

* TaeguTec Tech Center clamping force comparison test

Tool life

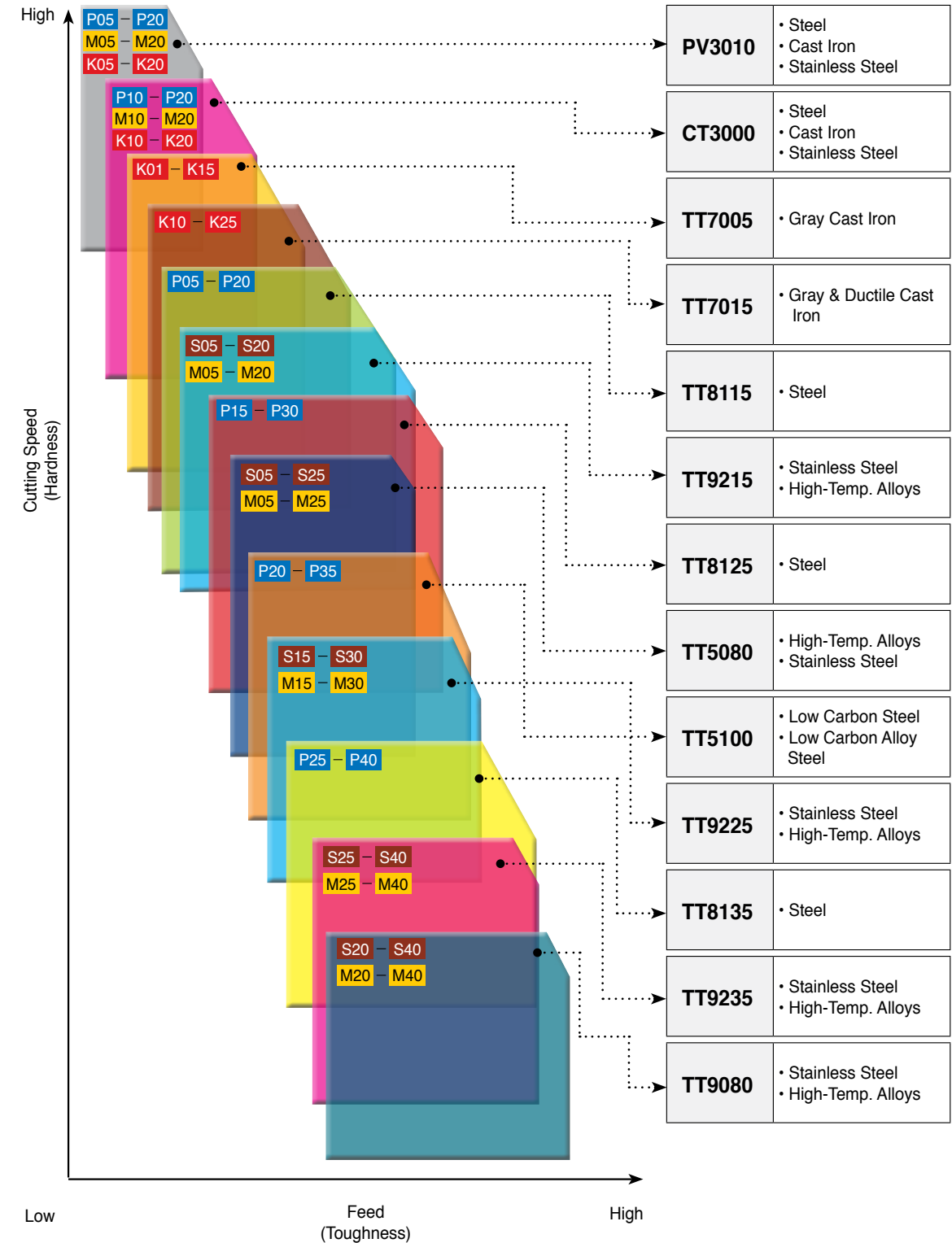




RHINORUSH grades

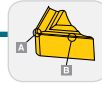
Grades	ISO	Characteristics & Applications
CT3000 Uncoated Cermet	P10 – P20 M10 – M20 K10 – K20	<ul style="list-style-type: none"> • Excellent surface finish turning on steel, stainless steel and cast iron • Excellent wear resistance and low coefficient of friction
PV3010 PVD Coated Cermet	P05 – P20 M05 – M20 K05 – K20	<ul style="list-style-type: none"> • For high surface finish turning of steel, stainless steel and cast iron • Excellent wear resistance and low coefficient of friction • Long tool life
TT7005 CVD Coated	K01 – K15	<ul style="list-style-type: none"> • For high speed machining of gray and ductile cast iron • Excellent wear resistant coated grade assures optimum performance in high speed continuous machining of cast iron
TT7015 CVD Coated	K10 – K25	<ul style="list-style-type: none"> • For general machining of gray and ductile cast iron • For continuous and interrupted machining of gray and ductile cast iron
TT8115 CVD Coated	P05 – P20	<ul style="list-style-type: none"> • For high speed turning and continuous cutting on steels • Excellent wear resistance and heat-resistance
TT8125 CVD Coated	P15 – P30	<ul style="list-style-type: none"> • For a wide range of turning on steels • Very good combination of wear resistance and toughness • For general use on steels
TT5100 CVD Coated	P20 – P35	<ul style="list-style-type: none"> • For a wide range of turning • Ideal for mild steel, low carbon steel and low carbon alloy steel • Excellent chipping resistance and sticking resistance
TT8135 CVD Coated	P25 – P40	<ul style="list-style-type: none"> • Tough carbide substrate • For a wide range of medium to roughing applications at low cutting speed on steels • For interrupted cutting
TT9215 CVD Coated	S05 – S20 M05 – M20	<ul style="list-style-type: none"> • Excellent insert wear resistance • For high cutting speed & continuous cutting on stainless steels
TT9225 CVD Coated	S15 – S30 M15 – M30	<ul style="list-style-type: none"> • Excellent combination of insert wear resistance & fracture resistance • For general use on stainless steel • For continuous and interrupted cutting on stainless steel
TT9235 CVD Coated	S25 – S40 M25 – M40	<ul style="list-style-type: none"> • Excellent combination of insert wear resistance & toughness • For low cutting speed & interrupted cutting
TT5080 PVD Coated	S05 – S25 M05 – M25	<ul style="list-style-type: none"> • For a wide range of turning of high-temp alloys • Very hard submicron substrate with good fracture toughness • For high cutting speed continuous cut in stainless steel
TT9080 PVD Coated	M20 – M40 S20 – S40	<ul style="list-style-type: none"> • Excellent chipping resistance • For general machining on stainless steel • For low cutting speed on super alloys

Insert grades





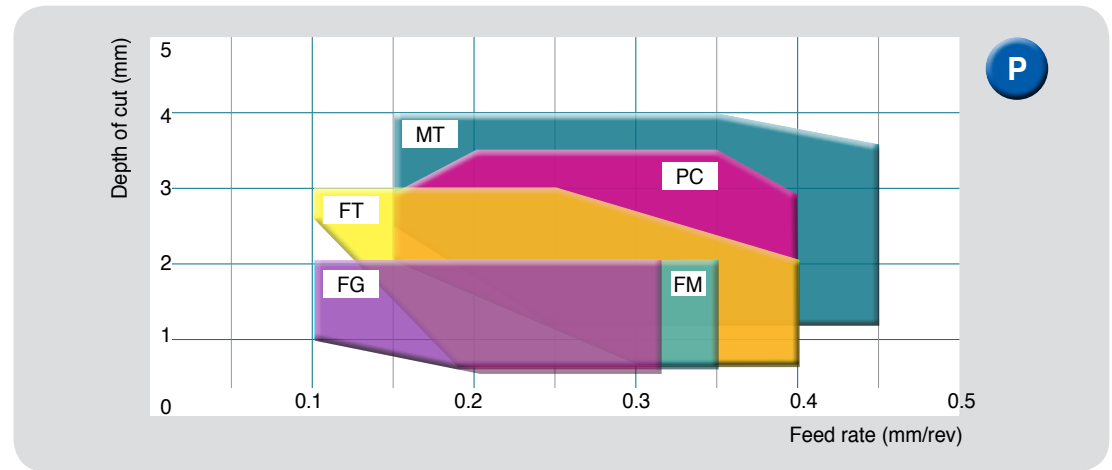
Available chip breaker



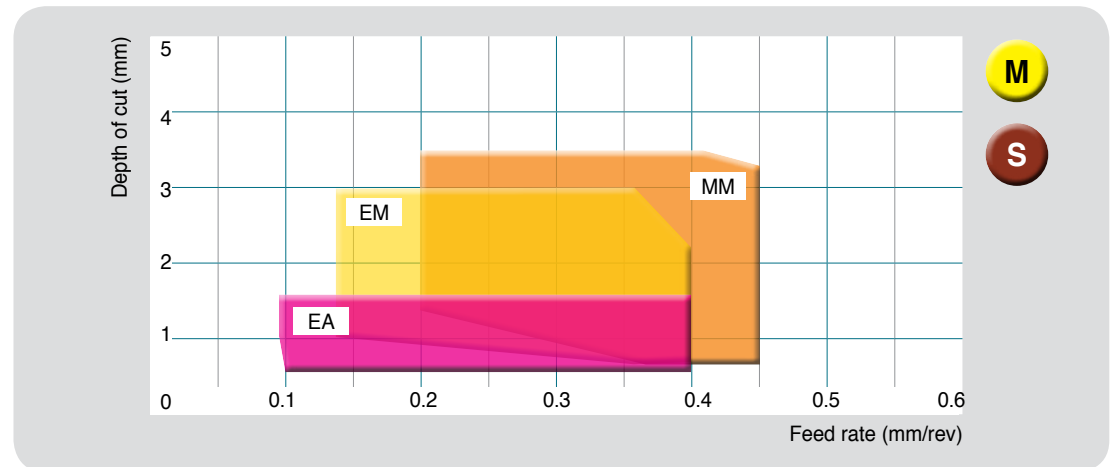
Chip breaker		Range & Features		
FG		18°	A	<ul style="list-style-type: none"> For finishing and semi-finishing applications For steel application Low cutting forces
		12°	B	
FM		5°	A	<ul style="list-style-type: none"> For steel machining Improved chip breaking due to 3dimension chip breaker Solution for a wide range from semi-finishing to semi-medium machining
		5°	B	
FT		0°	A	<ul style="list-style-type: none"> For steel machining Strong, serrated cutting edge for excellent chip evacuation in wider depth of cut range for both profiling and step machining Semi-finishing and medium machining Excellent chip breaking for automotive components
		0°	B	
PC		6°	A	<ul style="list-style-type: none"> For semi-finishing to medium applications Steel & Automotive component Excellent chip control on medium applications
		0°	B	
MT		6°	A	<ul style="list-style-type: none"> Suitable for continuous and interrupted cutting For medium rough applications Steel, cast iron and stainless steel Tough rake angle for general use
		4°	B	
EA		15°	A	<ul style="list-style-type: none"> For finishing applications Exotic materials Excellent chip control at low feeds and depths of cut
		12°	B	
EM		12°	A	<ul style="list-style-type: none"> For medium applications Stainless steel machining Sharp land design for low cutting force
		9°	B	
MM		8°	A	<ul style="list-style-type: none"> For general machining on stainless steel and steel Positive rake angle provides excellent chip evacuation
		8°	B	
MG-		0°	A	<ul style="list-style-type: none"> For medium rough applications For general machining on cast iron Strong rake geometry
		0°	B	
TNGG R/L		0°	A	<ul style="list-style-type: none"> Ground Insert Suitable for general purpose machining Lower cutting force and increased adhesion force Improved dimension and finishing surface accuracy
DNUX R/L 11		11°	A	<ul style="list-style-type: none"> For steel and stainless steel applications For medium applications For slender workpiece applications High positive rake geometry to minimize cutting force

Chip breaker range

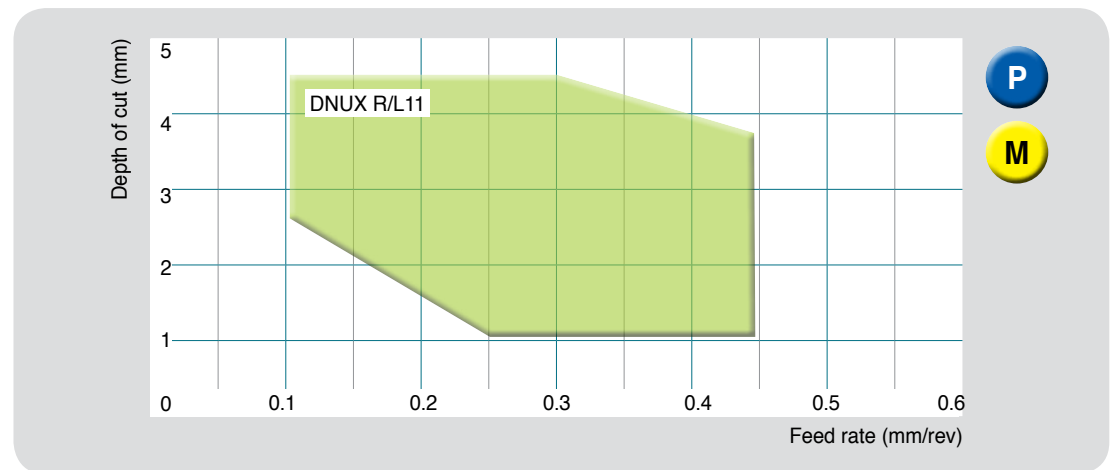
Steel - Workpiece: Medium carbon steel / Cutting speed (Vc): 200 m/min



Stainless steel - Workpiece: Stainless steel / Cutting speed (Vc): 200 m/min



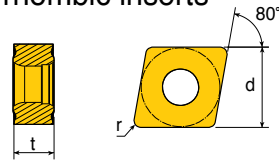
Steel - Workpiece: Medium carbon steel / Cutting speed (Vc): 200 m/min





CNMA / CNMG Negative 80° rhombic inserts

Designation	d	t	r
CNM□ 090404	9.52	4.76	0.4
CNM□ 090408	9.52	4.76	0.8
CNM□ 090412	9.52	4.76	1.2

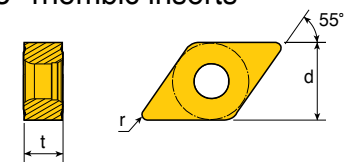


Insert	Designation	Recommended machining conditions		Grade														
		feed (mm/rev)	ap (mm)	Cermet		CVD coated							PVD coated					
				CT3000	TT7005	TT7015	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT5080	TT9080			
	CNMA 090408	0.15 - 0.60	1.00 - 3.50	●	●													
	CNMA 090412	0.15 - 0.70	1.00 - 3.50	●	●													
	CNMG 090404	0.10 - 0.45	0.50 - 3.50	●	●													
	CNMG 090408	0.10 - 0.50	0.50 - 3.50	●	●													
	CNMG 090412	0.10 - 0.55	0.50 - 3.50	●	●													
	CNMG 090404 EA	0.05 - 0.30	0.20 - 1.50							●	●	●		●	●			
	CNMG 090408 EA	0.07 - 0.40	0.30 - 1.50							●	●	●		●	●			
	CNMG 090408 EM	0.13 - 0.40	0.50 - 3.00							●	●	●		●	●			
	CNMG 090412 EM	0.15 - 0.40	0.70 - 3.00							●	●	●		●	●			
	CNMG 090404 FG	0.07 - 0.30	0.20 - 2.00				●	●						●				
	CNMG 090408 FG	0.10 - 0.35	0.50 - 2.00				●	●						●				
	CNMG 090412 FG	0.15 - 0.40	0.50 - 2.00				●	●						●				
	CNMG 090404 FM	0.07 - 0.30	0.25 - 2.00	●			●	●	●					●				
	CNMG 090408 FM	0.10 - 0.35	0.30 - 2.00	●			●	●	●					●				
	CNMG 090412 FM	0.15 - 0.40	0.35 - 2.00	●			●	●	●					●				
	CNMG 090404 FT	0.07 - 0.30	0.40 - 3.00				●	●	●					●				
	CNMG 090408 FT	0.10 - 0.40	0.50 - 3.00				●	●	●					●				
	CNMG 090412 FT	0.15 - 0.50	0.60 - 3.00				●	●	●					●				
	CNMG 090404 MM	0.15 - 0.45	0.40 - 3.50				●	●	●	●	●	●		●				
	CNMG 090408 MM	0.20 - 0.50	0.50 - 3.50				●	●	●	●	●	●		●				
	CNMG 090412 MM	0.23 - 0.50	0.70 - 3.50				●	●	●	●	●	●		●				
	CNMG 090404 MT	0.10 - 0.35	0.80 - 4.00				●	●						●				
	CNMG 090408 MT	0.15 - 0.45	1.00 - 4.00				●	●						●				
	CNMG 090412 MT	0.20 - 0.55	1.20 - 4.00				●	●						●				
	CNMG 090404 PC	0.10 - 0.30	0.40 - 3.50				●	●						●				
	CNMG 090408 PC	0.15 - 0.40	0.50 - 3.50				●	●	●					●				
	CNMG 090412 PC	0.18 - 0.50	0.60 - 3.50				●	●						●				

● : Standard Items

DNMG / DNUX Negative 55° rhombic inserts

Designation	d	t	r
DN□□ 130504	11.11	5.56	0.4
DN□□ 130508	11.11	5.56	0.8
DN□□ 130512	11.11	5.56	1.2



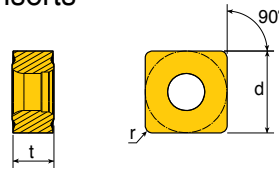
Insert	Designation	Recommended machining conditions		Grade														
		feed (mm/rev)	ap (mm)	Cermet		CVD coated							PVD coated					
				CT3000	TT7005	TT7015	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT5080	TT9080			
	DNMG 130504	0.10 - 0.45	0.50 - 3.50		●	●												
	DNMG 130508	0.10 - 0.50	0.50 - 3.50		●	●												
	DNMG 130512	0.10 - 0.55	0.50 - 3.50		●	●												
	DNMG 130504 EA	0.05 - 0.30	0.20 - 1.50									●	●	●		●	●	
	DNMG 130508 EA	0.07 - 0.40	0.30 - 1.50									●	●	●		●	●	
	DNMG 130508 EM	0.13 - 0.40	0.50 - 3.00									●	●	●		●	●	
	DNMG 130512 EM	0.15 - 0.40	0.70 - 3.00									●	●	●		●	●	
	DNMG 130504 FG	0.07 - 0.30	0.20 - 2.00				●	●							●			
	DNMG 130508 FG	0.10 - 0.35	0.50 - 2.00				●	●							●			
	DNMG 130512 FG	0.15 - 0.40	0.50 - 2.00				●	●							●			
	DNMG 130504 FM	0.07 - 0.30	0.25 - 2.00	●			●	●	●					●				
	DNMG 130508 FM	0.10 - 0.35	0.30 - 2.00	●			●	●	●					●				
	DNMG 130512 FM	0.15 - 0.40	0.35 - 2.00	●			●	●	●					●				
	DNMG 130504 FT	0.07 - 0.30	0.25 - 3.00				●	●	●					●				
	DNMG 130508 FT	0.10 - 0.40	0.30 - 3.00				●	●	●					●				
	DNMG 130512 FT	0.15 - 0.50	0.35 - 3.00				●	●	●					●				
	DNMG 130504 MM	0.15 - 0.45	0.40 - 4.00				●	●	●	●	●	●		●				
	DNMG 130508 MM	0.20 - 0.50	0.50 - 4.00				●	●	●	●	●	●		●				
	DNMG 130512 MM	0.23 - 0.50	0.70 - 4.00				●	●	●	●	●	●		●				
	DNMG 130504 MT	0.10 - 0.35	0.80 - 4.00				●	●	●					●				
	DNMG 130508 MT	0.15 - 0.45	1.00 - 4.00				●	●	●					●				
	DNMG 130512 MT	0.20 - 0.55	1.20 - 4.00				●	●	●					●				
	DNMG 130504 PC	0.10 - 0.30	0.40 - 3.50				●	●	●					●				
	DNMG 130508 PC	0.15 - 0.40	0.50 - 3.50				●	●	●					●				
	DNMG 130512 PC	0.18 - 0.50	0.60 - 3.50				●	●	●					●				
	DNUX 130504 R11	0.15 - 0.35	1.50 - 4.50				●	●					●		●		●	
	DNUX 130504 L11	0.15 - 0.35	1.50 - 4.50				●	●					●		●		●	
	DNUX 130508 R11	0.21 - 0.45	2.00 - 4.50				●	●					●		●		●	
	DNUX 130508 L11	0.21 - 0.45	2.00 - 4.50				●	●					●		●		●	

● : Standard Items



SNMG Negative 90° square inserts

Designation	d	t	r
SNMG 090404	9.52	4.76	0.4
SNMG 090408	9.52	4.76	0.8
SNMG 090412	9.52	4.76	1.2

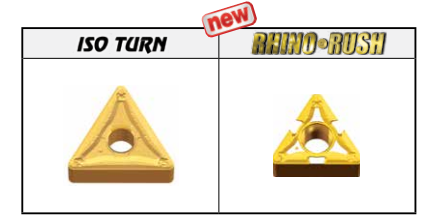
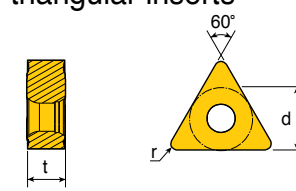


Insert	Designation	Recommended machining conditions		Grade											
				Cermet		CVD coated								PVD coated	
		feed (mm/rev)	ap (mm)	CT3000	TT7005	TT7015	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT5080	TT9080
	SNMG 090404	0.10 - 0.45	0.50 - 3.50		●	●									
	SNMG 090408	0.10 - 0.50	0.50 - 3.50		●	●									
	SNMG 090412	0.10 - 0.55	0.50 - 3.50		●	●									
	SNMG 090404 EA	0.05 - 0.30	0.20 - 1.50							●	●	●		●	●
	SNMG 090408 EA	0.07 - 0.40	0.30 - 1.50							●	●	●		●	●
	SNMG 090408 EM	0.13 - 0.40	0.50 - 3.00							●	●	●		●	●
	SNMG 090412 EM	0.15 - 0.40	0.70 - 3.00							●	●	●		●	●
	SNMG 090404 FG	0.07 - 0.30	0.20 - 2.00				●	●					●		
	SNMG 090408 FG	0.10 - 0.35	0.50 - 2.00				●	●					●		
	SNMG 090412 FG	0.15 - 0.40	0.50 - 2.00				●	●					●		
	SNMG 090404 FM	0.07 - 0.30	0.25 - 2.00	●			●	●	●				●		
	SNMG 090408 FM	0.10 - 0.35	0.30 - 2.00	●			●	●	●				●		
	SNMG 090412 FM	0.15 - 0.40	0.35 - 2.00	●			●	●	●				●		
	SNMG 090404 MM	0.15 - 0.45	0.40 - 3.50				●	●	●	●	●	●	●		
	SNMG 090408 MM	0.20 - 0.50	0.50 - 3.50				●	●	●	●	●	●	●		
	SNMG 090412 MM	0.23 - 0.50	0.70 - 3.50				●	●	●	●	●	●	●		
	SNMG 090404 MT	0.10 - 0.35	0.80 - 3.50				●	●	●				●		
	SNMG 090408 MT	0.15 - 0.45	1.00 - 3.50				●	●	●				●		
	SNMG 090412 MT	0.20 - 0.55	1.20 - 3.50				●	●	●				●		
	SNMG 090404 PC	0.10 - 0.30	0.40 - 3.00				●	●	●				●		
	SNMG 090408 PC	0.15 - 0.40	0.50 - 3.00				●	●	●				●		
	SNMG 090412 PC	0.18 - 0.50	0.60 - 3.00				●	●	●				●		

● : Standard Items

TNMG / TNGG Negative 60° triangular inserts

Designation	d	t	r
TNMG 130402	7.94	4.76	0.2
TNMG 130404	7.94	4.76	0.4
TNMG 130408	7.94	4.76	0.8
TNMG 130412	7.94	4.76	1.2



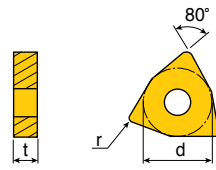
Insert	Designation	Recommended machining conditions		Grade											
				Cermet		CVD coated								PVD coated	
		feed (mm/rev)	ap (mm)	CT3000	TT7005	TT7015	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT5080	TT9080
	TNMG 130404	0.10 - 0.45	0.50 - 3.50		●	●									
	TNMG 130408	0.10 - 0.50	0.50 - 3.50		●	●									
	TNMG 130412	0.10 - 0.55	0.50 - 3.50		●	●									
	TNMG 130404 EA	0.05 - 0.30	0.20 - 1.50							●	●	●		●	●
	TNMG 130408 EA	0.07 - 0.40	0.30 - 1.50							●	●	●		●	●
	TNMG 130408 EM	0.13 - 0.40	0.50 - 3.00							●	●	●		●	●
	TNMG 130412 EM	0.15 - 0.40	0.70 - 3.00							●	●	●		●	●
	TNMG 130404 FG	0.07 - 0.30	0.25 - 1.50				●	●					●		
	TNMG 130408 FG	0.10 - 0.35	0.30 - 1.50				●	●					●		
	TNMG 130412 FG	0.15 - 0.40	0.35 - 1.50				●	●					●		
	TNMG 130404 FM	0.07 - 0.30	0.25 - 1.50	●			●	●	●				●		
	TNMG 130408 FM	0.10 - 0.35	0.30 - 1.50	●			●	●	●				●		
	TNMG 130412 FM	0.15 - 0.40	0.35 - 1.50	●			●	●	●				●		
	TNMG 130404 FT	0.07 - 0.30	0.25 - 2.50				●	●	●				●		
	TNMG 130408 FT	0.10 - 0.40	0.30 - 2.50				●	●	●				●		
	TNMG 130412 FT	0.15 - 0.50	0.35 - 2.50				●	●	●				●		
	TNMG 130404 MM	0.15 - 0.45	0.40 - 3.00				●	●	●	●	●	●	●		
	TNMG 130408 MM	0.20 - 0.50	0.50 - 3.00				●	●	●	●	●	●	●		
	TNMG 130412 MM	0.23 - 0.50	0.70 - 3.00				●	●	●	●	●	●	●		
	TNMG 130404 MT	0.10 - 0.35	0.80 - 3.00				●	●	●				●		
	TNMG 130408 MT	0.15 - 0.45	1.00 - 3.00				●	●	●				●		
	TNMG 130412 MT	0.20 - 0.55	1.20 - 3.00				●	●	●				●		
	TNMG 130404 PC	0.10 - 0.30	0.40 - 3.00				●	●	●				●		
	TNMG 130408 PC	0.15 - 0.40	0.50 - 3.00				●	●	●				●		
	TNMG 130412 PC	0.18 - 0.50	0.60 - 3.00				●	●	●				●		
	TNGG 130402 R/L	0.10 - 0.25	0.80 - 3.50	●											
	TNGG 130404 R/L	0.12 - 0.30	1.00 - 3.50	●											
	TNGG 130408 R/L	0.15 - 0.35	1.30 - 3.50	●											
	TNGG 130402 R-A	0.05 - 0.20	0.30 - 1.50	●											

● : Standard Items



WNMX Negative 80° trigon inserts

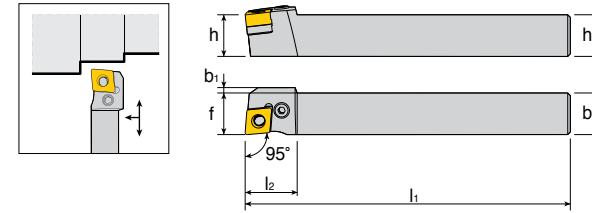
Designation	d	t	r
WNMX 060404	9.52	4.76	0.4
WNMX 060408	9.52	4.76	0.8
WNMX 060412	9.52	4.76	1.2



Insert	Designation	Recommended machining conditions		Grade												
				Cermet		CVD coated								PVD coated		
		feed (mm/rev)	ap (mm)	PV3010	CT3000	TT7005	TT7015	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT5080	TT9080
	WNMX 060404 EM	0.10 - 0.35	0.40 - 3.00								●	●	●		●	●
	WNMX 060408 EM	0.13 - 0.40	0.50 - 3.00								●	●	●		●	●
	WNMX 060412 EM	0.15 - 0.40	0.70 - 3.00								●	●	●		●	●
	WNMX 060404 FG	0.07 - 0.30	0.20 - 2.00	●	●			●	●					●	●	
	WNMX 060408 FG	0.10 - 0.35	0.50 - 2.00	●	●			●	●					●	●	
	WNMX 060404 FM	0.07 - 0.30	0.25 - 2.00		●			●	●					●		
	WNMX 060408 FM	0.10 - 0.35	0.30 - 2.00		●			●	●					●		
	WNMX 060412 FM	0.15 - 0.40	0.35 - 2.00		●			●	●					●		
	WNMX 060404 MM	0.15 - 0.45	0.40 - 3.00								●	●	●		●	●
	WNMX 060408 MM	0.20 - 0.50	0.50 - 3.00						●		●	●	●		●	●
	WNMX 060412 MM	0.23 - 0.50	0.70 - 3.00								●	●	●		●	●
	WNMX 060404 MT	0.10 - 0.35	0.80 - 3.00					●	●		●	●	●	●	●	
	WNMX 060408 MT	0.15 - 0.45	1.00 - 3.00			●	●	●	●		●	●	●	●	●	
	WNMX 060412 MT	0.20 - 0.55	1.20 - 3.00			●	●	●	●				●			
	WNMX 060404 PC	0.10 - 0.30	0.40 - 3.00					●	●							
	WNMX 060408 PC	0.15 - 0.40	0.50 - 3.00					●	●							●
	WNMX 060412 PC	0.18 - 0.50	0.60 - 3.00					●	●							●

● : Standard Items

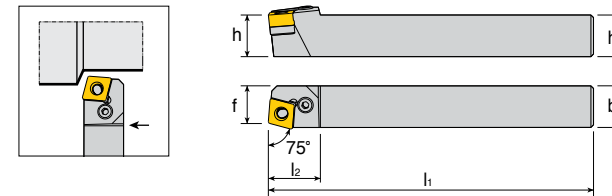
HCLNR/L-RS



Designation	Dimension (mm)						Insert	Components					
	h	b	b1	l1	l2	f		Lever	Screw	Shim	Shim pin	Snap ring	Wrench
HCLNR 1212 K0904-RS	12	12	2	125	18	12	CNM 0904	LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2
HCLNR/L 1616 K0904-RS	16	16	-	125	20	16		LCL 09-NX	LCS 3	LSC 32A	LSP 3A	-	L-W 2.5

• For swiss turning machining

HCBNR/L-RS

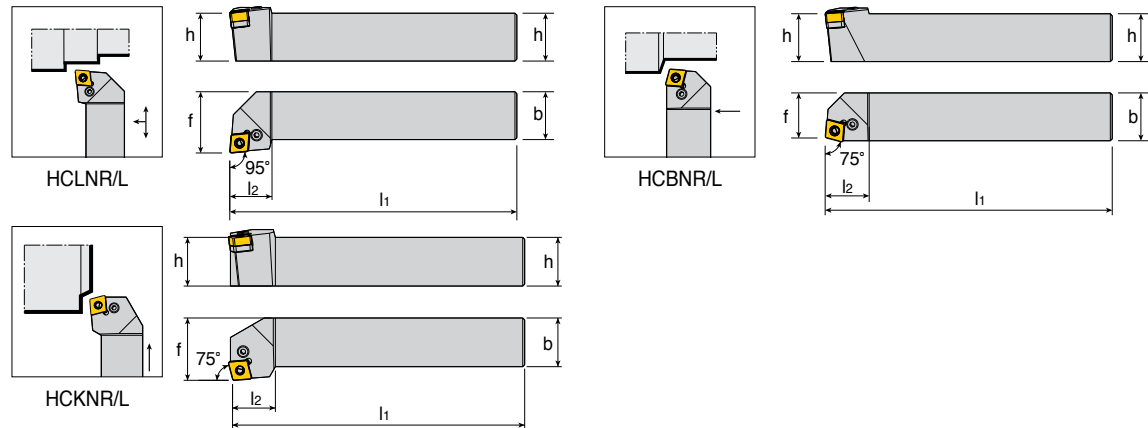


Designation	Dimension (mm)					Insert	Components				
	h	b	l1	l2	f		Lever	Screw	Shim	Shim pin	Wrench
HCBNR/L 1616 K0904-RS	16	16	125	20	14.5	CNM 0904	LCL 09-NX	LCS 3	LSC 32A	LSP 3A	L-W 2.5

• For swiss turning machining

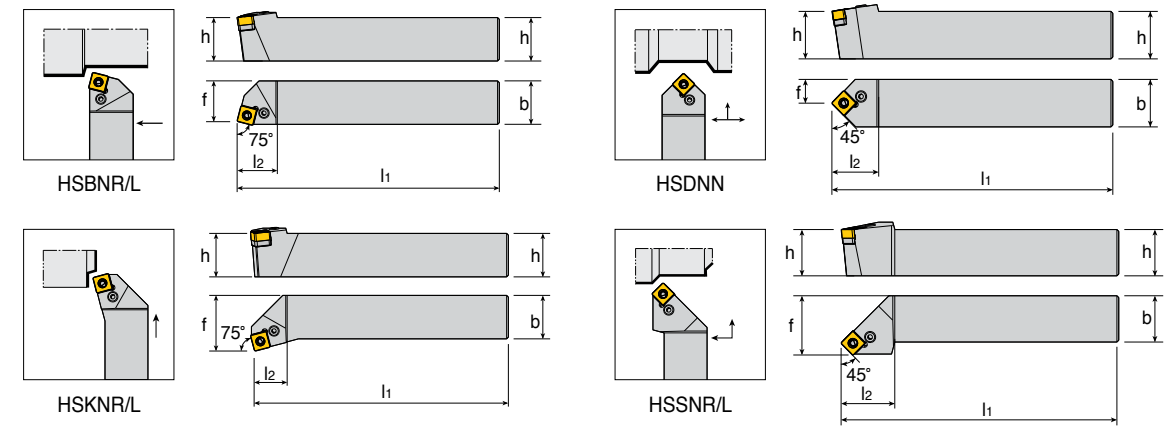


HCLNR/L HCBNR/L HCKNR/L



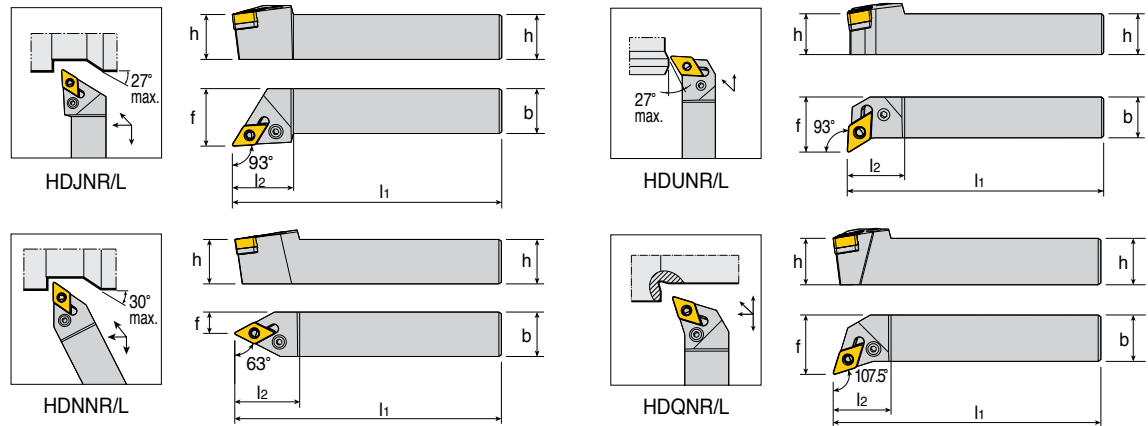
Approach angle	Designation	Dimension (mm)					Insert	Components				
		h	b	l ₁	l ₂	f		Lever	Screw	Shim	Shim pin	Wrench
95°	HCLNR/L 1616 H0904	16	16	100	22	20	CNM□ 0904 □□	LCL 09-NX	LCS 3	LSC 32A	LSP 3A	L-W 2.5
	HCLNR/L 2020 H0904	20	20	100	22	25						
	HCLNR/L 2020 K0904	20	20	125	22	25						
	HCLNR/L 2525 M0904	25	25	150	22	32						
75°	HCBNR/L 2020 K0904	20	20	125	23	18.5						
	HCBNR/L 2525 M0904	25	25	150	23	23.5						
	HCKNR/L 2525 M0904	25	25	150	22	32						

HSBNR/L HSDNN HSKNR/L HSSNR/L



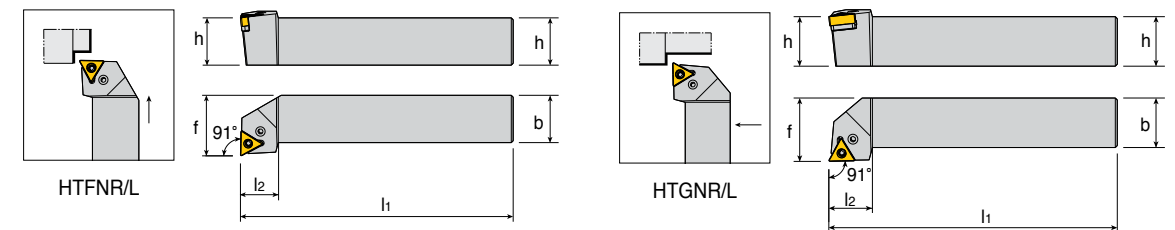
Approach angle	Designation	Dimension (mm)					Insert	Components				
		h	b	l ₁	l ₂	f		Lever	Screw	Shim	Shim pin	Wrench
75°	HSBNR/L 2020 K0904	20	20	125	23	18.5	SNMG 0904 □□	LCL 09-NX	LCS 3	LSS 32A	LSP 3A	L-W 2.5
	HSBNR/L 2525 M0904	25	25	150	23	23.5						
45°	HSDNN 2020 K0904	20	20	125	25	10						
	HSDNN 2525 M0904	25	25	150	25	12.5						
75°	HSKNR/L 2020 K0904	20	20	125	19	25						
	HSKNR/L 2525 M0904	25	25	150	19	32						
45°	HSSNR/L 2020 K0904	20	20	125	21.5	25						
	HSSNR/L 2525 M0904	25	25	150	29	32						

HDJNR/L HDUNR/L HDNNR/L HDQNR/L



Approach angle	Designation	Dimension (mm)					Insert	Components				
		h	b	l ₁	l ₂	f		Lever	Screw	Shim	Shim pin	Wrench
93°	HDJNR/L 2020 H1305	20	20	100	34	25	DN□□ 1305 □□	LCL 11-NX	LCS 4	LSD 3.52	LSP 4	L-W 3
	HDJNR/L 2020 K1305	20	20	125	34	25						
	HDJNR/L 2525 M1305	25	25	150	34	32						
	HDUNR/L 2020 K1305	20	20	125	28	27						
63°	HDNNR/L 2020 K1305	20	20	125	36.5	10						
	HDNNR/L 2525 M1305	25	25	150	36.5	12						
107.5°	HDQNR/L 2020 K1305	20	20	125	31	25						
	HDQNR/L 2525 M1305	25	25	150	31	32						

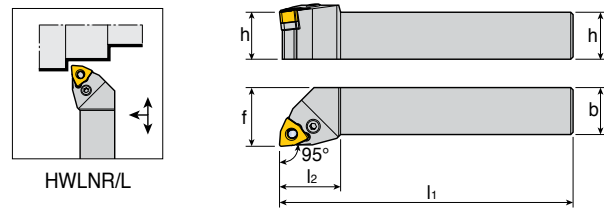
HTFNR/L HTGNR/L



Approach angle	Designation	Dimension (mm)					Insert	Components				
		h	b	l ₁	l ₂	f		Lever	Screw	Shim	Shim pin	Wrench
91°	HTFNR/L 2020 K1304	20	20	125	20	25	TN□G 1304 □□	LCL 08-NX	LCS 3-NX	LST 2.51.8	LSP 3B	L-W 2.5
	HTFNR/L 2525 M1304	25	25	150	20	32						
91°	HTGNR/L 1616 H1304	16	16	100	22	20						
	HTGNR/L 2020 H1304	20	20	100	22	25						
	HTGNR/L 2020 K1304	20	20	125	22	25						
	HTGNR/L 2525 M1304	25	25	150	22	32						

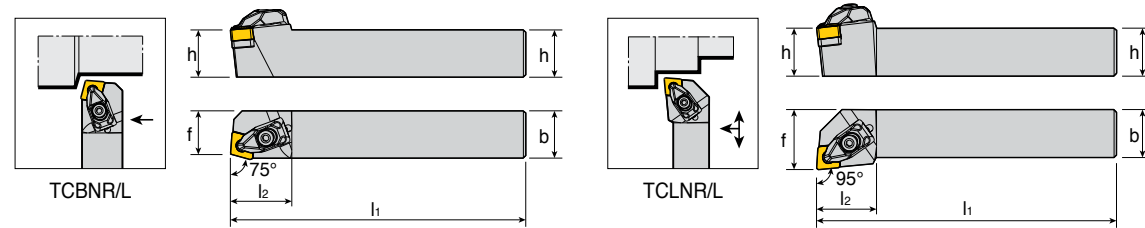


HWLNRL/L



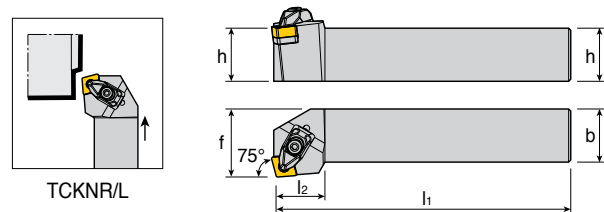
Approach angle	Designation	Dimension (mm)					Insert	Components				
		h	b	l ₁	l ₂	f		Lever	Screw	Shim	Shim pin	Wrench
95°	HWLNRL 1616 H0604	16	16	100	26	20	WNMX 0604 □□	LCL 09-NX	LCS 3	LSW 32A	LSP 3A	L-W 2.5
	HWLNRL 2020 K0604	20	20	125	26	25						
	HWLNRL 2525 M0604	25	25	150	26	32						

TCBNRL/L TCLNRL/L



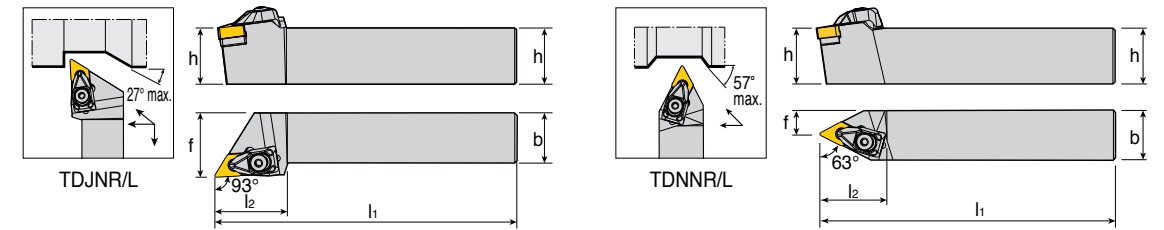
Approach angle	Designation	Dimension (mm)					Insert	Components						
		h	b	l ₁	l ₂	f		Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
75°	TCBNRL 2020 K0904	20	20	125	26	18.5	CNM □□ 0904 □□	DLM 3-NX	DLS 3	LSC 32A	SO 400851	DSP 3	L-W 2.5	T 15
	TCBNRL 2525 M0904	25	25	150	26	23.5								
95°	TCLNRL 2020 H0904	20	20	100	25	25	CNM □□ 0904 □□	DLM 3-NX	DLS 3	LSC 32A	SO 400851	DSP 3	L-W 2.5	T 15
	TCLNRL 2020 K0904	20	20	125	25	25								
	TCLNRL 2525 M0904	25	25	150	25	32								

TCKNRL/L



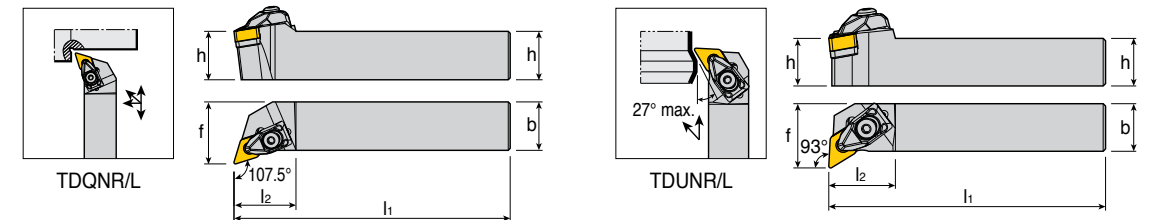
Approach angle	Designation	Dimension (mm)					Insert	Components						
		h	b	l ₁	l ₂	f		Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
75°	TCKNRL 2525 M0904	25	25	150	23	32	CNM □□ 0904 □□	DLM 3-NX	DLS 3	LSC 32A	SO 400851	DSP 3	L-W 2.5	T 15

TDJNRL/L TDNNRL/L



Approach angle	Designation	Dimension (mm)					Insert	Components						
		h	b	l ₁	l ₂	f		Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
93°	TDJNRL 2020 H1305	20	20	100	33	25	DN □□ 1305 □□	DLM 3.5-NX	DLS 4	LSD 3.52	SO 500901	DSP 4	L-W 3	T 20
	TDJNRL 2020 K1305	20	20	125	33	25								
	TDJNRL 2525 M1305	25	25	150	36	32								
63°	TDNNRL 2020 K1305	20	20	125	34	10	DN □□ 1305 □□	DLM 3.5-NX	DLS 4	LSD 3.52	SO 500901	DSP 4	L-W 3	T 20
	TDNNRL 2525 M1305	25	25	150	34	12.5								

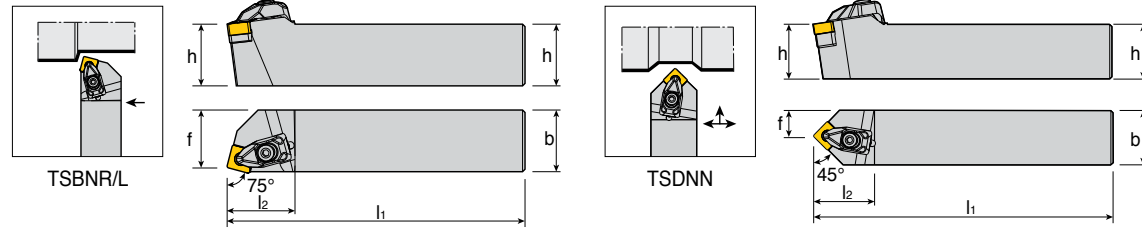
TDQNR/L TDUNR/L



Approach angle	Designation	Dimension (mm)					Insert	Components						
		h	b	l ₁	l ₂	f		Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
107.5°	TDQNR/L 2020 K1305	20	20	125	32	25	DN □□ 1305 □□	DLM 3.5-NX	DLS 4	LSD 3.52	SO 500901	DSP 4	L-W 3	T 20
	TDQNR/L 2525 M1305	25	25	150	32	32								
93°	TDUNR/L 2020 K1305	20	20	125	28	27	DN □□ 1305 □□	DLM 3.5-NX	DLS 4	LSD 3.52	SO 500901	DSP 4	L-W 3	T 20
	TDUNR/L 2525 M1305	25	25	150	28	32								

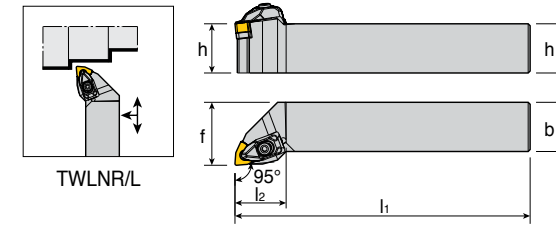


TSBNR/L TSDNN



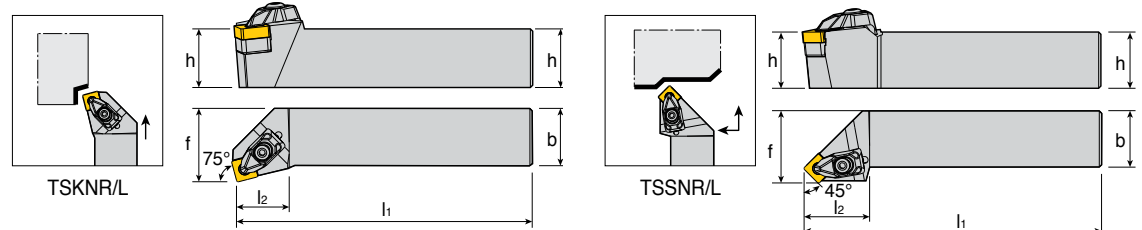
Approach angle	Designation	Dimension (mm)					Insert	Components						
		h	b	l ₁	l ₂	f		Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
75°	TSBNR/L 2020 K0904	20	20	125	27.5	18.5	SNMG 0904 □□	DLM 3-NX	DLS 3	LSS 32A	SO 400851	DSP 3	L-W 2.5	T 15
	TSBNR/L 2525 M0904	25	25	150	27.5	23.5								
45°	TSDNN 2020 K0904	20	20	125	28	10								
	TSDNN 2525 M0904	25	25	150	28	12.5								

TWLNRL



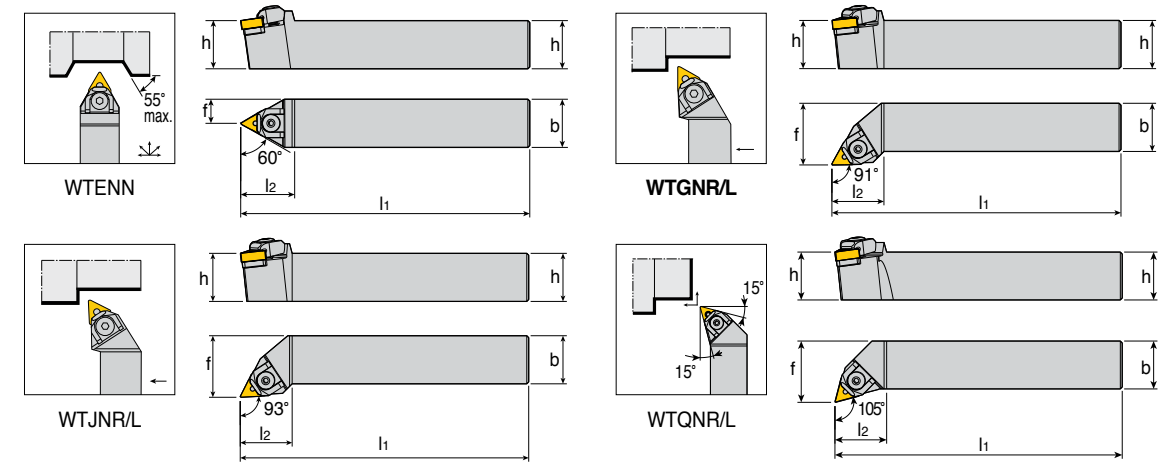
Approach angle	Designation	Dimension (mm)					Insert	Components						
		h	b	l ₁	l ₂	f		Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
95°	TWLNRL 2020 K0604	20	20	125	26	25	WNMX 0604 □□	DLM 3-NX	DLS 3	LSW 32A	SO 400851	DSP 3	L-W 2.5	T 15
	TWLNRL 2525 M0604	25	25	150	26	32								

TSKNR/L TSSNR/L



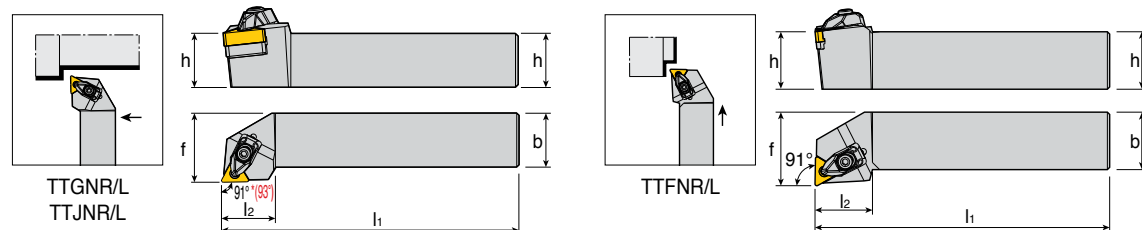
Approach angle	Designation	Dimension (mm)					Insert	Components						
		h	b	l ₁	l ₂	f		Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
75°	TSKNR/L 2020 K0904	20	20	125	23	25	SNMG 0904 □□	DLM 3-NX	DLS 3	LSS 32A	SO 400851	DSP 3	L-W 2.5	T 15
	TSKNR/L 2525 M0904	25	25	150	23	32								
45°	TSSNR/L 2020 K0904	20	20	125	29	25								
	TSSNR/L 2525 M0904	25	25	150	29	32								

WTENN WTGNR/L WTJNR/L WTQNR/L



Approach angle	Designation	Dimension (mm)					Insert	Components					
		h	b	l ₁	l ₂	f		Wedge clamp	Screw	Snap ring	Shim	Pin screw	Wrench
60°	WTENN 2020 K1304	20	20	125	28	10	TN□G 1304 □□	WC 2.53	WCS 2.5	CSR 2	WST 2.52	WSS 2.52	L-W 2.5
	WTENN 2525 M1304	25	25	150	28	12.5							
91°	WTGNR/L 2020 K1304	20	20	125	27	25							
	WTGNR/L 2525 M1304	25	25	150	27	32							
93°	WTJNR/L 2020 K1304	20	20	125	27	25							
	WTJNR/L 2525 M1304	25	25	150	27	32							
105°	WTQNR/L 2020 K1304	20	20	125	27	25							
	WTQNR/L 2525 M1304	25	25	150	27	32							

TTGNR/L TTJNR/L TTFNR/L

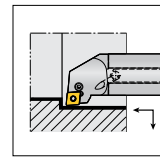


Approach angle	Designation	Dimension (mm)					Insert	Components						
		h	b	l ₁	l ₂	f		Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
91°	TTGNR/L 2020 H1304	20	20	100	25	25	TN□G 1304 □□	DLM 2.5-NX	DLS 3	LST 2.52	SO 400851	DSP 3	L-W 2.5	T 15
	TTGNR/L 2020 K1304	20	20	125	25	25								
	TTGNR/L 2525 M1304	25	25	150	25	32								
93°	TTJNR/L 2525 M1304	25	25	150	25	32								
	TTFNR/L 2020 K1304	20	20	125	25	25								
91°	TTFNR/L 2525 M1304	25	25	150	25	32								

*Approach angle of TTJNR/L is 93 degrees



A-HCLNR/L S-HCLNR/L



A-HCLNR/L
(Coolant through hole)

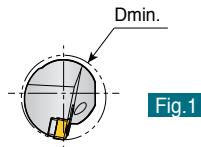
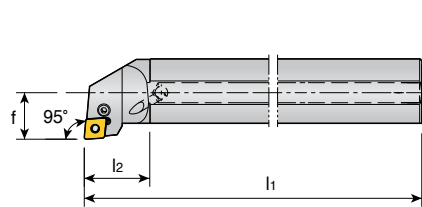
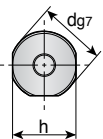


Fig.1

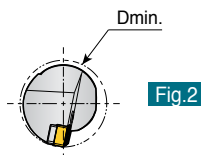
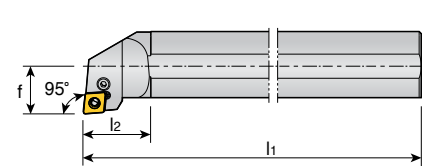
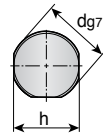
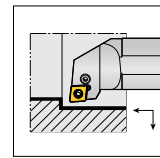


Fig.2



S-HCLNR/L

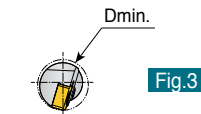
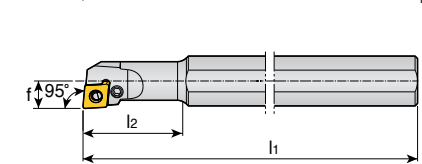
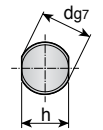
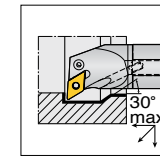


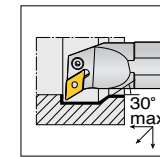
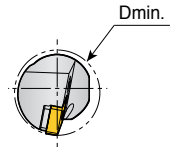
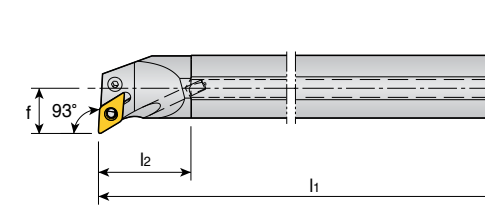
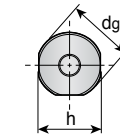
Fig.3

Designation	Dimension (mm)						Insert	Components						Fig.	
	dg7	h	l1	l2	f	D min		Lever	Screw	Shim	Shim pin	Snap ring	Wrench		
A16Q HCLNR/L 0904	16	15	180	25	11	20	CNM □ 0904 □	LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2	1	
A20Q HCLNR/L 0904	20	18	180	28	13	25									
A25R HCLNR/L 0904	25	23	200	31	17	32									
A32S HCLNR/L 0904	32	30	250	31	22	40		LCL 09-NX	LCS 3	LSC 32	LSP 3A	-	L-W 2.5		
S16Q HCLNR/L 0904	16	15	180	25	11	20		LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2		3
S20Q HCLNR/L 0904	20	18	180	28	13	25									
S20Q HCLNR/L 0904-D20	20	18	180	40	11	20									
S25R HCLNR/L 0904	25	23	200	31	17	32		LCL 09-NX	LCS 3	LSC 32	LSP 3A	-	L-W 2.5		2
S32S HCLNR/L 0904	32	30	250	31	22	40									
S40T HCLNR/L 0904	40	37	300	55	27	50									

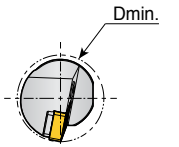
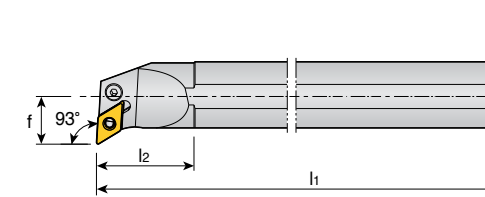
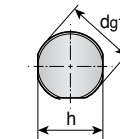
A-HDUNR/L S-HDUNR/L



A-HDUNR/L
(Coolant through hole)

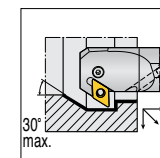


S-HDUNR/L

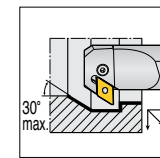
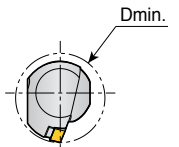
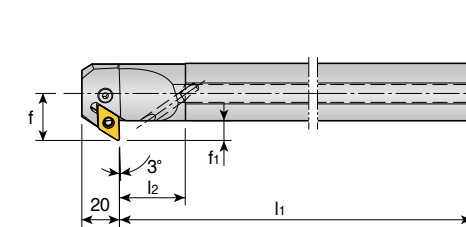
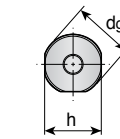


Designation	Dimension (mm)						Insert	Components					
	dg7	h	l1	l2	f	D min		Lever	Screw	Shim	Shim pin	Snap ring	Wrench
A32S HDUNR/L 1305	32	30	250	45	22	40	DN □ □ 1305 □ □	LCL 11-NX	LCS 4S	LSD 3.52B	LSP 4	-	L-W 3
A40T HDUNR/L 1305	40	37	300	55	27	50							
S32S HDUNR/L 1305	32	30	250	45	22	40							
S40T HDUNR/L 1305	40	37	300	55	27	50							

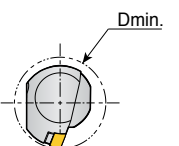
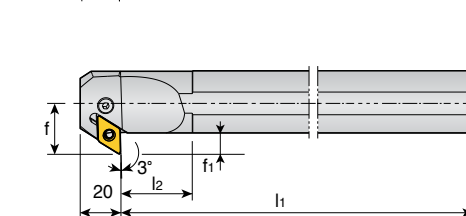
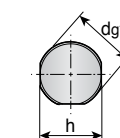
A-HDZNR/L S-HDZNR/L



A-HDZNR/L
(Coolant through hole)



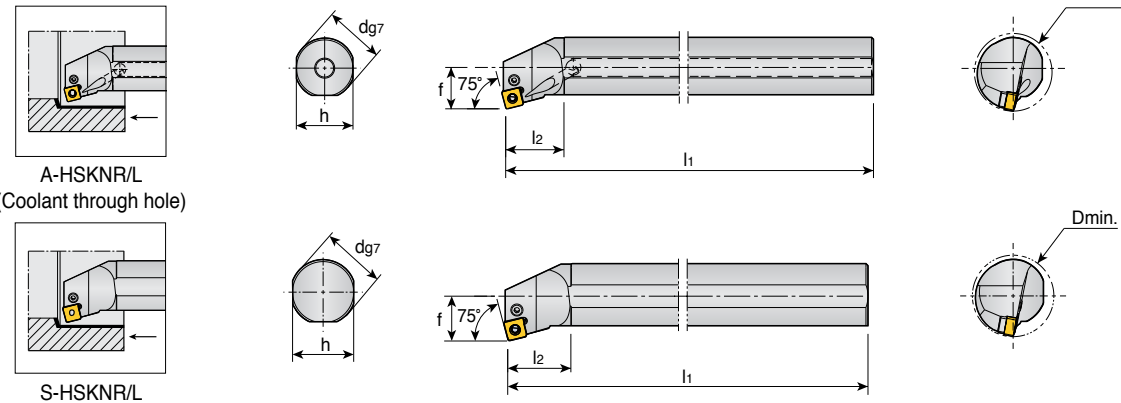
S-HDZNR/L



Designation	Dimension (mm)						Insert	Components						
	dg7	h	l1	l2	f	f1		D min	Lever	Screw	Shim	Shim pin	Snap ring	Wrench
A32S HDZNR/L 1305	32	30	250	35	25	10.5	45	DN □ □ 1305 □ □	LCL 11-NX	LCS 4S	LSD 3.52B	LSP 4	-	L-W 3
A40T HDZNR/L 1305	40	37	300	40	29	10.5	50							
S32S HDZNR/L 1305	32	30	250	35	25	10.5	45							
S40T HDZNR/L 1305	40	37	300	40	29	10.5	50							

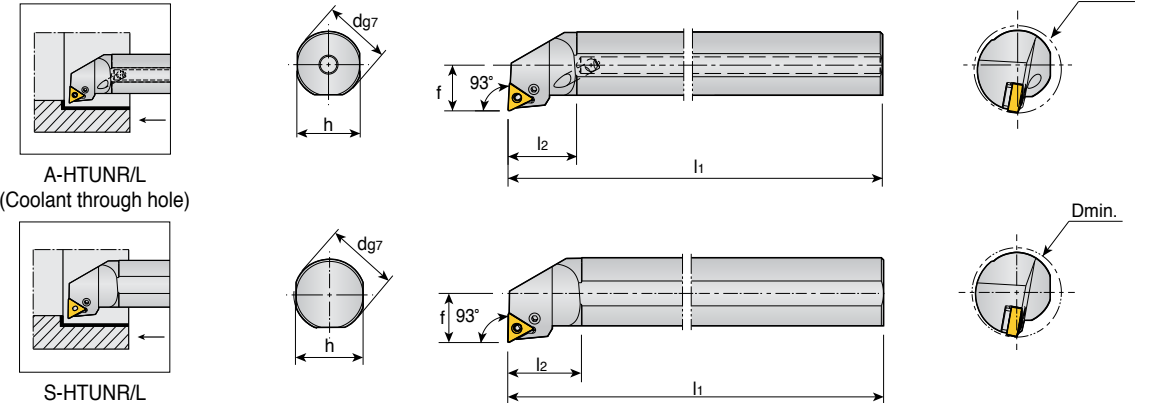


A-HSKNR/L S-HSKNR/L



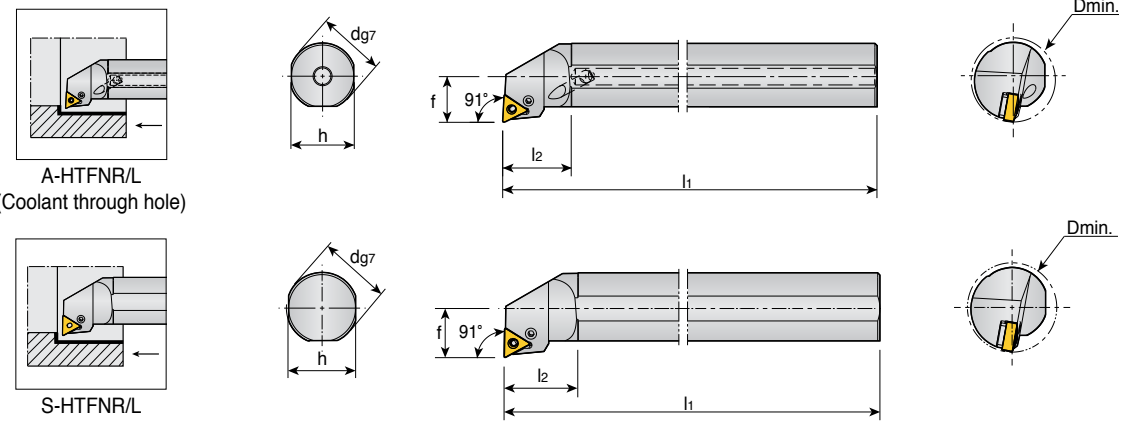
Designation	Dimension (mm)						Insert	Components						
	dg7	h	l1	l2	f	D min		Lever	Screw	Shim	Shim pin	Snap ring	Wrench	
A25R HSKNR/L 0904	25	23	200	31	17	32	SNMG 0904 □□	LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2	
A32S HSKNR/L 0904	32	30	250	31	22	40		LCL 09-NX	LCS 3	LSS 32	LSP 3A	-	L-W 2.5	
S25R HSKNR/L 0904	25	23	200	31	17	32		LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2	
S32S HSKNR/L 0904	32	30	250	31	22	40		LCL 09-NX	LCS 3	LSS 32	LSP 3A	-	L-W 2.5	

A-HTUNR/L S-HTUNR/L



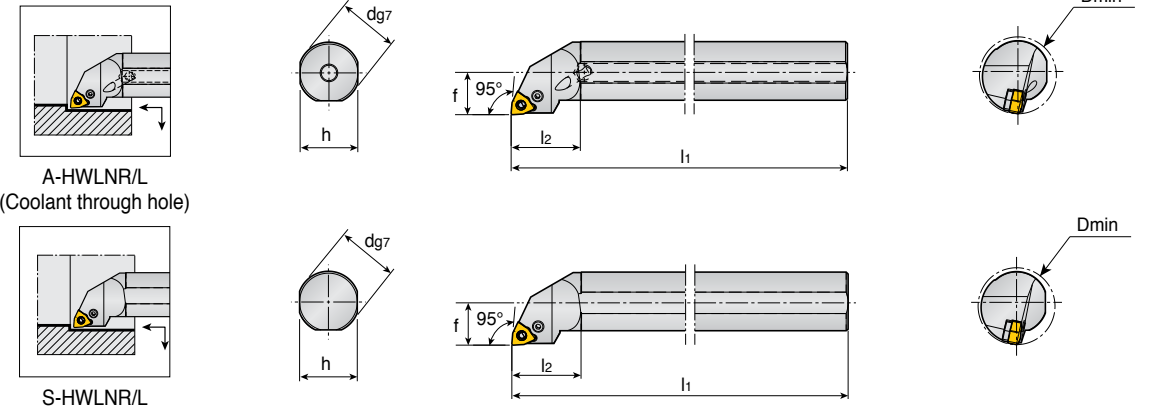
Designation	Dimension (mm)						Insert	Components						
	dg7	h	l1	l2	f	D min		Lever	Screw	Shim	Shim pin	Snap ring	Wrench	
A16Q HTUNR/L 1304	16	15	180	25	11	20	TN□G 1304 □□	LCL 08B-NX	LCS 3B	-	-	LSR 3B	L-W 2	
A20Q HTUNR/L 1304	20	18	180	28	13	25		LCL 08B-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	L-W 2.5	
A25R HTUNR/L 1304	25	23	200	33	17	32		LCL 08B-NX	LCS 3B	-	-	LSR 3B	L-W 2	
A32S HTUNR/L 1304	32	30	250	33	22	40		LCL 08-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	L-W 2.5	
S16Q HTUNR/L 1304	16	15	180	25	11	20		LCL 08B-NX	LCS 3B	-	-	LSR 3B	L-W 2	
S20Q HTUNR/L 1304	20	18	180	28	13	25		LCL 08B-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	L-W 2.5	
S25R HTUNR/L 1304	25	23	200	33	17	32		LCL 08-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	L-W 2.5	
S32S HTUNR/L 1304	32	30	250	33	22	40		LCL 08-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	L-W 2.5	

A-HTFNR/L S-HTFNR/L



Designation	Dimension (mm)						Insert	Components						
	dg7	h	l1	l2	f	D min		Lever	Screw	Shim	Shim pin	Snap ring	Wrench	
A16Q HTFNR/L 1304	16	15	180	25	11	20	TN□G 1304 □□	LCL 08B-NX	LCS 3B	-	-	LSR 3B	L-W 2	
A20Q HTFNR/L 1304	20	18	180	28	13	25		LCL 08-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	L-W 2.5	
A25R HTFNR/L 1304	25	23	200	33	17	32		LCL 08B-NX	LCS 3B	-	-	LSR 3B	L-W 2	
A32S HTFNR/L 1304	32	30	250	33	22	40		LCL 08-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	L-W 2.5	
S16Q HTFNR/L 1304	16	15	180	25	11	20		LCL 08B-NX	LCS 3B	-	-	LSR 3B	L-W 2	
S25R HTFNR/L 1304	25	23	200	33	17	32		LCL 08-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	L-W 2.5	
S32S HTFNR/L 1304	32	30	250	33	22	40		LCL 08-NX	LCS 3-NX	LST 2.51.8B	LSP 3B	-	L-W 2.5	

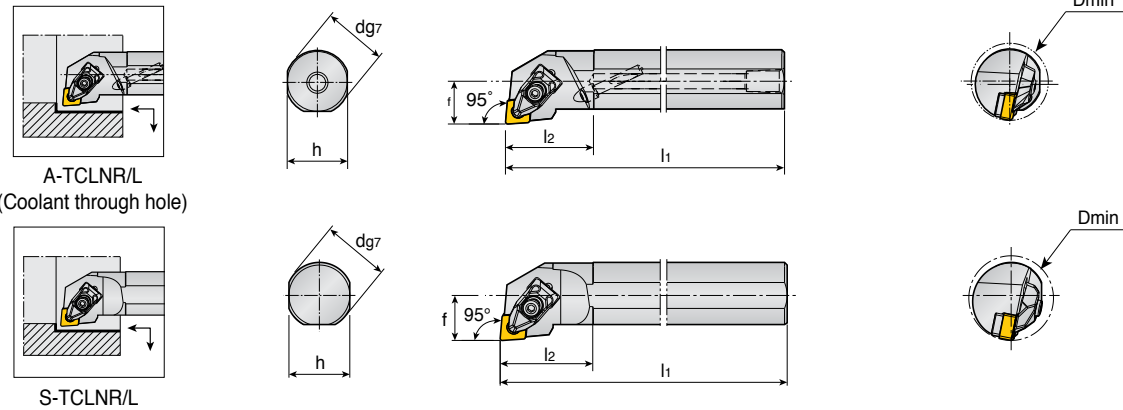
A-HWLNRL S-HWLNRL



Designation	Dimension (mm)						Insert	Components						
	dg7	h	l1	l2	f	D min		Lever	Screw	Shim	Shim pin	Snap ring	Wrench	
A16Q HWLNRL 0604	16	15	180	30	11	20	WNMX 0604 □□	LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2	
A20Q HWLNRL 0604	20	18	180	33	13	25		LCL 09-NX	LCS 3	LSW 32	LSP 3A	-	L-W 2.5	
A25R HWLNRL 0604	25	23	200	36	17	32		LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2	
A32S HWLNRL 0604	32	30	250	36	22	40		LCL 09-NX	LCS 3	LSW 32	LSP 3A	-	L-W 2.5	
S16Q HWLNRL 0604	16	15	180	30	11	20		LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2	
S20Q HWLNRL 0604	20	18	180	33	13	25		LCL 09B-NX	LCS 3B	-	-	LSR 3B	L-W 2	
S25R HWLNRL 0604	25	23	200	36	17	32		LCL 09-NX	LCS 3	LSW 32	LSP 3A	-	L-W 2.5	
S32S HWLNRL 0604	32	30	250	36	22	40		LCL 09-NX	LCS 3	LSW 32	LSP 3A	-	L-W 2.5	

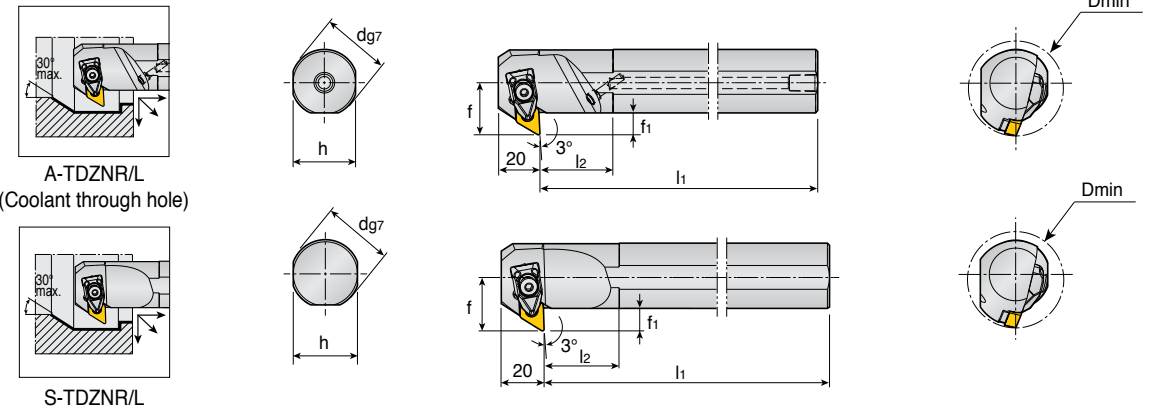


A-TCLNR/L S-TCLNR/L



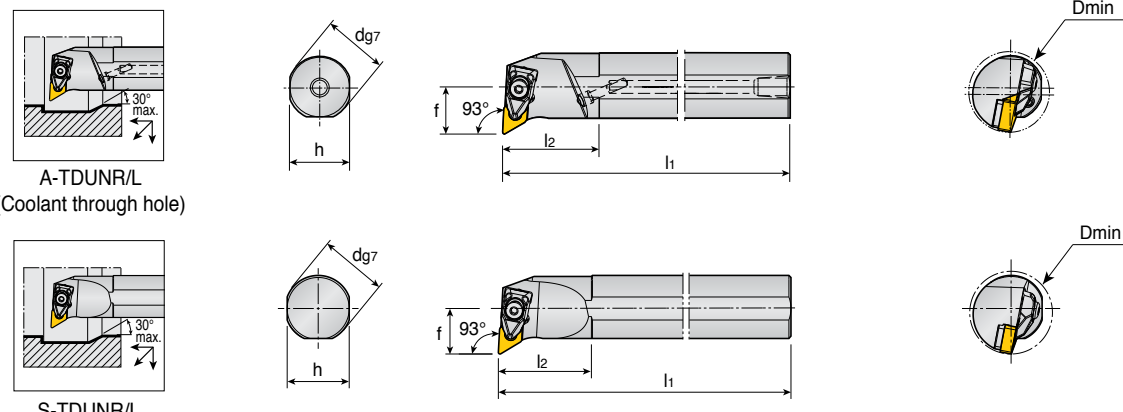
Designation	Dimension (mm)						Insert	Components																	
	dg7	h	l1	l2	f	D min		Clamp	Clamp screw	Shim	Shim screw	Spring	Nozzle	Wrench											
A25R TCLNR/L 0904	25	23	200	35	17	32										SO 40073I									
A32S TCLNR/L 0904	32	30	250	35	22	40										CNM □									SO 40085I
S25R TCLNR/L 0904	25	23	200	35	17	32										0904									SO 40073I
S32S TCLNR/L 0904	32	30	250	35	22	40										□ □									SO 40073I
S40T TCLNR/L 0904	40	37	300	45	27	50										□ □									SO 40085I

A-TDZNR/L S-TDZNR/L



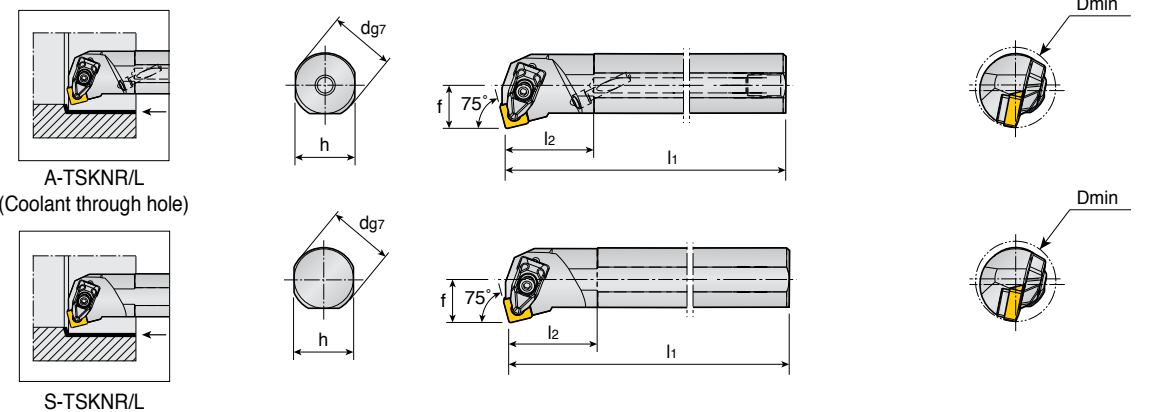
Designation	Dimension (mm)							Insert	Components																	
	dg7	h	l1	l2	f	f1	D min		Clamp	Clamp screw	Shim	Shim screw	Spring	Nozzle	Wrench											
A32S TDZNR/L 1305	32	30	250	35	25	10.5	45										NZ 62									
A40T TDZNR/L 1305	40	37	300	40	29	10.5	50										DN □ □									NZ 104
S32S TDZNR/L 1305	32	30	250	35	25	10.5	45										□ □									-
S40T TDZNR/L 1305	40	37	300	40	29	10.5	50										□ □									-

A-TDUNR/L S-TDUNR/L



Designation	Dimension (mm)						Insert	Components																	
	dg7	h	l1	l2	f	D min		Clamp	Clamp screw	Shim	Shim screw	Spring	Nozzle	Wrench											
A32S TDUNR/L 1305	32	30	250	45	22	40										NZ 62									
A40T TDUNR/L 1305	40	37	300	55	27	50										DN □ □									NZ 104
S32S TDUNR/L 1305	32	30	250	45	22	40										□ □									-
S40T TDUNR/L 1305	40	37	300	55	27	50										□ □									-

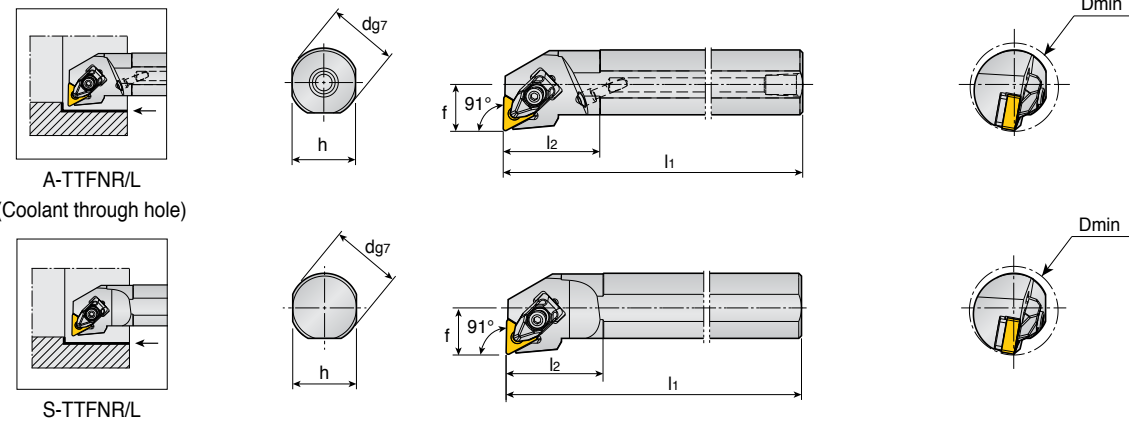
A-TSKNR/L S-TSKNR/L



Designation	Dimension (mm)						Insert	Components																
	dg7	h	l1	l2	f	D min		Clamp	Clamp screw	Shim	Shim screw	Spring	Nozzle	Wrench										
A25R TSKNR/L 0904	25	23	200	35	17	32										SO 40073I								
A32S TSKNR/L 0904	32	30	250	35	22	40										SNMG								SO 40085I
S25R TSKNR/L 0904	25	23	200	35	17	32										0904 □ □								SO 40073I
S32S TSKNR/L 0904	32	30	250	35	22	40										□ □								SO 40085I

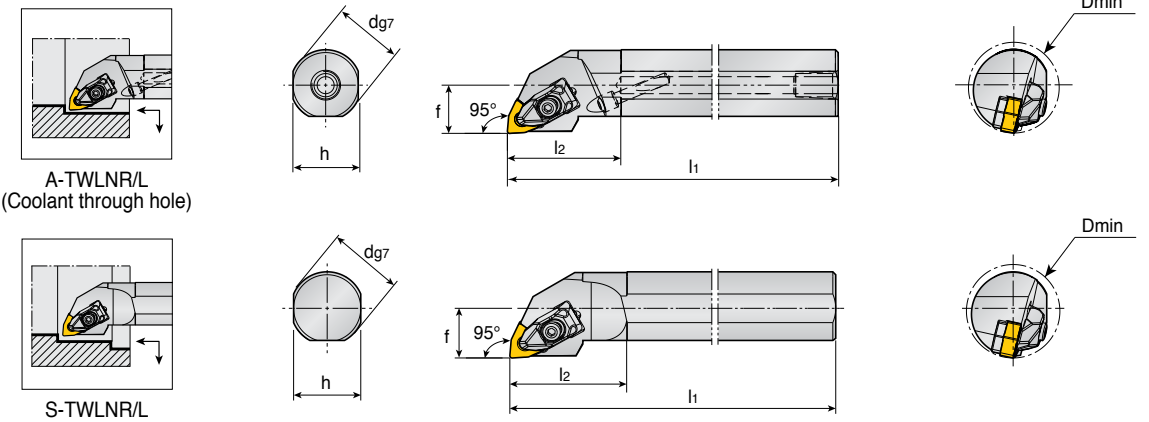


A-TTFNR/L S-TTFNR/L



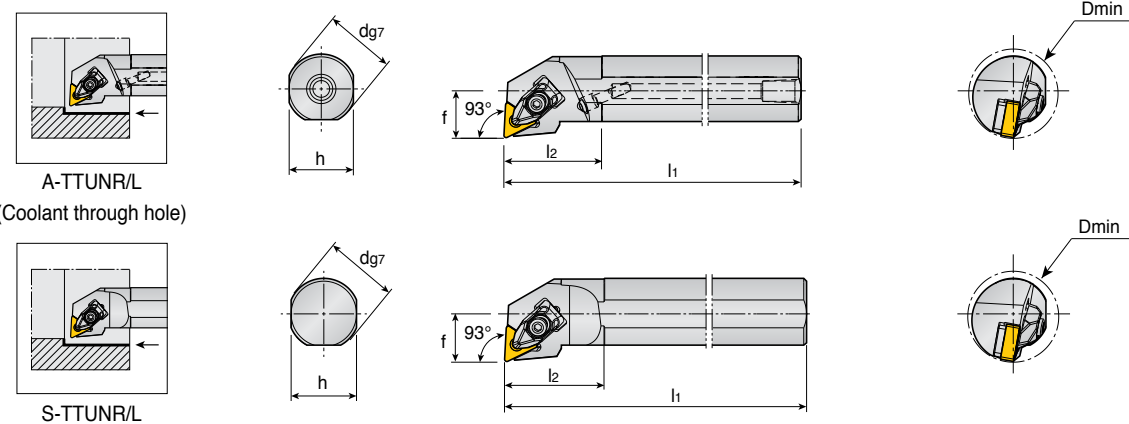
Designation	Dimension (mm)						Insert	Components							
	dg7	h	l1	l2	f	D min		Clamp	Clamp screw	Shim	Shim screw	Spring	Nozzle	Wrench	
A25R TTFNR/L 1304	25	30	200	35	17	32	 TNG 1304	 DLM 2.5-NX	 DLS 3	 LST 2.52B	 SO 40073I	 DSP 3	 NZ 62	 L-W 2.5	 T 15
A32S TTFNR/L 1304	32	30	250	35	22	40									
S25R TTFNR/L 1304	25	23	200	35	17	32									
S32S TTFNR/L 1304	32	30	250	35	22	40									

A-TWLNRL/L S-TWLNRL/L



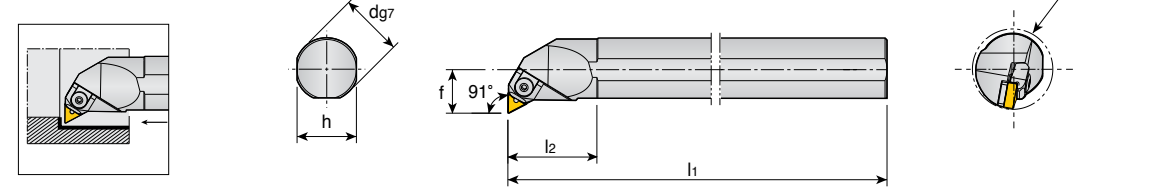
Designation	Dimension (mm)						Insert	Components							
	dg7	h	l1	l2	f	D min		Clamp	Clamp screw	Shim	Shim screw	Spring	Nozzle	Wrench	
A25R TWLNRL/L 0604	25	23	200	40	17	32	 WNMX 0604	 DLM 3-NX	 DLS 3	 LSW 32	 SO 40073I	 DSP 3	 NZ 62	 L-W 2.5	 T 15
A32S TWLNRL/L 0604	32	30	250	45	22	40									
S25R TWLNRL/L 0604	25	23	200	40	17	32									
S32S TWLNRL/L 0604	32	30	250	45	22	40									

A-TTUNR/L S-TTUNR/L



Designation	Dimension (mm)						Insert	Components							
	dg7	h	l1	l2	f	D min		Clamp	Clamp screw	Shim	Shim screw	Spring	Nozzle	Wrench	
A25R TTUNR/L 1304	25	23	200	35	17	32	 TNG 1304	 DLM 2.5-NX	 DLS 3	 LST 2.52B	 SO 40073I	 DSP 3	 NZ 62	 L-W 2.5	 T 15
A32S TTUNR/L 1304	32	30	250	35	22	40									
S25R TTUNR/L 1304	25	23	200	35	17	32									
S32S TTUNR/L 1304	32	30	250	35	22	40									

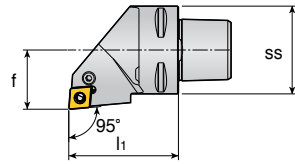
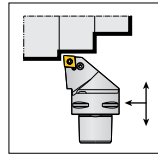
S-WTFNR/L



Designation	Dimension (mm)						Insert	Components					
	dg7	h	l1	l2	f	D min		Wedge clamp	Screw	Snap ring	Shim	Pin screw	Wrench
S25R WTFNR/L 1304	25	23	200	40	17	32	 TNG 1304	 WC 2.53	 WCS 2.5	 CSR 2	-	WSS 2.52-1	 L-W 2.5
S32S WTFNR/L 1304	32	30	250	45	22	40					WST 2.52	WSS 2.52	

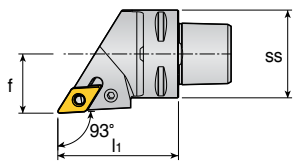
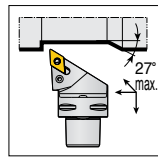


HCLNR/L



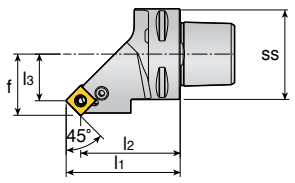
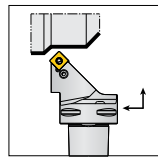
Designation	Dimension (mm)			Insert	Components						
	ss	f	l1		Lever	Screw	Shim	Shim Pin	Nozzle	Wrench	Shim Pin Punch
C4-HCLNR/L 27050-0904	40	27	50	CNM□ 0904 □□	LCL 09-NX	LCS 3	LSC 32	LSP 3A	NZ 83	L-W 2.5	SPP 3-4

HDJNR/L



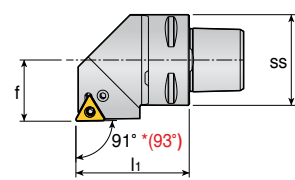
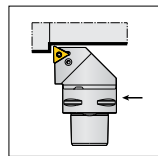
Designation	Dimension (mm)			Insert	Components						
	ss	f	l1		Lever	Screw	Shim	Shim Pin	Nozzle	Wrench	Shim Pin Punch
C4-HDJNR/L 27055-1305	40	27	55	DN□□ 1305 □□	LCL 11-NX	LCS 4	LSD 3.52	LSP 4	NZ 83	L-W 3	SPP 3-4

HSSNR/L



Designation	Dimension (mm)					Insert	Components						
	ss	f	l1	l2	l3		Lever	Screw	Shim	Shim Pin	Nozzle	Wrench	Shim Pin Punch
C4-HSSNR/L 27042-0904	40	27	50.3	44	20.6	SNMG 0904 □□	LCL 09-NX	LCS 3	LSS 32A	LSP 3A	NZ 83	L-W 2.5	SPP 3-4

HTGNR/L HTJNR/L



Designation	Dimension (mm)			Insert	Components						
	ss	f	l1		Lever	Screw	Shim	Shim Pin	Nozzle	Wrench	
C4-HTGNR/L 27050-1304	40	27	50	TN□G 1304 □□	LCL 08-NX	LCS 3-NX	LST 2.51.8	LSP 3B	NZ 83	L-W 2.5	
*C4-HTJNR/L 27050-1304	40	27	50								

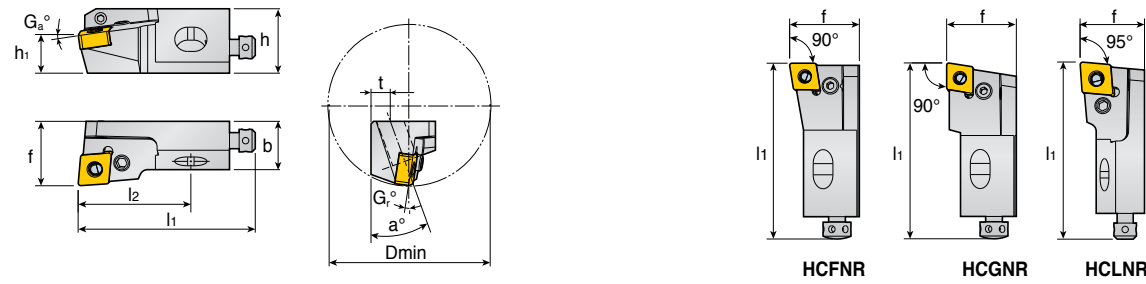
*Approach angle of HTJNR/L is 93 degrees

Cartridge Program

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			



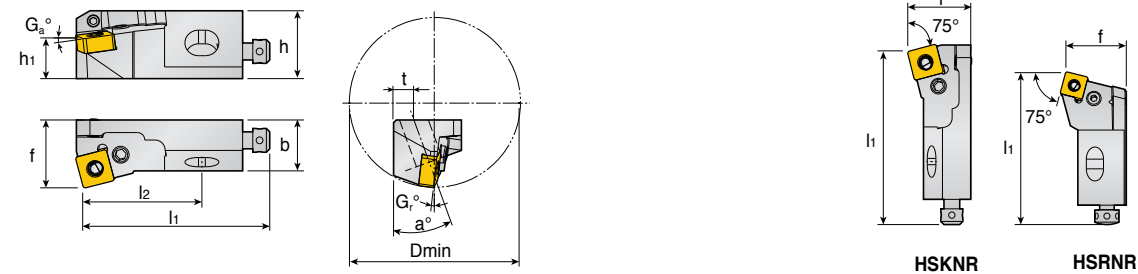
HCFNR/L HCGNR/L HCLNR/L



Approach angle	Designation	Insert	Dimension (mm)										
			h	h1	b	l1	l2	f	G _a °	G _r °	t	a°	Dmin
90°	HCFNR/L 16CA 0904	CNMG 0904 □□	25	16	20	63	38	25	-6°	-8°	0	45°	55
90°	HCGNR/L 16CA 0904		25	16	20	63	38	25	-10°	-8°	0	45°	55
95°	HCLNR/L 12CA 0904		20	12	15	55	35	20	-8°	-8°	6	20°	50
95°	HCLNR/L 16CA 0904		25	16	20	63	38	25	-8°	-8°	0	45°	55

• All cartridges are to be ordered as specials

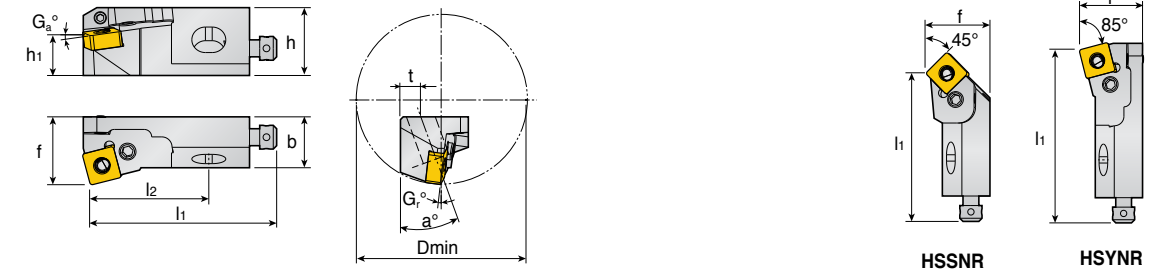
HSKNR/L HSRNR/L



Approach angle	Designation	Insert	Dimension (mm)										
			h	h1	b	l1	l2	f	G _a °	G _r °	t	a°	Dmin
75°	HSKNR/L 10CA 0904	SNMG 0904 □□	17	10	11	50	30	14	-4°	-9°	5	20°	40
75°	HSKNR/L 12CA 0904		20	12	15	55	35	20	-4°	-9°	6	20°	50
75°	HSRNR/L 16CA 0904		25	16	20	63	38	25	-11°	-3°	0	45°	60

• All cartridges are to be ordered as specials

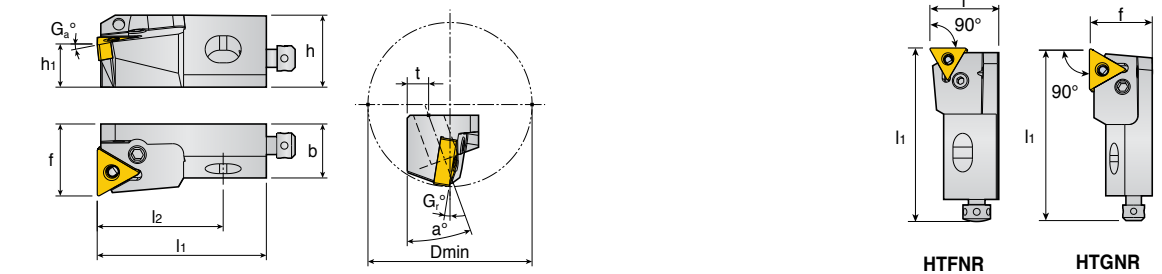
HSSNR/L HSYNR/L



Approach angle	Designation	Insert	Dimension (mm)										
			h	h1	b	l1	l2	f	G _a °	G _r °	t	a°	Dmin
45°	HSSNR/L 12CA 0904	SNMG 0904 □□	20	12	15	47	27	20	-9°	-8°	6	20°	50
	HSSNR/L 16CA 0904		25	16	20	53	28	25	-8°	-8°	0	45°	55
85°	HSYNR/L 10CA 0904		17	10	11	50	30	14	-5°	-9°	5	20°	40
	HSYNR/L 12CA 0904		20	12	15	55	35	20	-4°	-9°	6	20°	50

• All cartridges are to be ordered as specials

HTFNR/L HTGNR/L

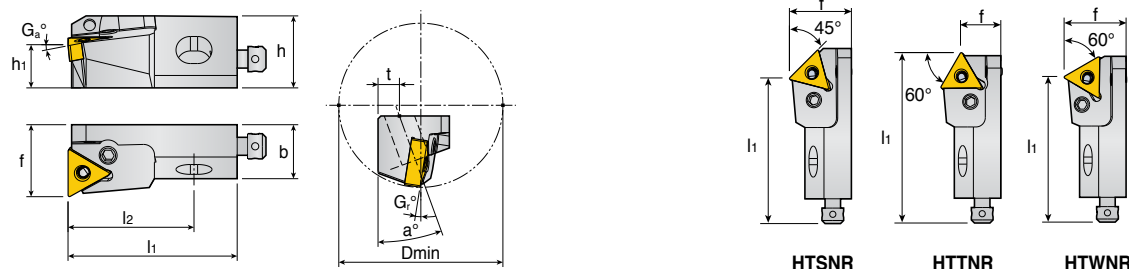


Approach angle	Designation	Insert	Dimension (mm)										
			h	h1	b	l1	l2	f	G _a °	G _r °	t	a°	Dmin
90°	HTFNR/L 12CA 1304	TNCG 1304 □□	20	12	15	55	35	20	-6°	-9°	6	20°	50
	HTFNR/L 16CA 1304		25	16	20	63	38	25	-6°	-8°	0	45°	55
90°	HTGNR/L 12CA 1304		20	12	15	55	35	20	-10°	-8°	6	20°	50
	HTGNR/L 16CA 1304		25	16	20	63	38	25	-10°	-8°	0	45°	60

• All cartridges are to be ordered as specials



HTSNR/L HTTNR/L HTWNR/L



Approach angle	Designation	Insert 	Dimension (mm)										
			h	h1	b	l1	l2	f	G _a °	G _r °	t	a°	Dmin
	HTSNR/L 12CA 1304	TN□G 1304 □□	20	12	15	47	27	20	-5°	-9°	6	20°	50
	HTSNR/L 16CA 1304		25	16	20	53	28	25	-8°	-8°	0	45°	55
	HTTNR/L 12CA 1304		20	12	15	55	35	13	-6°	-7°	6	20°	50
	HTWNR/L 12CA 1304		20	12	15	47	27	20	-3°	-9°	6	20°	50


• All cartridges are to be ordered as specials

Cartridge Components

Cartridge Designation	Hook Lever	Screw	Shim	Shim Pin	Snap Ring	Axial Adj. Screw	Radial Adj. Screw	Mounting Screw	Washer	Wrench
HCLNR/L 12CA 0904	LCL 09B-NX	LCS 3B	-	-	LSR 3B	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 2
HCFNR/L HCGNR/L HCLNR/L 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
HSKNR/L HSYNR/L 10CA 0904	LCL 09B-NX	LCS 3B	-	-	LSR 3B	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 2
HSKNR/L HSSNR/L 12CA 0904	LCL 09B-NX	LCS 3B	-	-	LSR 3B	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 2
HSRNR/L HSSNR/L 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
HTFNR/L HTGNR/L HTSNR/L HTTNR/L HTWNR/L 12CA 1304	LCL 08B-NX	LCS 3B	-	-	LSR 3B	AJM 5F	RSS M4	BH M6x1x25	MW 6.4x12	L-W 2
HTFNR/L HTGNR/L HTSNR/L 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

RHINO-RUSH



- Smaller & stronger than conventional ISO turning inserts
- Next generation clamping system: Two directional clamping force
- Excellent productivity and longer, stable tool life
-  SIZE TECHNOLOGY



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