

How to select internal turning tools

How to select internal turning tools

Explanation of internal turning tools detailed table

● Listed according to clamping types.

● Approach angle of tools

● Tools type
The first 4 letters in the type description stands for tool shape and applicatio.

● Insert type

● Specification chart

● Application chart
The arrow shows suitable applications such as internal turning, profiling and end turning, etc.

Corresponding tool holders of insert DN P-type clamping

PDPNRIL
KAPR:62°30'

Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S32T-PDPNR/L15-3	▲	▲	40	32	30	300	22	LEM8×21	WH-30L	L4	D15AP	SP4
S40U-PDPNR/L15-3	▲	▲	50	40	38	350	27					
S32T-PDPNR/L15	△	△	40	32	30	300	22	LEM8×21	WH-30L	L4B	D15AP	SP4
S40U-PDPNR/L15	△	△	50	40	38	350	27					

▲ Stock available △ Make-to-order

Applicable inserts						
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining	
Inserts shape	XF A60	XM A63	DR Double-side A65	HDR A66	TC A66	
	DF A60	PM A62	DR Single-side A65		Without chipbreaker A67	
	SF A60	DM A63	ER Double-side A65			
	EF A61	EM A64	ER Single-side A66			
	ADF A61	EG A64	SNR Double-side A66			
	NF A61	NM A64	LR Single-side A65			
	NGF A62					
	Tool holder type	<input type="checkbox"/> -PDPNR/L15-3	DN <input type="checkbox"/> 1504 <input type="checkbox"/>	DN <input type="checkbox"/> 1504 <input type="checkbox"/>	DN <input type="checkbox"/> 1504 <input type="checkbox"/>	DN <input type="checkbox"/> 1504 <input type="checkbox"/>
	<input type="checkbox"/> -PDPNR/L15	DN <input type="checkbox"/> 1506 <input type="checkbox"/>	DN <input type="checkbox"/> 1506 <input type="checkbox"/>	DN <input type="checkbox"/> 1506 <input type="checkbox"/>	DN <input type="checkbox"/> 1506 <input type="checkbox"/>	

● Tool holders with oil hole

● Products specification
Including product description, stock (left and right hand), basic dimensions and applicable spare parts.

● Applicable inserts
Including applications of inserts, reference page, insert shape and corresponding tool holders.



TURNING



Internal turning tools

Internal turning tools overview ● A191

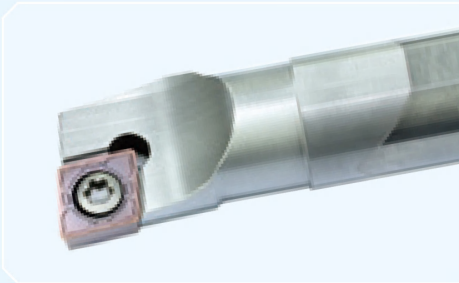
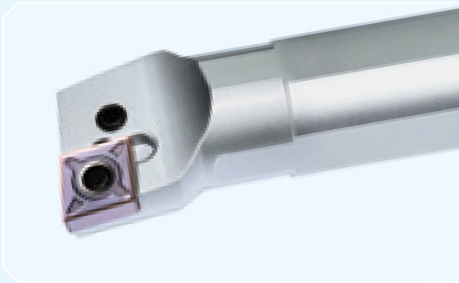
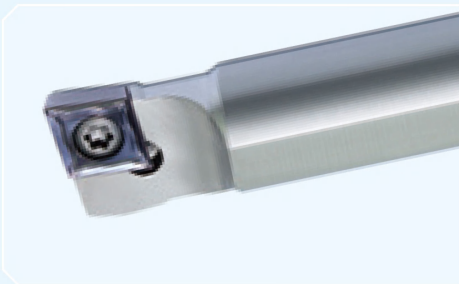
Internal turning tools code key ● A192-A193

Detailed table of internal turning tools ● A194-A221

Internal turning tool holders by P-type clamping ● A194-A199

Internal turning tool holders by S-type clamping ● A200-A215

Damping internal turning tool holders and their features ● A216-A221



Internal turning tools





Name	Feature	62°30'	75°	90°	91°	93°	93°	93°	95°	107°30'
P-type internal turning tools	<ul style="list-style-type: none"> The minimum machining diameter is 20mm. Applicable inserts are economic negative inserts. Hole clamping 	PDPN A195	PSKN A197	PTFN A198			PDUN A196		PCLN A194	
									PWLN A199	
S-type internal turning tools	<ul style="list-style-type: none"> The minimum machining diameter is 10mm. Applicable inserts are 5°, 7° and 11° positive inserts. Screw clamping. 		SSKC A204	SCFC A214	STFC A205	STUP A213	SDUC A202	SDZC A203		SDQC A201
							SDUP A212		SCLC A200	SDQP A211
							SVUC A207		 A215	SVQB A208
							SVUB A209		SCLP A210	SVQC A206
Damping internal turning tools	<ul style="list-style-type: none"> The minimum diameter can be machined is 12mm. Applicable inserts are 7°, 11° positive inserts. Good Performance on reducing shake. 					STUP A220	SDUP A219		SCLP A217	SDQP A218
							SVUC A221			SVQC A221



TURNING / General Turning Tools

Internal turning tools code key

General turning

Internal turning tools code key

Type of tool holder	
Code	Type
A	Steel tool holder with oil-hole
C	Cemented carbide tool holder
E	Cemented carbide tool holder with oil hole
S	Steel tool holder
X	Special inserts applied

Diameter of tool holder	
Code	Diameter
08	08
10	10
16	16
20	20
25	25
32	32
40	40
50	50

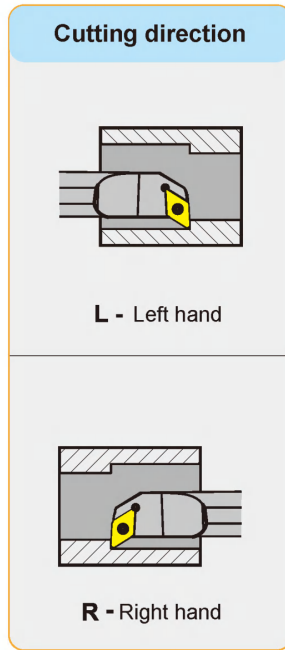
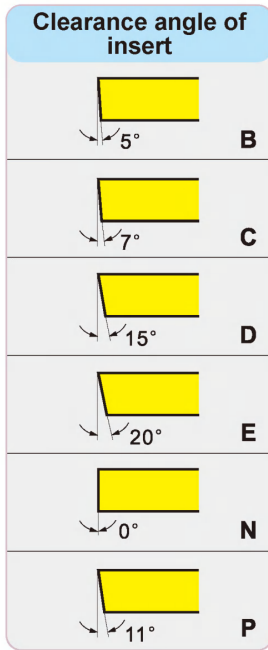
Length of tool holder	
Code	Length
H	100
K	125
M	150
N	160
Q	180
R	200
S	250
T	300
U	350
V	400

Clamping system
P-Hole clamping
M-Top and hole clamping
S-Screw on
C-Top clamping

Inserts shape	
80° C	55° D
R	S
60° T	35° V
80° W	

S **16** **R** - **S** **D** **U**

Tool holder style and approach angle							
A	B	C	D	E	F	G	H
J	K	L	M	N	O	P	Q
R	S	T	U	V	W	X	



Length of cutting edge

Inserts shape	C	D	R	S	T	V	W
Inscribed circle	Length of cutting edge(mm)						
5.556	---	---	---	---	09	---	---
6.350	06	07	---	---	11	---	---
9.525	09	11	09	09	16	16	06
12.700	12	15	12	12	22	22	08
15.875	16	19	15	15	27	---	---
19.050	19	---	19	19	33	---	---
25.400	25	---	25	25	44	---	---

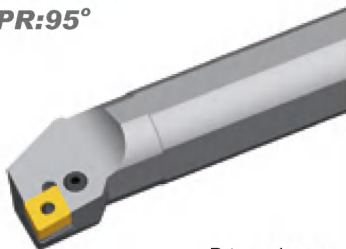
General turning

Internal turning tools code key

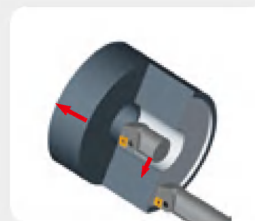
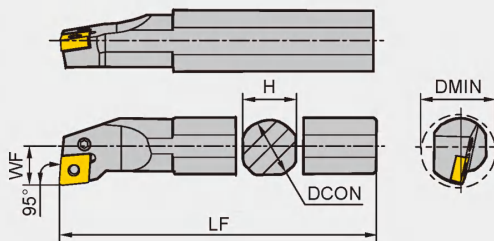
Internal turning tools

Corresponding tool holders of insert **CN** P-type clamping

PCLNR/IL
KAPR:95°



R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S16Q-PCLNR/L09	△	△	20	16	15	180	11	LEM5×9B	WT09P	L3C	---	---
S20R-PCLNR/L09	△	△	25	20	18	200	13	LEM5×9B				
S25S-PCLNR/L09	△	△	32	25	23	250	17	LEM5×9B				
S25S-PCLNR/L12	△	△	32	25	23	250	17	LEM6×13.4A	WH25L	L4A	---	---
S32T-PCLNR/L12	▲	▲	44	32	30	300	22	LEM8×21	WH30L	L4	C12APB	SP4
S40U-PCLNR/L12	▲	▲	54	40	38	350	27					
S50V-PCLNR/L12	▲	▲	63	50	47	400	35					
S50V-PCLNR/L16	△	△	63	50	48	400	31	LEM8×25	WH30L	L5	C16AP	SP5
S50S-PCLNR/L19	△	△	63	50	47	250	35	LEM10×27	WH40L	L6	C19AP	SP6
S50W-PCLNR/L19	▲	▲	63	50	47	450	35					

▲Stock available △Make-to-order

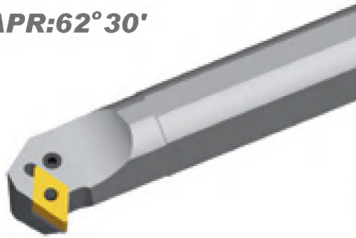
Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining							
Inserts shape	XF A52	XM A54	DR Double-side A56	HDR A58	TC A58							
	DF A52	PM A53	DR Single-side A57	HPR A58	Without chipbreaker A59							
	SF A52	DM A54	ER Double-side A57									
	EF A52	EM A55	ER Single-side A57									
	ADF A53	EG A55	SNR Double-side A57									
	NF A53	EH A55	LR Single-side A56									
		NM A55										
Tool holder type	<input type="checkbox"/> -PCLNR/L09	CN <input type="checkbox"/> <input type="checkbox"/> 0903 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 0903 <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> -PCLNR/L12	CN <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> -PCLNR/L16	CN <input type="checkbox"/> <input type="checkbox"/> 1606 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1606 <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> -PCLNR/L19	CN <input type="checkbox"/> <input type="checkbox"/> 1906 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1906 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1906 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1906 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1906 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1906 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1906 <input type="checkbox"/> <input type="checkbox"/>	CN <input type="checkbox"/> <input type="checkbox"/> 1906 <input type="checkbox"/> <input type="checkbox"/>

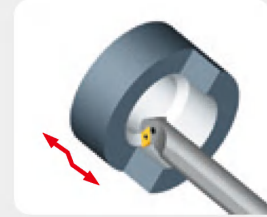
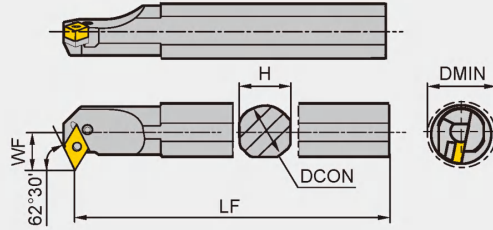


Corresponding tool holders of insert **DN** P-type clamping

PDPNR/L
KAPR:62° 30'



R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S32T-PDPNR/L15-3	▲	▲	40	32	30	300	22	LEM8×21	WH30L	L4	D15AP	SP4
S40U-PDPNR/L15-3	▲	▲	50	40	38	350	27					
S32T-PDPNR/L15	△	△	40	32	30	300	22	LEM8×21	WH30L	L4B	D15AP	SP4
S40U-PDPNR/L15	△	△	50	40	38	350	27					

▲Stock available △Make-to-order

General turning

Internal turning tools

Applicable inserts

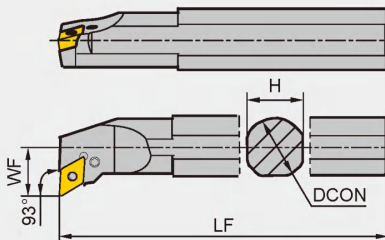
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A60	XM A63	DR Double-side A65	HDR A66	TC A66
	DF A60	PM A62	DR Single-side A65		Without chipbreaker A67
	SF A60	DM A63	ER Double-side A65		
	EF A61	EM A64	ER Single-side A66		
	ADF A61	EG A64	SNR Double-side A66		
	NF A61	NM A64	LR Single-side A65		
	NGF A62				
Tool holder type	<input type="checkbox"/> -PDPNR/L15-3	DN <input type="checkbox"/> 1504 <input type="checkbox"/>	DN <input type="checkbox"/> 1504 <input type="checkbox"/>	DN <input type="checkbox"/> 1504 <input type="checkbox"/>	DN <input type="checkbox"/> 1504 <input type="checkbox"/>
	<input type="checkbox"/> -PDPNR/L15	DN <input type="checkbox"/> 1506 <input type="checkbox"/>	DN <input type="checkbox"/> 1506 <input type="checkbox"/>	DN <input type="checkbox"/> 1506 <input type="checkbox"/>	DN <input type="checkbox"/> 1506 <input type="checkbox"/>

Corresponding tool holders of insert **DN** P-type clamping

PDUNR/L
KAPR:93°



R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S20R-PDUNR/L11	△	△	25	20	19	200	13	LEM5×12B	WT09P	L3D	---	---
S25S-PDUNR/L11	△	△	32	25	23	250	17					
S32T-PDUNR/L15	△	△	40	32	30	300	22	LEM8×21	WH30L	L4B	D15AP	SP4
S32T-PDUNR/L15-3	△	△	40	32	30	300	22	LEM8×21	WH30L	L4	D15AP	SP4
S40U-PDUNR/L15	△	△	50	40	38	350	27	LEM8×21	WH30L	L4B	D15AP	SP4
S40U-PDUNR/L15-3	▲	▲	50	40	38	350	27	LEM8×21	WH30L	L4	D15AP	SP4

▲Stock available △Make-to-order

Applicable inserts

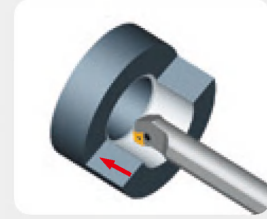
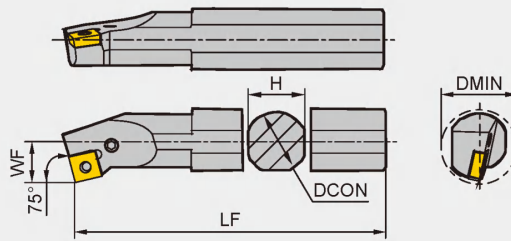
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A60	XM A63	DR Double-side A65	HDR A66	TC A66
	DF A60	PM A62	DR Single-side A65		Without chipbreaker A67
	SF A60	DM A63	ER Double-side A65		
	EF A61	EM A64	ER Single-side A66		
	ADF A61	EG A64	SNR Double-side A66		
	NF A61	NM A64	LR Single-side A65		
	NGF A62				
Tool holder type	<input type="checkbox"/> -PDUNR/L11	DN <input type="checkbox"/> 1104 <input type="checkbox"/>	DN <input type="checkbox"/> 1104 <input type="checkbox"/>		DN <input type="checkbox"/> 1104 <input type="checkbox"/>
	<input type="checkbox"/> -PDUNR/L15-3	DN <input type="checkbox"/> 1504 <input type="checkbox"/>	DN <input type="checkbox"/> 1504 <input type="checkbox"/>	DN <input type="checkbox"/> 1504 <input type="checkbox"/>	DN <input type="checkbox"/> 1504 <input type="checkbox"/>
	<input type="checkbox"/> -PDUNR/L15	DN <input type="checkbox"/> 1506 <input type="checkbox"/>	DN <input type="checkbox"/> 1506 <input type="checkbox"/>	DN <input type="checkbox"/> 1506 <input type="checkbox"/>	DN <input type="checkbox"/> 1506 <input type="checkbox"/>

Corresponding tool holders of insert **SN** P-type clamping

PSKNR/L
KAPR:75°



R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S25S-PSKNR/L12	▲	▲	32	25	23	250	17	LEM6×13.4A	WH25L	L4A	---	---
S32T-PSKNR/L12	△	△	41	32	30	300	22	LEM8×21	WH30L	L4	S12APB	SP4
S40U-PSKNR/L12	△	△	50	40	38	350	27					

▲Stock available △Make-to-order

General turning

Internal turning tools

Applicable inserts

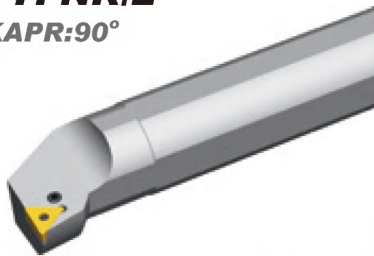
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A68	XM A70	DR Double-side A73	HDR A75	TC A76
	DF A68	PM A70	DR Single-side A74	HPR A76	Without chipbreaker A77
	EF A68	DM A71	ER Double-side A74		
	ADF A69	EM A71	ER Single-side A75		
	SF A69	EG A72	SNR Double-side A75		
		NM A72	LR Single-side A72		

Tool holder type	<input type="checkbox"/> -PSKNR/L12	SN <input type="checkbox"/> 1204 <input type="checkbox"/>	SN <input type="checkbox"/> 1204 <input type="checkbox"/>	SN <input type="checkbox"/> 1204 <input type="checkbox"/>	SN <input type="checkbox"/> 1204 <input type="checkbox"/>	SN <input type="checkbox"/> 1204 <input type="checkbox"/>
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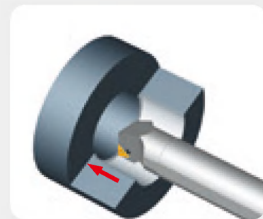
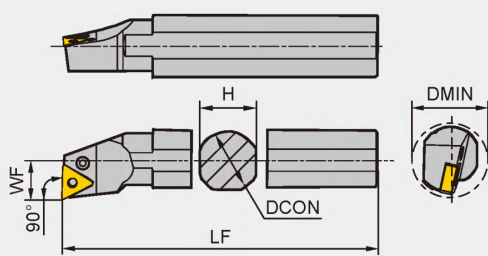


Corresponding tool holders of insert **TN** P-type clamping

PTFNRL
KAPR:90°



R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S25S-PTFNR/L16	▲	▲	32	25	23	250	17	LEM5×12B	WT09P	L3B	---	---
S32T-PTFNR/L16	△	△	41	32	30	300	21	LEM6×17	WH25L	L3	T16APB	SP3
S40U-PTFNR/L16	△	△	50	40	38	350	26					

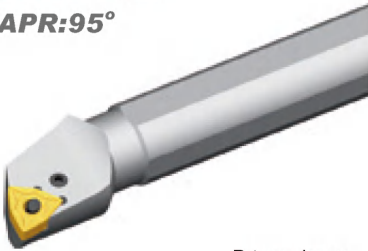
▲Stock available △Make-to-order

Applicable inserts

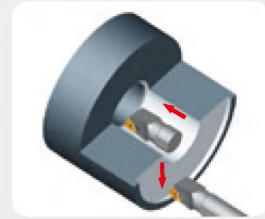
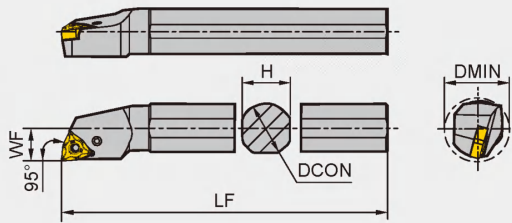
Application	For finishing	For semi-finishing	For roughing	For heavy machining	For cast iron machining
Inserts shape	XF A78	XM A80	DR Double-side A82	HDR A84	TC A84
	DF A78	PM A80	DR Single-side A83		Without chipbreaker A84
	SF A78	DM A81	ER Double-side A83		
	EF A79	EM A81	SNR Double-side A83		
	ES A79	EG A81	LR Single-side A82		
	ADF A79	EH A82			
Tool holder type	<input type="checkbox"/> -PTFNR/L16	TN <input type="checkbox"/> 1604 <input type="checkbox"/>	TN <input type="checkbox"/> 1604 <input type="checkbox"/>	TN <input type="checkbox"/> 1604 <input type="checkbox"/>	TN <input type="checkbox"/> 1604 <input type="checkbox"/>

Corresponding tool holders of insert **WN** P-type clamping

PWLNRL
KAPR:95°



R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Lever	Shim	Shim pin
	R	L	DMIN	DCON	H	LF	WF					
S16R-PWLNRL06	△	△	22	16	15	200	11	LEM5X12B	WT09P	L3B	---	---
S20R-PWLNRL06	△	△	25	20	18	200	13			L3B	---	---
S25S-PWLNRL06	△	△	35	25	23	250	17			L3B	---	---
S20R-PWLNRL08	△	△	25	20	18	200	13	LEM6X13.4A	WH25L	L4A	---	---
S25S-PWLNRL08	△	△	32	25	23	250	17			L4A	---	---
S32T-PWLNRL08	△	△	40	32	30	300	22			L4	W08AP	SP4

▲Stock available △Make-to-order

Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For cast iron machining
Inserts shape	XF A88	XM A90	DR Double-side A92	TC A93
	DF A88	PM A90	SNR Double-side A92	Without chipbreaker A93
	SF A88	DM A91		
	EF A89	EM A91		
	ES A89	EG A91		
	ADF A89	EH A92		
	NF A89	NM A92		
Tool holder type	<input type="checkbox"/> -PWLNRL06	WN <input type="checkbox"/> <input type="checkbox"/> 0604 <input type="checkbox"/> <input type="checkbox"/>	WN <input type="checkbox"/> <input type="checkbox"/> 0604 <input type="checkbox"/> <input type="checkbox"/>	WN <input type="checkbox"/> <input type="checkbox"/> 0604 <input type="checkbox"/> <input type="checkbox"/>
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General turning

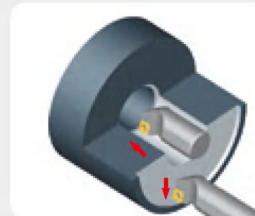
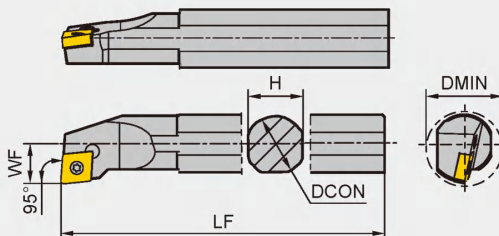
Internal turning tools

Corresponding tool holders of insert **CC** S-type clamping

SCLCRIL KAPR:95°



R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S08K-SCLCR/L06	▲	▲	10	8	7.4	125	5	I60M2.5×5.5		---	---
S10K-SCLCR/L06	▲	▲	13	10	9	125	6				
S12M-SCLCR/L06	▲	▲	16	12	11	150	9				
S12M-SCLCR/L09	▲	▲	16	12	11	150	9	I60M3.5×8	WT15IP	---	---
S14N-SCLCR/L09	△	△	18	14	13	160	9				
S16Q-SCLCR/L09	△	△	20	16	15	180	11				
S20R-SCLCR/L09	△	△	25	20	18	200	13	I60M3.5×8	WT15IP	---	---
S25S-SCLCR/L09	△	△	32	25	23	250	17	I60M3.5×10			
S20R-SCLCR/L12	△	△	25	20	19	200	12.5	I60M4×11X			
S25S-SCLCR/L12	▲	▲	32	25	23	250	17	I60M4×11X	WT15IP	---	---
S32T-SCLCR/L12	△	△	40	32	30	300	22	I60M4×11X	WH40L	C12BS	SM6×10XA
S40U-SCLCR/L12	△	△	50	40	37	350	27				

▲Stock available △Make-to-order

Applicable inserts

Application	For extra finishing	For finishing	For semi-finishing	For roughing	For cast iron machining	For Al machining
Inserts shape	SF A95	XF A95	XM A96	HR A98	TC A98	LH A99
		HF A95	HM A97			LC A99
		EF A96	EM A97			
		AHF A96	EG A97			
Tool holder type	<input type="checkbox"/> -SCLCR/L06	CC <input type="checkbox"/> 0602 <input type="checkbox"/>	CC <input type="checkbox"/> 0602 <input type="checkbox"/>	CC <input type="checkbox"/> 0602 <input type="checkbox"/>	CC <input type="checkbox"/> 0602 <input type="checkbox"/>	CCGX0602 <input type="checkbox"/>
	<input type="checkbox"/> -SCLCR/L09	CC <input type="checkbox"/> 09T3 <input type="checkbox"/>	CC <input type="checkbox"/> 09T3 <input type="checkbox"/>	CC <input type="checkbox"/> 09T3 <input type="checkbox"/>	CC <input type="checkbox"/> 09T3 <input type="checkbox"/>	CCGX09T3 <input type="checkbox"/>
	<input type="checkbox"/> -SCLCR/L12		CC <input type="checkbox"/> 1204 <input type="checkbox"/>	CC <input type="checkbox"/> 1204 <input type="checkbox"/>	CC <input type="checkbox"/> 1204 <input type="checkbox"/>	CCGX1204 <input type="checkbox"/>

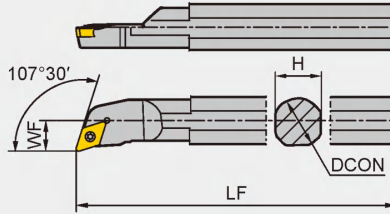



Corresponding tool holders of insert **DC** S-type clamping

SDQCR/L
KAPR:107° 30'



R-type shown














Type	Stock		Basic dimensions(mm)					Screw	Wrench	---	---
	R	L	DMIN	DCON	H	LF	WF			---	---
S10K-SDQCR/L07	▲	▲	13	10	9	125	7	I60M2.5×5.5	WT071P	---	---
S12M-SDQCR/L07	▲	▲	16	12	11	150	9	I60M2.5×6.5		---	---
S16Q-SDQCR/L07	△	△	20	16	15	180	11	I60M2.5×6.5		---	---
S20R-SDQCR/L11	△	△	25	20	18	200	13	I60M3.5×8	WT151P	---	---
S25S-SDQCR/L11	△	△	32	25	23	250	17	I60M3.5×10		---	---
S32T-SDQCR/L11	△	△	40	32	30	300	22	I60M3.5×8		---	---
S40U-SDQCR/L11	△	△	50	40	37	350	27	I60M3.5×10		---	---

▲Stock available △Make-to-order

General turning

Internal turning tools

Applicable inserts

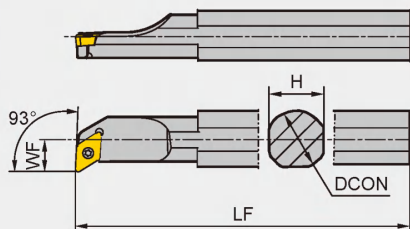
Application	For extra finishing	For finishing	For semi-finishing	For roughing	For AI machining
Inserts shape	SF  A100	XF  A100	XM  A101	HR  A102	LH  A103
		HF  A100	HM  A102		LC  A103
		EF  A101	EM  A102		
		AHF  A101			
Tool holder type	<input type="checkbox"/> -SDQCR/L07	DC <input type="checkbox"/> <input type="checkbox"/> 0702 <input type="checkbox"/> <input type="checkbox"/>	DC <input type="checkbox"/> <input type="checkbox"/> 0702 <input type="checkbox"/> <input type="checkbox"/>	DC <input type="checkbox"/> <input type="checkbox"/> 0702 <input type="checkbox"/> <input type="checkbox"/>	DCGX0702 <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> -SDQCR/L11	DC <input type="checkbox"/> <input type="checkbox"/> 11T3 <input type="checkbox"/> <input type="checkbox"/>	DC <input type="checkbox"/> <input type="checkbox"/> 11T3 <input type="checkbox"/> <input type="checkbox"/>	DC <input type="checkbox"/> <input type="checkbox"/> 11T3 <input type="checkbox"/> <input type="checkbox"/>	DCGX11T3 <input type="checkbox"/> <input type="checkbox"/>

Corresponding tool holders of insert **DC** S-type clamping

SDUCR/L
KAPR:93°














R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	---	---
	R	L	DMIN	DCON	H	LF	WF				
S10K-SDUCR/L07	▲	▲	13	10	9	125	7	I60M2.5×5.5	WT071P	---	---
S12M-SDUCR/L07	▲	▲	16	12	11	150	9				
S16Q-SDUCR/L07	△	△	20	16	15	180	11	I60M3.5×8	WT151P	---	---
S20R-SDUCR/L11	△	△	25	20	18	200	13				
S25S-SDUCR/L11	△	△	32	25	23	250	17	I60M3.5×10	WT151P	---	---
S32T-SDUCR/L11	△	△	40	32	30	300	22				
S40U-SDUCR/L11	△	△	50	40	37	350	27				

▲Stock available △Make-to-order

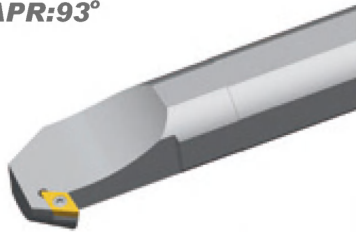
Applicable inserts

Application	For extra finishing	For finishing	For semi-finishing	For roughing	For AI machining	
Inserts shape	SF  A100	XF  A100	XM  A101	HR  A102	LH  A103	
		HF  A100	HM  A102		LC  A103	
		EF  A101	EM  A102			
		AHF  A101				
Tool holder type	<input type="checkbox"/> SDUCR/L07	DC <input type="checkbox"/> <input type="checkbox"/> 0702 <input type="checkbox"/> <input type="checkbox"/>	DC <input type="checkbox"/> <input type="checkbox"/> 0702 <input type="checkbox"/> <input type="checkbox"/>	DC <input type="checkbox"/> <input type="checkbox"/> 0702 <input type="checkbox"/> <input type="checkbox"/>		DCGX0702 <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> SDUCR/L11	DC <input type="checkbox"/> <input type="checkbox"/> 11T3 <input type="checkbox"/> <input type="checkbox"/>	DC <input type="checkbox"/> <input type="checkbox"/> 11T3 <input type="checkbox"/> <input type="checkbox"/>	DC <input type="checkbox"/> <input type="checkbox"/> 11T3 <input type="checkbox"/> <input type="checkbox"/>	DC <input type="checkbox"/> <input type="checkbox"/> 11T3 <input type="checkbox"/> <input type="checkbox"/>	DCGX11T3 <input type="checkbox"/> <input type="checkbox"/>

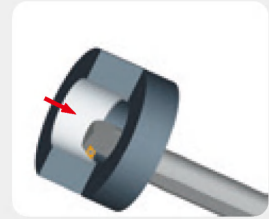
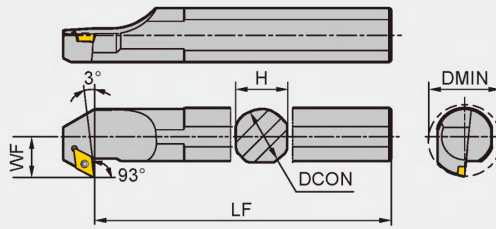






Corresponding tool holders of insert **DC** S-type clamping

SDZCR/L
KAPR:93°



R-type shown














Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S25S-SDZCR/L11	△	△	32	25	23	250	17	I60M3.5×10	WT15IP	---	---
S32T-SDZCR/L11	△	△	40	32	30	300	22				
S40U-SDZCR/L11	△	△	50	40	37	350	27	I60M3.5×12	WT15IP WH35L	D11BS	SM5×8.65XA

▲Stock available △Make-to-order

General turning

Internal turning tools

Applicable inserts

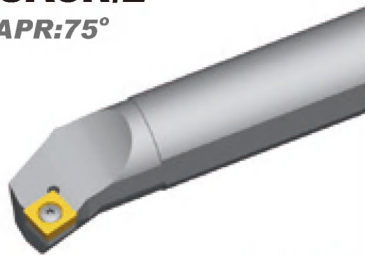
Application	For extra finishing	For finishing	For semi-finishing	For roughing	For AI machining
Inserts shape	SF  A100	XF  A100	XM  A101	HR  A102	LH  A103
		HF  A100	HM  A102		LC  A103
		EF  A101	EM  A102		
		AHF  A101			
Tool holder type	<input type="checkbox"/> <input type="checkbox"/> -SDZCR/L11	DC <input type="checkbox"/> <input type="checkbox"/> 11T3 <input type="checkbox"/> <input type="checkbox"/>	DC <input type="checkbox"/> <input type="checkbox"/> 11T3 <input type="checkbox"/> <input type="checkbox"/>	DC <input type="checkbox"/> <input type="checkbox"/> 11T3 <input type="checkbox"/> <input type="checkbox"/>	DC <input type="checkbox"/> <input type="checkbox"/> 11T3 <input type="checkbox"/> <input type="checkbox"/>



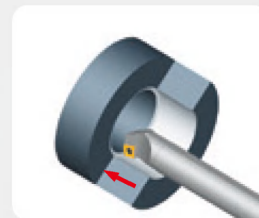
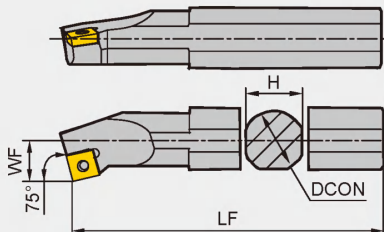
Internal turning tools

Corresponding tool holders of insert **SC** S-type clamping

SSKCRIL
KAPR:75°







R-type shown













General turning

Internal turning tools

Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S12M-SSKCR/L09	▲	△	16	12	11	150	9	I60M3.5×8	WT15IP	---	---
S16Q-SSKCR/L09	△	△	20	16	15	180	11				
S20R-SSKCR/L09	△	△	25	20	18	200	13				
S25S-SSKCR/L12	△	△	32	25	23	250	17	I60M4×11X	WT15IP	---	---
S32T-SSKCR/L12	△	△	40	32	30	300	22		WT15IP WH40L	S12BS	SM6×10XA

▲Stock available △Make-to-order

Applicable inserts

Application	For finishing		For semi-finishing		For roughing		For AI machining	
Inserts shape	XF	 A106	XM	 A107	HR	 A108	LH	 A108
	HF	 A106	HM	 A107			LC	 A108
	EF	 A106	EM	 A107				
	AHF	 A106						
Tool holder type	<input type="checkbox"/> -SSKCR/L09	SC <input type="checkbox"/> <input type="checkbox"/> 09T3 <input type="checkbox"/> <input type="checkbox"/>	SC <input type="checkbox"/> <input type="checkbox"/> 09T3 <input type="checkbox"/> <input type="checkbox"/>	SC <input type="checkbox"/> <input type="checkbox"/> 09T3 <input type="checkbox"/> <input type="checkbox"/>	SC <input type="checkbox"/> <input type="checkbox"/> 09T3 <input type="checkbox"/> <input type="checkbox"/>	SC <input type="checkbox"/> <input type="checkbox"/> 09T3 <input type="checkbox"/> <input type="checkbox"/>	SC <input type="checkbox"/> <input type="checkbox"/> 09T3 <input type="checkbox"/> <input type="checkbox"/>	SC <input type="checkbox"/> <input type="checkbox"/> 09T3 <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> -SSKCR/L12		SC <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	SC <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	SC <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	SC <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	SC <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	SC <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>

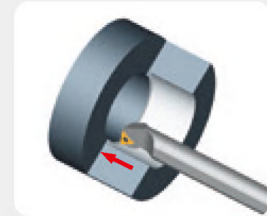
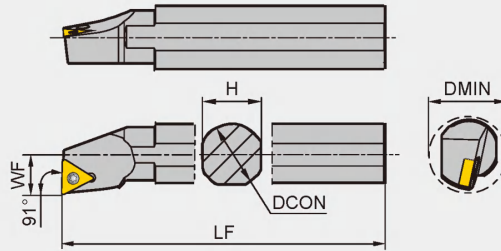


Corresponding tool holders of insert **TC** S-type clamping

STFCRIL
KAPR:91°



R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S12M-STFCR/L11	▲	▲	16	12	11	150	9	I60M2.5×6.5	WT071P	---	---
S16Q-STFCR/L11	△	△	20	16	15	180	11				
S20R-STFCR/L11	△	△	25	20	18	200	13	I60M3.5×10	WT151P	---	---
S25S-STFCR/L16	△	△	32	25	23	250	17				
S32T-STFCR/L16	△	△	40	32	30	300	22	I60M3.5×12	WT151P WH35L	T16BS	SM5×8.65XA
S40U-STFCR/L16	△	△	50	40	37	350	27				

▲Stock available △Make-to-order

General turning

Internal turning tools

Applicable inserts

Application	For finishing	For semi-finishing	For roughing	For AI machining	
Inserts shape	XF A109	XM A111	HR A112	LH A113	
	HF A109	HM A112		LC A113	
	EF A109	EM A111			
	AHF A111	EG A111			
Tool holder type	<input type="checkbox"/> -STFCR/L11	TC <input type="checkbox"/> <input type="checkbox"/> 1102 <input type="checkbox"/> <input type="checkbox"/>	TC <input type="checkbox"/> <input type="checkbox"/> 1102 <input type="checkbox"/> <input type="checkbox"/>	TC <input type="checkbox"/> <input type="checkbox"/> 1102 <input type="checkbox"/> <input type="checkbox"/>	TCGX1102 <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> -STFCR/L16	TC <input type="checkbox"/> <input type="checkbox"/> 16T3 <input type="checkbox"/> <input type="checkbox"/>	TC <input type="checkbox"/> <input type="checkbox"/> 16T3 <input type="checkbox"/> <input type="checkbox"/>	TC <input type="checkbox"/> <input type="checkbox"/> 16T3 <input type="checkbox"/> <input type="checkbox"/>	TCGX16T3 <input type="checkbox"/> <input type="checkbox"/>

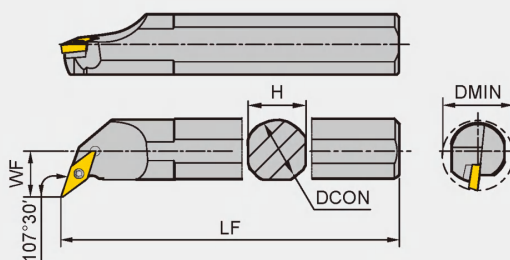






Corresponding tool holders of insert VC S-type clamping

SVQCR/L
KAPR:107°30'









R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S16Q-SVQCR/L11	▲	▲	22	16	15	180	13	I60M2.5×6.5	WT07IP	---	---
S20R-SVQCR/L16	△	△	27	20	18	200	14	I60M3.5×8	WT15IP	---	---
S25S-SVQCR/L16	△	△	35	25	23	250	20	I60M3.5×12	WT15IP	V16BS	SM5×8.65XA
S32T-SVQCR/L16	△	△	40	32	30	300	22		WH35L		

▲Stock available △Make-to-order

Applicable inserts

Application	For extra finishing	For finishing	For Al machining	
Inserts shape	SF  A114	XF  A114	LH  A116	
		NF  A114	LC  A116	
		AHF  A114		
Tool holder type	<input type="checkbox"/> SVQCR/L11	VC <input type="checkbox"/> <input type="checkbox"/> 1103 <input type="checkbox"/> <input type="checkbox"/>	VC <input type="checkbox"/> <input type="checkbox"/> 1103 <input type="checkbox"/> <input type="checkbox"/>	VCGX1103 <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> SVQCR/L16		VC <input type="checkbox"/> <input type="checkbox"/> 1604 <input type="checkbox"/> <input type="checkbox"/>	VCGX1604 <input type="checkbox"/> <input type="checkbox"/>

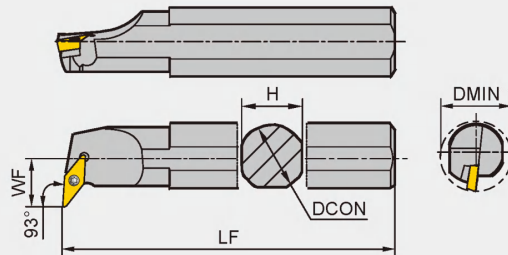
Corresponding tool holders of insert **VC**

S-type clamping

SVUCR/L
KAPR:93°









R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S16Q-SVUCR/L11	△	△	24	16	15	180	15	I60M2.5×6.5	WT07IP	---	---
S20R-SVUCR/L11	△	△	28	20	18	200	17				
S25S-SVUCR/L16	△	△	33	25	23	250	19	I60M3.5×12	WT15IP	---	---
S32T-SVUCR/L16	△	△	40	32	30	300	22				

▲Stock available △Make-to-order

Applicable inserts

Application	For extra finishing	For finishing	For Al machining	
Inserts shape	SF  A114	XF  A114	LH  A116	
		NF  A114	LC  A116	
		AHF  A114		
Tool holder type	<input type="checkbox"/> SVUCR/L11	VC <input type="checkbox"/> <input type="checkbox"/> 1103 <input type="checkbox"/> <input type="checkbox"/>	VC <input type="checkbox"/> <input type="checkbox"/> 1103 <input type="checkbox"/> <input type="checkbox"/>	VCGX1103 <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> SVUCR/L16		VC <input type="checkbox"/> <input type="checkbox"/> 1604 <input type="checkbox"/> <input type="checkbox"/>	VCGX1604 <input type="checkbox"/> <input type="checkbox"/>

General turning

Internal turning tools

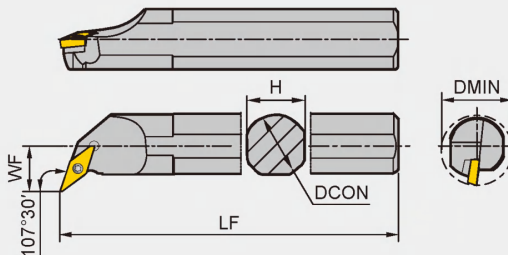


Corresponding tool holders of insert **VB** S-type clamping

SVQBR/L
KAPR:107°30'



R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S20R-SVQBR/L16	△	△	27	20	18	200	14	I60M3.5×8	WT15IP	---	---
S25S-SVQBR/L16	△	△	35	25	23	250	20	I60M3.5×12	WT15IP	V16BS	SM5×8.65XA
S32T-SVQBR/L16	▲	▲	40	32	30	300	22		WH35L		

▲Stock available △Make-to-order

Applicable inserts

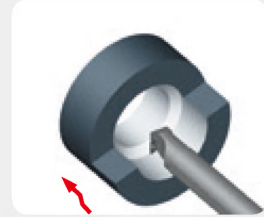
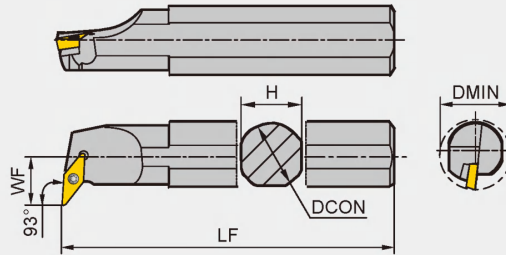
Application	For finishing	For semi-finishing	For roughing	
Inserts shape	XF A117	XM A118	HR A119	
	EF A117	HM A119	SNR A119	
	NF A118	EM A118		
	NGF A118			
	AHF A118			
Tool holder type	<input type="checkbox"/> <input type="checkbox"/> -SVQBR/L16	VB <input type="checkbox"/> <input type="checkbox"/> 1604 <input type="checkbox"/> <input type="checkbox"/>	VB <input type="checkbox"/> <input type="checkbox"/> 1604 <input type="checkbox"/> <input type="checkbox"/>	VB <input type="checkbox"/> <input type="checkbox"/> 1604 <input type="checkbox"/> <input type="checkbox"/>

Corresponding tool holders of insert **VB** S-type clamping

SVUBRIL
KAPR:93°



R-type shown



Type	Stock		Basic dimensions(mm)					Screw	Wrench	Shim	Shim screw
	R	L	DMIN	DCON	H	LF	WF				
S25S-SVUBR/L16	△	△	33	25	23	250	18	I60M3.5×12	WT151P	---	---
S32T-SVUBR/L16	△	△	40	32	30	300	22				

※ Tool holder with cooling hole ▲ Stock available △ Make-to-order

General turning

Internal turning tools

Applicable inserts

Application	For finishing	For semi-finishing	For roughing	
Inserts shape	XF A117	XM A118	HR A119	
	EF A117	HM A119	SNR A119	
	NF A118	EM A118		
	NGF A118			
	AHF A118			
Tool holder type	<input type="checkbox"/> <input type="checkbox"/> -SVUBR/L16	VB <input type="checkbox"/> <input type="checkbox"/> 1604 <input type="checkbox"/> <input type="checkbox"/>	VB <input type="checkbox"/> <input type="checkbox"/> 1604 <input type="checkbox"/> <input type="checkbox"/>	VB <input type="checkbox"/> <input type="checkbox"/> 1604 <input type="checkbox"/> <input type="checkbox"/>



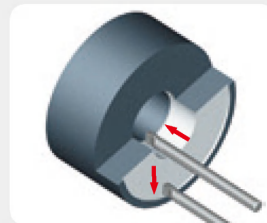
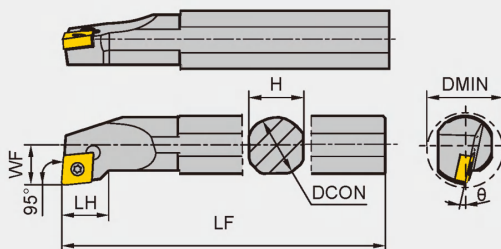
Corresponding tool holders of insert CP □ □

S-type clamping

SCLPRIL
KAPR:95°




R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	H	LF	WF	θ	LH				
S10K-SCLPR/L06	▲	▲	12	10	9	125	6	-7°	17	I60M2.5×5.5	WT07IP	---	---
S12M-SCLPR/L06	▲	▲	16	12	11	150	8	-4°	20				
S16Q-SCLPR/L09	▲	▲	20	16	15	180	10	-4°	29	I60M3.5×8	WT15IP	---	---
S20R-SCLPR/L09	△	△	25	20	18	200	13	-4°	35				

▲Stock available △Make-to-order

Applicable inserts

Application	For extra finishing
Inserts shape	SF  A120
Tool holder type	□□-SCLPR/L06 CP□□0602□□ □□-SCLPR/L09 CP□□09T3□□

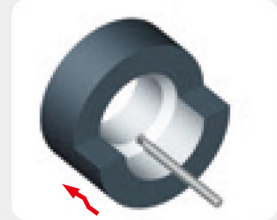
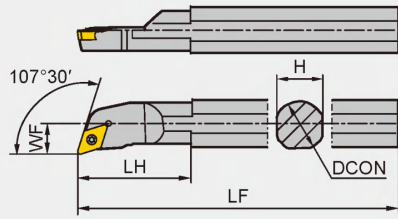
Corresponding tool holders of insert **DP** □ □

S-type clamping

SDQPR/L
KAPR:107°30'




R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	H	LF	WF	θ	LH				
S10K-SDQPR/L07	△	△	13	10	9	125	7	-8°	20	I60M2.5×5.5	WT07IP	---	---
S12M-SDQPR/L07	▲	△	16	12	11	150	9	-8°	22				
S16Q-SDQPR/L07	▲	△	20	16	15	180	11	-6°	27	I60M2.5×6.5	WT07IP	---	---
S16Q-SDQPR/L11	▲	△	20	16	15	180	11	-6°	32				
S20R-SDQPR/L11	△	△	25	20	18	200	13	-6°	33	I60M3.5×8	WT15IP	---	---

▲Stock available △Make-to-order

Applicable inserts

Application	For extra finishing
Inserts shape	SF  A120
Tool holder type	□□-SDQPR/L07 DP□□0702□□ □□-SDQPR/L11 DP□□11T3□□

General turning

Internal turning tools





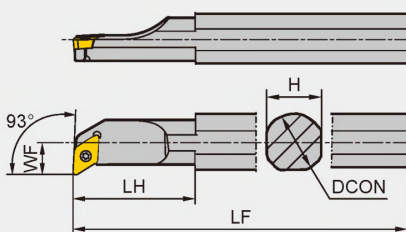
Corresponding tool holders of insert **DP** □ □

S-type clamping

SDUPRIL
KAPR:93°




R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	H	LF	WF	θ	LH				
S10K-SDUPR/L07	▲	▲	15	10	9	125	9	-8°	18	160M2.5×5.5	WT071P	---	---
S12M-SDUPR/L07	▲	△	16	12	11	150	9	-8°	19				
S16Q-SDUPR/L07	△	△	20	16	15	180	11	-6°	25	160M2.5×6.5			

▲Stock available △Make-to-order

Applicable inserts

Application	For extra finishing
Inserts shape	SF  A120
Tool holder type	□□-SDUPR/L07 DP□□0702□□

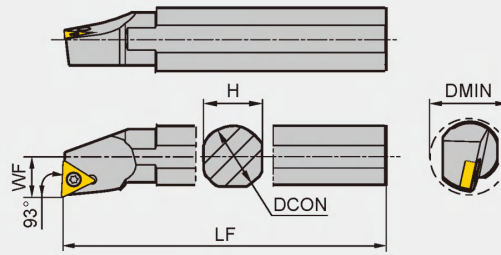
Corresponding tool holders of insert **TP**



S-type clamping

STUPRIL
KAPR:93°




R-type shown

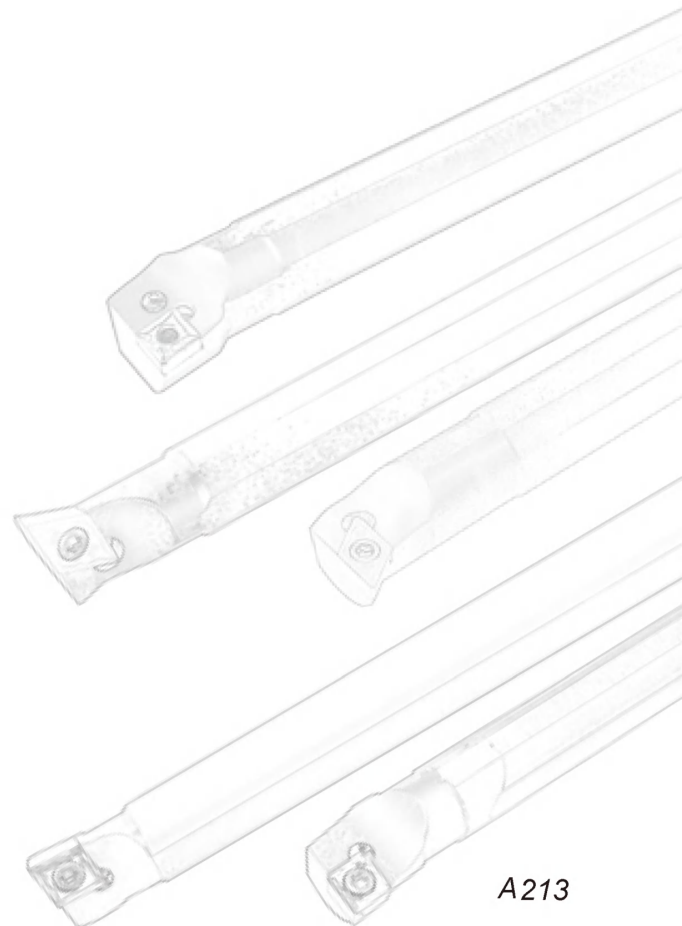


Type	Stock		Basic dimensions(mm)					Screw	Wrench	---	---
	R	L	DMIN	DCON	H	LF	WF			---	---
S10M-STUPR/L09	△	△	13	10	9.4	150	6	I60M2.2×5.5	WT071P	---	---
S10M-STUPR/L11	△	△	13	10	9.4	150	6			---	---
S12Q-STUPR/L11	△	△	16	12	11.4	180	7.5	I60M2.5×6.5	WT071P	---	---
S16R-STUPR/L11	△	△	20	16	15	200	10			---	---

▲Stock available △Make-to-order

Applicable inserts

Application	For extra finishing
Inserts shape	SF 
	A122
Tool holder type	
<input type="checkbox"/> -STUPR/L09	TP <input type="checkbox"/> <input type="checkbox"/> 0902 <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> -STUPR/L11	TP <input type="checkbox"/> <input type="checkbox"/> 1103 <input type="checkbox"/> <input type="checkbox"/>



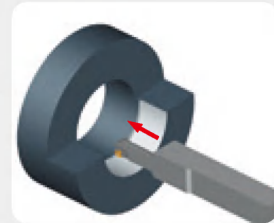
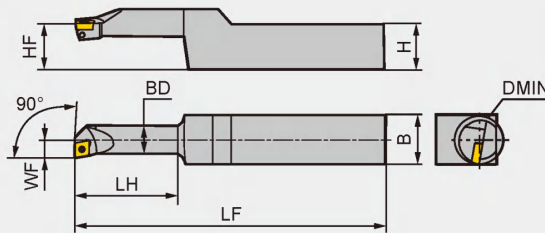
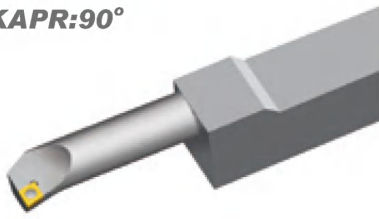
General turning

Internal turning tools



Corresponding tool holders of insert **CC** S-type clamping

SCFCRIL
KAPR:90°



General turning

Internal turning tools

Type	Stock		Basic dimensions(mm)								Screw	Wrench	---	---
	R	L	DMIN	BD	LF	WF	H	HF	B	LH				
S10M-SCFCR/L06S25	▲	▲	13	10	150	7	27	27	25	35	I60M2.5×5.5	WT071P	---	---
S12P-SCFCR/L06S25	▲	▲	16	12	170	9	27	27	25	35				
S16Q-SCFCR/L09S25	▲	▲	20	16	180	11	27	27	25	50	I60M3.5×8	WT151P	---	---
S20R-SCFCR/L09S25	△	△	25	20	200	13	27	27	25	50				
S25R-SCFCR/L12S25	△	△	32	25	200	17	27	27	25	75	I60M5×13	WT201P	---	---

▲Stock available △Make-to-order

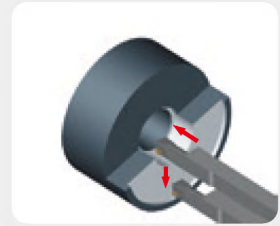
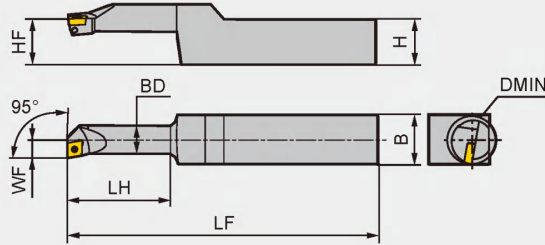
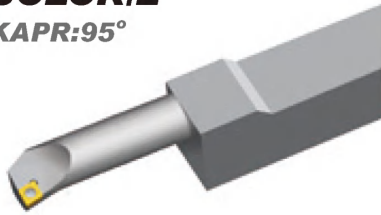
Applicable inserts

Application	For extra finishing	For finishing	For semi-finishing	For roughing	For cast iron machining	For Al machining
Inserts shape	SF  A95	XF  A95	XM  A96	HR  A98	TC  A98	LH  A99
		HF  A95	HM  A97			LC  A99
		EF  A96	EM  A97			
		AHF  A96	EG  A97			
Tool holder type	<input type="checkbox"/> -SCFCR/L06S25	CC <input type="checkbox"/> <input type="checkbox"/> 0602 <input type="checkbox"/> <input type="checkbox"/>	CC <input type="checkbox"/> <input type="checkbox"/> 0602 <input type="checkbox"/> <input type="checkbox"/>	CC <input type="checkbox"/> <input type="checkbox"/> 0602 <input type="checkbox"/> <input type="checkbox"/>	CC <input type="checkbox"/> <input type="checkbox"/> 0602 <input type="checkbox"/> <input type="checkbox"/>	CC <input type="checkbox"/> <input type="checkbox"/> 0602 <input type="checkbox"/> <input type="checkbox"/> CCGX0602 <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> -SCFCR/L09S25	CC <input type="checkbox"/> <input type="checkbox"/> 09T3 <input type="checkbox"/> <input type="checkbox"/>	CC <input type="checkbox"/> <input type="checkbox"/> 09T3 <input type="checkbox"/> <input type="checkbox"/>	CC <input type="checkbox"/> <input type="checkbox"/> 09T3 <input type="checkbox"/> <input type="checkbox"/>	CC <input type="checkbox"/> <input type="checkbox"/> 09T3 <input type="checkbox"/> <input type="checkbox"/>	CC <input type="checkbox"/> <input type="checkbox"/> 09T3 <input type="checkbox"/> <input type="checkbox"/> CCGX09T3 <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> -SCFCR/L12S25		CC <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	CC <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	CC <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/>	CC <input type="checkbox"/> <input type="checkbox"/> 1204 <input type="checkbox"/> <input type="checkbox"/> CCGX1204 <input type="checkbox"/> <input type="checkbox"/>



Corresponding tool holders of insert **CC** S-type clamping

SCLCRIL
KAPR:95°



Type	Stock		Basic dimensions(mm)								Screw	Wrench	---	---
	R	L	DMIN	BD	LF	WF	H	HF	B	LH				
S10M-SCLCR/L06S20	▲	▲	13	10	150	7	22	22	20	30	I60M2.5×5.5	WT07IP	---	---
S12P-SCLCR/L06S20	▲	▲	16	12	170	9	22	22	20	35				
S16Q-SCLCR/L09S20	▲	▲	20	16	180	11	22	22	20	40	I60M3.5×8	WT15IP	---	---
S20R-SCLCR/L09S20	△	△	25	20	200	13	22	22	20	45				

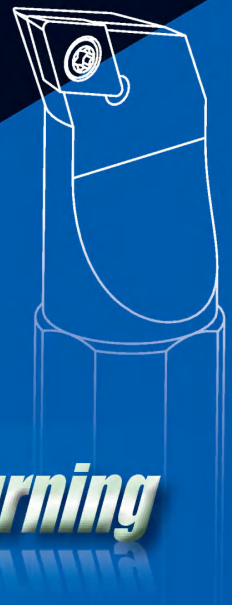
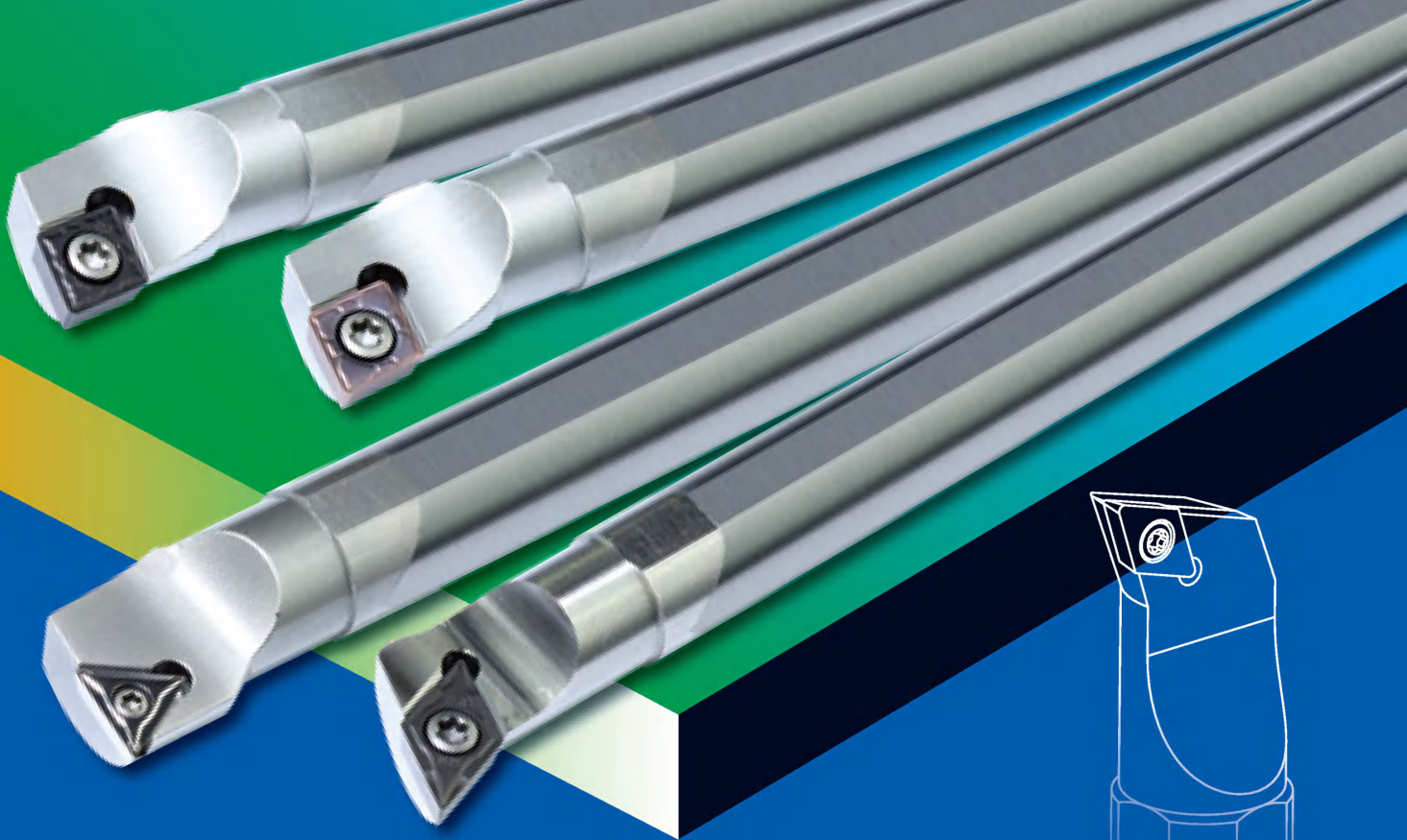
▲Stock available △Make-to-order

General turning

Internal turning tools

Applicable inserts

Application	For extra finishing	For finishing	For semi-finishing	For roughing	For cast iron machining	For Al machining
Inserts shape	SF  A95	XF  A95	XM  A96	HR  A98	TC  A98	LH  A99
		HF  A95	HM  A97			LC  A99
		EF  A96	EM  A97			
		AHF  A96	EG  A97			
Tool holder type	<input type="checkbox"/> -SCLCR/L06S20	CC <input type="checkbox"/> 0602 <input type="checkbox"/>	CC <input type="checkbox"/> 0602 <input type="checkbox"/>	CC <input type="checkbox"/> 0602 <input type="checkbox"/>	CC <input type="checkbox"/> 0602 <input type="checkbox"/>	CCGX0602 <input type="checkbox"/>
	<input type="checkbox"/> -SCLCR/L09S20	CC <input type="checkbox"/> 09T3 <input type="checkbox"/>	CC <input type="checkbox"/> 09T3 <input type="checkbox"/>	CC <input type="checkbox"/> 09T3 <input type="checkbox"/>	CC <input type="checkbox"/> 09T3 <input type="checkbox"/>	CCGX09T3 <input type="checkbox"/>



Damping tool holders for internal turning

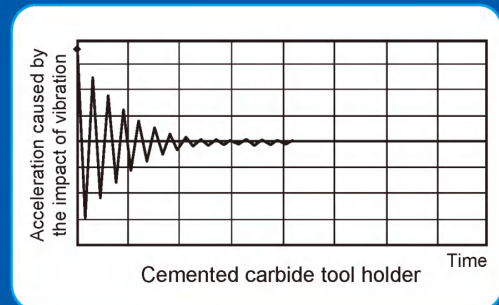
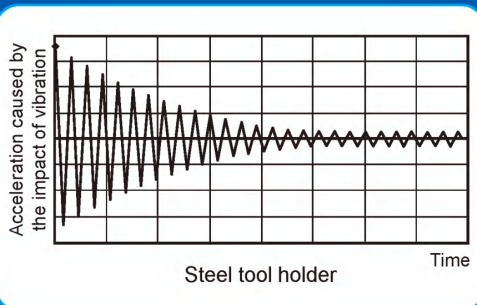
Technical features

Increasing material rigidity of tool holder can reduce the amplitude, or obtain larger overhang under the condition of same systemic stability. Therefore, compared with steel tool holder, cemented carbide tool holder has better dampening effect, smaller amplitude and reaches convergence point sooner. As for machining under the condition of long overhang and easy vibration, they can exert excellent performance and achieve higher dimensional accuracy and surface quality.



Under the same machining condition

The maximum overhang of cemented carbide tool holder can reach $L \leq 6D$, while the recommended maximum overhang of steel tool holder is $L \leq 3D$.

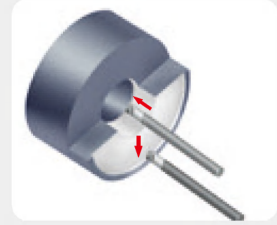
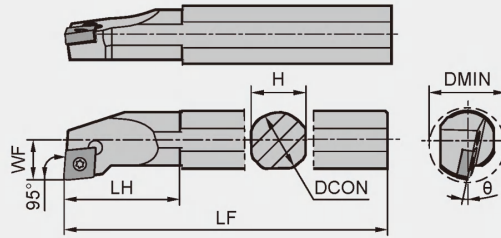


Corresponding tool holders of insert **CP** (Damping tool holder) S-type clamping

SCLPRIL
KAPR:95°



R-type shown




Type	Stock		Basic dimensions(mm)							Screw	Wrench	--	--
	R	L	DMIN	DCON	WF	LF	LH	H	θ			--	--
C10M-SCLPR/L06	▲	△	12	10	6	150	17	9	-7°	I60M2.5×5.5	WT071P	--	--
C12Q-SCLPR/L06	△	△	16	12	8	180	20	11	-4°			--	--
C16R-SCLPR/L09	▲	△	20	16	10	200	29	15	-4°	I60M3.5×8	WT151P	--	--
C20S-SCLPR/L09	△	△	25	20	13	250	35	18	-4°			--	--

▲Stock available △Make-to-order

General turning

Internal turning tools

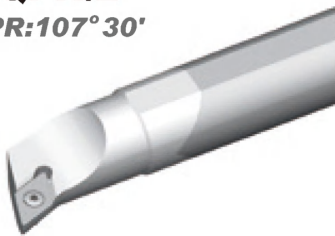
Applicable inserts

Application	For extra finishing
Inserts shape	SF  A120
Tool holder type	<input type="checkbox"/> <input type="checkbox"/> -SCLPR/L06 CP <input type="checkbox"/> <input type="checkbox"/> 0602 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> -SCLPR/L09 CP <input type="checkbox"/> <input type="checkbox"/> 09T3 <input type="checkbox"/> <input type="checkbox"/>

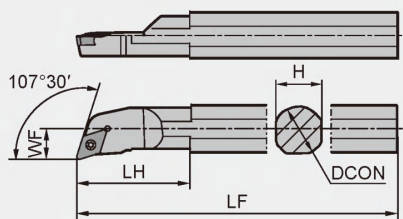


Corresponding tool holders of insert **DP** (Damping tool holder) S-type clamping

SDQPR/L
KAPR:107°30'




R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	WF	LF	LH	H	θ				
C10M-SDQPR/L07	▲	△	13	10	7	150	20	9	-8°	I60M2.5×5.5	WT07IP	---	---
C12Q-SDQPR/L07	△	△	16	12	9	180	22	11	-8°				
C16R-SDQPR/L07	△	△	20	16	11	200	27	15	-6°	I60M2.5×6.5	WT07IP	---	---
C16R-SDQPR/L11	△	△	20	16	11	200	32	15	-6°				
C20S-SDQPR/L11	▲	△	25	20	13	250	33	18	-6°	I60M3.5×8	WT15IP	---	---

▲Stock available △Make-to-order

Applicable inserts

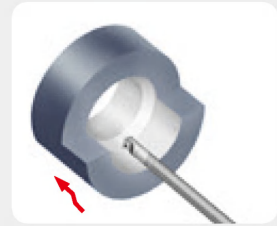
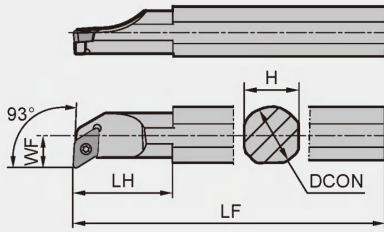
Application	For extra finishing
Inserts shape	SF  A120
Tool holder type	<input type="checkbox"/> -SDQPR/L07 DP <input type="checkbox"/> <input type="checkbox"/> 0702 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> -SDQPR/L11 DP <input type="checkbox"/> <input type="checkbox"/> 11T3 <input type="checkbox"/> <input type="checkbox"/>



Corresponding tool holders of insert **DP** (Damping tool holder) S-type clamping

SDUPRIL
KAPR:93°




R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	WF	LF	LH	H	θ			---	---
C10M-SDUPR/L07	△	△	15	10	9	150	18	9	-8°	I60M2.5×5.5	WT07IP	---	---
C12Q-SDUPR/L07	△	△	16	12	9	180	19	11	-8°	I60M2.5×5.5		---	---
C16R-SDUPR/L07	△	△	20	16	11	200	25	15	-6°	I60M2.5×6.5		---	---

▲Stock available △Make-to-order

Applicable inserts

Application	For extra finishing
Inserts shape	SF  A120
Tool holder type	<input type="checkbox"/> -SDUPR/L07 DP <input type="checkbox"/> <input type="checkbox"/> 0702 <input type="checkbox"/> <input type="checkbox"/>

General turning

Internal turning tools

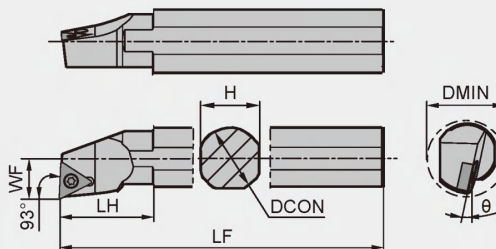


Corresponding tool holders of insert **TP** (Damping tool holder) S-type clamping

STUPRIL
KAPR:93°




R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	WF	LF	LH	H	θ				
C10M-STUPR/L09	▲	△	12	10	6	150	20	9	-6°	I60M2.2×5.5	WT071P	---	---
C12Q-STUPR/L09	▲	△	16	12	8	180	22	11	-4°				
C12Q-STUPR/L11	▲	△	16	12	8	180	25	11	-4°	I60M2.5×6.5	WT071P	---	---
C16R-STUPR/L11	▲	△	20	16	10	200	27	15	-3°				

▲Stock available △Make-to-order

Applicable inserts

Application	For extra finishing
Inserts shape	SF  A122
Tool holder type	<input type="checkbox"/> -STUPR/L09 TP <input type="checkbox"/> <input type="checkbox"/> 0902 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> -STUPR/L11 TP <input type="checkbox"/> <input type="checkbox"/> 1103 <input type="checkbox"/> <input type="checkbox"/>

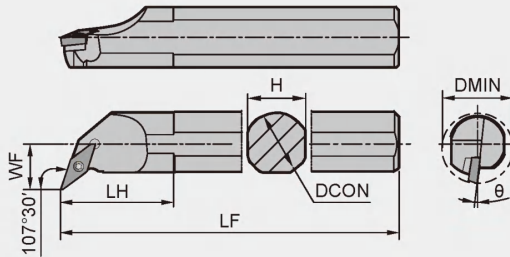


Corresponding tool holders of insert VC□□ (Damping tool holder) S-type clamping

SVQCRIL
KAPR:107°30'



R-type shown



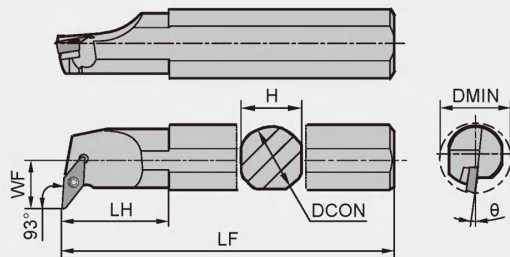
Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	WF	LF	LH	H	θ				
C16R-SVQCR/L11	△	△	22	16	13	200	28	15	-6°	160M2.5×6.5	WT071P	---	---
C20S-SVQCR/L11	△	△	26	20	15	250	32	18	-4°			---	---

▲Stock available △Make-to-order

SVUCRIL
KAPR:93°





R-type shown



Type	Stock		Basic dimensions(mm)							Screw	Wrench	---	---
	R	L	DMIN	DCON	WF	LF	LH	H	θ				
C16R-SVUCR/L11	△	△	24	16	15	200	25	15	-6°	160M2.5×6.5	WT071P	---	---
C20S-SVUCR/L11	△	△	28	20	17	250	30	18	-4°			---	---

▲Stock available △Make-to-order

Applicable inserts

Application	For extra finishing	For Al machining
Inserts shape	SF  A114	LH  A116
		LC  A116
Tool holder type	□□-SVQCR/L11	VC□□1103□□
	□□-SVUCR/L11	VC□□1103□□

General turning
Internal turning tools



Table of recommended cutting parameters for general turning

General turning

Application information for general turning

ISO	Materials	Hardness HB	CVD Coating			PVD Coating			Cermet	Coated cermet	
			YBC152	YBC252	YBC352	YBG102	YBG202	YBG302	YNG151	YNG151C	
			Feed rate (mm/rev)								
			0.1-0.6	0.1-0.8	0.2-1.0	0.2-0.4	0.1-0.6	0.05-0.8	0.05-0.2	0.05-0.2	
			Cutting speed (m/min)								
P	Carbon steel	C=0.15%	125	500-270	480-240	430-220	460-220	380-180	360-165	550-350	580-350
		C=0.35%	150	460-250	460-230	350-200	440-210	300-170	280-150	500-300	520-300
		C=0.60%	200	400-220	400-200	310-180	380-180	260-150	240-130	460-260	480-260
	Alloy steel	Anneal	180	400-180	400-200	250-150	380-180	200-120	180-100	410-240	430-240
		Hardened	275	280-150	260-140	200-120	240-120	140-90	120-70	300-180	320-180
		Hardened	300	260-150	240-120	180-110	220-100	125-80	100-60	250-170	270-170
	High alloy steel	Hardened	350	230-120	220-120	160-100	200-100	110-75	90-55	230-150	250-150
		Anneal	200	360-190	310-170	220-130	290-150	175-100	155-80	350-200	370-200
	Cast steel	Hardene	325	190-130	150-100	140-90	130-80	85-60	65-40	170-110	190-110
		Non-Alloy	180	280-160	250-140	190-130	230-125	135-95	115-75	260-170	280-170
		Low alloy	200	280-110	220-110	170-130	200-90	120-100	100-80	260-170	280-170
		High alloy	225	210-110	190-100	150-110	170-80	95-55	95-55	260-100	280-100

ISO	Materials	Hardness HB	CVD Coating			PVD Coating			Cermet	Coated cermet		
			YBM153	YBM251	YBM253	YBM215	YBG202	YBG205	YBG302	YNG151	YNG151C	
			Feed rate (mm/rev)									
			0.2-0.6	0.2-0.6	0.2-0.6	0.2-0.4	0.1-0.4	0.2-0.4	0.2-0.6	0.1-0.3	0.1-0.3	
			Cutting speed (m/min)									
M	Stainless steel	Ferrite	180	280-180	250-140	260-140	290-190	300-190	290-190	250-150	330-220	350-210
		Austenite	260	250-150	200-110	210-110	240-160	250-160	240-160	220-120	250-150	270-140
		Martensite	330	200-140	210-130	220-130	250-170	260-170	250-170	210-120	270-170	290-160



Table of recommended cutting parameters for general turning

ISO	Materials		Hardness HB	CVD Coating			Cermet	Coated cermet	Nonmetallic ceramics
				YBD052	YBD102	YBD152	YNG151	YNG151C	CN3100
				Feed rate (mm/rev)					
				0.1-0.4	0.1-0.4	0.1-0.5	0.1-0.4	0.1-0.4	0.1-1.5
				Cutting speed (m/min)					
K	Malleable cast iron	Ferrolites	130	350-230	330-220	320-105	280-160	300-180	800-600
		Pearlyte	230	250-105	230-100	230-100	220-120	240-150	700-500
	Low grade cast iron		180	520-200	480-200	480-190	400-250	420-270	700-500
	High grade cast iron		260	230-120	220-115	210-100	360-240	380-260	800-600
	Ductile iron	Ferrolites	160	310-150	300-150	290-140	330-190	350-210	600-450
		Pearlyte	250	230-110	220-105	210-100	310-200	330-220	500-350

ISO	Materials		Hardness HB	PVD Coating					Cermet	CBN			PCD	Nonmetallic ceramics
				YBG102	YBG105	YBG202	YBS103	YBG212	YD101	YCB011	YCB012	YZB221	YCD011	CN3100
				Feed rate (mm/rev)										
				0.05-0.15	0.05-0.15	0.05-0.2	0.05-0.2	0.05-0.2	0.05-0.35	0.05-0.5	0.05-0.2	0.05-0.2	0.05-0.5	0.05-0.2
				Cutting speed (m/min)										
N	Aluminium alloy	Unheated	60						1750-800				<2500	
		Heat treatment	100						510-250				<2500	
	Cast aluminium alloy	Unheated	75						460-175				<2500	
		Heat treatment	90						300-110				<2500	
	Copper alloy	Lead alloy	110						610-205				630-65	
		Copper, red bronze	90						310-195				630-65	
Copper, Lead-free copper, electrolytic copper		100						225-115				375-30		
S	Nickel-based alloy	Nickel-based alloy	40	90-30	90-40	90-30	90-20	90-30	70-20					150-260
H	Other material	Hard steel	45 HRC								350-225	350-225		
		Extra hard steel	50~60 HRC								250-135	250-135		
		Chilled cast iron	500							180-120				

General turning

Application information for general turning



Table of correctional cutting parameters of internal turning

Internal turning tools by P-type clamping

Workpiece material	Hardness HB	Machining category	L/D≤3		L/D=3-4 (Diameter of shank ≥ Ø 16mm)	
			Feed rate (mm/rev)	Cutting depth (mm)	Feed rate (mm/rev)	Cutting depth (mm)
P Carbon steel, Alloy steel 45 [#] , 42CrMo	HB180—280	For semi-finishing	0.1- 0.25 -0.4	<5.0	0.1- 0.2 -0.3	<4.0
M Carbon steel, Alloy steel 1Cr18Ni9Ti, 0Cr18Ni9	≤HB220	For semi-finishing	0.1- 0.2 -0.3	<4.0	0.1- 0.15 -0.25	<3.0
K Cast iron HT250	HB170—230	For semi-finishing	0.1- 0.25 -0.4	<5.0	0.1- 0.2 -0.3	<4.0

Internal turning tools by S-type clamping

Workpiece material	Hardness HB	Machining category	L/D≤3		L/D=4		L/D=5		L/D=6	
			Feed rate (mm/rev)	Cutting depth (mm)	Feed rate (mm/rev)	Cutting depth (mm)	Feed rate (mm/rev)	Cutting depth (mm)	Feed rate (mm/rev)	Cutting depth (mm)
P Carbon steel, Alloy steel 45 [#] , 42CrMo	HB180-280	For finishing	0.05- 0.1 -0.15	<0.2	0.05- 0.1 -0.15	<0.2				
		For semi-finishing	0.15- 0.25 -0.35	<3.0	0.1- 0.15 -0.2	<1.5				
M Stainless steel 1Cr18Ni9Ti, 0Cr18Ni9	≤HB220	For finishing	0.05- 0.1 -0.15	<0.2	0.05- 0.1 -0.15	<0.2				
		For semi-finishing	0.15- 0.2 -0.25	<2.0	0.1- 0.15 -0.2	<1.0				
N Al alloy	---	For finishing	0.05- 0.1 -0.15	<0.2	0.05- 0.1 -0.15	<0.2	0.05- 0.1 -0.15	-0.15	0.05- 0.1 -0.15	<0.1
		For semi-finishing	0.05- 0.1 -0.15	<2.0	0.05- 0.1 -0.15	<1.5	0.05- 0.1 -0.15	-1.0	0.05- 0.1 -0.15	<1.0

Damping internal turning tools

Workpiece material	Machining conditions	Chipbreaker	Inserts material	Feed rate (mm/rev)	Cutting depth (mm)
P Steel HB180-280	For finishing	SF	YNG151 YNG151C	0.05- 0.2 -0.35	0.05- 0.1-0.3 -0.5
M Stainless steel ≤HB220				0.05- 0.2 -0.35	0.05- 0.1-0.3 -0.5
K Cast iron HB170-230				0.05- 0.2 -0.35	0.05- 0.1-0.3 -0.5

Blue words are recommended cutting parameters.



Frequent problems of turning and solutions

Solutions			Tool material		Cutting conditions				Tool shape						Machine clamping system			
			Harder materials	Tougher materials	Cutting speed	Feed rate	Cutting depth	Cutting liquid	Change chipbreaker of inserts	Rake angle	Nose radius	Approach angle	Cutting edge strength	Increase precision of inserts	Increase rigidity of tool holder	Clamping of tool holder and workpiece	Overhang of tool holder	Power, gap
Common problem	Cause																	
Over abrasion on nose	Bad precision during machining	Abrasion intensified on flank	✓							↑								
		Unsuitable cutting conditions			↓	↑												
Surface precision deterioration	Bad surface quality	Abrasion intensified and cutting edge not sharp enough	✓		↓			✓		↑	↑		↓	✓				
		Cutting edge breakage		✓		↓	↓		✓		↑		↑		✓	✓	✓	
		Unsuitable geometrical shape of cutting edge							✓		↑		↓	✓				
		Unsuitable cutting conditions			↑	↓	↓	✓										
		Vibration		✓	↑	↓	↓	✓	✓	↑	↓	↑	↓		✓	✓	✓	✓
		Built-up edge			↑	↑		✓	✓	↑			↓	✓				
Radiation	Effect of cutting heat	Unsuitable cutting conditions			↓	↓	↓											
		Unsuitable geometrical shape of cutting edge	✓						✓	↑			↓					
Bad precision of dimensions	Dimensions fluctuate during cutting	Insert tolerance											✓					
		Offset of workpiece or tools							✓	↑	↓	↑		✓	✓	✓	✓	
Breakage	Abrasion on flank and rake face	Abrasion on clearance face	✓		↓				✓	↑	↑		↓					
		Abrasion on rake face	✓		↓	↓	↓		✓	↑			↓					
	Edge chipping		✓		↓	↓		✓				↓	↑		✓	✓	✓	✓
	Built-up edge				↑	↑		✓	✓	↑		↓	✓					
	Thermal cracking				↓	↓	↓	✓	✓	↑		↓						
	Cutting edge nose deformation		✓		↑	↓	↓	✓	✓	↑	↑	↓	↓					
	Tool life			✓		↓	↓		✓		↑	↓	↑		✓	✓	✓	✓
Chip controlling	Long, unbroken and snarled chips	Unsuitable cutting condition			↓	↑	↑	✓										
		Unsuitable geometry							✓		↓	↑						
	Too short and hard chips	Unsuitable cutting condition				↓	↓	✓										
		Unsuitable geometrical shape of cutting edge							✓		↑	↓						
Burr and knockdown flange	Steel and Al, burrs occurring	Unsuitable cutting condition			↑	↓		✓										
		Tool abrasion and unsuitable geometrical shape	✓						✓	↑	↓	↑	↓					
	Edge break out on cast iron	Unsuitable cutting conditions			↓	↑		✓										
		Tool abrasion and unsuitable geometrical shape	✓						✓	✓	↓	↓	↓					
	Heavy burr on soft steel					↓	↓											
	Unsuitable cutting condition							✓	↑	↑		↑		✓	✓	✓	✓	
	Tool abrasion and unsuitable geometrical shape	✓						✓	↑	↑		↑		✓	✓	✓	✓	

General turning

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Abrasion of tools and various damages

Tool damage type	Phenomenon	Cause	Solution
Flank wear	Cutting resistant force increasing Groove wear on flank	Tool material is too soft. Cutting speed is too high. Clearance angle is too small. Feed rate is too low.	<ul style="list-style-type: none"> ◆ Select tool materials with good wear resistance. ◆ Reduce cutting speed. ◆ Enlarge clearance angle. ◆ Increase feed rate.
Rake face wear (Crater wear)	Bad chip controlling Surface quality deterioration	Tool material is too soft. Cutting speed is too high. Feed rate is too high.	<ul style="list-style-type: none"> ◆ Select tool materials with good wear resistance. ◆ Reduce cutting speed. ◆ Reduce feed rate.
Cutting edge breakage	Occasional breakage Instability of tool life	Tool material is too hard. Feed rate is high. Cutting edge strength is not high enough. Rigidity of tool holder and tool bar is small.	<ul style="list-style-type: none"> ◆ Select tool materials with good toughness. ◆ Reduce feed rate. ◆ Increase land width (if rounding changes into chamfering). ◆ Enlarge tool bar size.
Breakage	Cutting resistant force increasing Deterioration of surface roughness	Tool material is too hard. Feed rate is high. Cutting edge strength is not high enough. Rigidity of tool holder and tool bar is low.	<ul style="list-style-type: none"> ◆ Select tool materials with good toughness. ◆ Reduce feed rate. ◆ Increase land width (if rounding changes into chamfering). ◆ Enlarge tool bar size.
Plastic deformation (Cutting edge collapse)	Workpiece dimensions change Nose abrasion	Tool material is too soft. Cutting speed is too high. Cutting depth and feed rate are too high. Cutting edge temperature is too high.	<ul style="list-style-type: none"> ◆ Select tool material with good wear resistance ◆ Reduce cutting speed. ◆ Reduce cutting depth and feed rate. ◆ Select tool materials with good heat conductivity.
Built-up edge (Bonding)	Surface quality deterioration during finishing Cutting resistant force increasing	Cutting speed is low. Cutting edge is not sharp enough. Tool material is unsuitable.	<ul style="list-style-type: none"> ◆ Increase cutting speed. ◆ Enlarge rake angle. ◆ Select tool materials that are not easy to adhere together (coating, cermet, etc.)
Thermal cracking	Damage because of thermal circulation Normally occurring during intermittent machining	Premature edge failure due to thermal cracks. Tool material is too hard.	<ul style="list-style-type: none"> ◆ Adopt dry cutting. ◆ Select tool materials with good toughness.
Chattering	burrs occurring Cutting resistant force increasing	Feed rate and cutting speed are too high.	<ul style="list-style-type: none"> ◆ Select tool materials with good wear resistance. ◆ Sharpen cutting edge by enlarging rake angle. ◆ Reduce cutting speed.
Flaking	Usually occurring when machining super hard materials, which is accompanied with vibration	Bonding occurs on cutting edge. Chip flow is obstructed.	<ul style="list-style-type: none"> ◆ Sharpen cutting edge by enlarging rake angle. ◆ Enlarge chip pocket.