

**NEW**  
**PRODUCT!**

## Swiss tool for automatic machine tool

### LF geometry positive insert

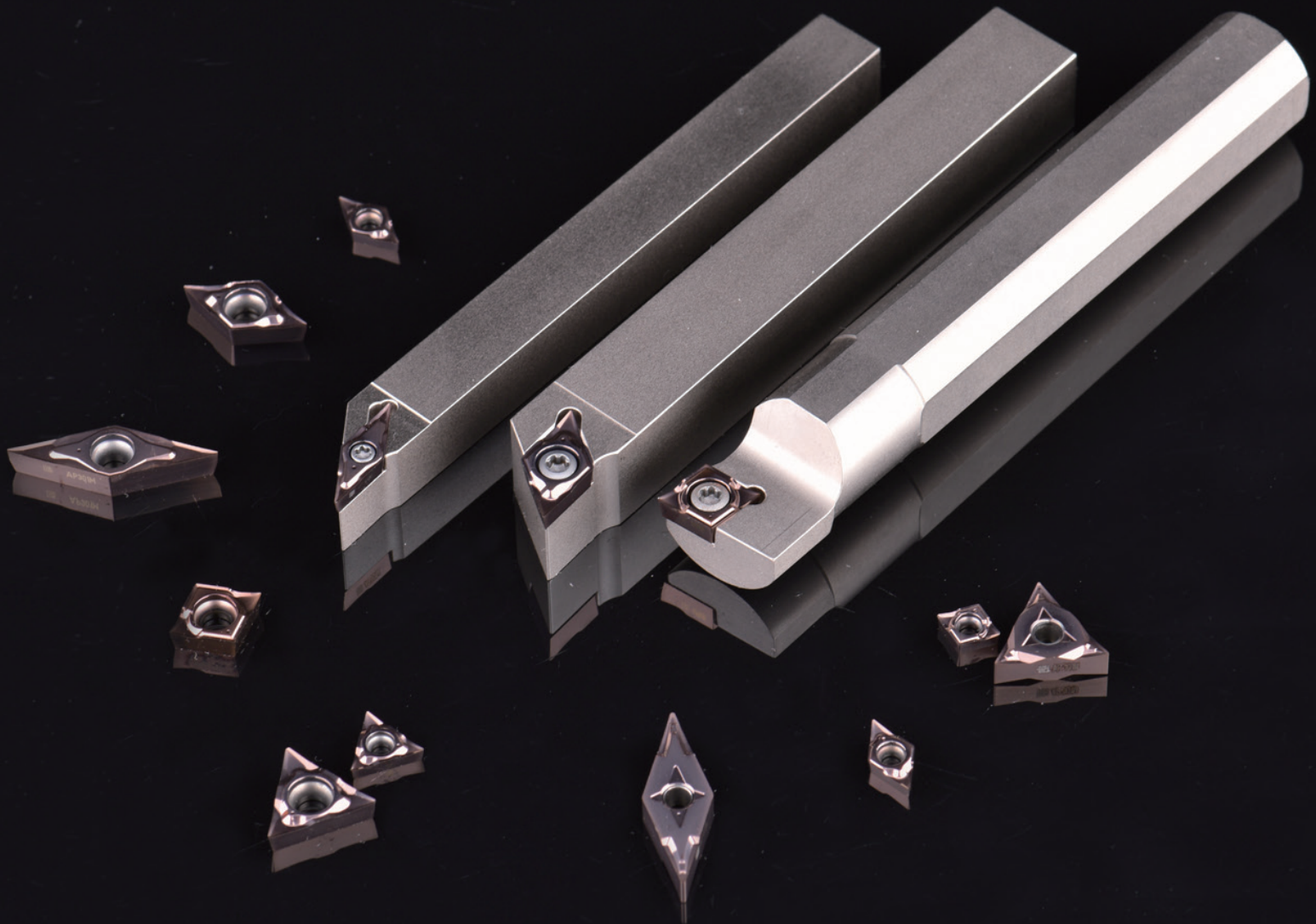
Ground positive insert with low cutting force

### UF geometry negative insert

Suitable for stainless steel turning

### External turning holder

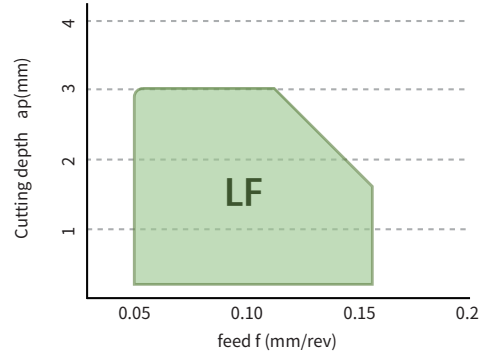
Ground high precision tool holder



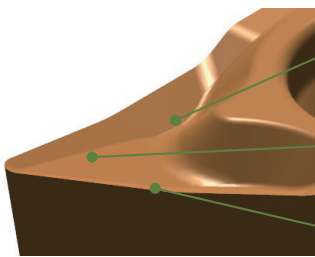


## ➤ Positive LF geometry

Developed for small parts  
Low cutting force for small part finishing

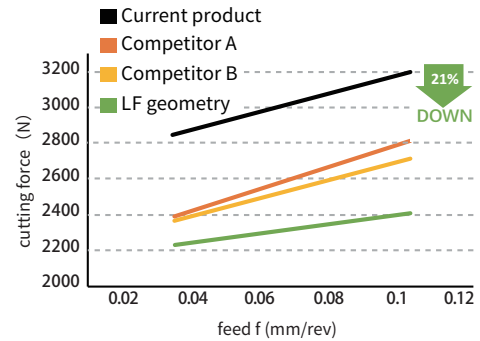


## ● Geometry features



- **Big chip space polished to get mirror result**  
Reduce the possibility of built-up edge
- **Sharp and big rake angle for low cutting force**  
Stable chip evacuation in big cutting depth
- **Sharp side cutting edge**  
Excellent machining surface

Big rake angle for smooth chip evacuation  
Depth: 0.3-3.0 mm



Cutting date:  $V_c=120\text{m/min}$   $f=0.08\text{mm/rev}$   $a_p=1.0\text{mm}$  wet  
Workpiece material: SUS316L

## ● Grade features

First choice for  
general machining

M15-M35  
P15-P35  
**AP301M**

The dedicated grade for small part machining,  
suitable for steel and stainless steel machining  
with good performance in built-up edge resistance

First choice for  
heat resistant alloys


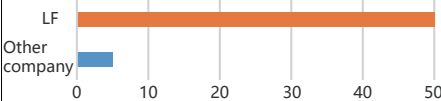
S05-S25  
M05-M25  
**AP100S**

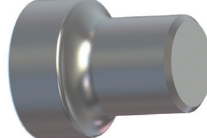
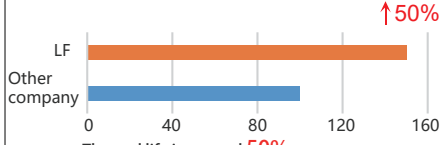
PVD coating grade with high hardness  
and good plastic deformation resistance to  
get even wear resistance and good performance

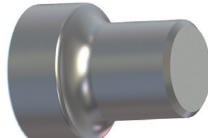
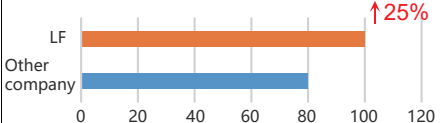
Workpiece material	Steel(Carbon steel/Alloyed steel)					Stainless steel					Titanium alloy							
	Finishing		Rough turning			Finishing		Rough turning			Finishing		Rough turning					
ISO classification	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	S01	S10	S20	S30	S40			
LF geometry			AP301M					AP301M					AP100S				AP301M	


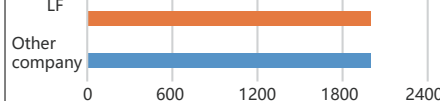


◆ **Success stories**

Insert	DCGT 11T302FP-LF AP301M
Workpiece	
Material	440C
Vc	100 m/min
f	0.04 mm/rev
ap	0.1 mm
Coolant	Emulsion
Result	 <p>The competitor got poor surface finish, and LF geometry has machined <b>50</b> peices.</p>

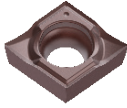

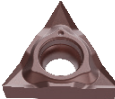



Insert	CCGT 09T304FP-LF AP301M
Workpiece	
Material	TC4
Vc	30m/min
f	0.05mm/rev
ap	0.3 mm
Coolant	Emulsion
Result	 <p>The tool life improved <b>50%</b>.</p>

Insert	VCGT 110304FP-LF AP301M
Workpiece	
Material	TC4
Vc	32m/min
f	0.05mm/rev
ap	0.2mm
Coolant	Emulsion
Result	 <p>The tool life improved <b>25%</b>.</p>

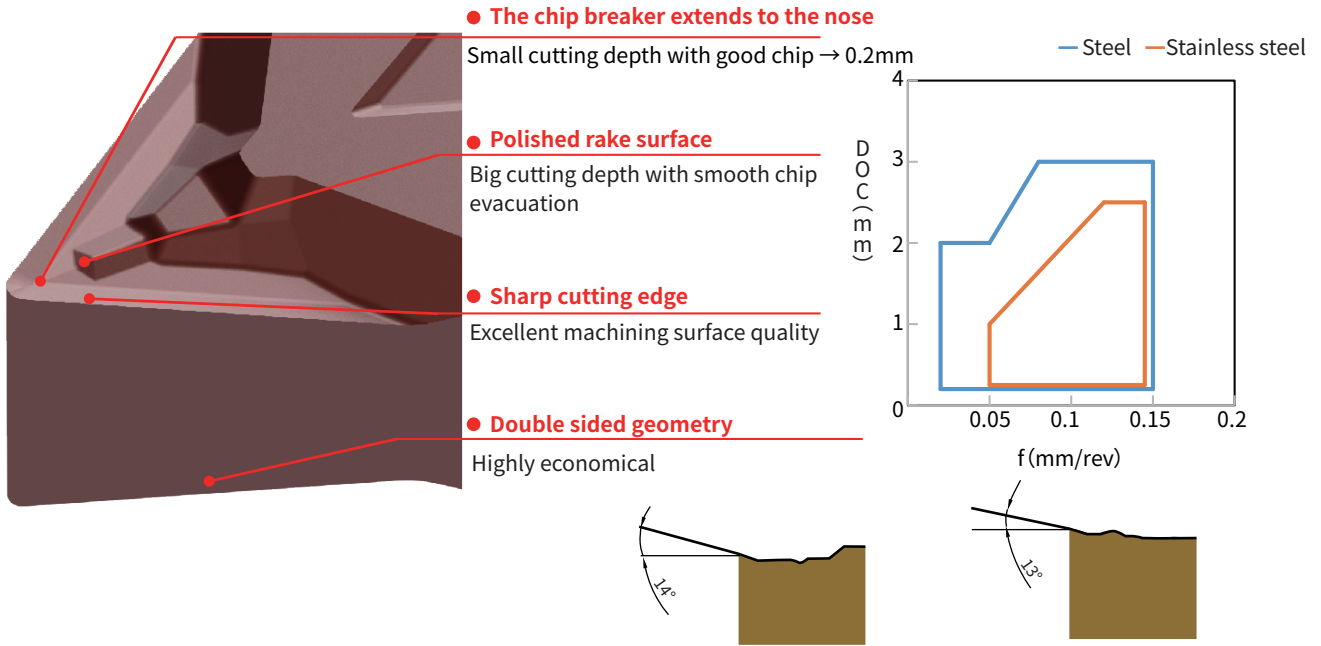
Insert	DCGT 11T302FP-LF AP301M
Workpiece	
Material	9Cr18Mo
Vc	37.6m/min
f	0.03mm/rev
ap	0.15mm
Coolant	Emulsion
Result	 <p>The surface finishing is the same as the result of competitor's wiper insert. The indexing is mandatory by the customer.</p>



● **Product series-insert with LF geometry**

Insert	Product code	RE	Parameter		Grade
			f(mm/rev)	ap(mm)	AP301M
	CCGT 060201FP-LF	<0.1	0.05-0.2	0.35-3.0	●
	060202FP-LF	0.2	0.05-0.2	0.35-3.0	●
	060204FP-LF	0.4	0.05-0.2	0.35-3.0	●
	09T301FP-LF	<0.1	0.05-0.2	0.35-3.0	●
	09T302FP-LF	0.2	0.05-0.2	0.35-3.0	●
	09T304FP-LF	0.4	0.05-0.2	0.35-3.0	●
	DCGT 0702005FP-LF	<0.05	0.05-0.2	0.35-3.0	●
	070201FP-LF	<0.1	0.05-0.2	0.35-3.0	●
	070202FP-LF	0.2	0.05-0.2	0.35-3.0	●
	070204FP-LF	0.4	0.05-0.2	0.35-3.0	●
	11T301FP-LF	<0.1	0.05-0.2	0.35-3.0	●
	11T302FP-LF	0.2	0.05-0.2	0.35-3.0	●
	11T304FP-LF	0.4	0.05-0.2	0.35-3.0	●
	TCGT 110201FP-LF	<0.1	0.05-0.2	0.35-3.0	●
	110202FP-LF	0.2	0.05-0.2	0.35-3.0	●
	110204FP-LF	0.4	0.05-0.2	0.35-3.0	●
	16T304FP-LF	0.4	0.05-0.2	0.35-3.0	●
	VBGT 1103005FP-LF	<0.05	0.05-0.2	0.35-3.0	●
	110301FP-LF	<0.1	0.05-0.2	0.35-3.0	●
	110302FP-LF	0.2	0.05-0.2	0.35-3.0	●
	110304FP-LF	0.4	0.05-0.2	0.35-3.0	●
	160401FP-LF	<0.1	0.05-0.2	0.35-3.0	●
	160402FP-LF	0.2	0.05-0.2	0.35-3.0	●
	VCGT 1103005FP-LF	<0.05	0.05-0.2	0.35-3.0	●
	110301FP-LF	<0.1	0.05-0.2	0.35-3.0	●
	110302FP-LF	0.2	0.05-0.2	0.35-3.0	●
	110304FP-LF	0.4	0.05-0.2	0.35-3.0	●
	VPGT 1103005FP-LF	<0.05	0.05-0.2	0.35-3.0	●
	110301FP-LF	<0.1	0.05-0.2	0.35-3.0	●
	110302FP-LF	0.2	0.05-0.2	0.35-3.0	●

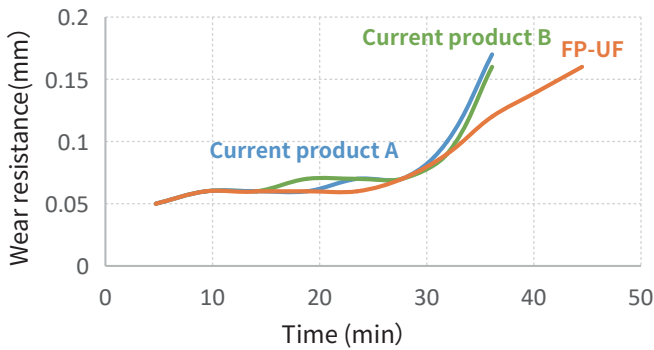
➤ **Negative UF geometry**



◆ **Chip breaking comparison**

**Wear resistance**

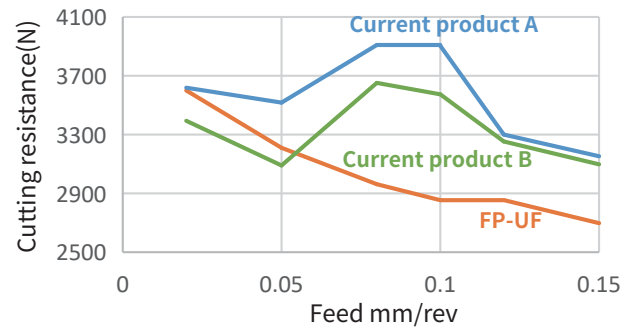
Alloyed steel (40CrNiMo) continuous machining



Insert	TNGG 160402FP-UF AP301M
Speed	180m/min
Feed	0.08mm/min
Doc	1.0mm
Coolant	Water soluble coolant

**Cutting force**

Alloyed steel (40CrNiMo) continuous machining



Insert	TNGG 160402FP-UF AP301M
Speed	180m/min
Feed	0.02 - 0.15mm/min
Doc	1.0mm
Coolant	Water soluble coolant



● **Comparison on chip breaking**

TNGG 160402FP-UF AP301M

Current product

3.0				
2.0				
1.0				
0.5				
0.2				
	0.02	0.05	0.10	0.15
Cutting condition: material: SUS304 Vc=160m/min Wet				



3.0				
2.0				
1.0				
0.5				
0.2				
	0.02	0.05	0.10	0.15
Cutting condition: material: SUS304 Vc=160m/min Wet				

● **Comparison on machining surface**

	FP-UF geometry		Other company's geometry	
<b>At the beginning</b>		 Ra:1.33um		 Ra:1.57um
<b>After 20 minutes</b>		 Ra:1.64um		 Ra:2.45um
Cutting condition: SUS304 Ø40mm Vc=160m/min f=0.08mm/rev ap=1mm Wet				

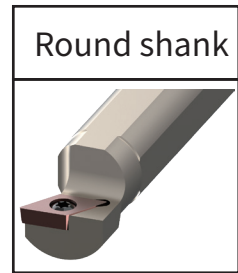
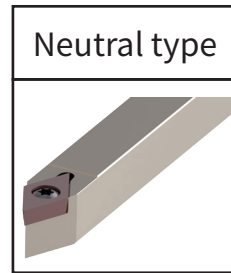
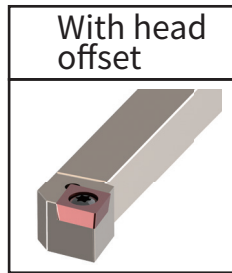
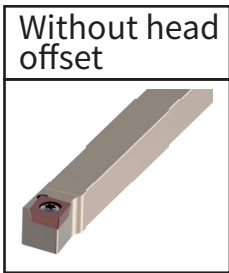
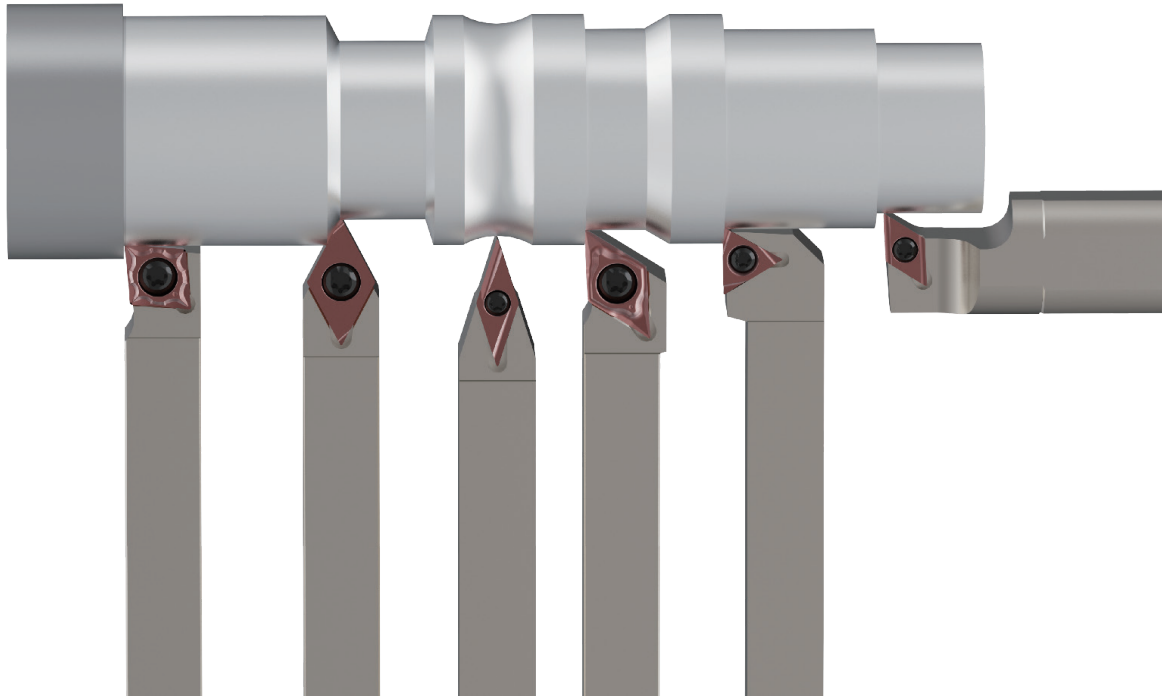


• **Product series-insert with UF geometry**

Insert Left hand(L) insert shown in the examples	Product code	RE	Parameter		Grade
			f(mm/rev)	ap(mm)	AP301M
	TNGG 160401FP-UF	0.1	0.03-0.11	0.3-2.5	●
	160402FP-UF	0.2	0.03-0.11	0.3-2.5	●
	160404FP-UF	0.4	0.03-0.11	0.3-2.5	●
	VNGG 160401FP-UF	0.1	0.02-0.1	0.5-2.0	●
	160402FP-UF	0.2	0.02-0.1	0.5-2.0	●
	160404FP-UF	0.4	0.02-0.1	0.5-2.0	●



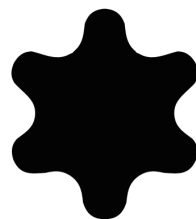
➤ Small part external turning shank



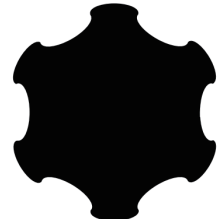
✓ Various shapes to match with different machining conditions

✓ Fully ground for high positioning precision

✓ Use TORX PLUS screw



TORX



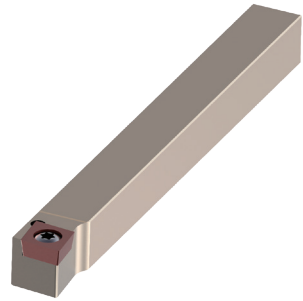
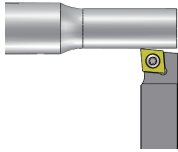
TORX PLUS





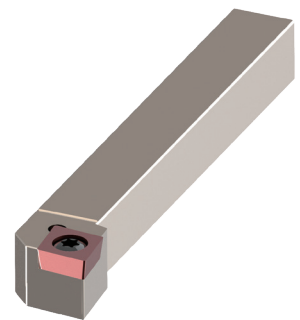
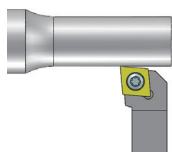
• **Product series-external turning shank**

**SCLC external turning shank-without offset head**



Product code		Dimension (mm)					Stock	
		H	B	HF	LH	WF	R	L
	SCLCR/L 0808F-06F	8	8	8	-	8	●	●
	SCLCR/L 1010JX-06F	10	10	10	-	10	●	●
	SCLCR/L 1010JX-09F	10	10	10	15	10	●	●
	SCLCR/L 1212F-09F	12	12	12	-	12	●	●
	SCLCR/L 1212JX-09F	12	12	12	-	12	●	●
	SCLCR/L 1616JX-09F	16	16	16	-	16	●	●

**SCLC external turning shank-with offset head**

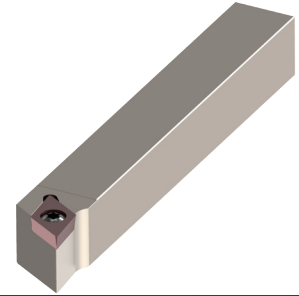
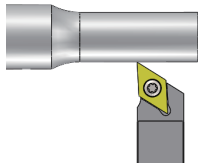


Product code		Dimension (mm)						Stock	
		H	B	HF	LF	LH	WF	R	L
	SCLCR/L 1010F-06	10	10	10	80	9	12	●	●
	SCLCR/L 1010F-09	10	10	10	80	14	12	●	●
	SCLCR/L 1212H-09	12	12	12	100	14	16	●	●
	SCLCR/L 1616H-09	16	16	16	100	15	20	●	●



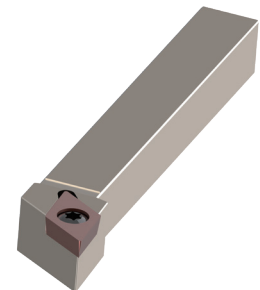
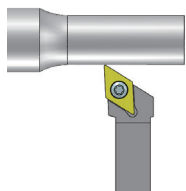
● **Product series-external turning shank**

**SDJC external turning shank-without offset head**



Product code		Dimension (mm)							Stock	
		H	B	HF	LF	LH	WF	HBKW	R	L
	SDJCR/L 0808F-07F	8	8	8	80	14	8	0.5	●	●
	SDJCR/L 1010JX-07F	10	10	10	120	-	10	-	●	●
	SDJCR/L 1010JX-11F	10	10	10	120	20	10	3	●	●
	SDJCR/L 1212F-11F	12	12	12	80	20	12	1	●	●
	SDJCR/L 1212JX-11F	12	12	12	120	20	12	1	●	●
	SDJCR/L 1616JX-11F	16	16	16	120	-	16	-	●	●

**SDJC external turning shank-with offset head**

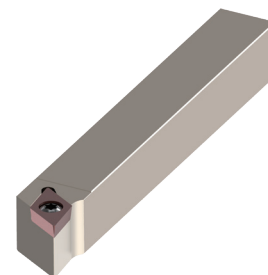
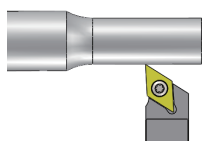


Product code		Dimension (mm)							Stock	
		H	B	HF	LF	LH	WF	HBKW	R	L
	SDJCR/L 1010F-07	10	10	10	80	12	12	-	●	●
	SDJCR/L 1010F-11	10	10	10	80	18	12	3	●	●
	SDJCR/L 1212H-11	12	12	12	100	18	16	1	●	●
	SDJCR/L 1616H-11	16	16	16	100	18	20	-	●	●



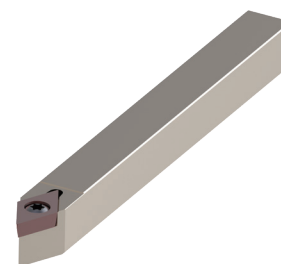
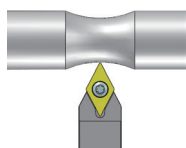
● **Product series-external turning shank**

**SDLC external turning shank-without offset head**



Product code		Dimension (mm)							Stock	
		H	B	HF	LF	LH	WF	HBKW	R	L
	SDLCR/L 1010JX-07F	10	10	10	120	-	10	-	●	●
	SDLCR/L 1212F-07F	12	12	12	80	-	12	-	●	●
	SDLCR/L 1212JX-07F	12	12	12	120	-	12	-	●	●
	SDLCR/L 1616JX-07F	16	16	16	120	-	16	-	●	●
	SDLCR 1010F-11F	10	10	10	80	-	10	4	●	-
	SDLCR/L 1010JX-11F	10	10	10	120	-	10	4	●	●
	SDLCR 1212F-11F	12	12	12	80	-	12	2	●	-
	SDLCR/L 1212JX-11F	12	12	12	120	-	12	2	●	●
	SDLCR 1616H-11F	16	16	16	100	-	16	-	●	-
	SDLCR/L 1616JX-11F	16	16	16	120	-	16	-	●	●

**SDNC external turning shank-neutral type**

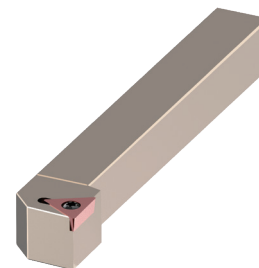
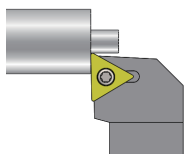


Product code		Dimension (mm)							Stock
		H	B	HF	LF	LH	WF	HBKW	N
	SDNCN 0808F-07	8	8	8	80	-	4	-	●
	SDNCN 1010JX-07	10	10	10	120	-	5	-	●
	SDNCN 1212JX-07	12	12	12	120	-	6	-	●
	SDNCN 1010F-11	10	10	10	80	-	5	-	●
	SDNCN 1010JX-11	10	10	10	120	-	5	4	●
	SDNCN 1212F-11	12	12	12	80	-	6	4	●
	SDNCN 1212JX-11	12	12	12	120	-	6	2	●
	SDNCN 1616H-11	16	16	16	100	-	8	2	●
	SDNCN 1616JX-11	16	16	16	120	-	8	-	●



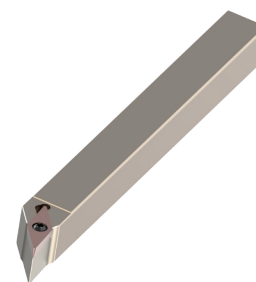
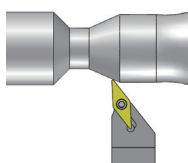
Product series-external turning shank

STGC/STG external turning shank-with offset head



Product code		Dimension (mm)						Stock	
		H	B	HF	LF	LH	WF	R	L
	STGCR 0808F-08	8	8	8	80	12	10	●	-
	STGCR/L 1010F-11	10	10	10	80	15	14	●	●
	STGCR/L 1212H-11	12	12	12	100	15	16	●	●
	STGCR/L 1616H-11	16	16	16	100	15	20	●	●
	STGPR 0808F-08	8	8	8	80	12	10	●	-
	STGPR/L 1010F-11	10	10	10	80	15	14	●	●
	STGPR/L 1212H-11	12	12	12	100	15	16	●	●
	STGPR/L 1616H-11	16	16	16	100	15	20	●	●

SVJB external turning shank

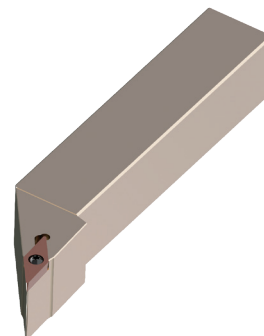
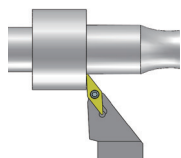


Product code		Dimension (mm)						Stock	
		H	B	HF	LF	LH	WF	R	L
	SVJBR/L 1010JX-11F	10	10	10	120	-	10	●	●
	SVJBR/L 1212JX-11F	12	12	12	120	-	12	●	●
	SVJBR/L 1616JX-11F	16	16	16	120	-	16	●	●
	SVJBR/L 2020JX-11F	20	20	20	120	20	20	●	●



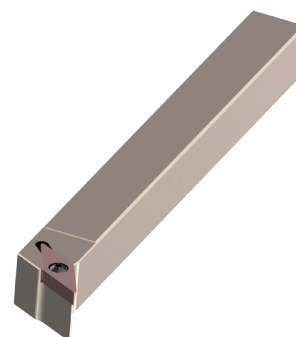
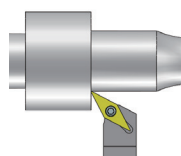
• **Product series-external turning shank**

**SVJB external turning shank-with offset head**



Product code		Dimension (mm)						Stock	
		H	B	HF	LH	WF	R	R	L
	SVJBR/L 2020K-11	20	20	20	125	30	25	●	●
	SVJBR/L 2020K-16	20	20	20	125	30	25	●	●
	SVJBR/L 2525M-16	25	25	25	150	30	32	●	●

**SVPB external turning shank-with offset head**

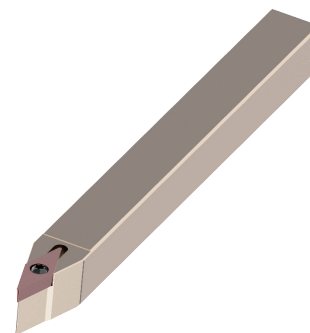
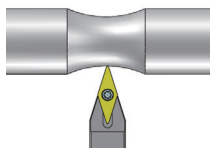


Product code		Dimension (mm)					Stock	
		H	B	HF	LH	WF	R	L
	SVPBR/L 1010JX-11	10	10	10	120	14.5	●	●
	SVPBR/L 1212JX-11	12	12	12	120	16.5	●	●
	SVPBR/L 1616JX-11	16	16	16	120	20.5	●	●
	SVPBR/L 2020K-11	20	20	20	125	25	●	●
	SVPBR/L 2020K-16	20	20	20	125	25	●	●
	SVPBR/L 2525M-16	25	25	25	150	32	●	●



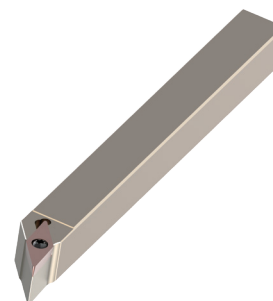
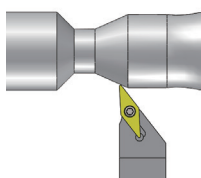
● **Product series-external turning shank**

**SVVB external turning shank-neutral type**



Product code		Dimension (mm)					Stock	
		H	B	HF	LF	WF	R	L
	SVVBN 1010JX-11	10	10	10	120	5	●	●
	SVVBN 1212JX-11	12	12	12	120	6	●	●
	SVVBN 1616JX-11	16	16	16	120	8	●	●
	SVVBN 2020K-11	20	20	20	125	10	●	●
	SVVBN 2020K-16	20	20	20	125	10	●	●
	SVVBN 2525M-16	25	25	25	150	12.5	●	●

**SVJCR external square tool holder-without offset head**

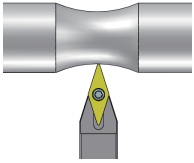


Product code		Dimension (mm)					Stock	
		H	B	HF	LF	WF	R	L
	SVJCR/L 1010JX-11F	10	10	10	120	10	●	●
	SVJCR/L 1212JX-11F	12	12	12	120	12	●	●
	SVJCR/L 1616JX-11F	16	16	16	120	16	●	●
	SVJCR/L 2020JX-11F	20	20	20	120	20	●	●



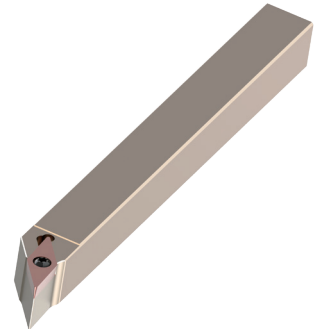
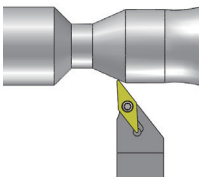
• **Product series-external turning shank**

**SVVCN external turning shank-neutral type**



Product code		Dimension (mm)					Stock	
		H	B	HF	LF	WF	N	
	SVVCN 1010JX-11	10	10	10	120	5	●	
	SVVCN 1212JX-11	12	12	12	120	6	●	
	SVVCN 1616JX-11	16	16	16	120	8	●	

**SVLPR external turning shank-without offset head**

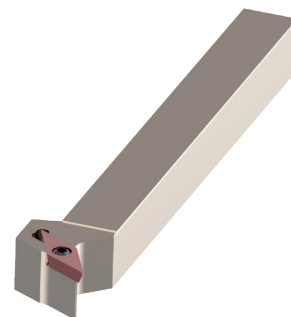
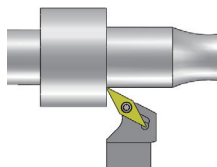


Product code		Dimension (mm)					Stock	
		H	B	HF	LF	WF	R	L
	SVLPR/L 1010JX-08F	10	10	10	120	10	●	●
	SVLPR/L 1212JX-08F	12	12	12	120	12	●	●
	SVLPR/L 1616JX-08F	16	16	16	120	12	●	●
	SVLPR/L 1212JX-11F	12	12	12	120	16	●	●
	SVLPR/L 1616JX-11F	16	16	16	120	10	●	●
	SVLPR/L 2020K-11F	20	20	20	125	10	●	●



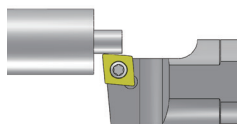
● **Product series-external turning shank**

**SVPP external turning shank**



Product code	Dimension (mm)							Stock		
	H	B	HF	LF	LH	WF	HBKW	R	L	
	SVPPR/L 1010JX-08F	10	10	10	120	16	10	4	●	●
	SVPPR/L 1212JX-08F	12	12	12	120	16	12	2	●	●
	SVPPR/L 1616JX-08F	16	16	16	120	20	16	-	●	●
	SVPPR/L 1010JX-11F	10	10	10	120	20	10	8	●	●
	SVPPR/L 1212JX-11F	12	12	12	120	20	12	6	●	●
	SVPPR/L 1616JX-11F	16	16	16	120	20	16	2	●	●

**Round shank-suitable for C type insert**



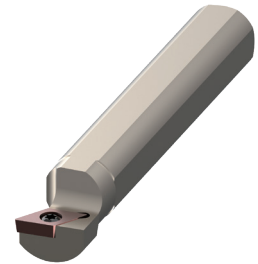
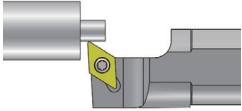
Product code	Dimension (mm)					Stock	
	DCON	LF	H	WF	WF2	L	
	S12F-SCLCL06	12	80	11	6	1	●
	S14H-SCLCL06	14	100	13	6	1	●
	S15.0H-SCLCL06	15.875	100	15	6	1	●
	S16H-SCLCL06	16	100	15	6	1	●
	S19.0JX-SCLCL06	19.05	120	17	6	1	●
	S20JX-SCLCL06	20	120	18	6	1	●
	S19.0JX-SCLCL09	19.05	120	17	10	2	●
	S20JX-SCLCL09	20	120	18	10	2	●
	S22JX-SCLCL09	22	120	20	10	2	●
	S25JX-SCLCL09	25	120	23	10	2	●
	S25.0JX-SCLCL09	25.4	120	23	10	2	●





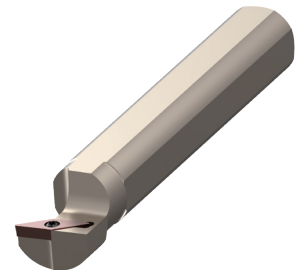
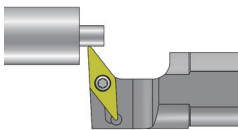
● **Product series-external turning shank**

**Round shank-suitable for D type insert**



Product code		Dimension (mm)					Stock
		DCON	LF	H	WF	WF2	L
	S12F-SDUCL07	12	80	11	6	3.8	●
	S14H-SDUCL07	14	100	13	6	3.8	●
	S15.0H-SDUCL07	15.875	100	15	6	3.8	●
	S16H-SDUCL07	16	100	15	6	3.8	●
	S19.0JX-SDUCL07	19.05	120	17	6	3.8	●
	S20JX-SDUCL07	20	120	18	6	3.8	●
	S19.0JX-SDUCL11	19.05	120	17	10	5.8	●
	S20JX-SDUCL11	20	120	20	10	5.8	●
	S22JX-SDUCL11	22	120	20	10	5.8	●
	S25JX-SDUCL11	25	120	23	10	5.8	●
	S25.0JX-SDUCL11	25.4	120	23	10	5.8	●

**Round shank-suitable for V type insert**



Product code		Dimension (mm)					Stock
		DCON	LF	H	WF	WF2	L
	S12F-SVUPL08	12	80	11	7.5	5.5	●
	S14H-SVUPL08	14	100	13	7.5	5.5	●
	S15.0H-SVUPL08	15.875	100	15	8	5.5	●
	S16H-SVUPL08	16	100	15	8	5.5	●
	S19.0JX-SVUBL11	19.05	120	17	10.5	8	●
	S20JX-SVUBL11	20	120	18	10.5	8	●
	S22JX-SVUBL11	22	120	20	10.5	8	●
	S25JX-SVUBL11	25	120	23	10.5	8	●
	S25.0JX-SVUBL11	25.4	120	23	10.5	8	●