

TurnLine

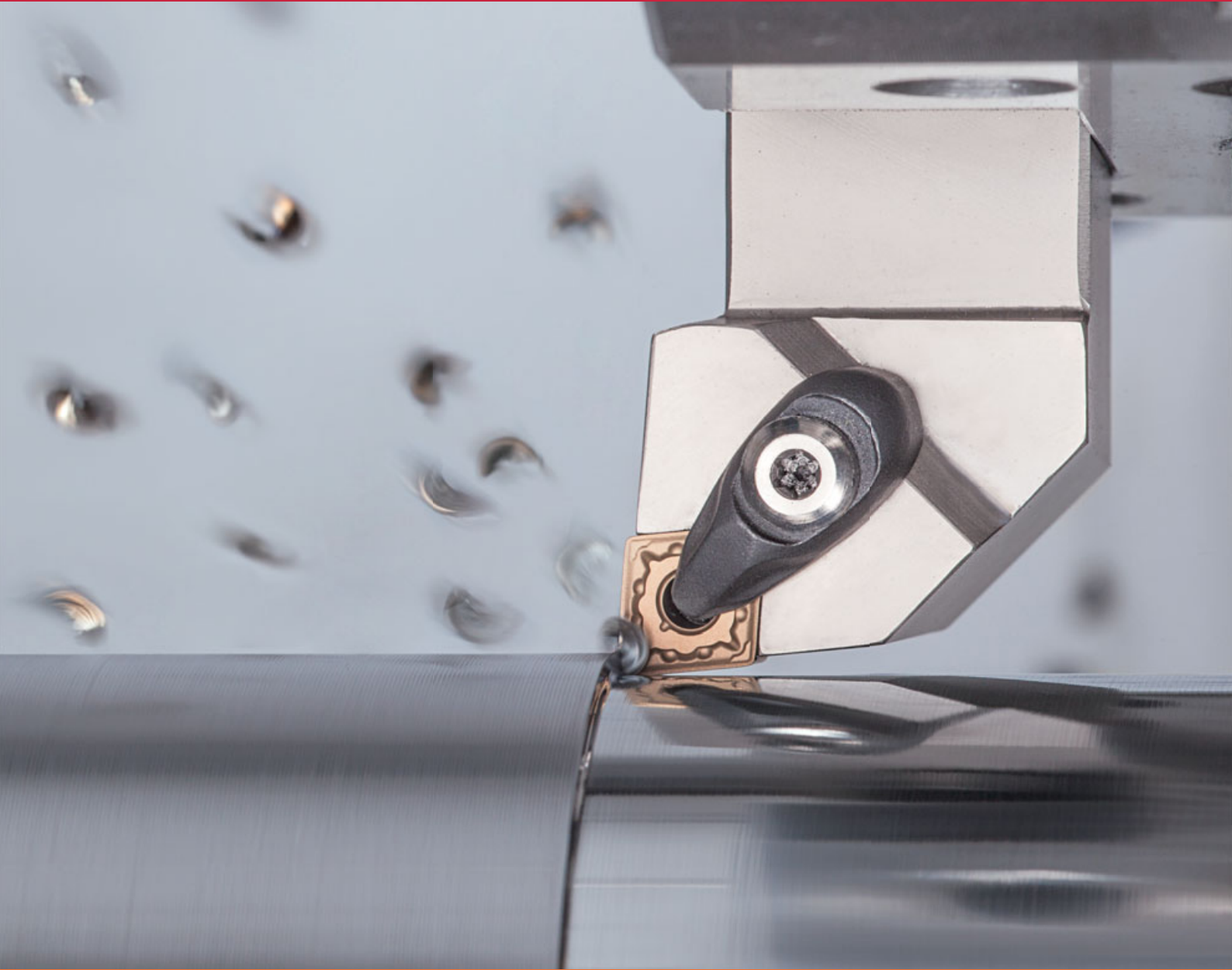
**FW & SW**

[www.tungaloy.com](http://www.tungaloy.com)

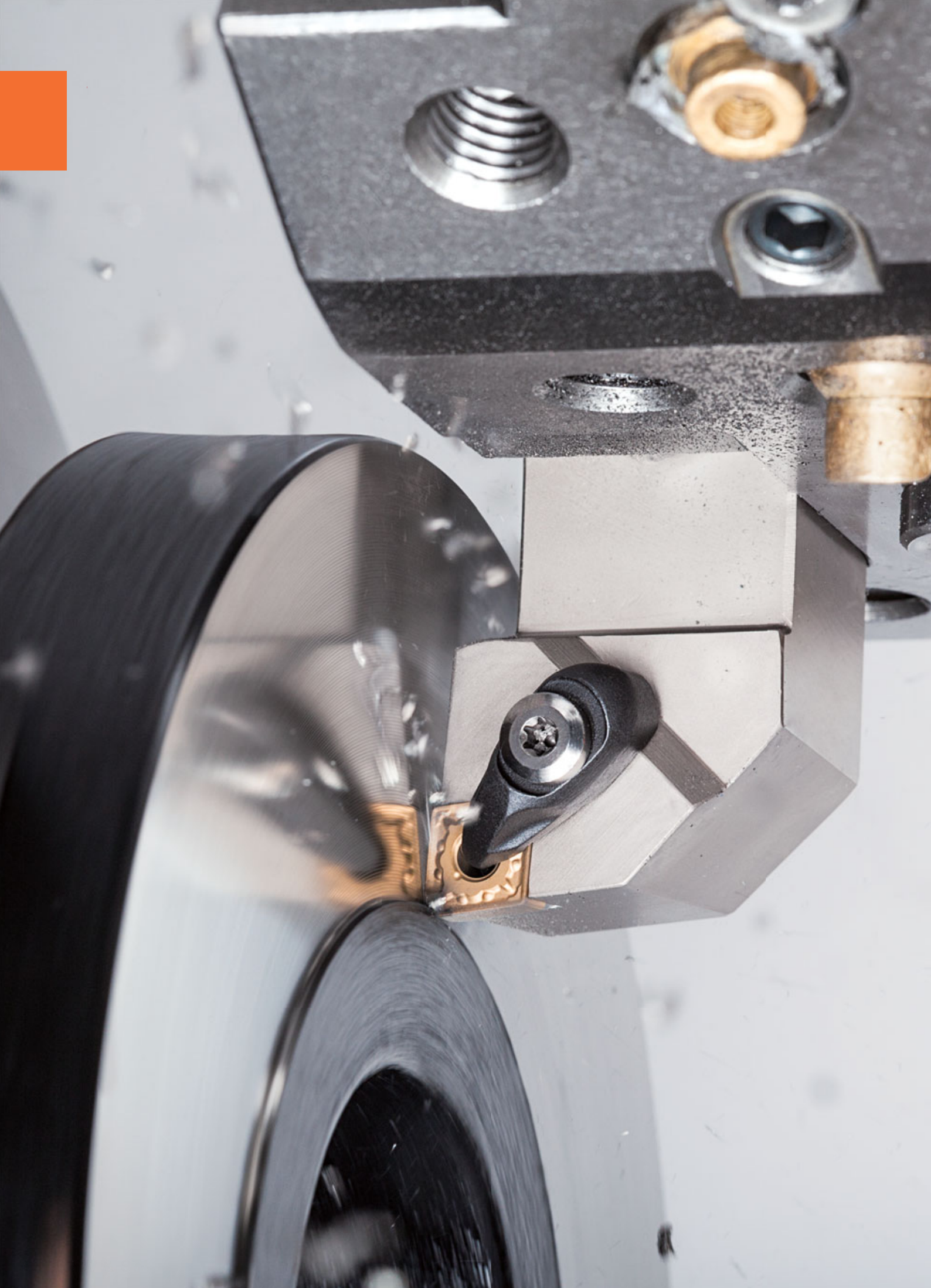
Tungaloy Report No. 434-G

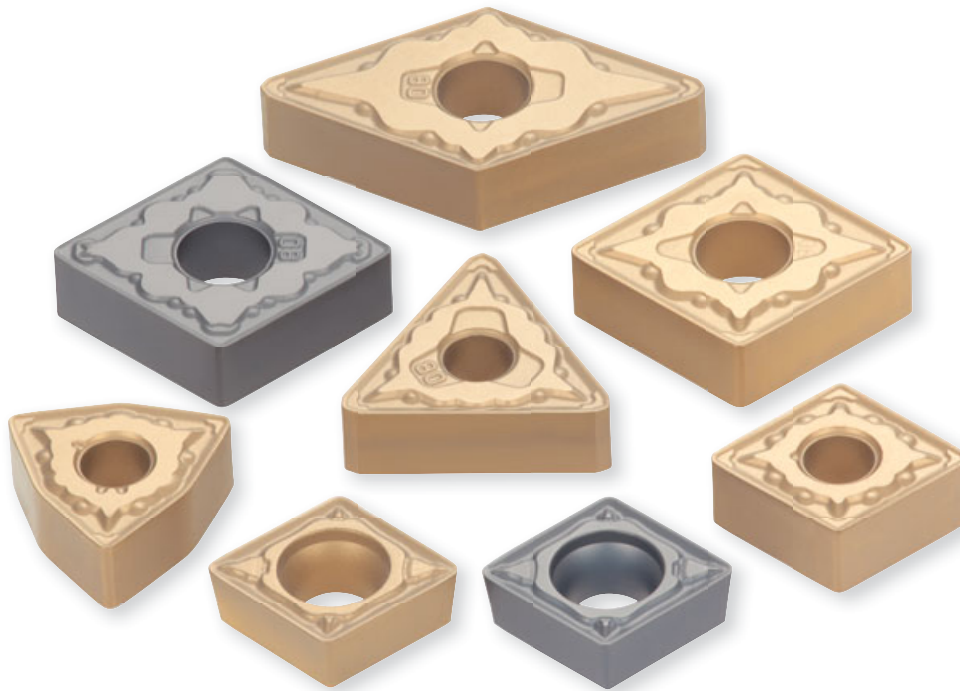
FW & SW

# New wiper insert series for advanced turning operations



Member IMC Group  
**Tungaloy**





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**Only half the surface roughness even at doubled feed rate** compared to regular ISO insert without wiper

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# FW & SW

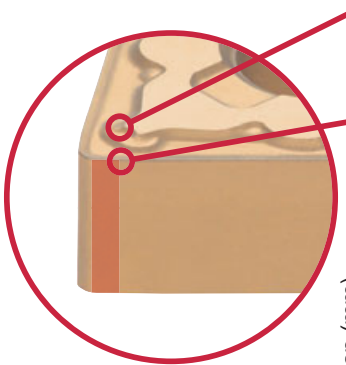
## Highly efficient machining due to uniquely designed wiper shape

### New chipbreakers with wiper edge

# FW

## Finishing

# P



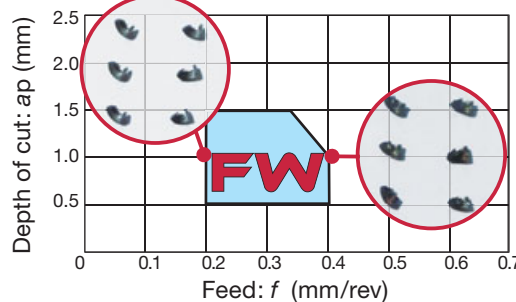
### Stable chip control

Newly designed “Two-Stage Protrusion” offers stable chip control in machining with low depth of cut

### Excellent surface finish

Wiper edge with radius shape provides good surface quality

### Application area and chip control

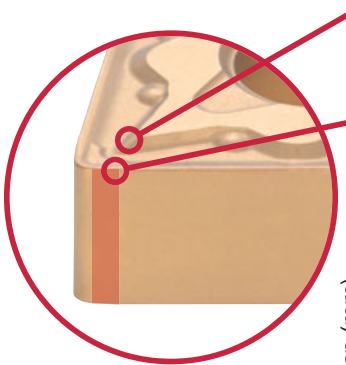


Insert	: CNMG120408-FW
Workpiece	: S45C / C45
Cutting speed	: $V_c = 250$ m/min
Machining	: External turning (Continuous cutting)

# SW

## Finishing to medium cutting

# P K



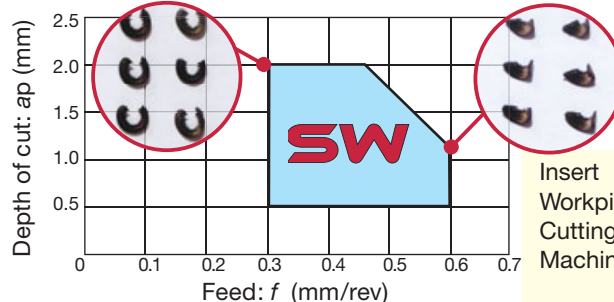
### Stable chip control

Newly developed “Two-Stage bottom” design provides stable chip control in a wide range of depth of cut

### Excellent surface finish

Wiper edge with radius shape provides good surface quality even at high feed

### Application area and chip control

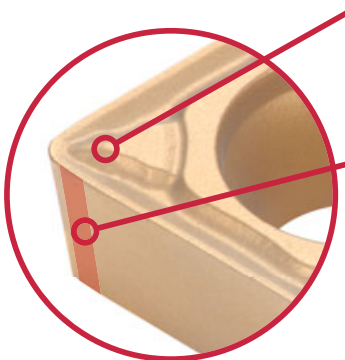


Insert	: CNMG120408-SW
Workpiece	: S45C / C45
Cutting speed	: $V_c = 250$ m/min
Machining	: External turning (Continuous cutting)

## New chipbreakers with wiper edge

# SW

**For medium to finish cutting**



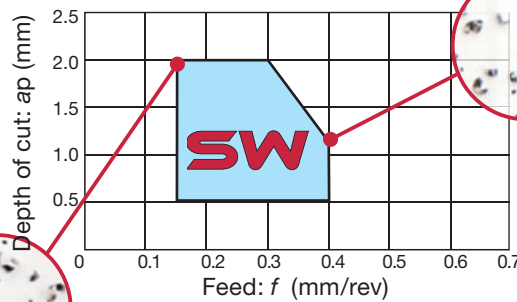
### Protrusion

Newly designed protrusion improves chip control.

### Wiper edge with radius shape

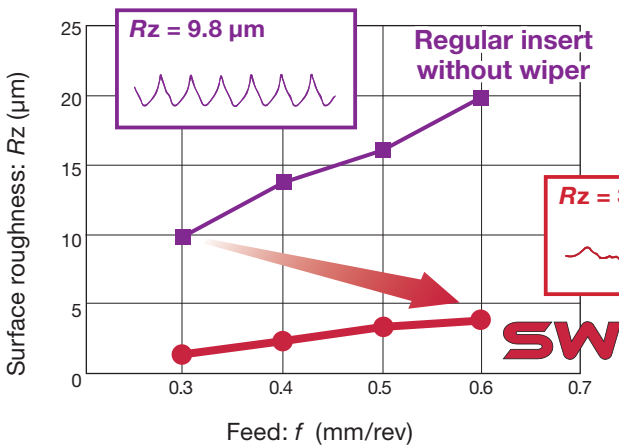
Increases feed rate and delivers excellent surface finish due to uniquely designed wiper edge in radius shape.

■ Application area and chip control



Insert	: CCMT09T308-SW
Workpiece	: C45
Cutting speed	: Vc = 150 m/min
Machining	: External turning (Continuous cutting)

## Excellent surface roughness



**Surface roughness is 50% with doubled feed rate!!**

Insert	: CNMG120408-SW
Workpiece	: S45C / C45
Cutting speed	: Vc = 250 m/min
Depth of cut	: ap = 1.0 mm
Machining	: External turning (Continuous cutting)

## Wiper edge on small-sized Eco inserts

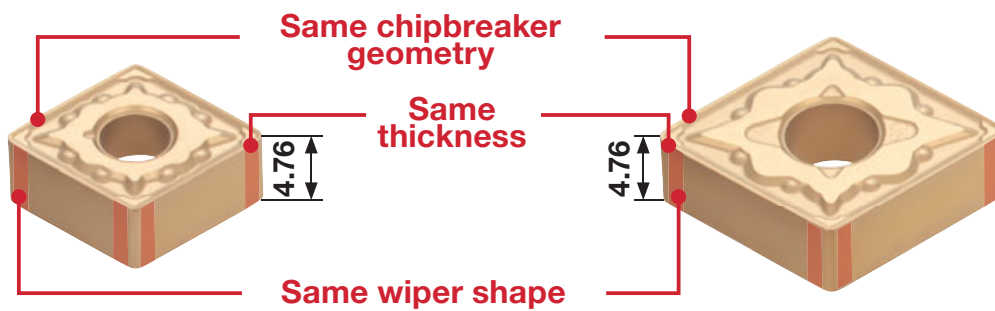


### Wiper inserts are available in EcoTurn series

Downsized inserts with the same thickness and chipbreaker geometry as regular-sized inserts.

**ISO ETURN**  
CNMG090408E type

Regular size  
CNMG120408 type



## Incredible productivity with high-pressure coolant system

Wiper insert on TungJet improves productivity and provides good surface quality in machining at high speed and feed.



Please refer to Tungaloy Report No.432 for the details of TungJet series.

## Wiper edge on 100° corner of CNMG type insert



## Toolholders for wiper inserts

Wiper edges are effective when used on specific toolholders with the appropriate angle of frontal cutting edge.

Insert shape	CNMG, WNMG CCMT	DNMG	TNMG
Cutting edge style	<p><b>L</b></p>	<p><b>J</b></p>	<p><b>F</b> <b>G</b> <b>J</b></p>

For high-feed machining, Turning A series toolholders with double-clamping system are recommended.

## Cautions in using wiper inserts

Radius shape and chamfering

- Wiper edge is not effective
- **The adjustment is required in NC program**

### Value of adjustment for corner radius

Corner radius: $r_E$ (mm)	0.4	0.8	1.2
Adjustment (mm)	0.28	0.60	0.96

- Machining of radius shape

- Chamfering



The appropriate adjustment provides the same result as standard ISO inserts.







## INSERT NEGATIVE TYPE

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting



**Triangular, 60°  
with hole**



P	Steel	●	◐																					
M	Stainless																							
K	Cast iron	●	◐																					
N	Non-ferrous																							
S	Superalloys																							
H	Hard materials																							

Application	Chipbreaker	Designation	Corner radius	T9115	Coating																					
Finishing (Wiper)		<b>FW</b>	TNMG110404E-FW	0.4	●																					
			TNMG110408E-FW	0.8	●																					
			TNMG160404-FW	0.4	●																					
			TNMG160408-FW	0.8	●																					
Finishing to medium cutting (Wiper)		<b>SW</b>	TNMG110408E-SW	0.8	●																					
			TNMG110412E-SW	1.2	●																					
			TNMG160408-SW	0.8	●																					
			TNMG160412-SW	1.2	●																					



**Trigon, 80°  
with hole**

P	Steel	●	◐	◐	◐	✱							●	◐											
M	Stainless																								
K	Cast iron	●	◐	◐			●	◐	◐				●	◐											
N	Non-ferrous																								
S	Superalloys																								
H	Hard materials																								

Application	Chipbreaker	Designation	Corner radius	Coating					GT9530	NS9530										
				T9105	T9115	T9125	T515	T5115												
Finishing (Wiper)		<b>FW</b>	WNMG060404E-FW	0.4	●	●	●			●	●									
			WNMG060408E-FW	0.8	●	●	●			●	●									
			WNMG080404-FW	0.4		●	●			●	●									
			WNMG080408-FW	0.8	●	●	●			●	●									
Finishing to medium cutting (Wiper)		<b>SW</b>	WNMG060408E-SW	0.8	●	●	●		●											
			WNMG060412E-SW	1.2	●	●	●		●											
			WNMG080408-SW	0.8	●	●	●	●	●											
			WNMG080412-SW	1.2		●	●	●	●											

● : Line-up

## INSERT POSITIVE TYPE

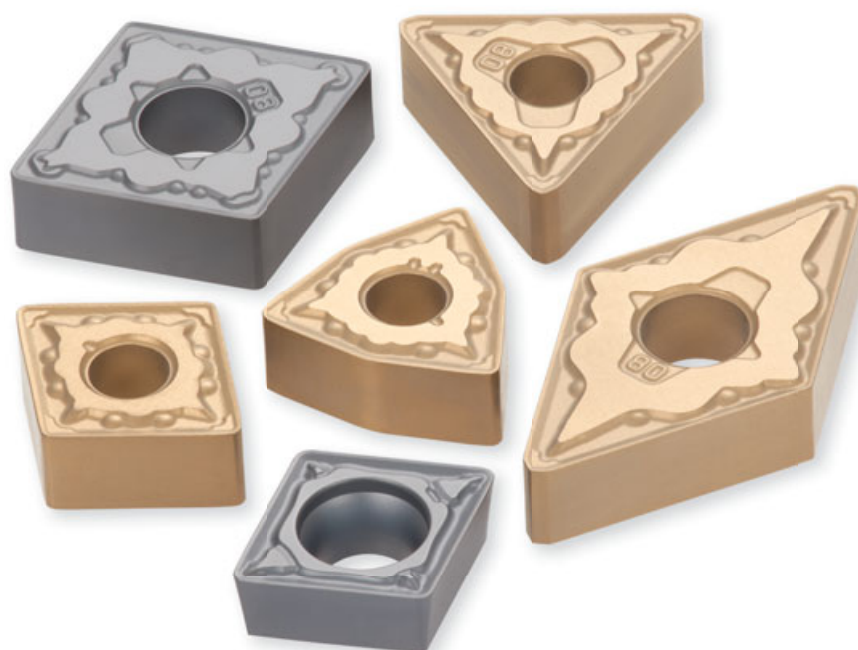


Rhombic, 80°  
with hole  
Positive 7°

	P	M	K	N	S	H
Steel	●●●*					
Stainless		●●●				
Cast iron	●●					
Non-ferrous				●●●		
Superalloys					●●●	
Hard materials						●●●

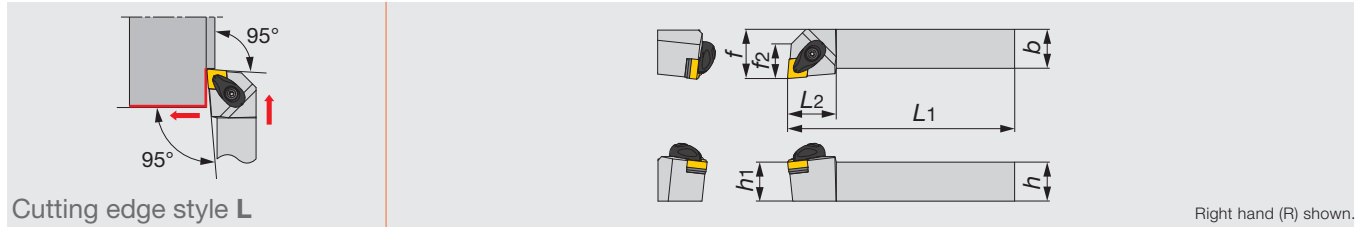
Application	Chipbreaker	Designation	Corner radius	Coating						Coated cermet		Cermet		
				T9115	T9125							NS9530		
				●	●							●		
Finishing to medium cutting (Wiper)	SW	CCMT060204-SW	0.4	●	●							●		
		CCMT060208-SW	0.8	●	●							●		
		CCMT09T304-SW	0.4	●	●							●		
		CCMT09T308-SW	0.8	●	●							●		

● : Line-up



## ACLNR/L

Double-clamp toolholder with 95° approach angle, for negative 80° rhombic inserts



Right hand (R) shown.

Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	f <sub>2</sub>	r <sub>ε</sub> **	Insert	Torque*
ACLNR/L2020K0904-A	20	20	125	25	20	25	18	0.8	CN**0904...	3
ACLNR/L2525M0904-A	25	25	150	25	25	32	18	0.8	CN**0904...	3
ACLNR/L2020K12-A	20	20	125	26	20	25	19	0.8	CN**1204...	3
ACLNR/L2525M12-A	25	25	150	30	25	32	21	0.8	CN**1204...	3
ACLNR/L3225P12-A	32	25	170	30	32	32	21	0.8	CN**1204...	3

\*Torque: Recommended torque (N·m) for clamping

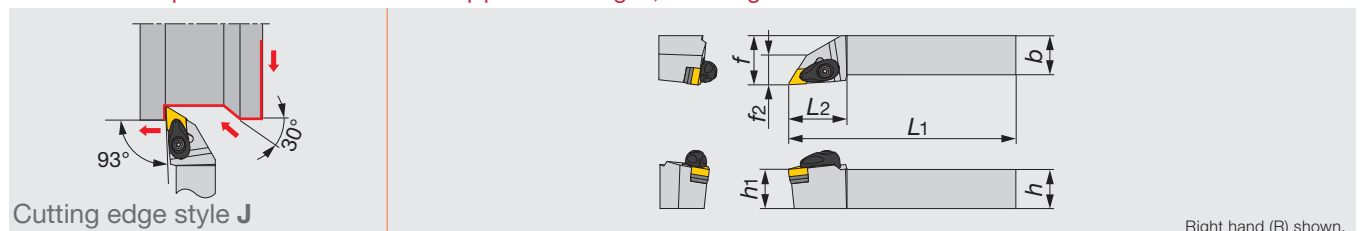
\*\*r<sub>ε</sub>: Standard corner radius

### SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench	Wrench
ACLNR/L**0904-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASC322	CSTB-3.5	T-15F	-
ACLNR/L**12-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASC422	CSTB-3.5	T-15F	-

## ADJNR/L

Double-clamp toolholder with 93° approach angle, for negative 55° rhombic



Right hand (R) shown.

Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	f <sub>2</sub>	r <sub>ε</sub> **	Insert	Torque*
ADJNR/L2020K1104-A	20	20	125	30	20	25	16	0.8	DN**1104...	3
ADJNR/L2525M1104-A	25	25	150	30	25	32	19	0.8	DN**1104...	3
ADJNR/L2020K15-A	20	20	125	36	20	25	17	0.8	DN**1504...	3
ADJNR/L2020K1506-A	20	20	125	36	20	25	17	0.8	DN**1506...	3
ADJNR/L2525M15-A	25	25	150	36	25	32	18	0.8	DN**1504...	3
ADJNR/L2525M1506-A	25	25	150	36	25	32	18	0.8	DN**1506...	3
ADJNR/L3225P15-A	32	25	170	36	32	32	18	0.8	DN**1504...	3

\*Torque: Recommended torque (N·m) for clamping

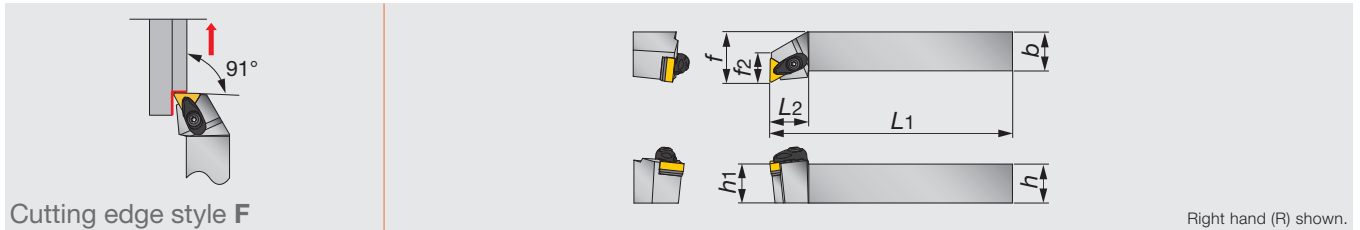
\*\*r<sub>ε</sub>: Standard corner radius

### SPARE PARTS

Designation	Clamp	Clamping screw	Spring	Spring pin	Shim	Coolant screw	Wrench
ADJNR/L**1104-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASD322	CSTB-3.5	T-15F
ADJNR/L**15-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F
ADJNR/L**1506-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD423	CSTB-3.5	T-15F

## ATFNR/L

Double-clamp toolholder for facing with 91° approach angle, negative triangle inserts



Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	f <sub>2</sub>	r <sub>e</sub> **	Insert	Torque*
ATFNR/L2020K16-A	20	20	125	25	20	25	18	0.8	TN**1604...	3
ATFNR/L2525M16-A	25	25	150	25	25	32	19	0.8	TN**1604...	3

\*Torque: Recommended torque (N·m) for clamping

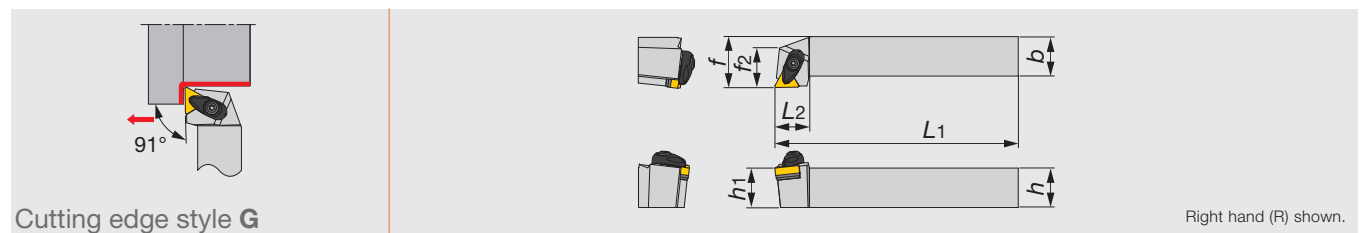
\*\*r<sub>e</sub>: Standard corner radius

### SPARE PARTS

Designation	Clamp	Clamping screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATFNR/L**16-A	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

## ATGNR/L

Double-clamp toolholder with 91° approach angle, for negative triangle inserts



Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	f <sub>2</sub>	r <sub>e</sub> **	Insert	Torque*
ATGNR/L2020K16-A	20	20	125	22	20	25	22	0.8	TN**1604...	3
ATGNR/L2525M16-A	25	25	150	22	25	32	25	0.8	TN**1604...	3

\*Torque: Recommended torque (N·m) for clamping

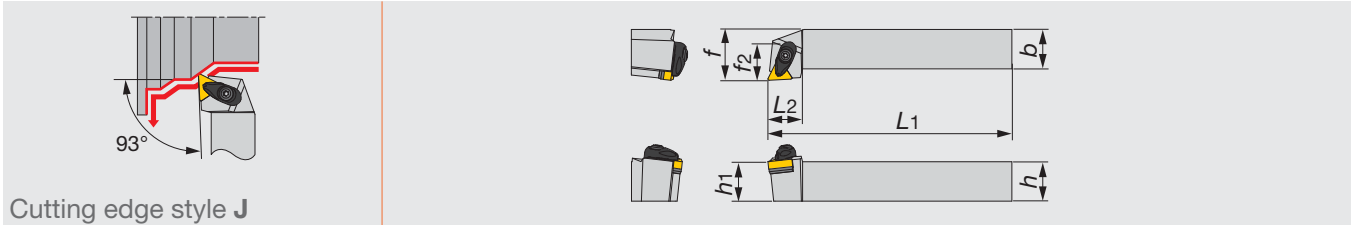
\*\*r<sub>e</sub>: Standard corner radius

### SPARE PARTS

Designation	Clamp	Clamping screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATGNR/L**16-A	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

## ATJNR/L

Double-clamp toolholder with 93° approach angle, for negative triangle inserts



Cutting edge style J

Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	f <sub>2</sub>	r <sub>c</sub> **	Insert	Torque*
ATJNR/L2020K16-A	20	20	125	22	20	25	23	0.8	TN**1604...	3
ATJNR/L2525M16-A	25	25	150	22	25	32	25	0.8	TN**1604...	3

\*Torque: Recommended torque (N·m) for clamping

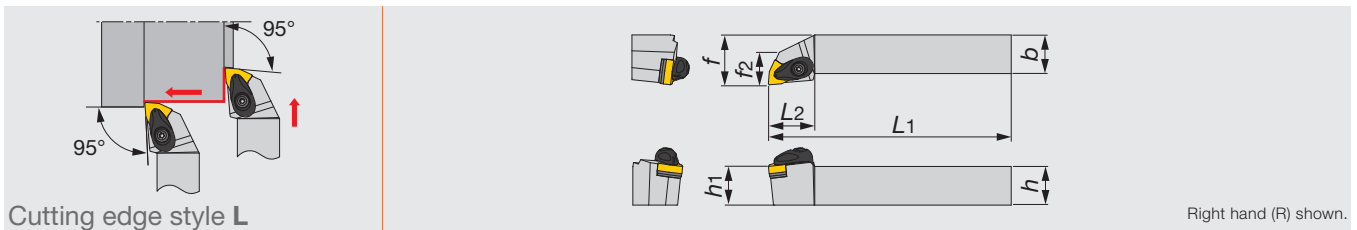
\*\*r<sub>c</sub>: Standard corner radius

### SPARE PARTS

Designation	Clamp	Clamping screw	Spring	Spring pin	Shim	Coolant screw	Wrench
ATJNR/L**16-A	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

## AWLNR/L

Double-clamp toolholder with 95° approach angle, for negative trigon inserts



Cutting edge style L

Right hand (R) shown.

Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	f <sub>2</sub>	r <sub>c</sub> **	Insert	Torque*
AWLNR/L2020K0604-A	20	20	125	27	20	25	16	0.8	WN**0604...	3
AWLNR/L2525M0604-A	25	25	150	27	25	32	23	0.8	WN**0604...	3
AWLNR/L2020K08-A	20	20	125	30	20	25	19	0.8	WN**0804...	3
AWLNR/L2525M08-A	25	25	150	30	25	32	21	0.8	WN**0804...	3
AWLNR/L3225P08-A	32	25	170	30	32	32	21	0.8	WN**0804...	3

\*Torque: Recommended torque (N·m) for clamping

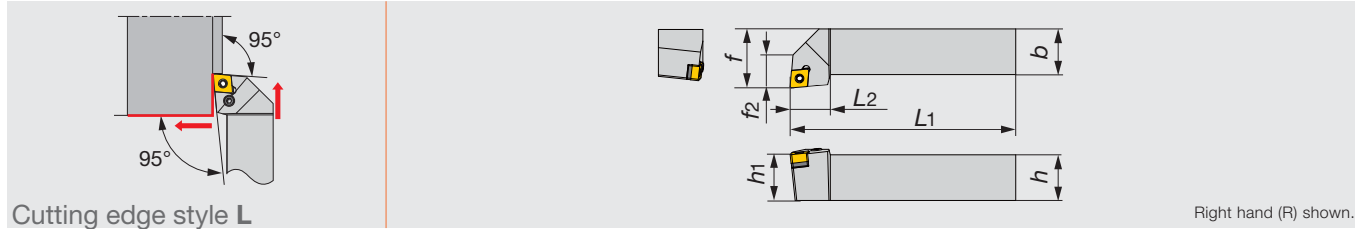
\*\*r<sub>c</sub>: Standard corner radius

### SPARE PARTS

Designation	Clamp	Clamping screw	Spring	Spring pin	Shim	Shim screw	Wrench
AWLNR/L**0604-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F
AWLNR/L**08-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASW422	CSTB-3.5	T-15F

## PCLNR/L






Lever lock type toolholder with 95° approach angle, for negative 80° rhombic



Right hand (R) shown.

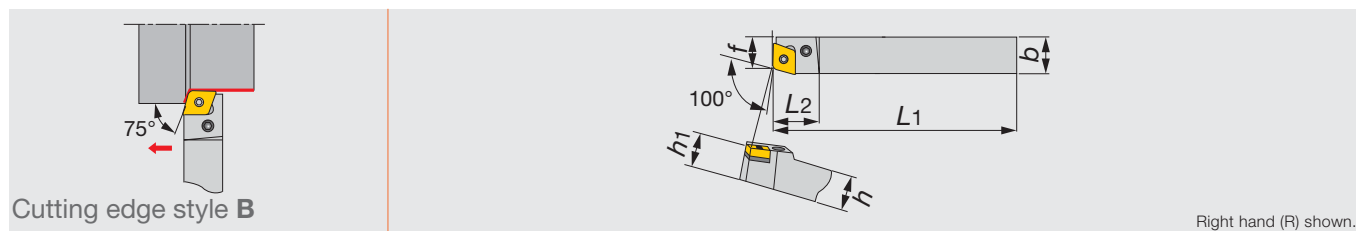
Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	f <sub>2</sub>	r <sub>c</sub> **	Insert	*Torque
PCLNR/L2020K0904	20	20	125	20	20	25	15	0.8	CN**0904...	2
PCLNR/L2525M0904	25	25	150	25	25	32	18	0.8	CN**0904...	2
PCLNR/L1616	16	16	100	26	16	20	—	0.8	CN**1204...	3
PCLNR/L2020	20	20	125	28	20	25	18	0.8	CN**1204...	3
PCLNR/L2525M4	25	25	150	28	25	32	18	0.8	CN**1204...	3
PCLNR/L3225P4	32	25	170	28	32	32	18	0.8	CN**1204...	3

\*Torque: Recommended torque (N·m) for clamping    \*\*r<sub>c</sub>: Standard corner radius

SPARE PARTS					
Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCLNR/L**0904	LSC317	LCS3	P-2.5	LSP3	LCL33
PCLNR/L1616	LSC42	LCS4CA	P-3	LSP4	LCL4
PCLNR/L2020	LSC42	LCS4	P-3	LSP4	LCL4
PCLNR/L2525M4	LSC42	LCS4	P-3	LSP4	LCL4
PCLNR/L3225P4	LSC42	LCS4	P-3	LSP4	LCL4

## PCBNR/L






Lever lock type toolholder with 75° approach angle, for negative 80° rhombic inserts



Right hand (R) shown.

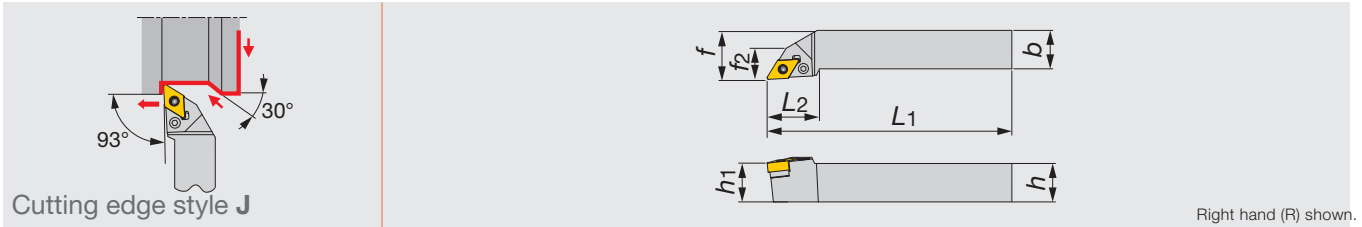
Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	r <sub>c</sub> **	Insert
PCBNR/L2525	25	25	150	28	25	22	0.8	CN**1204...

Note: 100° corners are used  
\*\*r<sub>c</sub>: Standard corner radius

SPARE PARTS					
Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCBNR/L2525	LSC42	LCS4	P-3	LSP4	LCL4

## PDJNR/L

Lever lock type toolholder with 93° approach angle, for negative 55° rhombic inserts



Right hand (R) shown.

Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	f <sub>2</sub>	r <sub>e</sub> **	Insert	Torque*
PDJNR/L1616H1104	16	16	100	27	16	20	16	0.8	DN**1104...	2
PDJNR/L2020K1104	20	20	125	27	20	25	16	0.8	DN**1104...	2
PDJNR/L2525M1104	25	25	150	27	25	32	19	0.8	DN**1104...	2
PDJNR/L2020	20	20	125	34	20	25	19	0.8	DN**1504...	3
PDJNR2020K15E	20	20	125	36	20	25	-	0.8	DN**1506...	3
PDJNR/L2520	25	20	150	34	25	25	19	0.8	DN**1504...	3
PDJNR/L2525	25	25	150	34	25	32	19	0.8	DN**1504...	3
PDJNR/L2525M15E	25	25	150	36	25	32	-	0.8	DN**1506...	3
PDJNR/L3225	32	25	170	32	32	32	19	0.8	DN**1504...	3
PDJNR3225P15E	32	25	170	36	32	34	-	0.8	DN**1506...	3

\*Torque: Recommended torque (N·m) for clamping

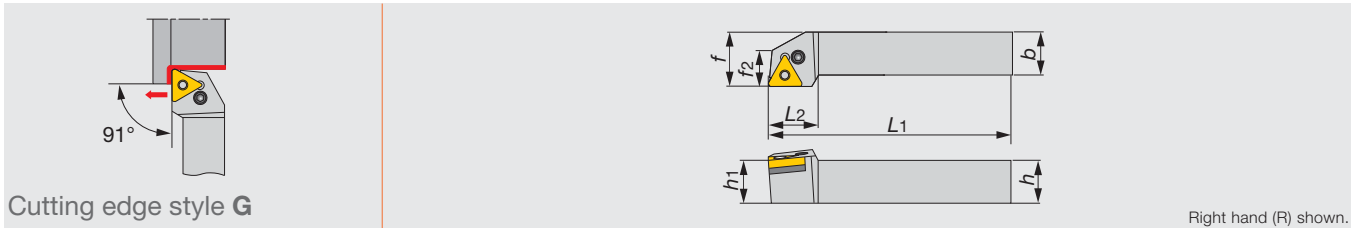
\*\*r<sub>e</sub>: Standard corner radius

### SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDJNR/L**1104	ELSD32	LCS3	P-2.5	LSP3	LCL33L
PDJNR/L2020	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR2020K15E	ELSD42	ELCS4	P-3	LSP4S	LCL44
PDJNR/L2520	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR/L2525	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR/L2525M15E	ELSD42	ELCS4	P-3	LSP4S	LCL44
PDJNR/L3225	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR3225P15E	ELSD42	ELCS4	P-3	LSP4S	LCL44

## PTGNR/L

Lever lock type toolholder with 91° approach angle, for negative triangle inserts



Cutting edge style G

Right hand (R) shown.

Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	f <sub>2</sub>	r <sub>e</sub> **	Insert	Torque*
PTGNR/L2020K1104	20	20	125	20	20	25	15	0.8	TN**1104...	2
PTGNR/L2525M1104	25	25	150	20	25	32	22.5	0.8	TN**1104...	2
PTGNR/L1616	16	16	100	22	16	20	16	0.8	TN**1604...	2
PTGNR/L2020	20	20	125	22	20	25	16	0.8	TN**1604...	2
PTGNR/L2525M3	25	25	150	22	25	32	21	0.8	TN**1604...	2

\*Torque: Recommended torque (N·m) for clamping

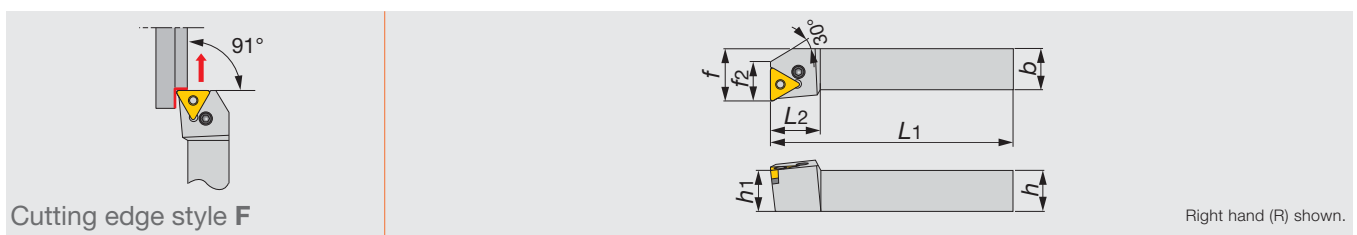
\*\*r<sub>e</sub>: Standard corner radius

### SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PTGNR/L**1104	-	LCS23A	P-2.5	-	LCL23
PTGNR/L1616, 2020	LST317	LCS3	P-2.5	LSP3	LCL3
PTGNR/L2525M3	LST317	LCS3	P-2.5	LSP3	LCL3

## PTFNR/L

Lever lock type toolholder for facing with 91° approach angle, negative triangle inserts



Cutting edge style F

Right hand (R) shown.

Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	f <sub>2</sub>	r <sub>e</sub> **	Insert	Torque*
PTFNR/L2020K1104	20	20	125	16	20	25	16	0.8	TN**1104...	2
PTFNR/L2525M1104	25	25	150	22	25	32	20	0.8	TN**1104...	2
PTFNR/L1616	16	16	100	22	16	20	16	0.8	TN**1604...	2
PTFNR/L2020	20	20	125	22	20	25	16	0.8	TN**1604...	2
PTFNR/L2525M3	25	25	150	22	25	32	20	0.8	TN**1604...	2

\*Torque: Recommended torque (N·m) for clamping

\*\*r<sub>e</sub>: Standard corner radius

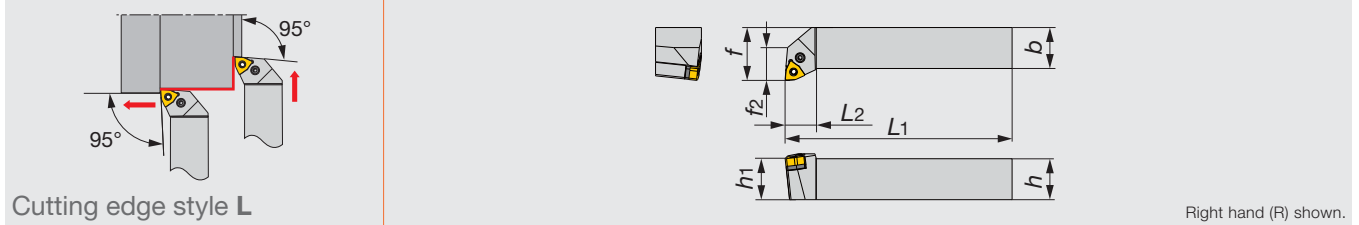
### SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PTFNR/L**1104	-	LCS23A	P-2.5	-	LCL23
PTFNR/L1616, 2020	LST317	LCS3	P-2.5	LSP3	LCL3
PTFNR/L2525M3	LST317	LCS3	P-2.5	LSP3	LCL3



## PWLNLR/L-Eco

Lever lock type toolholder with 95° approach angle, for negative 80° trigon



Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	f <sub>2</sub>	r <sub>c</sub> **	Insert	Torque*
PWLNLR/L2020K0604	20	20	125	15	20	25	18	0.8	WN**0604...	2
PWLNLR/L2525M0604	25	25	150	19	25	32	20	0.8	WN**0604...	2

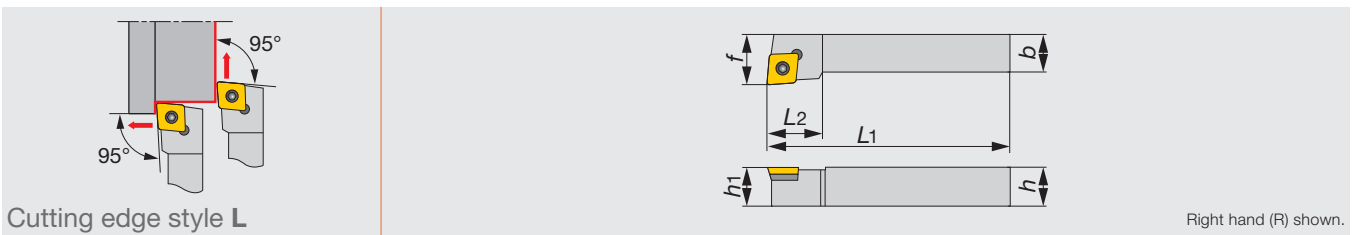
\*Torque: Recommended torque (N·m) for clamping      \*\*r<sub>c</sub>: Standard corner radius

### SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PWLNLR/L**0604	LSW312	LCS3	P-2.5	LSP3	LCL3

## SCLCR/L

Screw-on clamp toolholder with 95° approach angle, for positive 80° rhombic inserts



Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	r <sub>c</sub> **	Insert
SCLCR/L1616H09	16	16	100	16	16	20	0.8	CC**09T3...

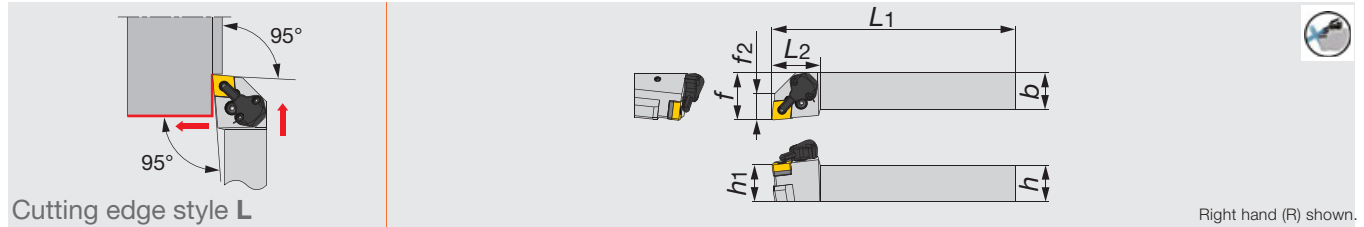
\*\*r<sub>c</sub>: Standard corner radius

### SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SCLCR/L1616H09	CSTB-3.5L	DTS5-3.5	SSC32	P-3.5	T-15F

## PCLNR/L-CHP

Lever lock type toolholder with 95° approach angle, for negative 80° rhombic inserts with channels for high pressure coolant



Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	f <sub>2</sub>	r <sub>e</sub> **	Insert	Torque*
PCLNR/L2020K0904-CHP	20	20	125	33	20	32	18	0.8	CN**0904...	2
PCLNR/L2525M0904-CHP	25	25	150	33	25	32	18	0.8	CN**0904...	2
PCLNR/L2020K12-CHP	20	20	125	33	20	32	18	0.8	CN**1204...	3
PCLNR/L2525M12-CHP	25	25	150	33	25	32	18	0.8	CN**1204...	3

\*Torque: Recommended torque (N-m) for clamping

\*\*r<sub>e</sub>: Standard corner radius

### SPARE PARTS

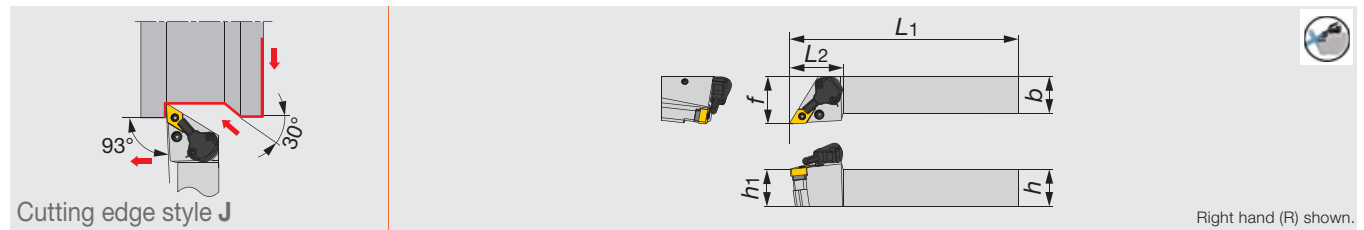
Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCLNR/L**0904-CHP	LSC317	LCS3	P-2.5	LSP3	LCL33
PCLNR/L**12-CHP	LSC42	LCS4	P-3	LSP4	LCL4

### SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PCLNR/L**0904-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2
PCLNR/L**12-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

## PDJNR/L-CHP

Lever lock type toolholder with 93° approach angle, for negative 55° rhombic inserts, with channels for high pressure coolant



Designation	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f	r <sub>e</sub> **	Insert	Torque*
PDJNR/L2020K1104-CHP	20	20	125	36	20	32	0.8	DN**1104...	2
PDJNR/L2525M1104-CHP	25	25	150	36	25	32	0.8	DN**1104...	2
PDJNR/L2020K15-CHP	20	20	125	36	20	32	0.8	DN**1504...	3
PDJNR/L2525M15-CHP	25	25	150	36	25	32	0.8	DN**1504...	3

\*Torque: Recommended torque (N-m) for clamping \*\*r<sub>e</sub>: Standard corner radius

### SPARE PARTS

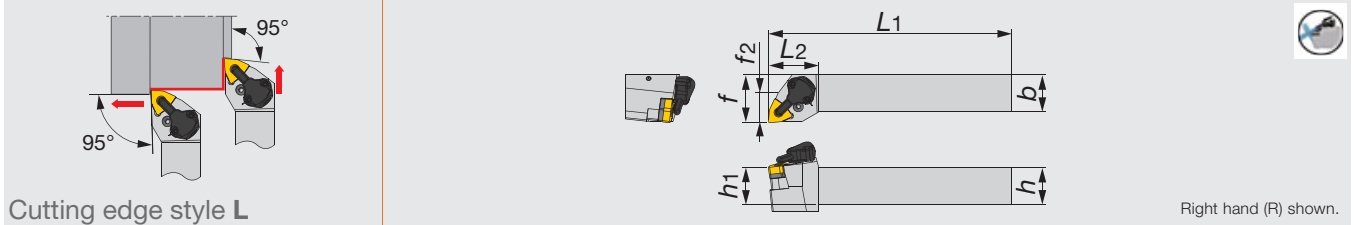
Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDJNR/L**1104-CHP	ELSD32	LCS3	P-2.5	LSP3	LCL33L
PDJNR/L**15-CHP	LSD43A	LCS4	P-3	LSP4	LCL4

### SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PDJNR/L**1104-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2
PDJNR/L**15-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

## PWLNLR/L-CHP

Lever lock toolholders – 95° approach angle.  
For negative 80° trigon insert. High-pressure coolant capability.








Designation	<i>h</i>	<i>b</i>	<i>L</i> <sub>1</sub>	<i>L</i> <sub>2</sub>	<i>h</i> <sub>1</sub>	<i>f</i>	<i>f</i> <sub>2</sub>	<i>r</i> <sub>e</sub> **	Insert	*Torque
PWLNLR/L2020K0604-CHP	20	20	125	34	20	32	20	0.8	WN**0604...	2
PWLNLR/L2525M0604-CHP	25	25	150	34	25	32	20	0.8	WN**0604...	2
PWLNLR/L2020K08-CHP	20	20	125	34	20	32	20	0.8	WN**0804...	3
PWLNLR/L2525K08-CHP	25	25	150	34	25	32	20	0.8	WN**0804...	3







\*Torque: Recommended torque (N·m) for clamping

\*\**r*<sub>e</sub>: Standard corner radius

### SPARE PARTS

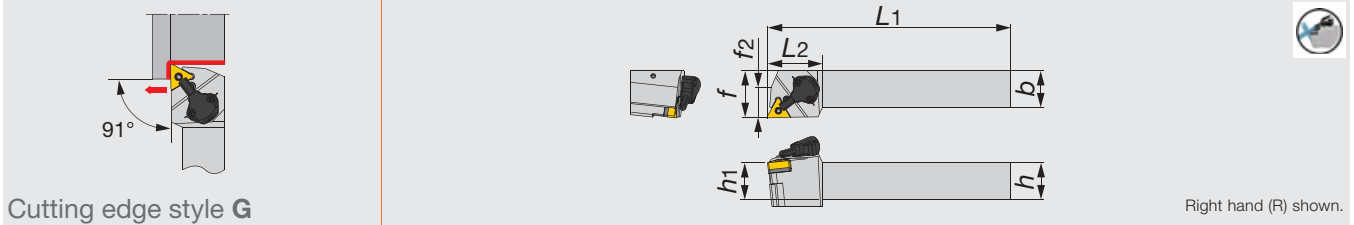
Designation					
Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PWLNLR/L**0604-CHP	LSW312	LCS3	P-2.5	LSP3	LCL3
PWLNLR/L**08-CHP	LSW42	LCS4	P-2.5	LSP4	LCL4

### SPARE PARTS

Designation						
Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PWLNLR/L**0604-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2
PWLNLR/L**08-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

## PTGNR/L-CHP

Lever lock toolholders – 91° approach angle.  
For negative triangle insert. High-pressure coolant capability.



Cutting edge style **G**

Right hand (R) shown.

Designation	<i>h</i>	<i>b</i>	<i>L</i> <sub>1</sub>	<i>L</i> <sub>2</sub>	<i>h</i> <sub>1</sub>	<i>f</i>	<i>f</i> <sub>2</sub>	<i>r</i> <sub>c</sub> **	Insert	*Torque
PTGNR/L2020K1104-CHP	20	20	125	38	20	32	21	0.8	TN**1104...	2
PTGNR/L2525M1104-CHP	25	25	150	38	25	32	21	0.8	TN**1104...	2
PTGNR/L2020K16-CHP	20	20	125	38	20	32	21	0.8	TN**1604...	2
PTGNR/L2525M16-CHP	25	25	150	38	25	32	21	0.8	TN**1604...	2

\*Torque: Recommended torque (N·m) for clamping

\*\**r*<sub>c</sub>: Standard corner radius

### SPARE PARTS

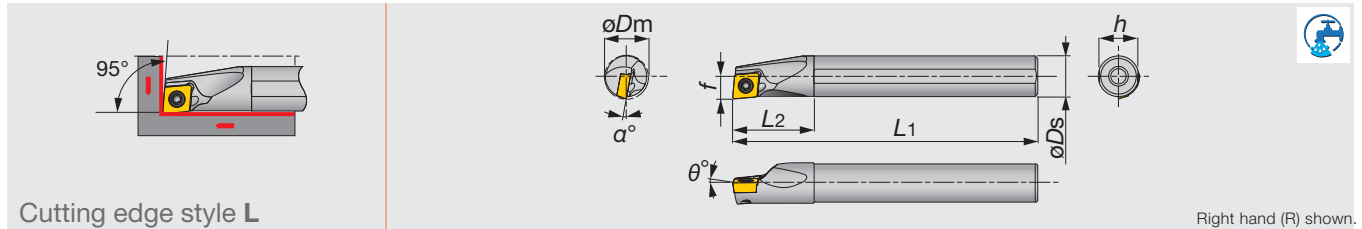
Designation					
Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PTGNR/L**1104-CHP	-	LCS23A	P-2.5	LSP3	LCL23
PTGNR/L**16-CHP	LST317	LCS3	P-2.5	LSP3	LCL3

### SPARE PARTS

Designation						
Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PTGNR/L**1104-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2
PTGNR/L**16-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

## A/E-SCLCR/L

Screw-on boring bars for posi 80° rhombic insert with 7° clearance



Cutting edge style L

Right hand (R) shown.

Designation	Material	$\phi D_m$	$\phi D_s$	$f$	$L_1$	$L_2$	$h$	$\theta^\circ$	$\alpha^\circ$	$r_{e^{**}}$	Insert	Torque-
A08H-SCLCR/L06-D100	STEEL	10	8	5.5	100	16	7.5	0	-13	0.4	CC**0602...	1.2
A10F-SCLCR06-D120	STEEL	12	10	6	80	20	9	0	-10	0.4	CC**0602...	1.2
A10K-SCLCR/L06-D120	STEEL	12	10	6	125	20	9	0	-10	0.4	CC**0602...	1.2
A12H-SCLCR06-D140	STEEL	14	12	7	100	24	11	0	-8	0.4	CC**0602...	1.2
A12M-SCLCR/L06-D140	STEEL	14	12	7	150	24	11	0	-8	0.4	CC**0602...	1.2
A12H-SCLCR06-D160	STEEL	16	12	9	100	24	11	0	-7	0.4	CC**0602...	1.2
A12M-SCLCR/L06-D160	STEEL	16	12	9	150	24	11	0	-7	0.4	CC**0602...	1.2
A16K-SCLCR09-D180	STEEL	18	16	9	125	32	15	0	-9	0.8	CC**09T3...	3
A16Q-SCLCR/L09-D180	STEEL	18	16	9	180	32	15	0	-10	0.8	CC**09T3...	3
A16K-SCLCR09-D200	STEEL	20	16	11	125	32	15	0	-9	0.8	CC**09T3...	3
A16Q-SCLCR/L09-D200	STEEL	20	16	11	180	32	15	0	-9	0.8	CC**09T3...	3
A20R-SCLCR/L09-D220	STEEL	22	20	11	200	32	18	0	-8	0.8	CC**09T3...	3
A25S-SCLCR/L09-D270	STEEL	27	25	13.5	250	45	23	0	-6	0.8	CC**09T3...	3
E08G-SCLCR06-D100	CARBIDE	10	8	5.5	90	22	7.5	0	-13	0.4	CC**0602...	1.2
E08K-SCLCR/L06-D100	CARBIDE	10	8	5.5	125	22	7.5	0	-13	0.4	CC**0602...	1.2
E10F-SCLCR06-D120	CARBIDE	12	10	6	80	25	9	0	-10	0.4	CC**0602...	1.2
E10H-SCLCR06-D120	CARBIDE	12	10	6	100	25	9	0	-10	0.4	CC**0602...	1.2
E10M-SCLCR/L06-D120	CARBIDE	12	10	6	150	25	9	0	-10	0.4	CC**0602...	1.2
E12G-SCLCR06-D140	CARBIDE	14	12	7	90	27	11	0	-8	0.4	CC**0602...	1.2
E12J-SCLCR06-D140	CARBIDE	14	12	7	110	27	11	0	-8	0.4	CC**0602...	1.2
E12Q-SCLCR/L06-D140	CARBIDE	14	12	7	180	27	11	0	-8	0.4	CC**0602...	1.2
E12G-SCLCR06-D160	CARBIDE	16	12	9	90	27	11	0	-7	0.4	CC**0602...	1.2
E12J-SCLCR06-D160	CARBIDE	16	12	9	110	27	11	0	-7	0.4	CC**0602...	1.2
E12Q-SCLCR/L06-D160	CARBIDE	16	12	9	180	27	11	0	-7	0.4	CC**0602...	1.2
E16H-SCLCR09-D180	CARBIDE	18	16	9	100	32	15	0	-10	0.8	CC**09T3...	3
E16L-SCLCR09-D180	CARBIDE	18	16	9	130	32	15	0	-10	0.8	CC**09T3...	3
E16R-SCLCR/L09-D180	CARBIDE	18	16	9	200	32	15	0	-10	0.8	CC**09T3...	3
E16H-SCLCR09-D200	CARBIDE	20	16	11	100	32	15	0	-9	0.8	CC**09T3...	3
E16L-SCLCR09-D200	CARBIDE	20	16	11	130	32	15	0	-9	0.8	CC**09T3...	3
E16R-SCLCR/L09-D200	CARBIDE	20	16	11	200	32	15	0	-9	0.8	CC**09T3...	3
E20S-SCLCR09-D220	CARBIDE	22	20	11	250	36	18	0	-8	0.8	CC**09T3...	3
E25T-SCLCR09-D270	CARBIDE	27	25	13.5	300	45	23	0	-6	0.8	CC**09T3...	3

\*Torque: Recommended torque (Nm) for clamping \*\* $r_e$ : Standard corner radius

Note: When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SCLCL\*\* type), and the left hand insert (L) is used for the right hand toolholders (SCLCR\*\* type).

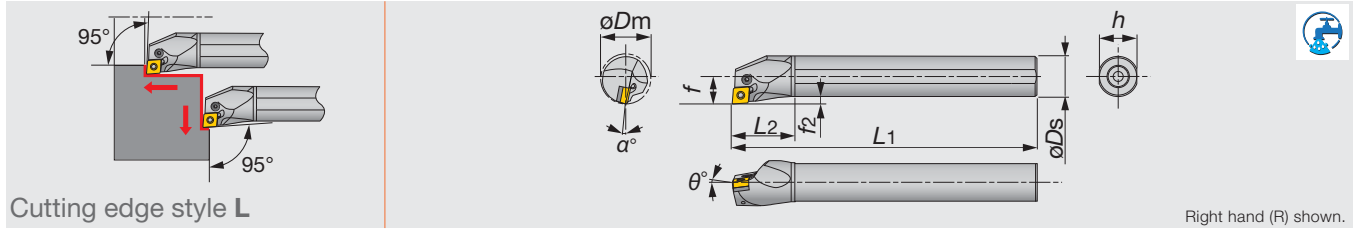
### SPARE PARTS



Designation	Clamping screw	Wrench
A**-SCLCR/L03-D...	CSTA-1.6	T-6F
A**-SCLCR/L04-D...	CSTB-2	T-6F
A**-SCLCR/L06-D...	CSTB-2.5S	T-8F
A**-SCLCR/L09-D...	CSTB-4S	T-15F
E**-SCLCR/L03-D...	CSTA-1.6	T-6F
E**-SCLCR/L04-D...	CSTB-2	T-6F
E**-SCLCR/L06-D...	CSTB-2.5S	T-8F
E16*-SCLCR/L09-D...	CSTB-4L060	T-15F
E2**-SCLCR/L09-D...	CSTB-4S	T-15F

## A-PCLNR/L

Lever-lock boring bars for negative 80° rhombic insert



Designation	Material	$\varnothing D_m$	$\varnothing D_s$	$f$	$L_1$	$L_2$	$h$	$f_2$	$\theta^\circ$	$\alpha^\circ$	$r_{e^{**}}$	Insert	Torque
A16M-PCLNR/L0904-D200	STEEL	20	16	11	150	32	15	3	-6	-16	0.8	CN**0904...	1.7
A20Q-PCLNR/L0904-D250	STEEL	25	20	13	180	36	18	3	-6	-12	0.8	CN**0904...	1.7
A25R-PCLNR/L12-D320	STEEL	32	25	17	200	45	23	4.5	-6	-13	0.8	CN**1204...	2.7
A32S-PCLNR/L12-D400	STEEL	40	32	22	250	50	30	6	-6	-11	0.8	CN**1204...	4.8
A40T-PCLNR/L12-D500	STEEL	50	40	27	300	60	37	7	-6	-10	0.8	CN**1204...	4.8
A50U-PCLNR/L12-D630	STEEL	63	50	35	350	65	47	10	-6	-8	0.8	CN**1204...	4.8

\*Torque: Recommended torque (Nm) for clamping \*\* $r_e$ : Standard corner radius

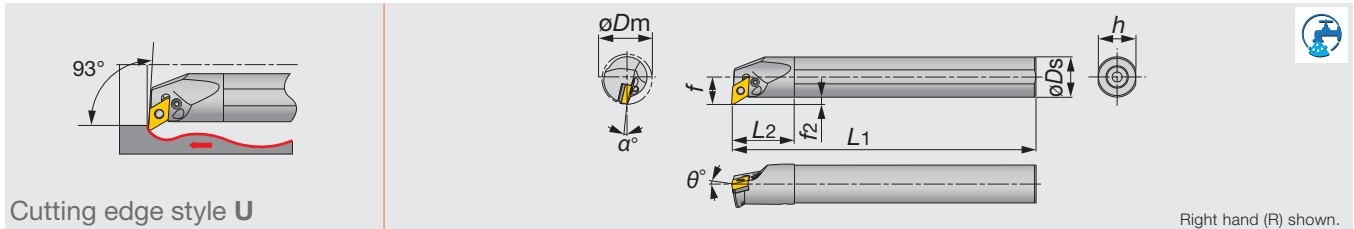
Note: When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (PCLNL \*\* type), and the left hand insert (L) is used for the right hand toolholders (PCLNR \*\* type).

### SPARE PARTS

Designation	Shim	Clamping screw1	Clamping screw2	Wrench2	Wrench2	Spring pin	Lever	Oil supply attachment	Screw for oil hole
A16M-PCLNR/L0904-D200	-	LCS33	-	P-2F	-	-	LCL33N	-	SSHM3-4
A20Q-PCLNR/L0904-D250	-	LCS33	-	P-2F	-	-	LCL33N	EA20	SSHM3-4
A25R-PCLNR/L12-D320	-	LCS43	-	-	P-2.5	-	LCL43N	-	-
A32S-PCLNR12-D400	LSC42BR	-	LCS4	-	P-3	LSP4	LCL4	-	-
A40T-PCLNR12-D500	LSC42BR	-	LCS4	-	P-3	LSP4	LCL4	-	-
A50U-PCLNR12-D630	LSC42BR	-	LCS4	-	P-3	LSP4	LCL4	-	-

## A-PDUNR/L

Lever-lock boring bars for negative 55° rhombic insert



Right hand (R) shown.

Designation	Material	$\phi D_m$	$\phi D_s$	$f$	$L_1$	$L_2$	$h$	$f_2$	$\theta^\circ$	$\alpha^\circ$	$r_{e^{**}}$	Insert	Torque*
A20Q-PDUNR/L1104-D250	STEEL	25	20	13	180	36	18	3	-6	-14	0.8	DN**1104...	1.7
A32S-PDUNR/L15-D400	STEEL	40	32	22	250	50	30	6	-6	-13	0.8	DN**1504...	4.8
A40T-PDUNR/L15-D500	STEEL	50	40	27	300	60	37	7	-6	-10	0.8	DN**1504...	4.8
A50U-PDUNR/L15-D630	STEEL	63	50	35	350	65	47	10	-6	-8	0.8	DN**1504...	4.8
A32S-PDUNR/L1506-D400	STEEL	40	32	22	250	50	30	6	-6	-13	0.8	DN**1506...	4.8
A40T-PDUNR/L1506-D500	STEEL	50	40	27	300	60	37	7	-6	-11	0.8	DN**1506...	4.8
A50U-PDUNR/L1506-D630	STEEL	63	50	35	350	65	47	10	-6	-10	0.8	DN**1506...	4.8

\*Torque: Recommended torque (Nm) for clamping

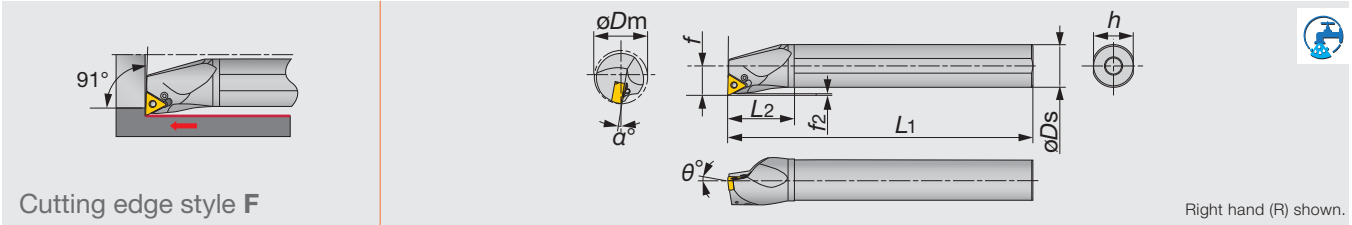
\*\* $r_e$ : Standard corner radius

### SPARE PARTS

Designation	Shim	Clamping screw1	Clamping screw2	Wrench2	Wrench2	Spring pin	Lever	Oil supply attachment	Screw for oil hole
A20Q-PDUNR/L1104-D250	-	-	LCS22A	P-2F	-	-	LCL33NL	EA20	SSHM2.5-3
A32S-PDUNR/L15-D400	LSD42BR/L	-	LCS4	-	P-3	LSP4	LCL4	EA-32	SSHM5-6
A40T-PDUNR/L15-D500	LSD42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PDUNR/L15-D630	LSD42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A32S-PDUNR/L1506-D400	ELSD42	-	ELCS4	-	P-3	LSP4S	LCL44	EA-20	SSHM5-6
A40T-PDUNR/L1506-D500	ELSD42	-	ELCS4	-	P-3	LSP4S	LCL44	-	SSHM6-6
A50U-PDUNR/L1506-D630	ELSD42	-	ELCS4	-	P-3	LSP4S	LCL44	-	SSHM6-6

## A-PTFNR/L

### Lever-lock boring bars for negative triangle insert



Cutting edge style F

Right hand (R) shown.

Designation	Material	$\varnothing D_m$	$\varnothing D_s$	$f$	$L_1$	$L_2$	$h$	$f_2$	$\theta^\circ$	$\alpha^\circ$	$r_{c^{**}}$	Insert	Torque
A25R-PTFNR/L1104-D320	STEEL	32	25	17	200	45	23	1.31	-6	-12	0.8	TN**1104...	2
A32S-PTFNR/L1104-D400	STEEL	40	32	22	250	50	30	1.25	-6	-10	0.8	TN**1104...	2
A25R-PTFNR/L16-D320	STEEL	32	25	17	200	45	23	1.2	-6	-12	0.8	TN**1604...	2.7
A32S-PTFNR/L16-D400	STEEL	40	32	22	250	50	30	1.1	-6	-10	0.8	TN**1604...	2.7
A40T-PTFNR/L16-D500	STEEL	50	40	27	300	60	37	1.1	-6	-10	0.8	TN**1604...	2.7
A50U-PTFNR/L16-D630	STEEL	63	50	35	350	65	47	1.1	-6	-8	0.8	TN**1604...	2.7

\*Torque: Recommended torque (Nm) for clamping \*\* $r_c$ : Standard corner radius

Note: The insert hole conforms to the ISO standard.

Tool holder length may be different to the ISO standard.

When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (PTUNL \*\* type), and the left hand insert (L) is used for the right hand toolholders (PTUNR \*\* type).

### SPARE PARTS

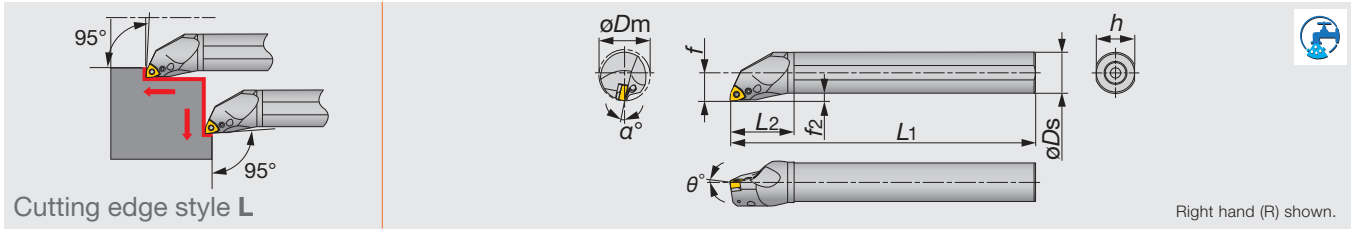


Designation	Shim	Clamping screw1	Clamping screw2	Wrench	Spring pin	Lever	Oil supply attachment	Screw for oil hole
A**-PTFNR/L1104-D...	-	LCS23A	-	P-2.5	-	LCL23	-	-
A25R-PTFNR/L16-D320	ELST317BR/L	-	LCS3	P-2.5	LSP3	LCL33	EA-25	SSHM4-5
A32S-PTFNR/L16-D400	LST317BR/L	-	LCS3	P-2.5	LSP3	LCL3	EA-32	SSHM4-5
A40T-PTFNR/L16-D500	LST317BR/L	-	LCS3	P-2.5	LSP3	LCL3	-	SSHM6-6
A50U-PTFNR/L16-D630	LST317BR/L	-	LCS3	P-2.5	LSP3	LCL3	-	SSHM6-6



## A-PWLNRL

### Lever-lock boring bars for negative trigon insert



Right hand (R) shown.

Designation	Material	$\phi D_m$	$\phi D_s$	$f$	$L_1$	$L_2$	$h$	$f_2$	$\theta^\circ$	$\alpha^\circ$	$r_c^{**}$	Insert	Torque
A16M-PWLNRL/L0604-D200	STEEL	20	16	11	150	32	15	3	-8	-17	0.8	WN**0604...	1.7
A20Q-PWLNRL/L0604-D250	STEEL	25	20	13	180	36	18	3	-6	-14	0.8	WN**0604...	1.7
A25R-PWLNRL/L06-D320	STEEL	32	25	17	200	45	23	4.5	-6	-12	0.8	WN**0604...	2.7
A32S-PWLNRL/L06-D400	STEEL	40	32	22	250	50	30	6	-6	-11	0.8	WN**0604...	2.7
A40T-PWLNRL/L08-D500	STEEL	50	40	27	300	60	37	7	-6	-10	0.8	WN**0804...	4.8

\*Torque: Recommended torque (Nm) for clamping

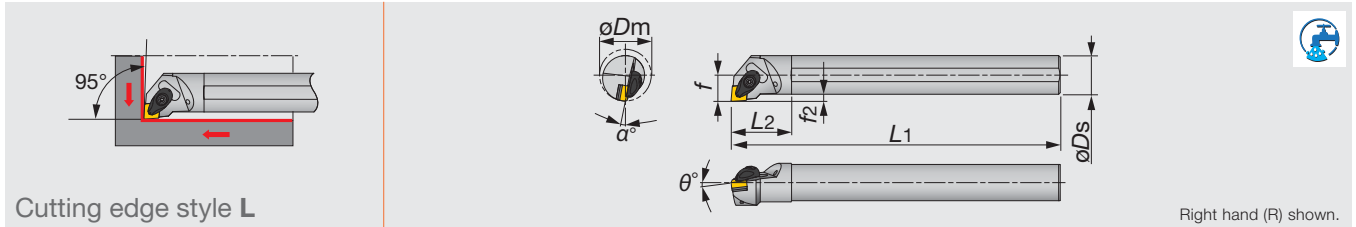
\*\* $r_c$ : Standard corner radius

### SPARE PARTS

Designation	Shim	Clamping screw1	Clamping screw2	Wrench2	Wrench2	Spring pin	Lever	Oil supply attachment	Screw for oil hole
A16M-PWLNRL/L0604-D200	-	LCS33	-	P-2F	-	-	LCL33N	-	SSHM3-4
A20Q-PWLNRL/L0604-D250	-	LCS33	-	P-2F	-	-	LCL33N	EA20	SSHM3-4
A25R-PWLNRL/L06-D320	LSW312BR/L	-	LCS3B	-	P-2.5	LSP3	LCL3	EA-25	SSHM4-5
A32S-PWLNRL/L06-D400	LSW312BR/L	-	LCS3	-	P-2.5	LSP3	LCL3	EA-32	SSHM4-5
A40T-PWLNRL/L08-D500	LSW42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM4-5

## A-ACLNR/L

Double-clamp boring bar, for negative 80° rhombic insert



Right hand (R) shown.

Designation	Material	$\varnothing D_m$	$\varnothing D_s$	$f$	$L_1$	$L_2$	$h$	$f_2$	$\theta^\circ$	$\alpha^\circ$	$r_{\epsilon}$ **	Insert	Torque
A25R-ACLNR/L0904-D320	STEEL	32	25	17	200	45	23	4.5	-6	-13	0.8	CN**0904...	3
A32S-ACLNR/L0904-D400	STEEL	40	32	22	250	50	30	6	-6	-10	0.8	CN**0904...	3
A25R-ACLNR/L12-D320	STEEL	32	25	17	200	45	23	4.5	-6	-13	0.8	CN**1204...	3
A32S-ACLNR/L12-D400	STEEL	40	32	22	250	50	30	6	-6	-10	0.8	CN**1204...	3
A40T-ACLNR/L12-D500	STEEL	50	40	27	300	55	37	7	-6	-8	0.8	CN**1204...	3
A50U-ACLNR12-D630	STEEL	63	50	35	350	65	47	10	-6	-7	0.8	CN**1204...	3

\*Torque: Recommended torque (Nm) for clamping

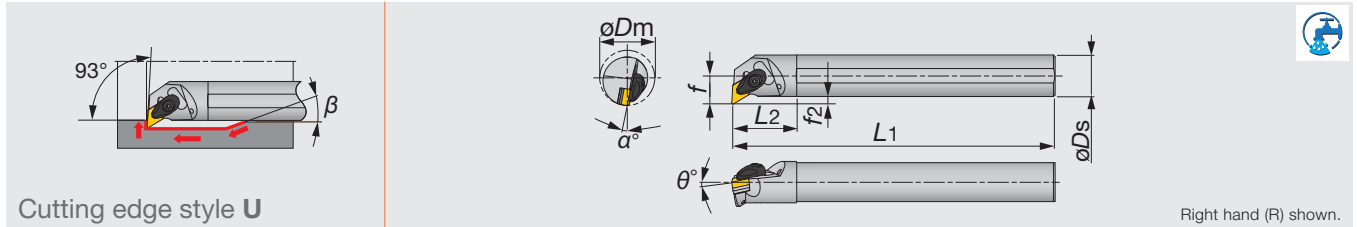
\*\* $r_{\epsilon}$ : Standard corner radius

### SPARE PARTS

Designation	Clamp	Clamping screw	Spring	Spring pin	Shim	Coolant screw	Wrench
A**-ACLNR/L0904...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASC322	CSTB-3.5	T-15F
A**-ACLNR/L12...	ACP4S	ACS-5W	BP-7	SP-2.5	ASC422	CSTB-3.5	T-15F

## A-ADUNR/L

Double-clamp boring bar, for negative 55° rhombic inserts



Right hand (R) shown.

Designation	Material	$\phi D_m$	$\phi D_s$	$f$	$L_1$	$L_2$	$h$	$f_2$	$\theta^\circ$	$\alpha^\circ$	$\beta$	$r_{e^{**}}$	Insert	Torque
A25R-ADUNR/L1104-D320	STEEL	32	25	17	200	45	23	4.5	-6	-13	-	0.8	DN**1104...	3
A32S-ADUNR/L1104-D400	STEEL	40	32	22	250	50	30	6	-6	-11	-	0.8	DN**1104...	3
A25R-ADUNR/L15-D320	STEEL	32	25	17	200	45	23	4.5	-6	-13	30	0.8	DN**1504...	3
A32S-ADUNR/L15-D400	STEEL	40	32	22	250	50	30	6	-6	-11	20	0.8	DN**1504...	3
A40T-ADUNR15-D500	STEEL	50	40	27	300	55	37	7	-6	-8	15	0.8	DN**1504...	3
A50U-ADUNR15-D630	STEEL	63	50	35	350	65	47	10	-6	-7	15	0.8	DN**1504...	3
A25R-ADUNR/L1506-D320	STEEL	32	25	17	200	45	23	4.5	-6	-13	15	0.8	DN**1506...	3
A32S-ADUNR/L1506-D400	STEEL	40	32	22	250	50	30	6	-6	-11	20	0.8	DN**1506...	3

\*Torque: Recommended torque (Nm) for clamping

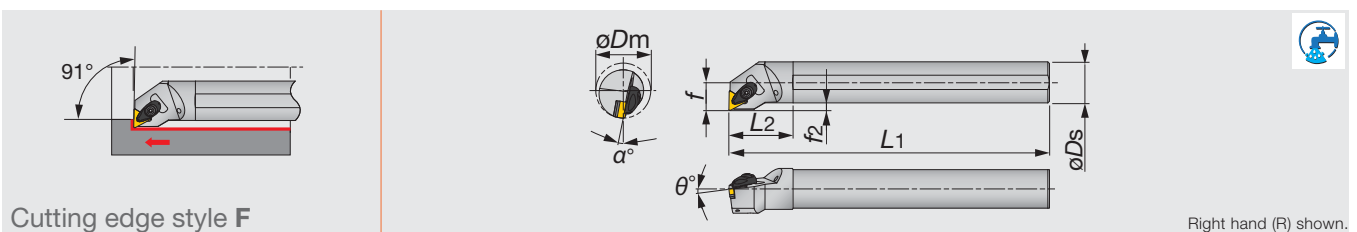
\*\* $r_e$ : Standard corner radius

### SPARE PARTS

Designation	Clamp	Clamping screw	Spring	Spring pin	Shim	Coolant screw	Wrench
A**-ADUNR/L...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASD322	CSTB-3.5	T-15F
A**-ADUNR/L15...	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F
A**-ADUNR/L1506...	ACP4S	ACS-5W	BP-7	SP-2.5	ASD423	CSTB-3.5	T-15F

## A-ATFNR/L

Double-clamp boring bar, for negative triangle insert



Right hand (R) shown.

Designation	Material	$\phi D_m$	$\phi D_s$	$f$	$L_1$	$L_2$	$h$	$f_2$	$\theta^\circ$	$\alpha^\circ$	$r_{e^{**}}$	Insert	Torque
A25R-ATFNR/L16-D320	STEEL	32	25	17	200	45	23	4.5	-6	-13	0.8	TN**1604...	3
A32S-ATFNR/L16-D400	STEEL	40	32	22	250	50	30	6	-6	-10	0.8	TN**1604...	3

\*Torque: Recommended torque (Nm) for clamping

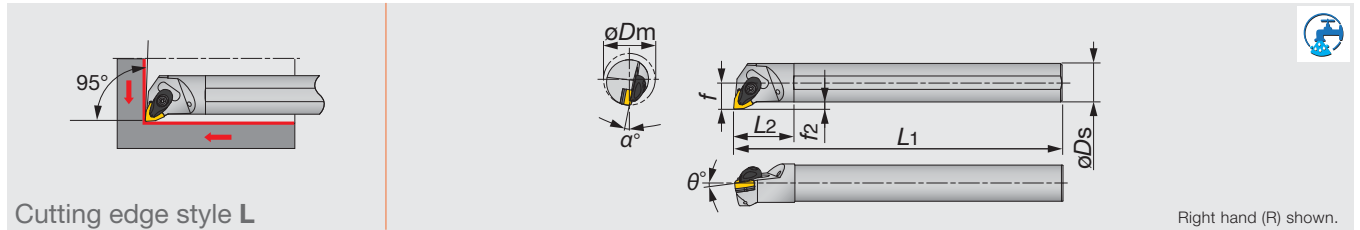
\*\* $r_e$ : Standard corner radius

### SPARE PARTS

Designation	Clamp	Clamping screw	Spring	Spring pin	Shim	Coolant screw	Wrench
A**-ATFNR/L16...	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

## A-AWLNR/L

Double-clamp boring bar, for negative trigon insert



Cutting edge style L

Right hand (R) shown.

Designation	Material	$\varnothing D_m$	$\varnothing D_s$	$f$	$L_1$	$L_2$	$h$	$f_2$	$\theta^\circ$	$\alpha^\circ$	$r_e^{**}$	Insert	Torque
A25R-AWLNR/L0604-D320	STEEL	32	25	17	200	45	23	4.5	-6	-13	0.8	WN**0604...	3
A32S-AWLNR/L0604-D400	STEEL	40	32	22	250	50	30	6	-6	-10	0.8	WN**0604...	3
A25R-AWLNR/L08-D320	STEEL	32	25	17	200	45	23	4.5	-6	-13	0.8	WN**0804...	3
A32S-AWLNR/L08-D400	STEEL	40	32	22	250	50	30	6	-6	-10	0.8	WN**0804...	3
A40T-AWLNR/L08-D500	STEEL	50	40	27	300	55	37	7	-6	-8	0.8	WN**0804...	3
A50U-AWLNR/L08-D630	STEEL	63	50	35	350	65	47	10	-6	-7	0.8	WN**0804...	3

\*Torque: Recommended torque (Nm) for clamping

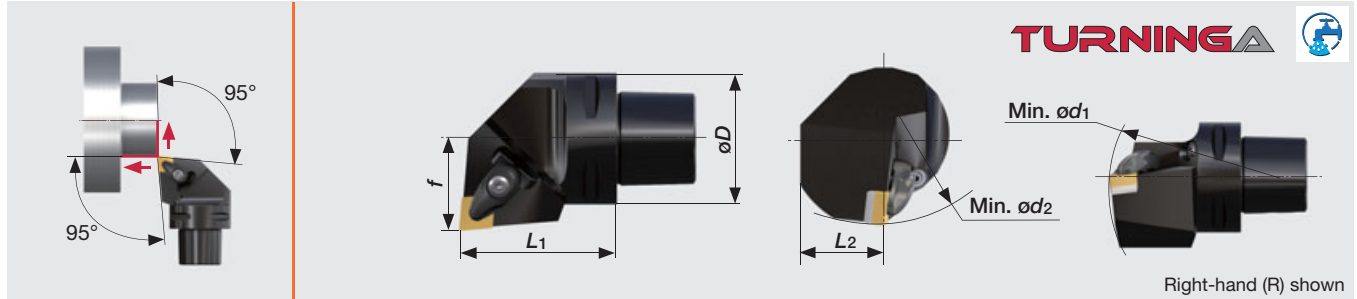
\*\* $r_e$ : Standard corner radius

### SPARE PARTS

Designation	Clamp	Clamping screw	Spring	Spring pin	Shim	Coolant screw	Wrench
A**-AWLNR/L0604...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F
A**-AWLNR/L08...	ACP4S	ACS-5W	BP-7	SP-2.5	ASW422	CSTB-3.5	T-15F

## C-ACLNR/L

Turning A double-clamping toolholder with 95° approach angle, for negative 80° rhombic inserts

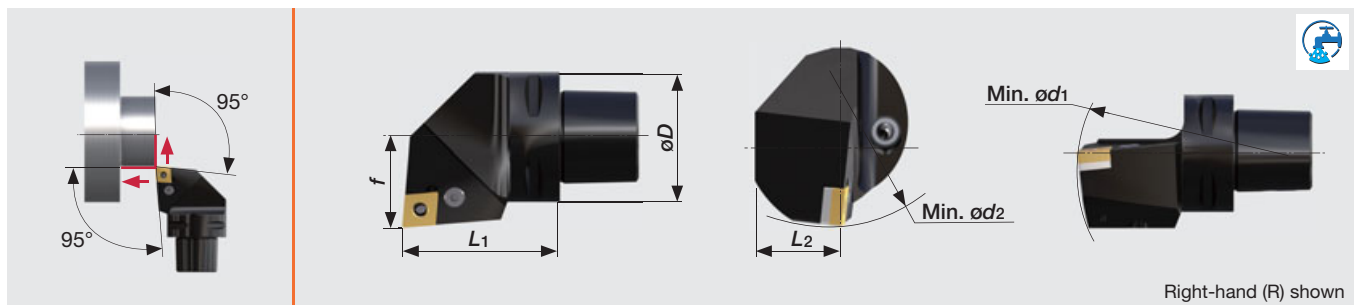


Designation	øD	L <sub>1</sub>	L <sub>2</sub>	f	ød <sub>1</sub>	ød <sub>2</sub>	r <sub>e</sub>	Insert
C4ACLNR/L27050-0904N	40	50	25	27	140	110	0.8	CN**0904...
C4ACLNR/L27050-12N	40	50	25	27	140	110	0.8	CN**1204...
C5ACLNR/L35060-12N	50	60	32	35	165	110	0.8	CN**1204...
C6ACLNR/L45065-12N	63	65	41	45	190	125	0.8	CN**1204...
C6ACLNR/L45065-0904N	63	65	35	45	190	110	0.8	CN**0904...

Applicable for 7 MPa pressure coolant

## C-PCLNR/L

Lever lock type toolholder with 95° approach angle, for negative 80° rhombic inserts



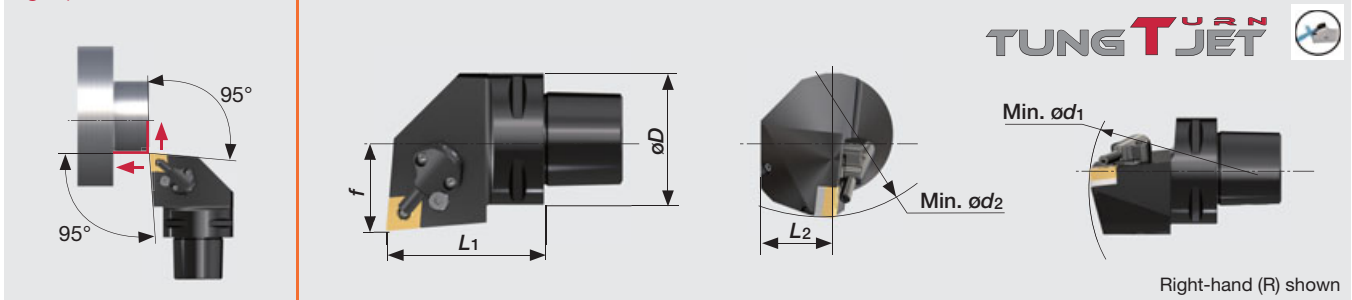
Designation	øD	L <sub>1</sub>	L <sub>2</sub>	f	ød <sub>1</sub>	ød <sub>2</sub>	r <sub>e</sub>	Insert
C5PCLNR/L35060-12 <sup>(1)</sup>	50	60	32	35	-	-	0.8	CN**1204...
C5PCLNR/L35060-12N <sup>(2)</sup>	50	60	32	35	165	110	0.8	CN**1204...
C6PCLNR/L45065-12N <sup>(2)</sup>	63	65	41	45	190	125	0.8	CN**1204...

(1) Applicable for 3 MPa pressure coolant (2) Applicable for 7 MPa pressure coolant

"-" in Min ød<sub>1</sub> and ød<sub>2</sub>: not suitable for internal boring

## C-PCLNR/L-CHP

Lever lock type toolholder with 95° approach angle, for negative 80° rhombic inserts, with channels for high pressure coolant

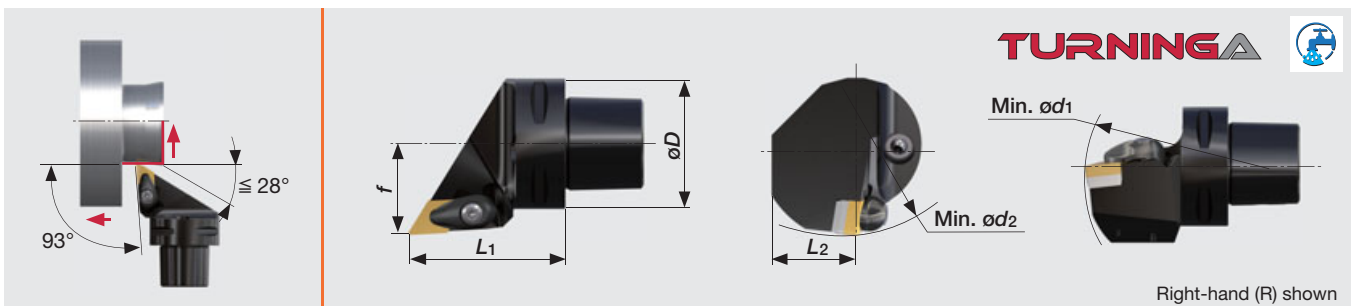


Designation	$\varnothing D$	$L_1$	$L_2$	$f$	$\varnothing d_1$	$\varnothing d_2$	$r_e$	Insert
C4PCLNR/L27050-0904-CHP	40	50	25	27	140	110	0.8	CN**0904...
C4PCLNR/L27050-12-CHP	40	50	25	27	140	110	0.8	CN**1204...
C5PCLNR/L35060-12-CHP	50	60	30	35	165	110	0.8	CN**1204...
C6PCLNR/L45065-0904-CHP	63	65	35	45	190	110	0.8	CN**0904...
C6PCLNR/L45065-12-CHP	63	65	35	45	190	110	0.8	CN**1204...

Applicable for 14 MPa pressure coolant

## C-ADJNR/L

Turning A double-clamping toolholder with 93° approach angle, for negative 55° rhombic inserts



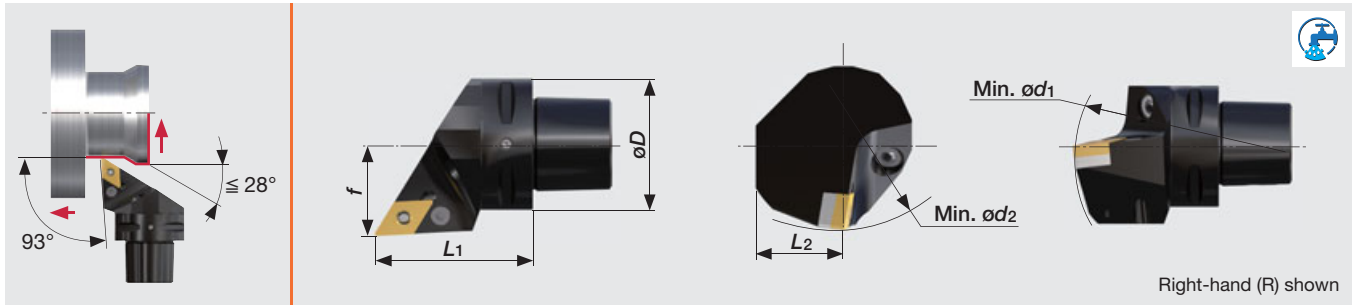
Designation	$\varnothing D$	$L_1$	$L_2$	$f$	$\varnothing d_1$	$\varnothing d_2$	$r_e$	Insert
C4ADJNR/L27050-1104N <sup>(2)</sup>	40	50	25	27	145	110	0.8	DN**1104...
C4ADJNR/L27050-15N <sup>(2)</sup>	40	50	25	27	145	110	0.8	DN**1504...
C5ADJNR/L35060-15N <sup>(2)</sup>	50	60	32	35	165	110	0.8	DN**1504...
C6ADJNR/L45065-1104N <sup>(2)</sup>	63	65	35	45	190	110	0.8	DN**1104...
C6ADJNR/L45065-15N <sup>(2)</sup>	63	65	41	45	190	110	0.8	DN**1504...
C6ADJNR/L45135-15N <sup>(2)</sup>	63	65	41	45	190	110	0.8	DN**1504...
C6ADJNR/L45135-15N <sup>(2)</sup>	63	135	41	45	190	110	0.8	DN**1504...

(1) Applicable for 3 MPa pressure coolant (2) Applicable for 7 MPa pressure coolant

"-" in Min  $\varnothing d_1$  and  $\varnothing d_2$ : not suitable for internal boring

## C-PDJNR/L

Lever lock type toolholder with 93° approach angle, for negative 55° rhombic inserts

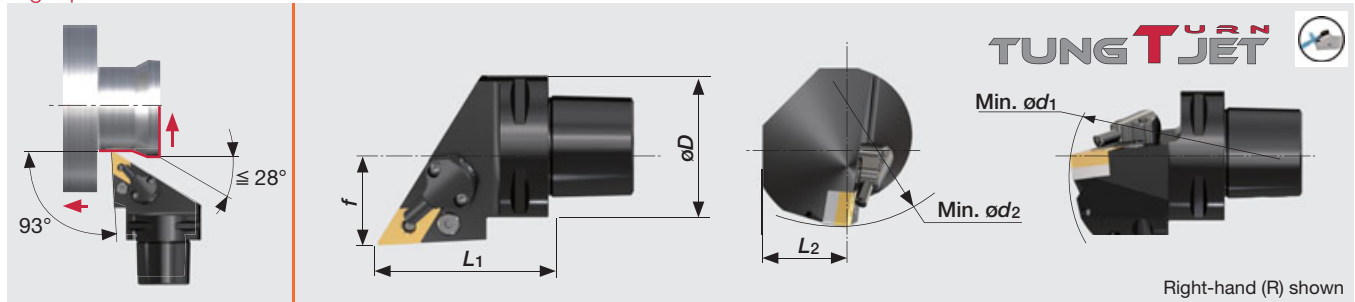


Designation	øD	L <sub>1</sub>	L <sub>2</sub>	f	ød <sub>1</sub>	ød <sub>2</sub>	r <sub>ε</sub>	Insert
C5PDJNR/L35060-15N	50	60	32	35	165	110	0.8	DN**1504...
C6PDJNR/L45065-15N	63	65	41	45	195	95	0.8	DN**1504...

Applicable for 7 MPa pressure coolant

## C-PDJNR/L-CHP

Lever lock type toolholder with TungCap connection, for negative 55° rhombic inserts, with channels for high pressure coolant

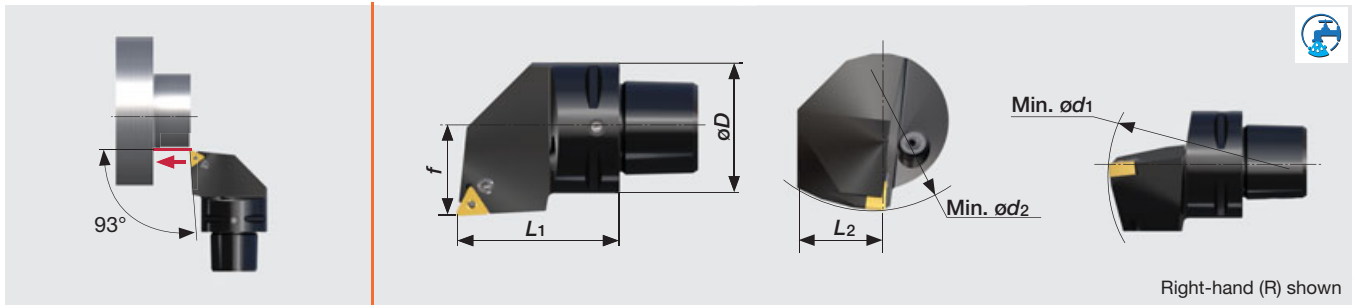


Designation	øD	L <sub>1</sub>	L <sub>2</sub>	f	ød <sub>1</sub>	ød <sub>2</sub>	r <sub>ε</sub>	Insert
C4PDJNR/L27055-1104-CHP	40	55	27	27	145	110	0.8	DN**1104...
C4PDJNR/L27055-15-CHP	40	55	27	27	145	110	0.8	DN**1504...
C5PDJNR/L35060-15-CHP	50	60	32	35	165	110	0.8	DN**1504...
C6PDJNR/L45065-1104-CHP	63	65	35	45	195	95	0.8	DN**1104...
C6PDJNR/L45065-15-CHP	63	65	35	45	190	95	0.8	DN**1504...

Applicable for 14 MPa pressure coolant

## C-PTJNR/L

Lever lock type toolholder with 93° approach angle, for negative triangle insert

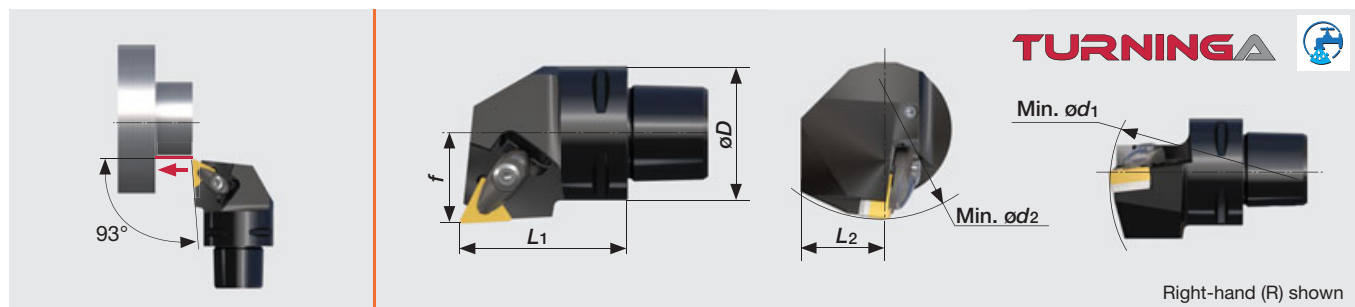


Designation	$\varnothing D$	$L_1$	$L_2$	$f$	$\varnothing d_1$	$\varnothing d_2$	$r_\epsilon$	Insert
C4PTJNR/L27050-1104N	40	50	25	27	140	110	0.8	TN**1104...

Applicable for 7 MPa pressure coolant

## C-ATJNR/L

TurningA double-clamping toolholder with 93° approach angle, for negative triangle insert



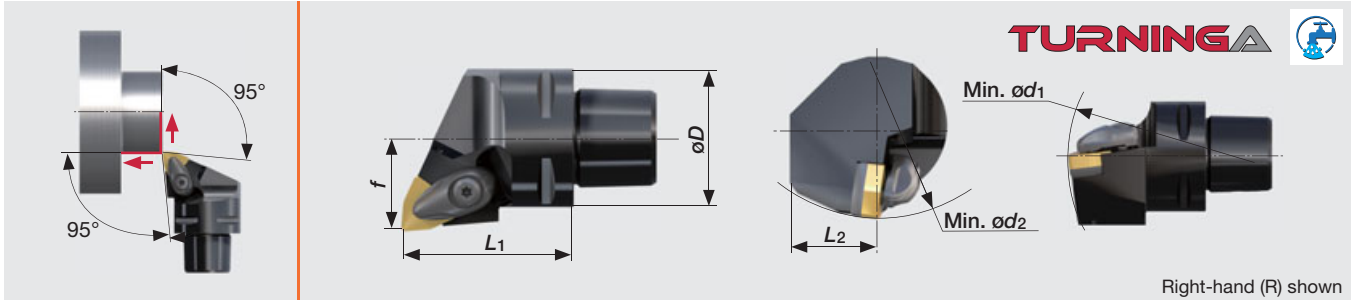
Designation	$\varnothing D$	$L_1$	$L_2$	$f$	$\varnothing d_1$	$\varnothing d_2$	$r_\epsilon$	Insert
C4ATJNR/L27050-16N	40	50	25	27	140	110	0.8	TN**1604...

Applicable for 7 MPa pressure coolant



## C-AWLNR/L

Turning A double-clamping toolholder with 95° approach angle, for negative trigon inserts



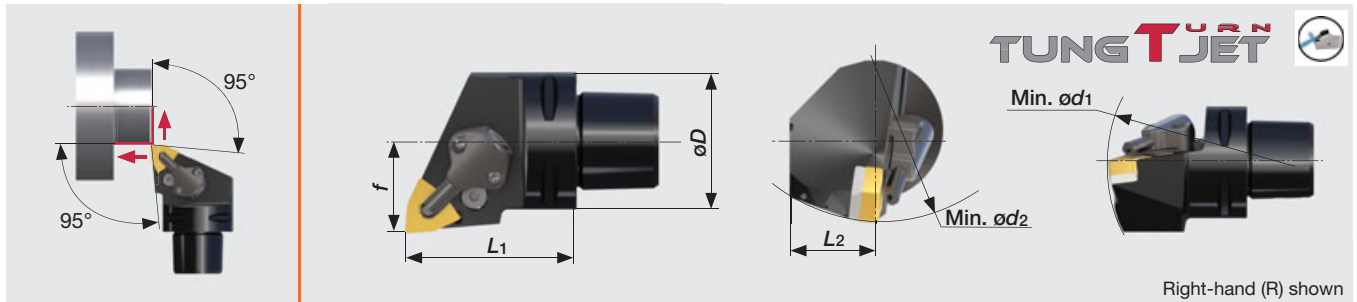
Designation	øD	L <sub>1</sub>	L <sub>2</sub>	f	ød <sub>1</sub>	ød <sub>2</sub>	r <sub>e</sub>	Insert
C4AWLNR/L27050-0604N	40	50	25	27	140	110	0.8	WN**0604...
C4AWLNR/L27050-08N	40	50	25	27	-	-	0.8	WN**0804...
C6AWLNR/L45065-08N	63	65	35	45	190	110	0.8	WN**0804...

Applicable for 7 MPa pressure coolant

"-" in Min ød<sub>1</sub> and ød<sub>2</sub>: not suitable for internal boring

## C-PWLNR/L-CHP

Lever lock type toolholder with TungCap connection, for negative inserts W 80° trigon, with channels for high pressure coolant



Designation	øD	L <sub>1</sub>	L <sub>2</sub>	f	ød <sub>1</sub>	ød <sub>2</sub>	r <sub>e</sub>	Insert
C4PWLNR/L27050-0604-CHP	40	50	25	27	140	110	0.8	WN**0604...
C4PWLNR/L27050-08-CHP	40	50	25	27	140	110	0.8	WN**0804...
C6PWLNR/L45065-08-CHP	63	65	41	45	190	110	0.8	WN**0804...

Applicable for 14 MPa pressure coolant

## SPARE PARTS FOR A-TYPE



Designation	Insert	Shim	Shim screw	Clamp	Clamping screw	Spring	Spring 1	Wrench	Coolant parts
C*ACLNR/L	CN**0904...	ASC322	CSTB-3.5	ACP3S-E	ACS-5W	BP-7	SP-2.5	T-15F	SATZ-M10X1-5
C*ACLNR/L	CN**1204...	ASC422	CSTB-3.5	ACP4S	ACS-5W	BP-7	SP-2.5	T-15F	SATZ-M10X1-5
C*ADJNR/L	DN**1104...	ASD322	CSTB-3.5	ACP3S-E	ACS-5W	BP-7	SP-2.5	T-15F	SATZ-M10X1-5
C*ADJNR/L	DN**1504...	ASD432	CSTB-3.5	ACP4S	ACS-5W	BP-7	SP-2.5	T-15F	SATZ-M10X1-5
C*ADJNR/L	DN**1506...	ASD423	CSTB-3.5	ACP4S	ACS-5W	BP-7	SP-2.5	T-15F	SATZ-M10X1-5
C4ATJNR/L	TN**1604...	AST322	CSTB-3.5	ACP3S	ACS-5W	BP-7	SP-2.5	T-15F	-
C*AWLNR/L	WN**0604...	ASW322	CSTB-3.5	ACP3S-E	ACS-5W	BP-7	SP-2.5	T-15F	-
C*AWLNR/L	WN**0804...	ASW422	CSTB-3.5	ACP4S	ACS-5W	BP-7	SP-2.5	T-15F	-

## SPARE PARTS FOR P-TYPE



Designation	Insert	Shim	Spring pin	Lever	Clamping screw	Wrench	Coolant parts
C*PCLNR/L	CN**1204...	LSC42	LSP4	LCL4	LCS4	P-3	SAZ-M8X1-M3
C*PDJNR/L	DN**1504...	LSD43A	LSP4	LCL4	LCS4	P-3	SATZ-M10X1-5
C*PDJNR/L	DN**1506...	LSD42A	LSP4S	LCL4	LCS4	P-3	SATZ-M10X1-5
C4PTJNR/L	TN**1140...	-	-	LCL23	LCS23A	P-2.5	SAZ-M8X1-M3

## SPARE PARTS FOR CHP-TYPE



Designation	Insert	Shim	Spring pin	Lever	Clamping screw	Wrench
C*PCLNR/L...0904-CHP	CN**0904...	LSC317	LSP3	LCL33	LCS3	P-2.5
C*PCLNR/L...-12-CHP	CN**1204...	LSC42	LSP4	LCL4	LCS4	P-3
C*PDJNR/L...1104-CHP	DN**1104...	ELSD32	LSP3	LCL33L	LCS3	P-2.5
C*PDJNR/L...-15-CHP	DN**1504...	LSD43A	LSP4	LCL4	LCS4	P-3
C*PDJNR/L...-15-CHP	DN**1506...	LSD42A	LSP4	LCL4	LCS4	P-3
C*PWLNR/L...0604-CHP	WN**0604...	LSW312	LSP3	LCL3	LCS3	P-2.5
C*PWLNR/L...-08-CHP	WN**0804...	LSW42BL	LSP4	LCL4	LCS4	P-3

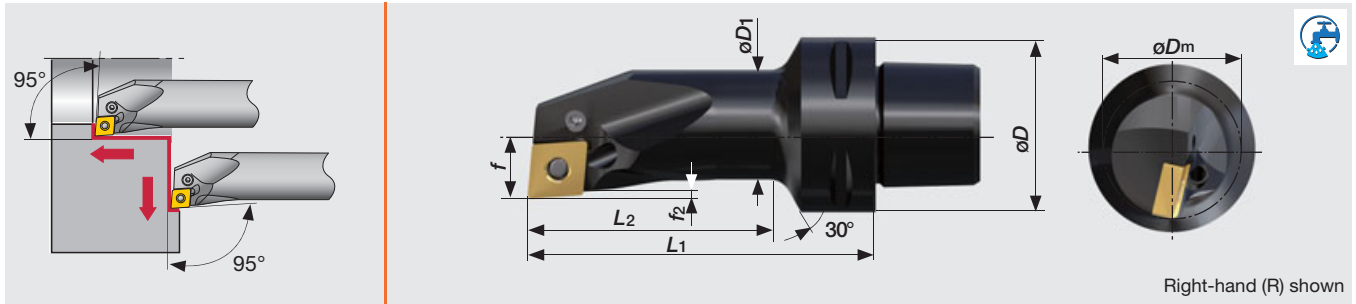
## COOLANT SET



Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C*PCLNR/L...-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N
C*PDJNR/L...-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N
C*PWLNR/L...-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

## C-PCLNR/L

Lever lock type boring bar, for negative 80° rhombic inserts



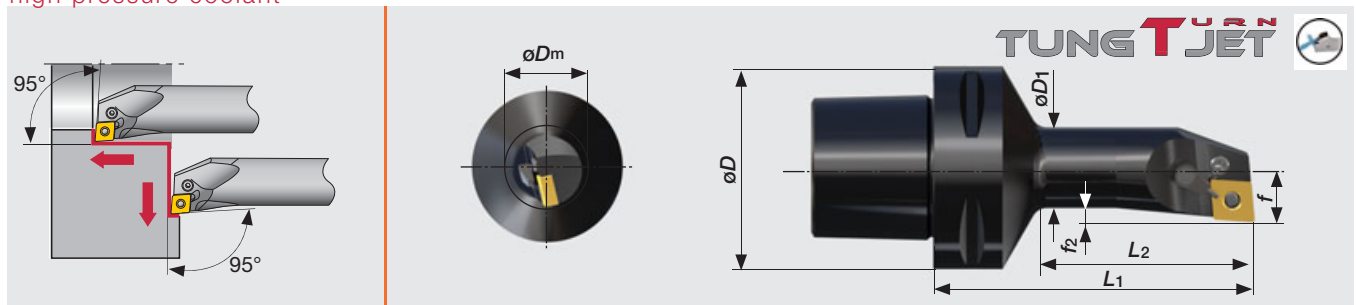
Right-hand (R) shown

Designation	$\varnothing D_m$	$\varnothing D$	$\varnothing D_1$	$L_1$	$L_2$	$f$	$f_2$	$r_c$	Insert
C4PCLNR17090-0904	32	40	25	90	63	17	1.3	0.8	CN**0904...
C4PCLNR/L17080-12	32	40	25	80	58.5	17	1.6	0.8	CN**1204...
C4PCLNR22110-0904	40	40	32	110	86.5	22	1.3	0.8	CN**0904...
C4PCLNR27120-0904	50	40	39.5	120	100	27	1.7	0.8	CN**0904...

Applicable for 7 MPa pressure coolant

## C-PCLNL-CHP

Lever lock type toolholder with TungCap connection, for negative 80° rhombic inserts, with channels for high pressure coolant

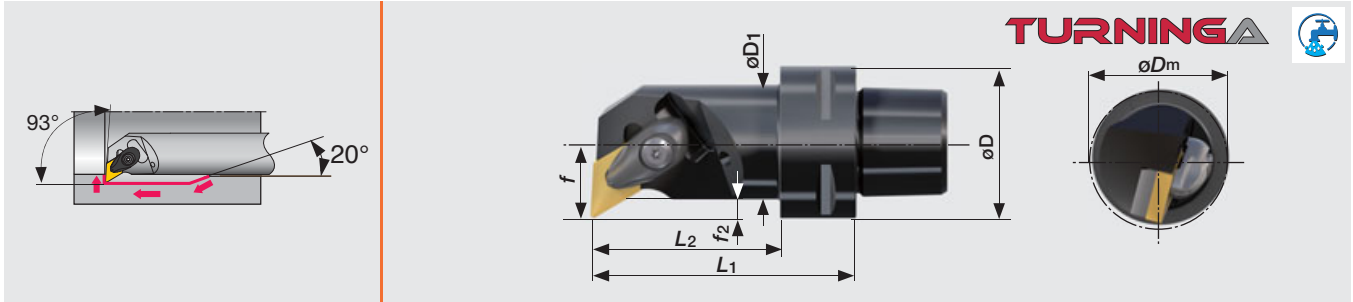


Designation	$\varnothing D_m$	$\varnothing D$	$\varnothing D_1$	$L_1$	$L_2$	$f$	$f_2$	$r_c$	Insert
C6PCLNL17100-12-CHP	32	63	25	100	67.5	17	4.5	0.8	CN**1204...

Applicable for 7 MPa pressure coolant

## C-ADUNR

Turning A double-clamp boring bar, for negative 55° rhombic inserts

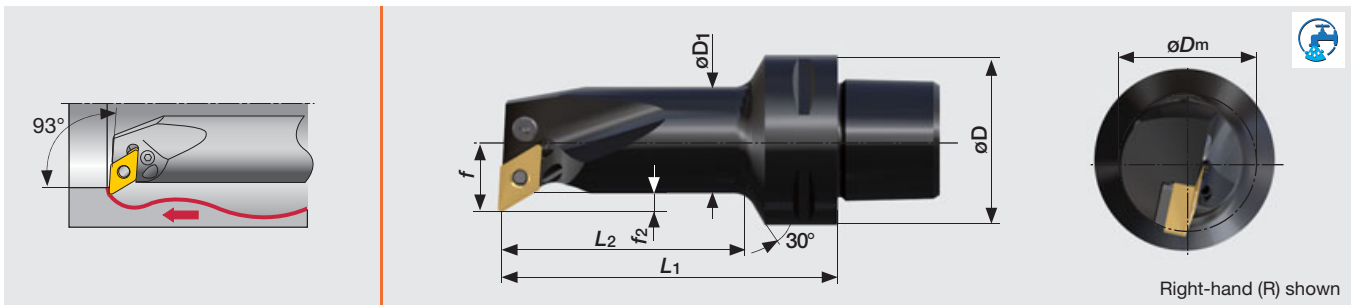


Designation	$\varnothing D_m$	$\varnothing D$	$\varnothing D_1$	$L_1$	$L_2$	$f$	$f_2$	$r_e$	Insert
C4ADUNR20070-15	38	40	30	70	50	20	5	0.8	DN**1504...
C4ADUNR27090-15	50	40	40	90	-	27	7	0.8	DN**1504...

Applicable for 7 MPa pressure coolant

## C-PDUNR/L

Lever lock type boring bar, for negative 55° rhombic inserts

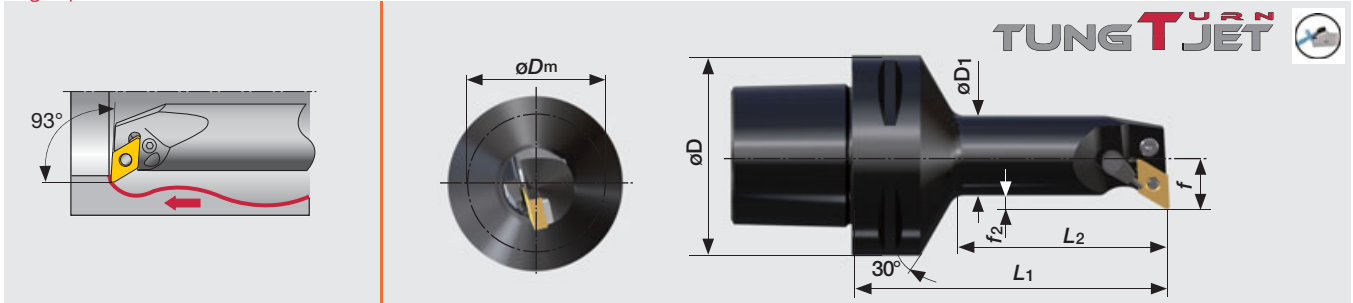


Designation	$\varnothing D_m$	$\varnothing D$	$\varnothing D_1$	$L_1$	$L_2$	$f$	$f_2$	$r_e$	Insert
C4PDUNR/L17080-11	32	40	25	80	58.5	17	4.4	0.4	DN**1104...

Applicable for 7 MPa pressure coolant

## C-PDUNL-CHP

Lever lock type toolholder with TungCap connection, for negative 55° rhombic inserts, with channels for high pressure coolant



Designation	$\varnothing D_m$	$\varnothing D$	$\varnothing D_1$	$L_1$	$L_2$	$f$	$f_2$	$r_\epsilon$	Insert
C6PDUNL17100-1104-CHP	32	63	25	100	67.5	17	4.5	0.8	DN**1104...

Applicable for 7 MPa pressure coolant

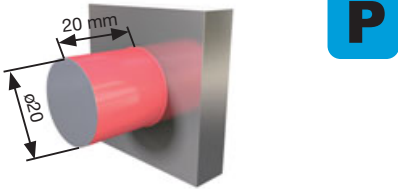
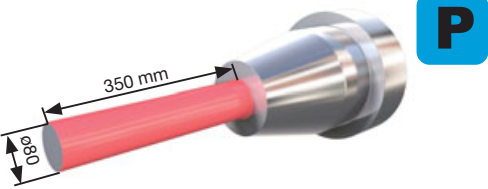
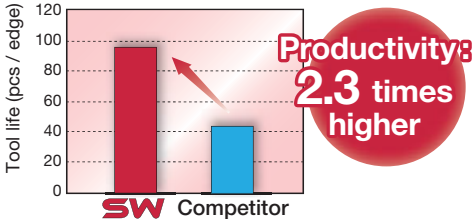
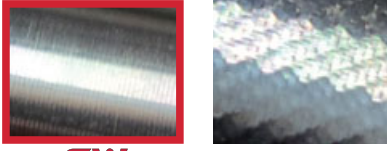
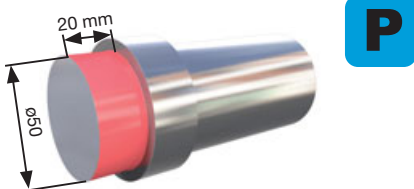
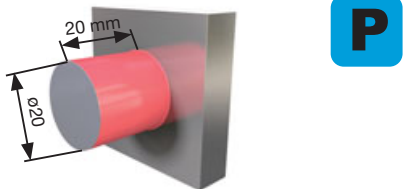
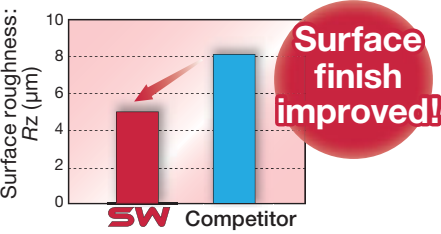
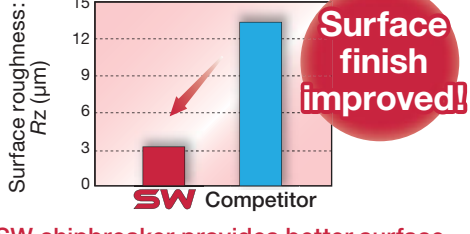
### SPARE PARTS FOR A-TYPE

Designation	Insert	Clamp	Clamping screw	Shim screw	Shim	Spring	Spring pin	Wrench
C4ADUNR	DNMG**15...	ACP4S	CSTB-3.5	ACS-5W	ASD423	BP-7	SP-2.5	T-15F

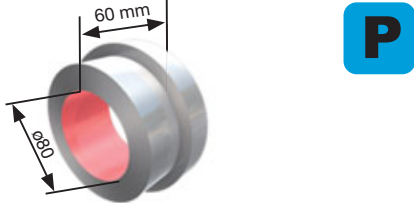
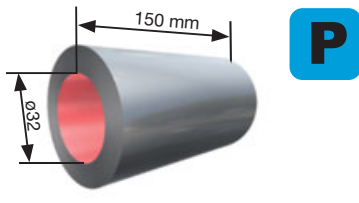
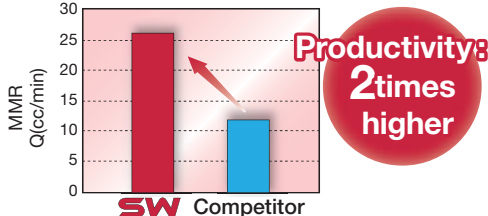
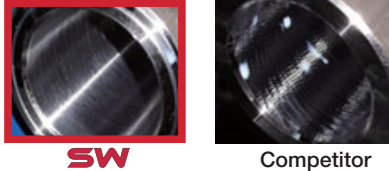
### SPARE PARTS FOR P-TYPE (CN\*\* Insert)

Designation	Insert	Shim	Shim screw	Spring pin	Lever	Wrench	Coolant unit
C*PCLNR17...0904	CN**0904...	-	LCS33	-	LCL33N	P-2F	-
C*PCLNR/L17...12	CN**1204...	-	LCS43	-	LCL43N	P-2.5F	-
C*PCLNR22/27...0904	CN**0904...	LSC317	LCS3	LSP3	LCL33	P-2.5F	-
C*PCLNL17-CHP	CN**1204...	-	LCS43	-	LCL43N	P-2.5F	S-CU-CHP
C4PDUNR/L17...	DN**1104...	ELSD317BR	LCS33	LSP3	LCL33L	P-2.5	-
C6PDUNL-CHP	DN**1104...	ELSD317BL	LCS43	LSP3	LCL33L	P-2.5	S-CU-CHP

## PRACTICAL EXAMPLES

Workpiece type	Ball nut	Mold parts	
Insert	CNMG090408E-SW	CNMG120408-SW	
Grade	T9125	T9115	
Workpiece material	SCM418 / 18CrMo4	S40C / C40	
			
Cutting conditions	Cutting speed: $V_c$ (m/min)	130	280
	Feed : $f$ (mm/rev)	0.45	0.5
	Depth of cut : $a_p$ (mm)	1.8	2.0
	Coolant	Wet	Wet
Results	 <p><b>Productivity 2.3 times higher</b></p> <p>SW chipbreaker allows high feed machining, which increases productivity by 2.3 times compared to the competitor.</p>	<p><b>Stable cutting!</b></p>  <p>SW provides stable machining without chattering, so the surface finish is better than the competitor.</p>	
	<p>SW chipbreaker provides stable machining without chattering, so the surface finish is better than the competitor.</p>		
Workpiece type	Intermediate shaft	Valve parts	
Insert	CNMG120408-SW	CNMG090408E-SW	
Grade	T9105	T9105	
Workpiece material	SCM418 / 18CrMo4	SCM440 / 42CrMo4	
			
Cutting conditions	Cutting speed: $V_c$ (m/min)	204	150
	Feed : $f$ (mm/rev)	0.4	0.3
	Depth of cut : $a_p$ (mm)	2.0	1.0 x 5 passes
	Coolant	Wet	Wet
Results	 <p><b>Surface finish improved!</b></p> <p>SW chipbreaker improves surface finish by 40% even under the same cutting condition as the competitor's.</p>	 <p><b>Surface finish improved!</b></p> <p>SW chipbreaker provides better surface finish even under the same cutting condition as the competitor's. As a result, finishing operation can be skipped.</p>	
	<p>SW chipbreaker provides better surface finish even under the same cutting condition as the competitor's. As a result, finishing operation can be skipped.</p>		

## PRACTICAL EXAMPLES

Workpiece type	Differential gear	Roll
Insert	CCMT09T304-SW	CCMT09T308-SW
Grade	NS9530	T9115
Workpiece material	SCM418 / 18CrMo4	S40C / C40
		
Cutting conditions	Cutting speed: $V_c$ (m/min)	260
	Feed : $f$ (mm/rev)	0.2
	Depth of cut : $a_p$ (mm)	0.5
	Coolant	Wet
Results	 <p>The positive insert with the SW chipbreaker has removed metal double that of the competitor's non-wiper insert, with tool life and surface finish quality being equal.</p>	<p><b>Stable cutting!</b></p>  <p>The positive insert with the SW chipbreaker has eliminated chatters and stabilized tool life.</p>

## Tungaloy Corporation (Head office)

11-1 Yoshima-Kogyodanchi  
Iwaki-city, Fukushima, 970-1144 Japan  
Phone: +81-246-36-8501  
Fax: +81-246-36-8542  
www.tungaloy.co.jp

## Tungaloy America, Inc.

3726 N Ventura Drive  
Arlington Heights, IL 60004, U.S.A.  
Phone: +1-888-554-8394  
Fax: +1-888-554-8392  
www.tungaloyamerica.com

## Tungaloy Canada

432 Elgin St. Unit 3  
Brantford, Ontario N3S 7P7, Canada  
Phone: +1-519-758-5779  
Fax: +1-519-758-5791  
www.tungaloy.co.jp/ca

## Tungaloy de Mexico S.A.

C Los Arellano 113,  
Parque Industrial Siglo XXI  
Aguascalientes, AGS, Mexico 20290  
Phone: +52-449-929-5410  
Fax: +52-449-929-5411  
www.tungaloy.co.jp/mx

## Tungaloy do Brasil Ltda.

Avd. Independencia N4158 Residencial Flora  
13280-000 Vinhedo, São Paulo, Brasil  
Phone: +55-19-38262757  
Fax: +55-19-38262757  
www.tungaloy.com/br

## Tungaloy Germany GmbH

An der Alten Ziegelei 1  
D-40789 Monheim, Germany  
Phone: +49-2173-90420-0  
Fax: +49-2173-90420-19  
www.tungaloy.de

## Tungaloy France S.A.S.

ZA Courtaboeuf - Le Rio  
1 rue de la Terre de feu  
F-91952 Courtaboeuf Cedex, France  
Phone: +33-1-6486-4300  
Fax: +33-1-6907-7817  
www.tungaloy.fr

## Tungaloy Italia S.r.l.

Via E. Andolfato 10  
I-20126 Milano, Italy  
Phone: +39-02-252012-1  
Fax: +39-02-252012-65  
www.tungaloy.it

## Tungaloy Czech s.r.o.

Turanka 115  
CZ-627 00 Brno, Czech Republic  
Phone: +420-532 123 391  
Fax: +420-532 123 392  
www.tungaloy.cz

## Tungaloy Ibérica S.L.

C/Miquel Servet, 43B, Nau 7  
Pol. Ind. Bufalvent  
ES-08243 Manresa (BCN), Spain  
Phone: +34 93 113 1360  
Fax: +34 93 876 2798  
www.tungaloy.es

## Tungaloy Scandinavia AB

Bultgatan 38  
442 40 Kungälv, Sweden  
Phone: +46-462119200  
www.tungaloy.se

## Tungaloy Rus, LLC

36-D Harkovsky Lane  
308009 Belgorod, Russia  
Phone: +7 4722 24 00 07  
Fax: +7 4722 24 00 08  
www.tungaloy.co.jp/ru

## Tungaloy East LLC

Stachek str., h.4, office 2, Ekaterinburg,  
620017, Russia  
Phone: +7-343-389-13-22  
Fax: +7-343-278-94-35  
www.tungaloy.co.jp/rue

## Tungaloy Polska Sp. z o.o.

ul. Genewska 24  
03-963 Warszawa, Poland  
Phone: +48-22-617-0890  
Fax: +48-22-617-0890  
www.tungaloy.co.jp/pl

## Tungaloy U.K. Ltd

The Technology Centre,  
Wolverhampton Science Park  
Glaisher Drive, Wolverhampton  
West Midlands WV10 9RU, UK  
Phone: +44 121 4000 231  
Fax: +44 121 270 9694  
www.tungaloy.co.jp/uk  
salesinfo@tungaloyuk.co.uk

## Tungaloy Hungary Kft

Erzsébet királyné útja 125  
H-1142 Budapest, Hungary  
Phone: +36 1 781-6846  
Fax: +36 1 781-6866  
www.tungaloy.co.jp/hu  
info@tungaloytools.hu

## Tungaloy Turkey

Dudullu.OSB 4. Cad No:4  
34776 Umraniye Istanbul, TURKEY  
Phone: +90 216 540 04 67  
Fax: +90 216 540 04 87  
www.tungaloy.com.tr  
info@tungaloy.com.tr

## Tungaloy Benelux b.v.

Tjalk 70  
NL-2411 NZ Bodegraven, Netherlands  
Phone: +31 172 630 420  
Fax: +31 172 630 429  
www.tungaloy-benelux.com

## Tungaloy Croatia

Josipa Kozarca 4  
10432 Bregana, Croatia  
Phone: +385 1 3326 604  
Fax: +385 1 3327 683  
www.tungaloy.hr

## Tungaloy Cutting Tool (Shanghai) Co.,Ltd.

Rm No 401 No.88 Zhabei  
Jiangchang No.3 Rd  
Shanghai 200436, China  
Phone: +86-21-3632-1880  
Fax: +86-21-3621-1918  
www.tungaloy.co.jp/tcts

## Tungaloy Cutting Tool (Thailand) Co.,Ltd.

Interlink tower 4th Fl.  
1858/5-7 Bangna-Trad Road  
km.5 Bangna, Bangna, Bangkok 10260  
Thailand  
Phone: +66-2-751-5711  
Fax: +66-2-751-5715  
www.tungaloy.co.th

## Tungaloy Singapore (Pte.), Ltd.

62 Ubi Road 1, #06-11 Oxley BizHub 2  
Singapore 408734  
Phone: +65-6391-1833  
Fax: +65-6299-4557  
www.tungaloy.co.jp/tspl

## Tungaloy Vietnam

Unit 18, 4th Fl. Saigon Centre Building  
65 Le Loi Blvd.  
Dist 1, Ho Chi Minh City, Vietnam  
Phone: +84-8-3827-0201  
Fax: +84-8-3827-0203  
www.tungaloy.co.jp/tspl

## Tungaloy India Pvt. Ltd.

Indiabulls Finance Centre,  
Unit # 902-A, 9th Floor,  
Tower 1, Senapati Bapat Marg,  
Elphinstone Road (West),  
Mumbai-400013, India  
Phone: +91-22-6124-8804  
Fax: +91-22-6124-8899  
www.tungaloy.co.jp/in

## Tungaloy Korea Co., Ltd

#1312, Byucksan Digital Valley 5-cha  
Beotkkot-ro 244, Geumcheon-gu  
153-788 Seoul, Korea  
Phone: +82-2-2621-6161  
Fax: +82-2-6393-8952  
www.tungaloy.co.jp/kr

## Tungaloy Malaysia Sdn Bhd

50 K-2, Kelana Mall, Jalan SS6/14  
Kelana Jaya, 47301  
Petaling Jaya, Selangor Darul Ehsan  
Malaysia  
Phone: +603-7805-3222  
Fax: +603-7804-8563  
www.tungaloy.co.jp/my

## Tungaloy Australia Pty Ltd

PO Box 2232, Rowville,  
Victoria 3178, Australia  
Phone: +61-3-9755-8147  
Fax: +61-3-9755-6070  
www.tungaloy.com.au

## PT. Tungaloy Indonesia

Kompleks Grand Wisata Block AA-10 No.3-5  
Cibitung  
Bekasi 17510, Indonesia  
Phone: +62-21-8261-5808  
Fax: +62-21-8261-5809  
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