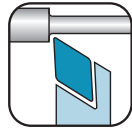


E



Introduction E2

Toolholders for back turning E12

TKF / TKFB insert	KTKF	E15
	KTKF Goose-neck holder / KTKF-Y Y-axis toolholder	E16
ABS15 insert	AABS-40F / SABS-40F	E20
ABW15 insert	AABW-40F / SABW-40F	E21
ABW23 insert	AABW-50F / SABW-50F	E22

Goose-neck toolholders E23

DC insert	SDJC	E23
VP insert	SVLP	E24

External toolholders E26

CC insert	ACLC-FF / SCLC-FF	E26
	SCLC-FFJCTM	E27
	SCLC	E28
DC insert	ADJC-FF / SDJC-FF	E29
	SDJC-FFJCTM	E30
	SDJC	E31
	SDJC-FF-Y	E32
	SDLC-FF / SDXC	E34
	SDNC-F / SDNC	E35
DP insert	SDLP-FF	E37
TC insert	STGC	E38
TP insert	STGP	E39
VB insert	AVJB-FF / SVJB-FF / SVJB-FFJCTM / SVJB / SVPB / SVVB	E40
VC insert	SVJC-FF / SVLC-FF / SVPC-FF / SVVC	E44
VP insert	SVJP-FF / SVJP-FFJCTM / SVLP-FF / SVPP-FF	E47
ZB insert	SZLB / SZPB / SZVBN	E52

External sleeve holder E54

CC insert	S...SCLC	E54
DC insert	S...SDUC/S...SDLC	E55
VB insert	S...SVUB	E58
VC insert	S...SVUC	E59

Toolholders for small double sided tooling E60

CN insert	SCLN-FF	E60
DN insert	SDLN-FF	E61
TN insert	STLN-FF	E62

Toolholders for double sided tooling for automatic lathes E63

CN insert	PCLN-FF	E63
TN insert	PTLN-FF	E64

Recommended cutting conditions E65

Summary of External Turning

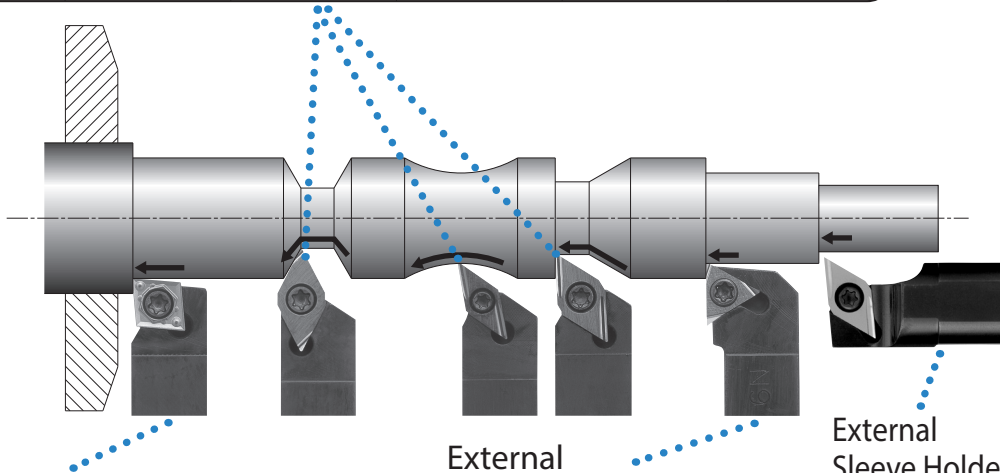
External / Copying

E



Small tools

ADJC-FF	SDJC-FF(JCTM) SDJC-FF-Y	SDJC	SDLC-FF SDLP-FF	SDLN-FF	SDNC-F	SDNC
Back Clamp Without Offset	Screw Clamp Without Offset	Screw Clamp	Screw Clamp Without Offset	Screw Clamp Without Offset	Screw Clamp	Screw Clamp
➔ E29	➔ E29, E30, E32	➔ E31	➔ E34, E37	➔ E61	➔ E35	➔ E35



External / Facing

ACLFC-FF	SCLC-FF(JCTM)	SCLC	SCLN-FF
Back Clamp Without Offset	Screw Clamp Without Offset	Screw Clamp	Screw Clamp Without Offset
➔ E26	➔ E26, E27	➔ E28	➔ E60

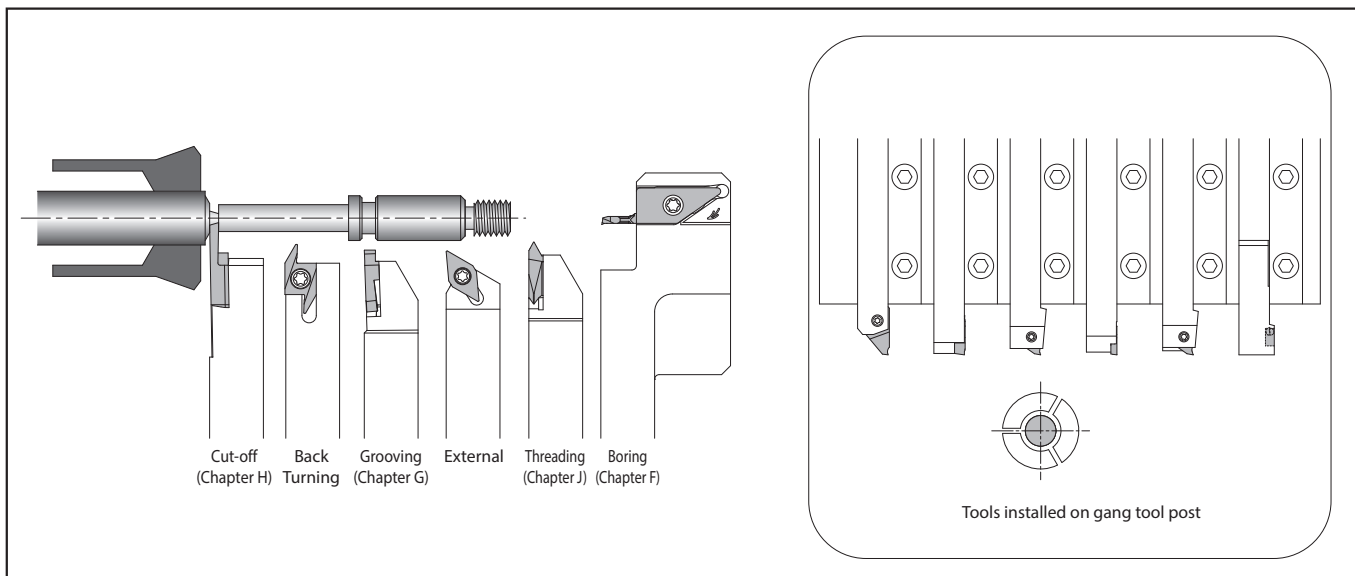
External

STGC(P)	STLN-FF
Screw Clamp	Screw Clamp Without Offset
➔ E38, E39	➔ E62

External
Sleeve Holder

S-SDLC
Screw Clamp Shank Dia. ø12~ø25.4
➔ E56

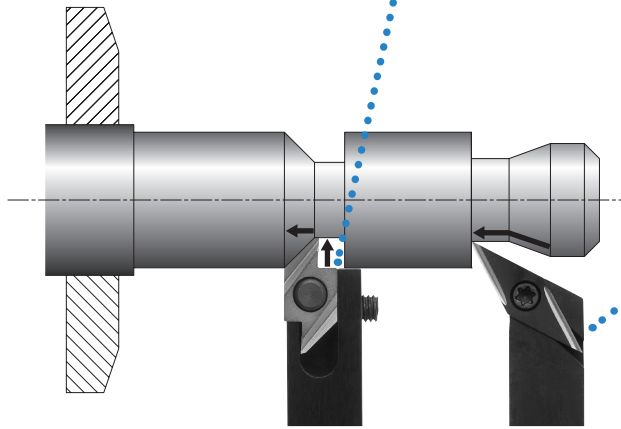
Tooling example (1) CNC Automatic lathe (Gang Type)



E2

Back Turning

AABS-40F	SABS-40F	AABW-40F	SABW-40F	AABW-50F	SABW-50F	KTKF
Back Clamp Edge Width : 2.8 ap : ~4.0	Screw Clamp Edge Width : 2.8 ap : ~4.0	Back Clamp Edge Width : 4.7 ap : ~4.0	Screw Clamp Edge Width : 4.7 ap : ~4.0	Back Clamp Edge Width : 4.7 ap : ~5.0	Screw Clamp Edge Width : 4.7 ap : ~5.0	Screw Clamp Edge Width : 1.5~3.8 Max. ap : 1.8~5.5

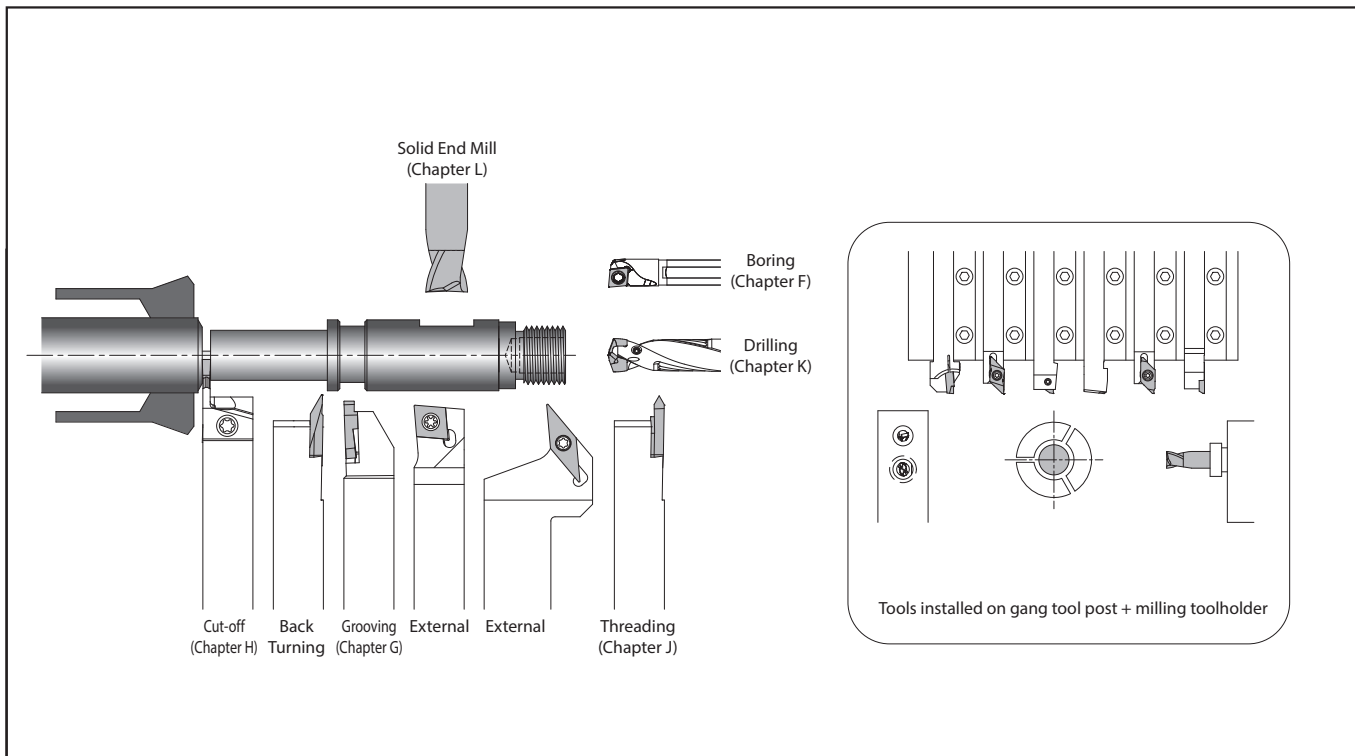


External / Facing / Copying / Undercutting

SVPB	SVPP-FF
Screw Clamp	Screw Clamp Without Offset

E
Small tools

Tooling example (2) CNC Automatic lathe (Gang Type)



How to use goose-neck holder for swiss tool automatic lathe (Gang type tool post)



Goose-neck holder is applicable to automatic lathes whose toolholder does not move to longitudinal direction (Z-axis direction).

E

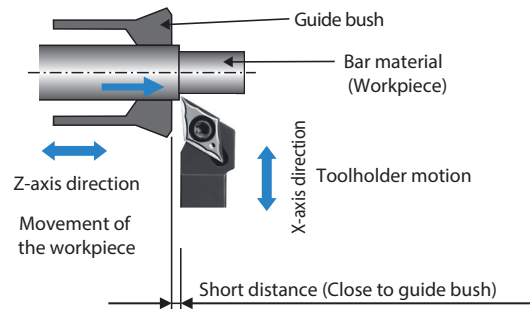


Small tools

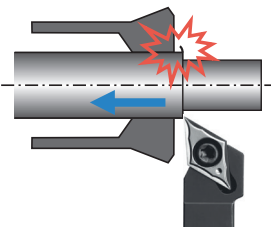
Swiss tool automatic lathe (Guide bush system)

In case of machining with the conventional toolholder

Goose-neck Holder is applicable to automatic lathe that toolholder does not move to longitudinal direction (Z-axis direction)

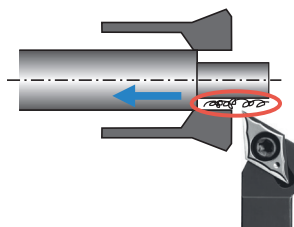


Problems of machining with the conventional toolholder

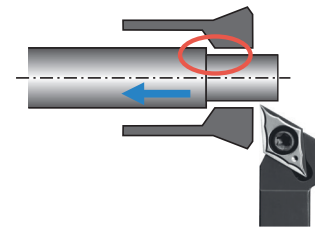


Case 1
During multiple passes, when bar material returns into guide bush, the burr contacts and breaks guide bush.

Case 2
The workpiece burr contacts the guide bush and causes dimensional variation.



Case 3
During multiple passes, when bar material returns into guide bush, the chips contacts and breaks guide bush.

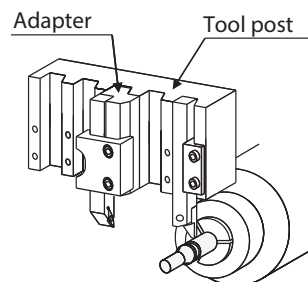


Case 4
Bar material deviation from the guide bush disables machining.

Problems of toolholder Installation

When using a conventional toolholder

1. Additional space is required for an adapter.
2. Toolholder's handling is difficult due to limited space.
3. Necessary to buy an adapter.
4. An adapter may interfere with the next tool post.

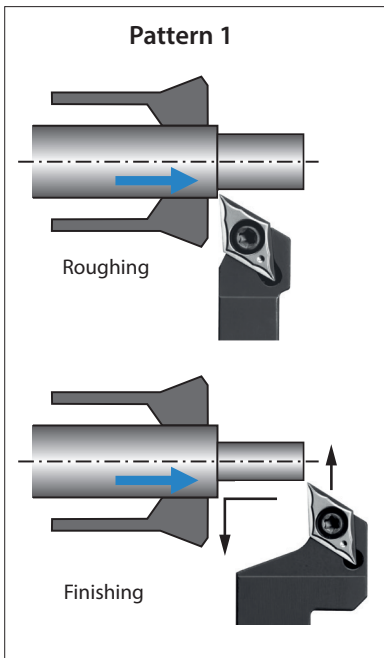


E4

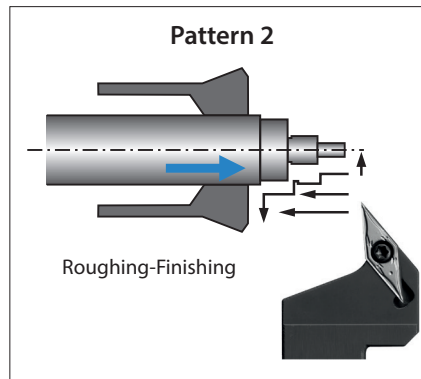
Advantages of goose-neck holder

When using goose-neck holder

1. Machining precision improves by additional finishing process.
2. Chips do not come into the guide bush.
3. Better chip control due to large chip evacuation space.

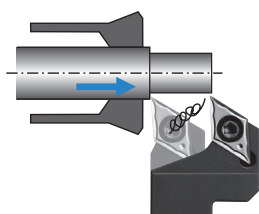


Available for machining after roughing without returning bar material into guide bush, preventing damages and improving precision.

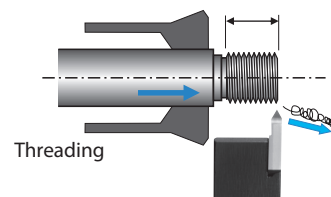


Available for roughing and finishing with one Goose-neck holder.

For better chip control



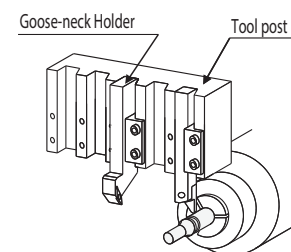
Optimum cutting edge position and large space for efficient chip evacuation.



With conventional threading toolholders, chip biting into guide bush can cause damages on threads.

Advantages of Toolholder installation - When using a goose-neck holder

1. Maximum number of toolholders can be attached.
2. No interference with next tool post.



E



Small tools

Summary of External Turning

External Sleeve Holder

S-SCLC	S-SDUC	S-SDLC	S-SVUB(C)	
Screw Clamp Shank Dia. $\phi 12\sim\phi 25.4$	Screw Clamp Shank Dia. $\phi 14\sim\phi 25.4$	Screw Clamp Shank Dia. $\phi 12\sim\phi 25.4$	Screw Clamp Shank Dia. $\phi 12\sim\phi 25.4$	
E54	E55	E56	E58, E59	

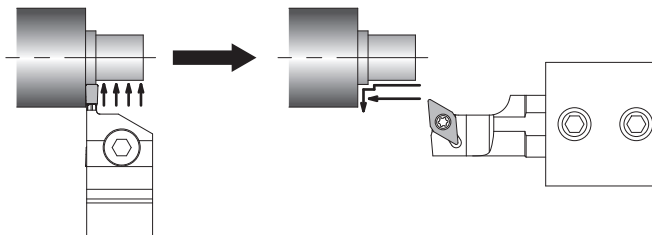
For Tooling Layout and Automatic Lathe List by Manufacturer, See Page R46~R54

E



Small tools

● Finishing by Sleeve Holder



- 1) Roughing by grooving toolholder
- 2) Finishing by Sleeve Holder improves chip control and reduces cutting time

Tooling Example (3) CNC Automatic lathe (Opposed Gang Type)

External / Facing

External / Copying

Grooving

(Chapter G)

Threading

(Chapter J)

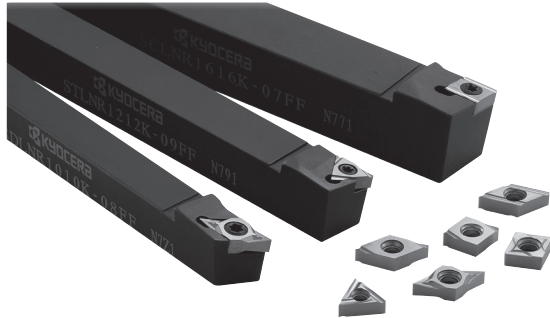
Boring

(Chapter F)

For Tooling Layout and Automatic Lathe List by Manufacturer, See Page R46~R54

E6

Toolholders for Small Double Sided Tooling (Screw Clamp)



Applications	External / Facing	External / Up Facing	External / Copying
Cutting Edge Angle	95°	95°	95°
Screw Clamp (Without Offset)			
	SCLN	STLN	SDLN
See Page	E60	E62	E61

Newly designed negative inserts (double-sided) enable high productivity and stability by economical doubled insert edge numbers
Sharp cutting equivalent to positive inserts (single-sided)

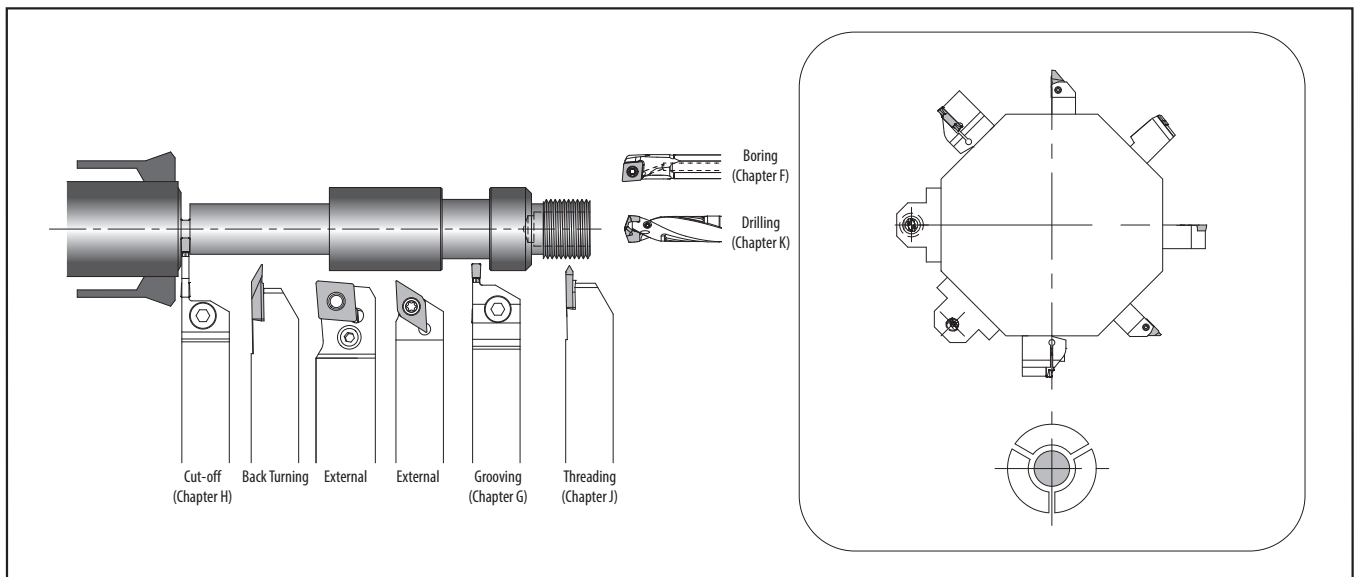
Toolholder for Double Sided Tooling for Automatic Lathe (Lever Lock, Without Offset)



Applications	External / Facing	External / Up Facing
Cutting Edge Angle	95°	95°
Lever Lock (Without Offset)		
	PCLN-FF	PTLN-FF
See Page	E63	E64

The lever lock type is available for small parts machining for external machining

Tooling Example (4)



For Tooling Layout and Automatic Lathe List by Manufacturer, See Page [R46~R54](#)

E



Small tools

JCTM Series direct coolant holder for small parts machining

JCTM Series

Applicable to different supply styles.

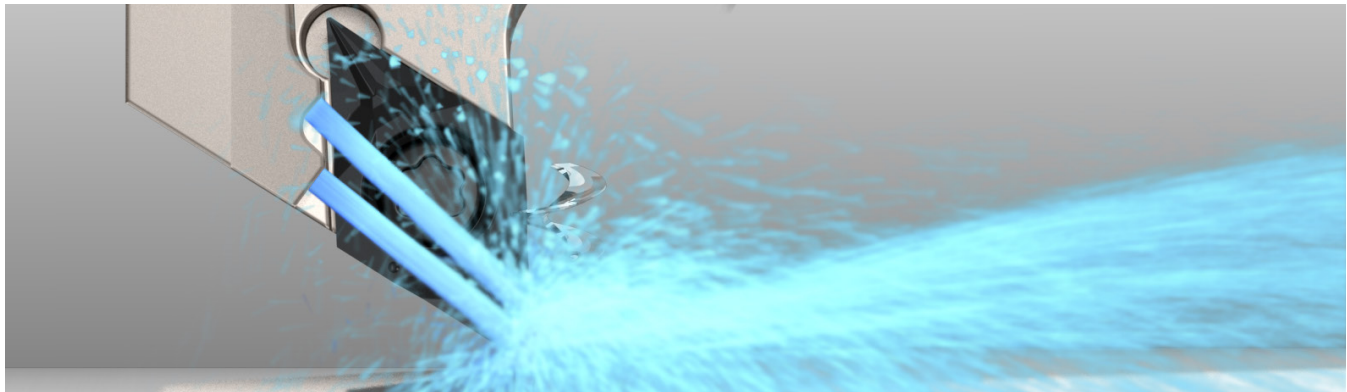
Supports internal coolant with/without piping system.

Lineup of turning, grooving (KGBF), and cut-off (KGD/KTKF) holders



Small tools

1 Using internal coolant to enhance tool performance



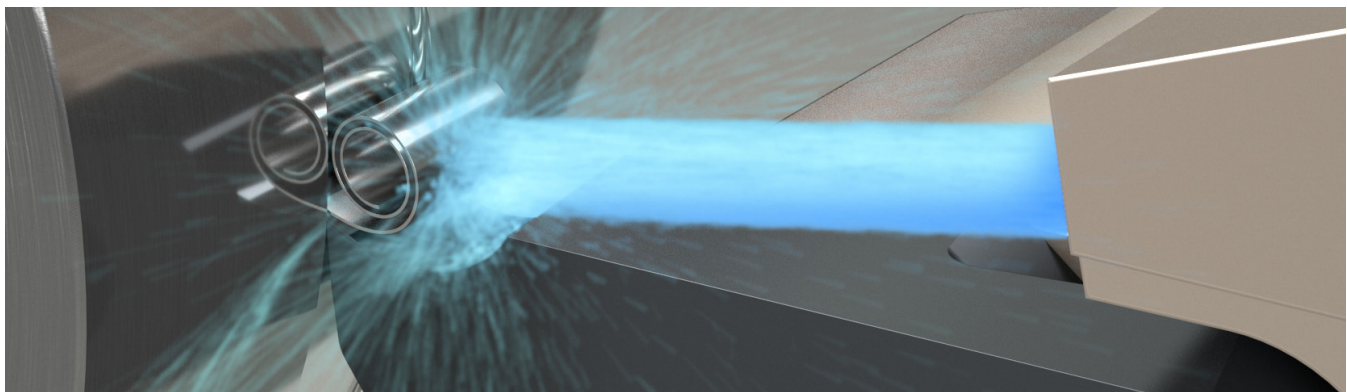
CG Image

Challenges

- Difficulty in automatic operation due to sudden chip entanglement
- Insert change is not enough to extend tool life

Solution

- The JCTM series is compatible with internal coolant supply system in a wide range of machines and also works under normal pressure
- Reduces down time by improving chip control and reduces cost by extending tool life



CG Image

Switching to internal coolant toolholder reduces chip entanglement

Internal coolant (2.5 MPa)



External coolant



Pin Alloy tool steel (SKS 93, JIS)

Vc = 180 m/min, ap = 1.4 mm
 f = 0.13 mm/rev, wet
 SDJC / DCMT11T304 type (User evaluation)

E8

2 Applicable to different supply styles. Supports internal coolant with/without piping system

Internal coolant without piping

*When the tool turret supports direct coolant

NEW

Coolant is supplied directly from tool turret into the holder. No need for piping just by installing tools

Applicable to wide range of machines

The tool turret is optional. Please contact our company sales representative for details.

CITIZEN MACHINERY CO., LTD. (L20, D25, M32)
STAR MICRONICS CO., LTD. (SB-R series, SR series, SV series)
TSUGAMI CORPORATION (S205/206-II □16 type, S205A/206A-II □16 type)

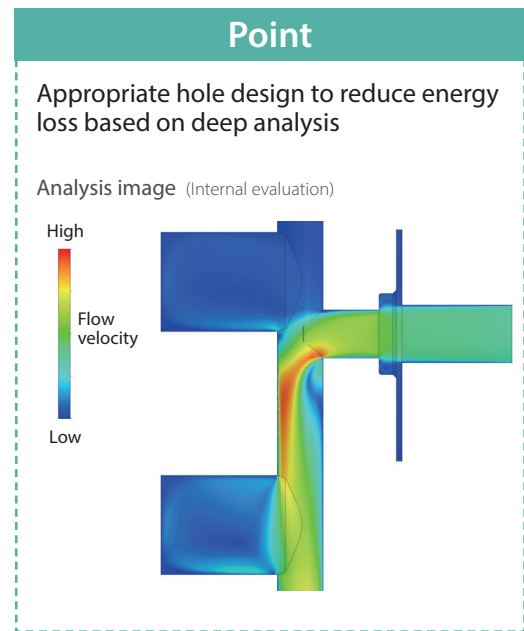
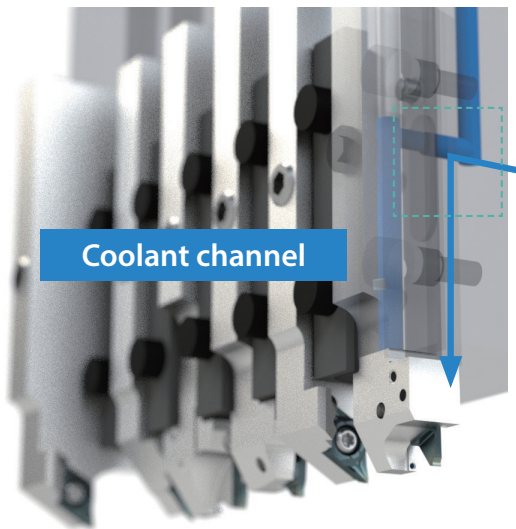
Compatible with various machine including the above. Toolholders can be customized as well.

(Random order)
Based on Kyocera survey in January 2021

E



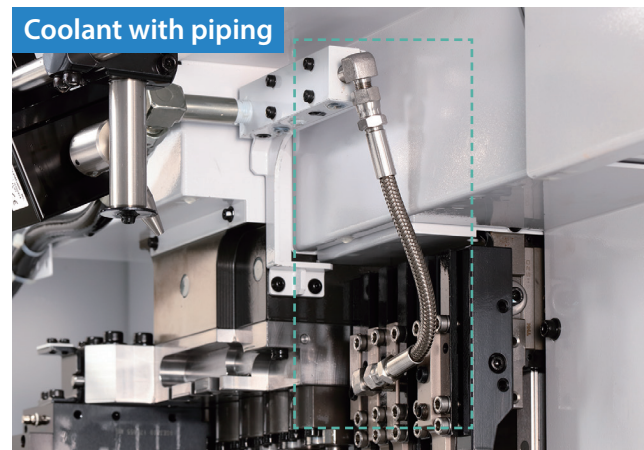
Small tools



Internal coolant with piping

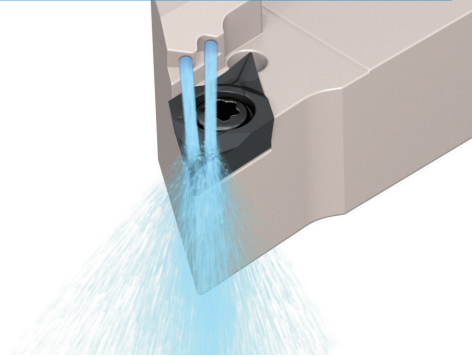
Compatible with internal coolant on any machine with standard piping parts

Commercial piping parts are available when using at normal pressure



3 Large lineup for various tooling operations

Turning Screw clamp - JCTM



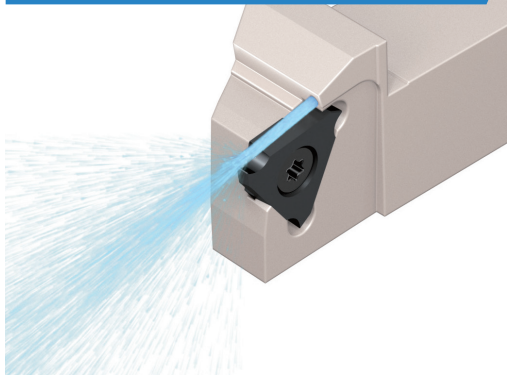
- **Double coolant holes**
Provide coolant toward the rake face of the insert
(V Type □12: Single hole)

- **Lineup**
SCLC-JCTM / SDJC-JCTM
SVJB-JCTM / SVJP-JCTM

Coolant supply structure comparison (Internal evaluation) (Image)

Screw clamp- JCTM	Competitor A
Discharges coolant toward the rake surface of insert	Discharges coolant down onto the chip forcing the chip into the part
Chip control performance ✓ Provides stable chip curls	Chip control performance Chip becomes unstable
Cooling effect ✓ The cutting edge stays cool	Cooling effect Chip can prevent coolant supply to edges

External grooving KGBF-JCTM



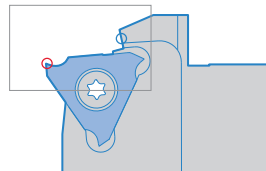
- **Provides coolant toward the rake surface of insert**

- **Specification**
Edge width: 0.25 -3 mm
Ground chipbreaker/3D GL Chipbreaker
Maximum groove depth: 3 mm

Coolant discharging comparison (Internal evaluation)

Small chips and better cooling of the insert leads to longer tool life.

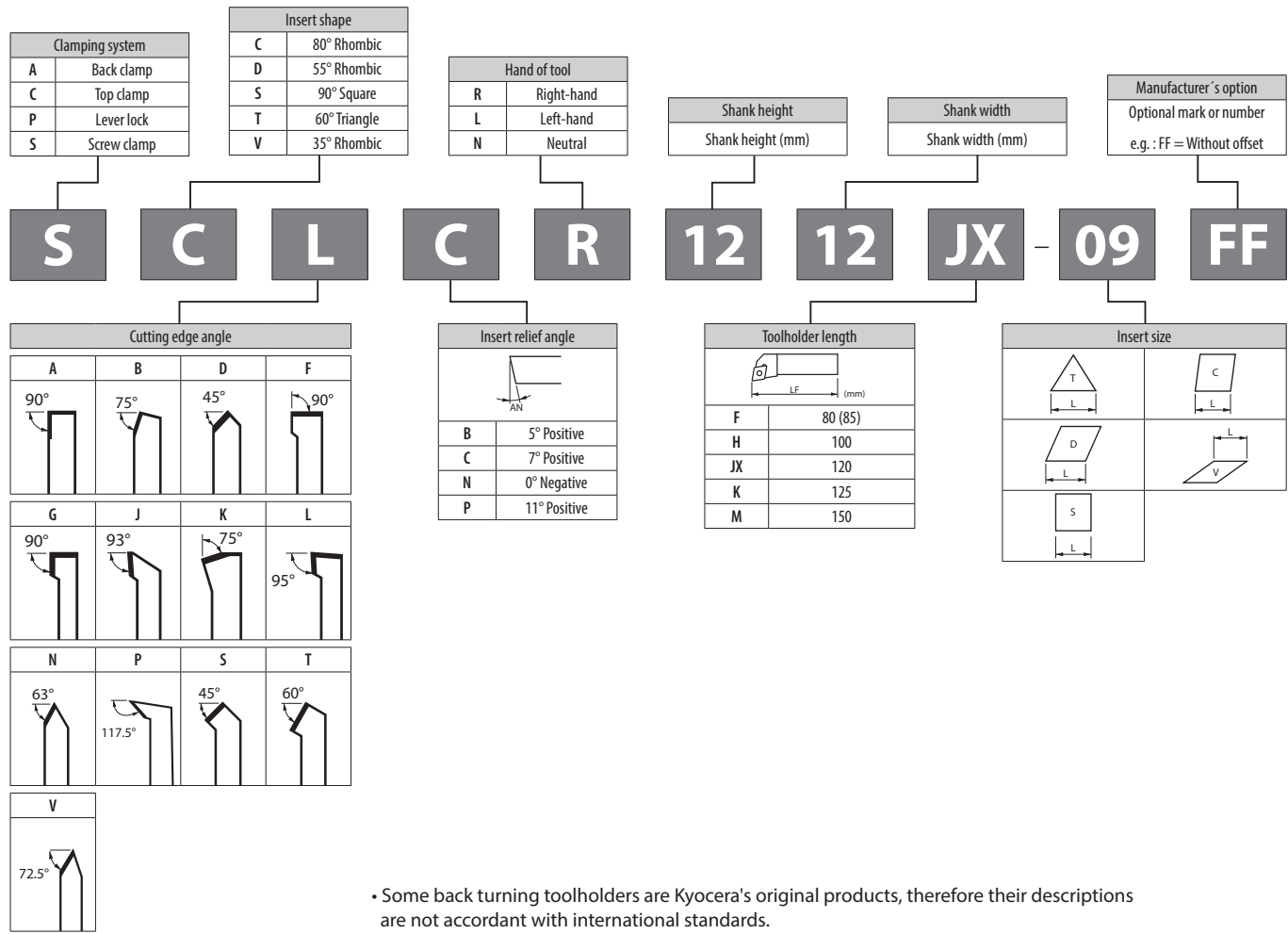
- Cutting edge
- Coolant hole



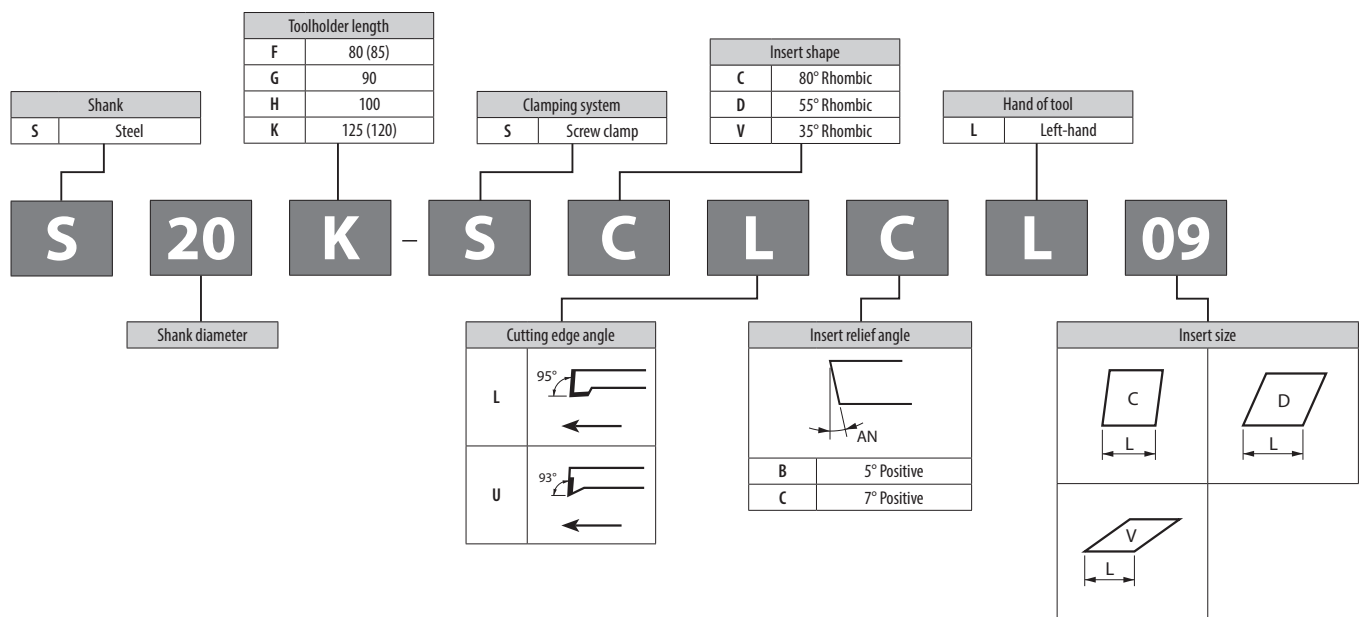
KGBF-JCTM	Competitor B
Coolant spread: Narrow Coolant density: High	Coolant spread: Wide Coolant density: Low
(Without insert)	(Without insert)

E
Small tools

Square shank identification system (small tools)



External sleeve holder identification system



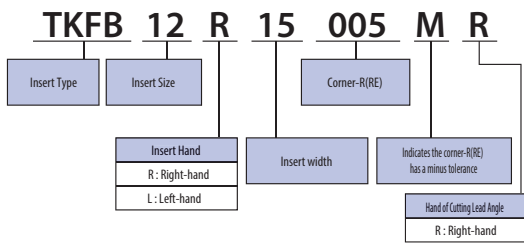
TKF / TKFB

E
Small tools

Insert		Description	No. of edges	Dimension (mm)							Angle (°)		Carbide			Applicable toolholder E15, E16
				CW	CDX	S	D1	RE	W1	a	PSIR%	θ	PVD	-	KW10	
				Carbon steel / Alloy steel	Stainless steel	Cast iron	Non-ferrous metals	P	M	K	N					
		TKFB 12R15005M	2	1.5	2.6	8.7	5.2	< 0.05	3	0.25	-	-	●	●	●	KTKFR...-12 KTKFR...-12-Y
		TKFB 12R28005M	2	2.8	4.6	8.7	5.2	< 0.05	3	0.3	-	-	●	●	●	
		TKFB 12R28010M	2	2.8	4.6	8.7	5.2	< 0.1	3	0.3	-	-	●	●	●	
		TKFB 16R38005M	2	3.8	6.3	9.5	5.2	< 0.05	4	0.3	-	-	●	●	●	KTKFR...-16
		TKFB 16R38010M	2	3.8	6.3	9.5	5.2	< 0.1	4	0.3	-	-	●	●	●	
		TKFB 12L28005MR	2	2.8	4.6	8.7	5.2	< 0.05	3	0.3	-	-	●	●	●	KTKFL...-12
		TKFB 12L28010MR	2	2.8	4.6	8.7	5.2	< 0.1	3	0.3	-	-	●	●	●	
		TKFB 16L38005MR	2	3.8	6.3	9.5	5.2	< 0.05	4	0.3	-	-	●	●	●	KTKFL...-16
		TKFB 16L38010MR	2	3.8	6.3	9.5	5.2	< 0.1	4	0.3	-	-	●	●	●	
		TKFB 12R28005P-GQ	2	2.8	4.6	8.7	5.2	0.05	3	1.5	-	74	●	●	●	KTKFR...-12 KTKFR...-12-Y
		TKFB 12R28015P-GQ	2	2.8	4.6	8.7	5.2	0.15	3	1.5	-	74	●	●	●	
		TKFB 16R38005P-GQ	2	3.8	6.3	9.5	5.2	0.05	4	1.8	-	72	●	●	●	KTKFR...-16
		TKFB 16R38015P-GQ	2	3.8	6.3	9.5	5.2	0.15	4	1.8	-	72	●	●	●	
		TKFB 12R28005-GQ	2	2.8	4.6	8.7	5.2	0.05	3	1.5	-	74	●	●	●	KTKFR...-12 KTKFR...-12-Y
		TKFB 12R28015-GQ	2	2.8	4.6	8.7	5.2	0.15	3	1.5	-	74	●	●	●	
		TKFB 16R38005-GQ	2	3.8	6.3	9.5	5.2	0.05	4	1.8	-	72	●	●	●	KTKFR...-16
		TKFB 16R38015-GQ	2	3.8	6.3	9.5	5.2	0.15	4	1.8	-	72	●	●	●	
		TKF 12R200-GTP	2	2	4.3	8.7	5	0.08	3	-	0	-	●	●	●	KTKFR...-12 KTKFR...-12-Y
		TKF 16R300-GTP	2	3	5.8	9.5	5	0.08	4	-	0	-	●	●	●	

Recommended cutting conditions E67

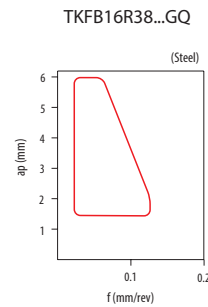
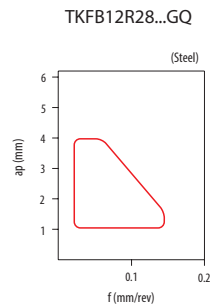
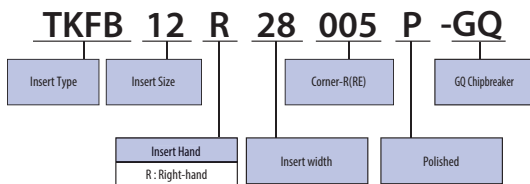
Inserts Identification System (Ref. to Tables 1 and 2)



Small machining	General purpose	Large machining
TKFB12R15.	TKFB12R28.	TKFB16R38.

Toolholder	Right-hand	Toolholder	Left-hand
Insert	Right-hand	Insert	Left-hand
Lead angle	Right-hand	Lead angle	Right-hand

Applicable Chipbreaker Range



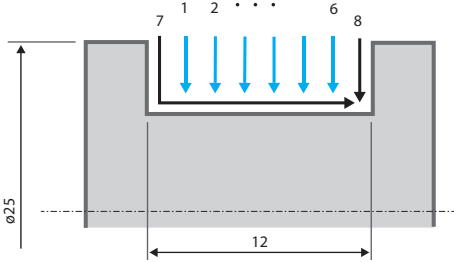
● : Standard item

E12

GTP chipbreaker - Grooving and Turning Available

Cutting Time Comparison (Internal evaluation)

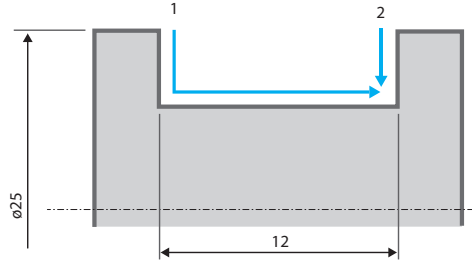
Competitor A
Multiple Grooves and a Finishing Pass
Workpiece Material : S45C(ø25)



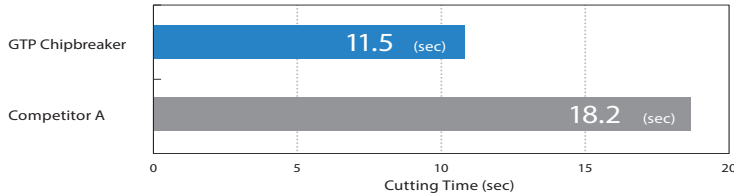
Cutting Conditions: Multiple Grooves
Vc=100m/min
ap=3.5mm, f=0.10mm/rev

Cutting Conditions: Finishing
Vc=100m/min
ap=0.5mm, f=0.05mm/rev

TKF12R200-GTP
Grooving and Turning
Workpiece Material : S45C(ø25)



Cutting Conditions: Grooving and Turning
Vc=100m/min
ap=4mm, f=0.05mm/rev



GTP chipbreaker required fewer machining paths than Competitor

40%
Cutting Time Reduction

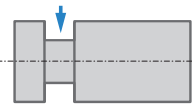


Chip Control Comparison (Internal evaluation)

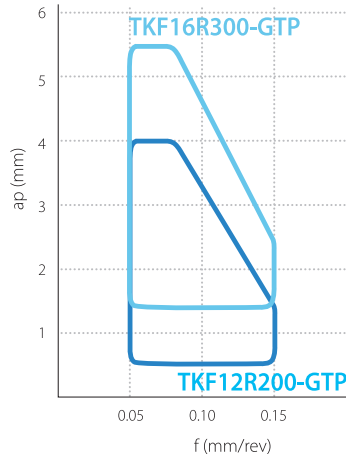
Grooving

f (mm/rev)	0.05	0.07	0.10
TKF12R200-GTP			
Competitor B			

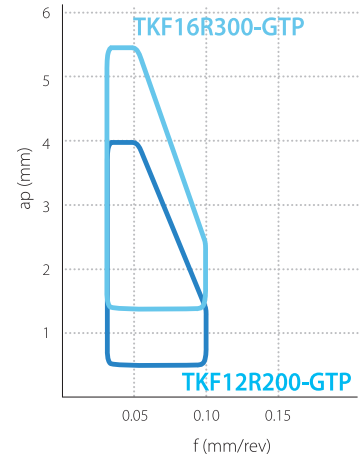
Cutting Conditions : Vc=100m/min, ap=4mm, Wet
Workpiece Material : S45C(ø25)



Recommended Chipbreaker Range (Steel)

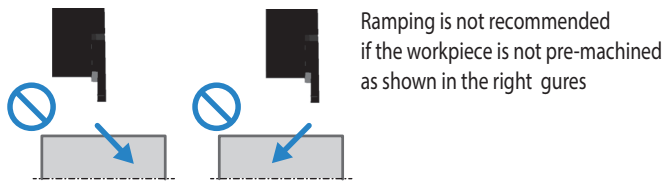


Recommended Chipbreaker Range (SUS)

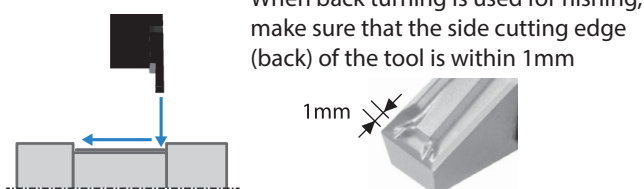


Caution for machining

Ramping

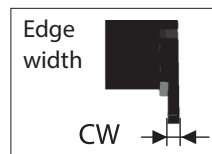
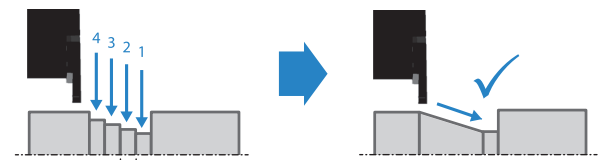


Back Turning

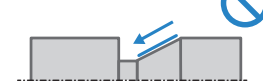


Tips for Ramping

Step grooving is required before ramping. (Refer to the gure below)



Back turning is not recommended on the tapered surface.



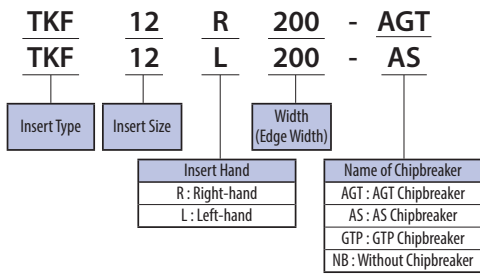
TKF

Insert		Description		Carbon steel / Alloy steel										Stainless steel				Cast iron				Non-ferrous metals				PCD	Applicable toolholder E15, E16
				Dimension (mm)										Angle (°)		Tolerance (mm)											
				No. of edges	CW	CDX	S	S1	D1	RE	LE	W1	PSIR%/L	CW min.	CW max.	RE (+/-) min.	RE (+/-) max.	RP1001									
	TKF12R 150-NB 200-NB 250-NB	1	1.5	3.5	8.7	8.3	5	0.1	2	3	3	0	-0.03	+0.03	-0.05	0	●	KTKFR...-12 KTKFR...-12-Y									
		2	2	4	8.7	8.3	5	0.1	3	3	0	-0.03	+0.03	-0.05	0	●											
		2.5	2.5	4	8.7	8.3	5	0.1	3	3	0	-0.03	+0.03	-0.05	0	●											
	TKF12R 200-AGT 250-AGT	1	2	4.8	8.7	8.3	5	0.1	4.2	3	3	0	-0.03	+0.03	-0.05	0	●	KTKFR...-12 KTKFR...-12-Y									
		2.5	2.5	4.8	8.7	8.3	5	0.1	4.2	3	3	0	-0.03	+0.03	-0.05	0	●										
	TKF12R 200-AS 250-AS TKF12L 200-AS TKF16R 250-AS TKF16L 250-AS	1	2	5	8.7	7.3	5	0.1	5.3	3	3	0	-0.03	+0.03	-0.05	0	●	KTKF ^{1/2} /L...-12 KTKFR...-12-Y									
		2	2.5	5	8.7	7.3	5	0.1	5.3	3	3	0	-0.03	+0.03	-0.05	0	●										
		1	2.5	8	9.5	8	5	0.1	6.3	4	4	0	-0.03	+0.03	-0.05	0	●										
		1	2.5	8	9.5	8	5	0.1	6.3	4	4	0	-0.03	+0.03	-0.05	0	●										

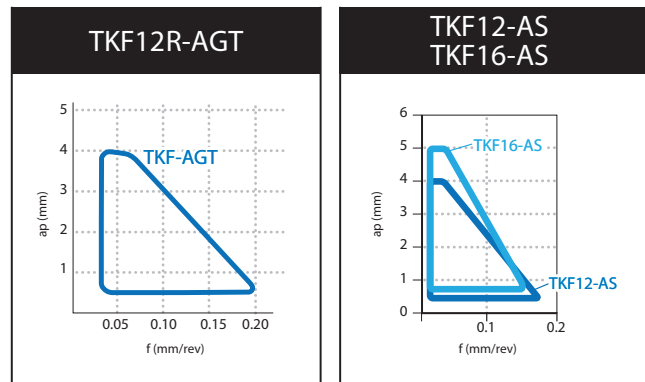
Recommended cutting conditions E67

E
Small tools

Inserts Identification System



Applicable Range



* PCD Inserts for turning and grooving
* Not recommended for cut-off

Note 1) The cutting edge of the TKF-AS / -ASR will be 1 mm lower than the center line when attached to the KTKF toolholder (Ref. to Fig. 2). Adjust the height by making NC lathe parameter settings or inserting a plate.
2) If the 1 mm adjustment is not possible, use the TKF...-AGT/TKF...-NB. (Ref. to Fig. 3)

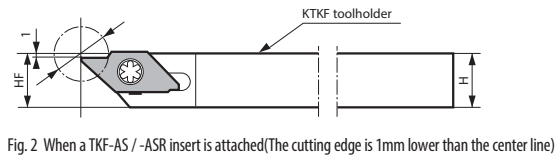


Fig. 2 When a TKF-AS / -ASR insert is attached (The cutting edge is 1mm lower than the center line)

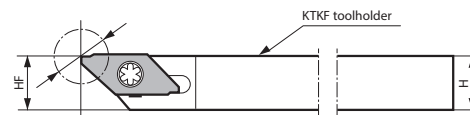


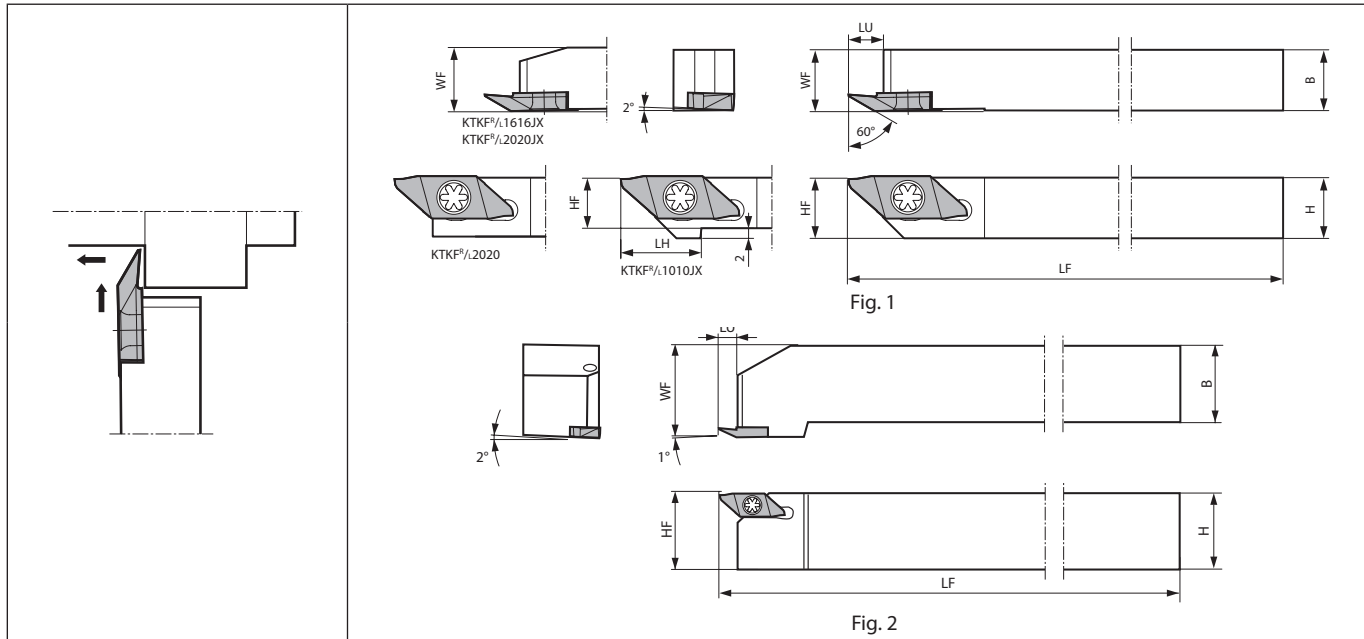
Fig. 3 When a TKF-NB insert is attached

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

E14

KTKF (Back turning)



Right-hand shown | Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.



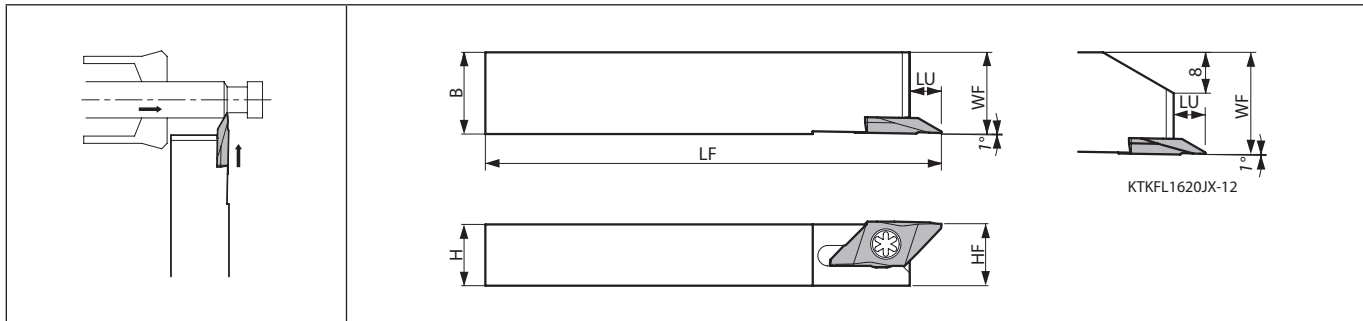
Toolholder dimensions

Description	Availability		Dimension (mm)								Spare parts		Applicable inserts E12, E14
											Screw	Wrench	
	R	L	H	B	LH	HF	LF	LU	WF				
KTKF [®] /L 1010JX-12 1212F-12 1212JX-12 1616JX-12 2020JX-12 2525M-12	●	●	10	10	15	10	120	10	1	SB-4590TRWN	FT-10	TKF12 [®] /L... TKFB12 [®] /L...	
	●	●	12	12		12	85	12	1				
	●	●	16	16	-	16	120	16	1				
	●	●	20	20		20	120	20	1				
	●	●	25	25		25	150	30	2				
	Fig.	6											
KTKF [®] /L 1010JX-16 1212F-16 1212JX-16 1616JX-16 2020JX-16 2525M-16	●	●	10	10	20	10	120	10	1	SB-4590TRWN	FT-10	TKF16 [®] /L... TKFB16 [®] /L...	
	●	●	12	12		12	85	12	1				
	●	●	16	16	-	16	120	16	1				
	●	●	20	20		20	120	20	1				
	●	●	25	25		25	150	30	2				
	Fig.	8											

LU shows the distance from the toolholder to the cutting edge.
See Page H15 for internal coolant type (coolant-through holders)

● : Standard item

KTKF (Back turning, Goose-neck holder)



Left-hand shown | Left-hand Insert for Left-hand Toolholder.



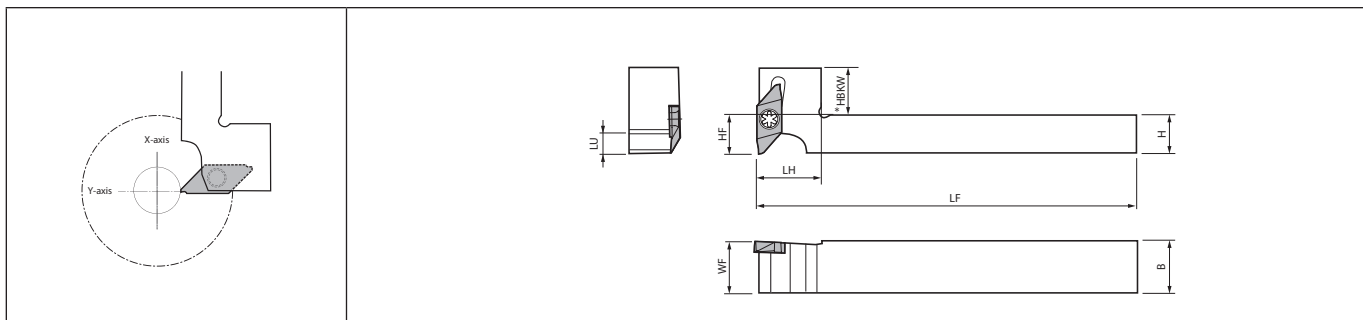
Small tools

Toolholder dimensions

Description	Availability	Dimension (mm)							Spare parts		Applicable inserts ➔ E12, E14
		L	H	B	HF	LF	LU	WF	Screw	Wrench	
KTKFL 1216JX-12	●	12	16	12	12	120	6	16	SB-4590TRWN	FT-10	TKF12L... TKFB12L...
1620JX-12	●	16	20	16	16	120	6	20	SB-4590TRWN	FT-10	TKF12L... TKFB12L...

LU shows the distance from the toolholder to the cutting edge.

KTKF-Y (Back turning, Y-axis toolholder)



Right-hand shown | Right-hand Insert for Right-hand Toolholder.

Toolholder dimensions

Description	Availability	Dimension (mm)								Spare parts		Applicable inserts ➔ E12, E14
		R	H	B	LH	HF	HBKW	LF	WF	Screw	Wrench	
KTKFR 1216JX-12-Y	●	12	16	20	12	15	120	16	SB-4590TRWN	FT-10	TKF12R... TKFB12R...	
1616JX-12-Y	●	16	16	25	16	11	120	16	SB-4590TRWN	FT-10	TKF12R... TKFB12R...	

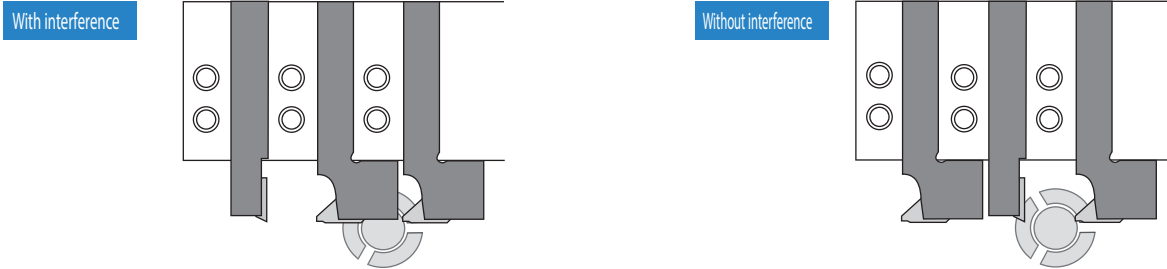
LU shows the distance from the toolholder to the cutting edge.

● : Standard item

E16

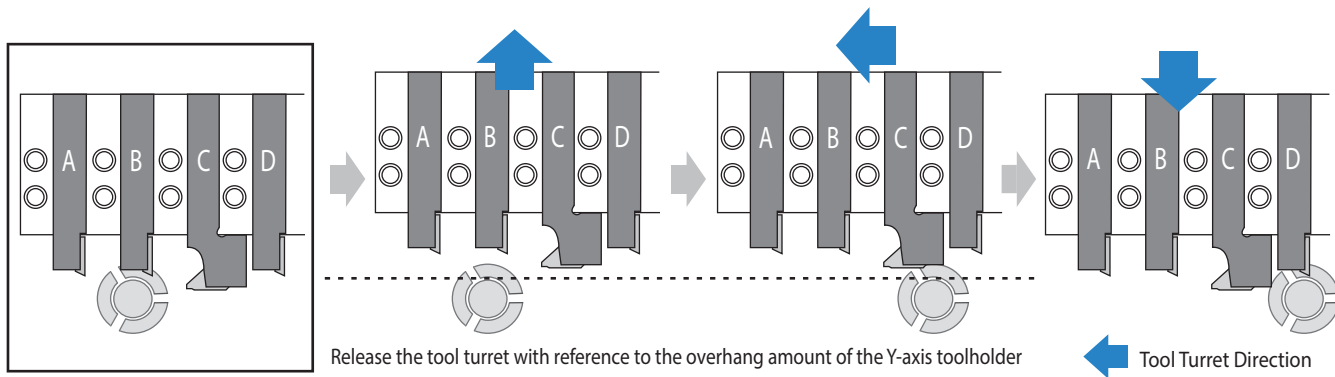
Precautions for using Y-axis toolholder

Do not use Y-axis toolholders side by side to prevent interference. (Only two Y-axis holder can be used at the same time)



Standard toolholders may be mounted between two Y-axis toolholders

When changing the tool, set the retracted position with reference to the cutting edge of the Y-axis holder. (When exchanging from tool B to D)



E
Small tools

Note that using other toolholders together will result in different outside diameters

(Unit : mm)

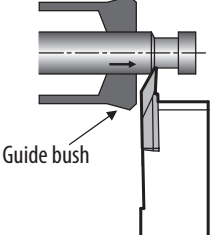
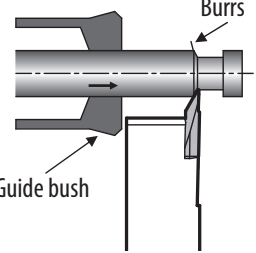
Y-axis Toolholder Overhang	Examples	Overhang Amount L			
		Available Outside Cutting Diameter (φ)	20	22	25
20		A	Without Restriction	Without Restriction	Without Restriction
		B	13.0	13.0	13.0
		C	Without Restriction	Without Restriction	Without Restriction
25		A	38.0	58.0	Without Restriction
		B	14.9	13.6	13.0
		C	45.0	60.0	Without Restriction

Toolholders for back turning - TKFB insert

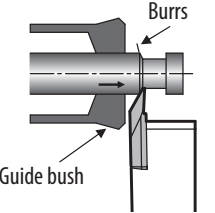
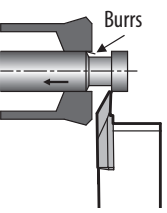
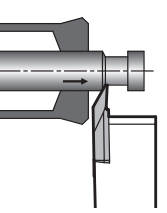
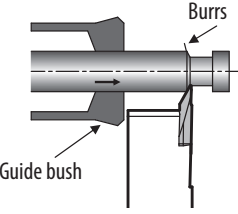
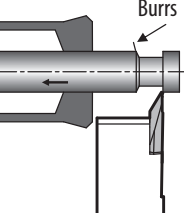
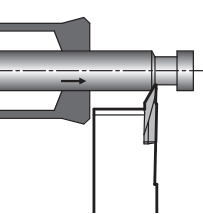
How to select back turning toolholder hand

E

Small tools

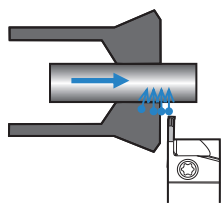
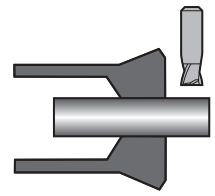
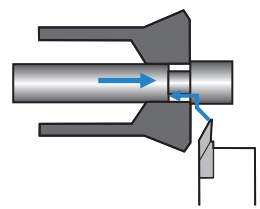
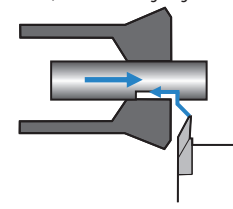
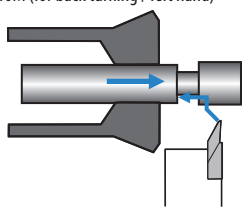
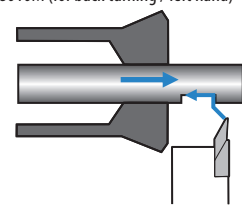
<p>Right-hand</p>		<ul style="list-style-type: none"> • Machining near the guide bush is possible • Narrow cutting edge width of TKFB12R15005M • Optimum for small parts and high precision machining
<p>Left-hand</p>	<p>The workpiece burr does not contact the guide bush.</p> 	<ul style="list-style-type: none"> • Machining with a distance from guide bush • Good chip control due to large space between the guide bush and the tool. • Excellent chip control in roughing and finishing (plural passes) • Stable accuracy of external diameter dimension: <ul style="list-style-type: none"> • When burrs occur, if a left-hand toolholder is used, it is not necessary to return workpiece into guide bush in finishing. • Also, left-hand toolholders prevent guide bush wear caused by chip biting.

Workpiece movement and tool hand selection - in roughing and finishing

	Roughing	Workpiece position after roughing	Finishing
<p>Right-hand</p>			
<p>Left-hand</p>			

* Good dimension accuracy: If a left-hand toolholder is used, burrs on workpiece generated in roughing do not damage the guide bush in finishing.

Chip control improvement in back turning

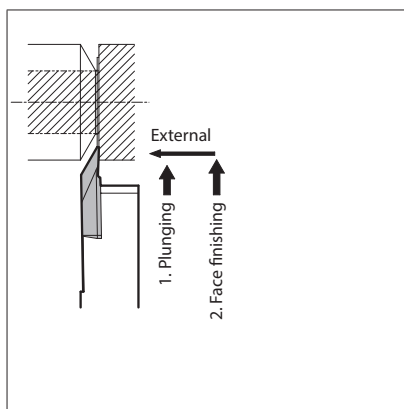
	Chip control improvement by tool pass changes - 1	Chip control improvement by tool pass changes - 2
Roughing	<p>Roughing with grooving tools</p> <p>1. GMM2420-020MW (Grooving)</p> 	<p>Pre-Stage machining is processed with solid end mill</p> <p>1. Solid end mill</p> 
Finishing (Countermeasures 1) Use right-hand toolholder	<p>When using TKFB12R28010M (for back turning / right hand)</p>  <p>Advantages:</p> <ul style="list-style-type: none"> • Good surface roughness <p>Disadvantages:</p> <ul style="list-style-type: none"> • If a machining pass is long, the guide bush can not support the workpiece. 	<p>When using TKFB12R28010M (for back turning / right hand)</p>  <p>Advantages:</p> <ol style="list-style-type: none"> 1. Minimal deflection in long machining passes 2. Chips are broken into small pieces, though the workpiece material is sticky <p>Disadvantages:</p> <ul style="list-style-type: none"> • The pre-stage machining may cause fractures, because of interrupted machining
Finishing (Countermeasures 2) Use left-hand toolholder	<p>When using TKFB12L28010M (for back turning / left hand)</p>  <p>Advantages:</p> <ol style="list-style-type: none"> 1. Good surface roughness 2. High precision machining if the machined portion does not contact the guide bush. <p>Disadvantages:</p> <ul style="list-style-type: none"> • If a machining pass is long, the guide bush can not support the workpiece. 	<p>When using TKFB12L28010M (for back turning / left hand)</p>  <p>Advantages:</p> <ol style="list-style-type: none"> 1. Minimal deflection in long machining passes 2. Chips are broken into small pieces, though the workpiece material is sticky. 3. High precision machining if the machined portion does not contact the guide bush. <p>Disadvantages:</p> <ul style="list-style-type: none"> • The pre-stage machining may cause fractures, because of interrupted machining.



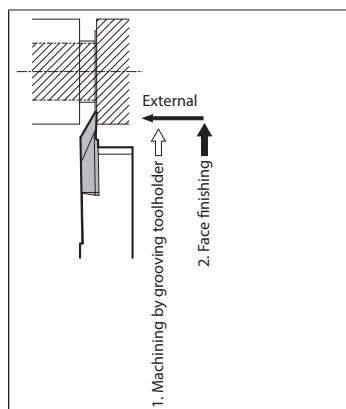
Countermeasure against peeled surface in face back turning

When peeled surface occurs on the workpiece face, please apply the countermeasures below.

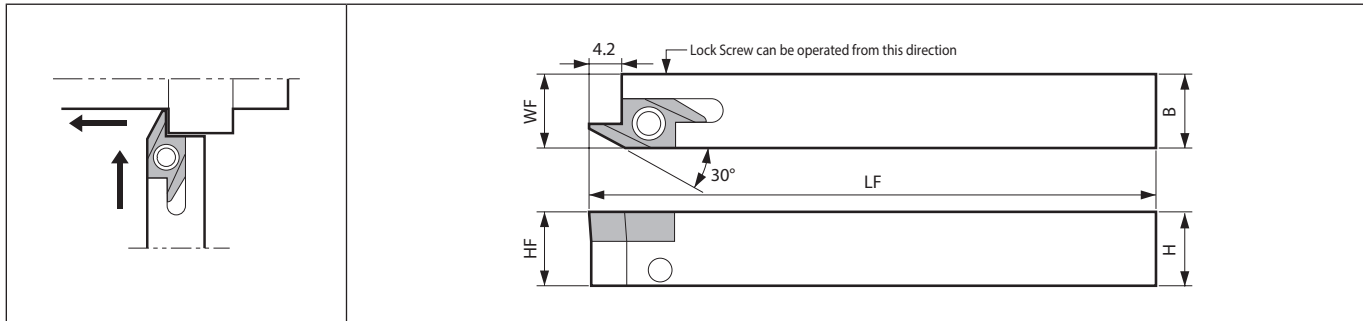
Countermeasures 1 Face finishing



Countermeasures 2 Face finishing after grooving



AABS-40F (Back turning / Edge width : 2.8mm, Max. depth : 4mm)

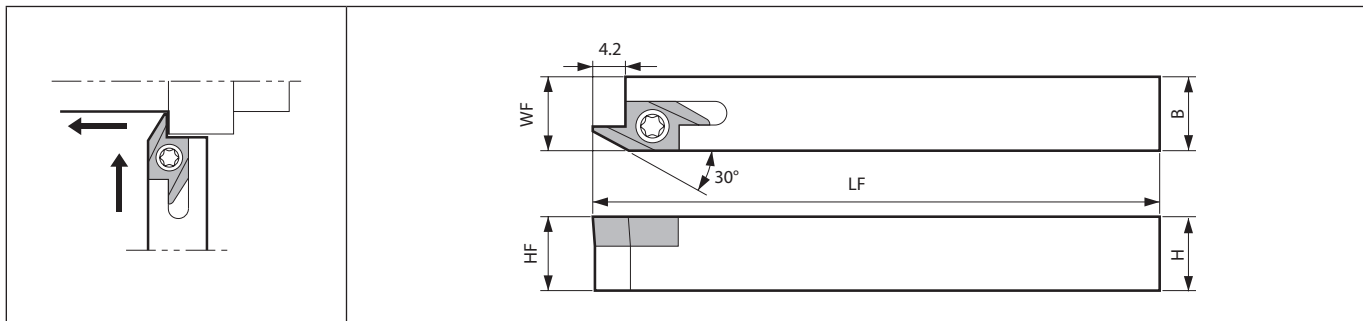


Toolholder dimensions

Small tools

Description	Availability	Dimension (mm)						Standard corner-R(RE)	Spare parts			Applicable inserts ➔ B112
		R	H	B	HF	LF	WF		Anchor pin	Lock screw	Wrench	
		AABSR 1010JX-40F	●	10	10	10	10.2			LPA-11		
1212JX-40F	●	12	12	12	120	12.2	LPA-13	HSB4X8R	FH-2			
1616JX-40F	●	16	16	16	16.2		LPA-17					

SABS-40F (Back turning / Edge width : 2.8mm, Max. depth : 4mm)

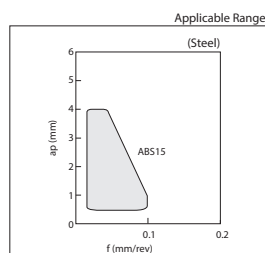


Toolholder dimensions

Description	Availability	Dimension (mm)						Standard corner-R(RE)	Spare parts		Applicable inserts ➔ B112
		R	H	B	HF	LF	WF		Screw	Wrench	
		SABSR 1010JX-40F	●	10	10	10	120		10.2	0.15	
1212F-40F	●				85	12.2					
1212JX-40F	●	12	12	12	120	12.2					
1616JX-40F	●	16	16	16	16.2	16.2					
2020K-40F	●	20	20	20	125	20.2					

Applicable inserts

Applications	Back turning
Insert	
Type	ABS15
Page	B112

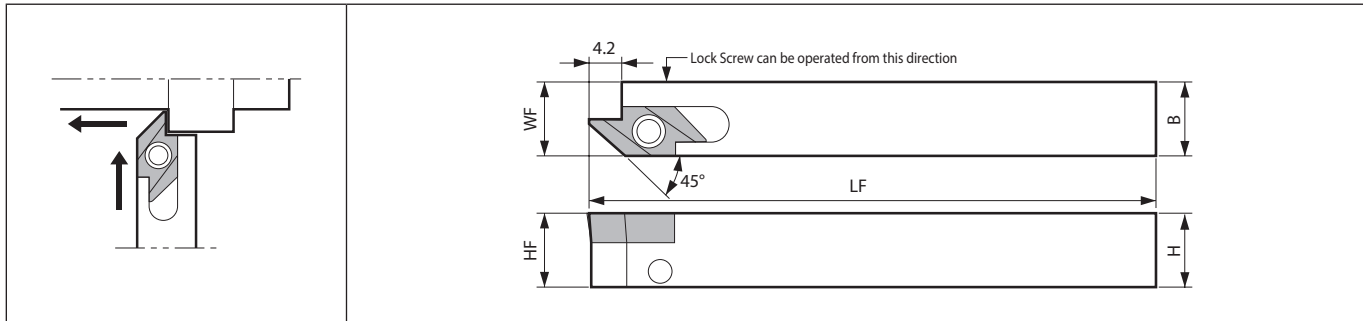


Recommended cutting conditions ➔ E67

● : Standard item

E20

AABW-40F (Back turning / Edge width : 4.7mm, Max. depth : 4mm)

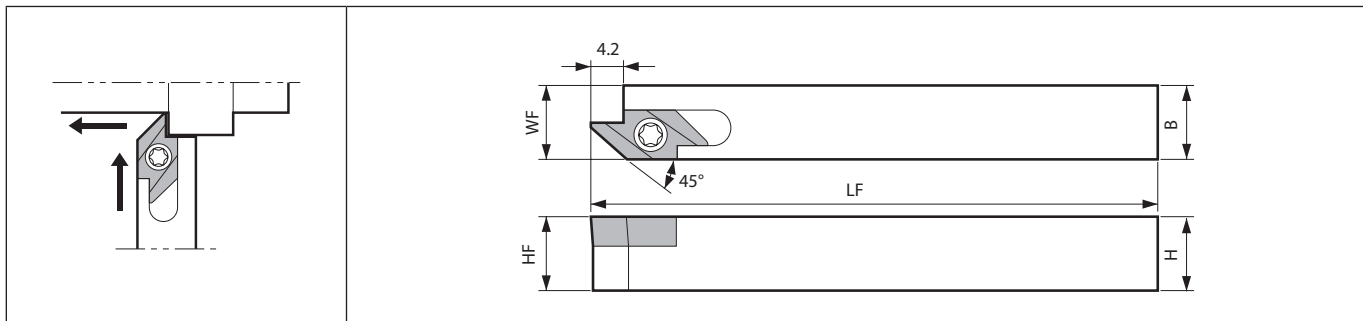


Toolholder dimensions

Description	Availability	Dimension (mm)						Standard corner-R(RE)	Spare parts			Applicable inserts ➔ B112
		R	H	B	HF	LF	WF		Anchor pin	Lock screw	Wrench	
		AABWR	●	10	10	10			10.2	0.15	LPA-11	
	●	12	12	12	120	12.2		LPA-13				
	●	16	16	16		16.2		LPA-17				



SABW-40F (Back turning / Edge width : 4.7mm, Max. depth : 4mm)

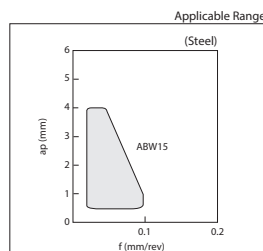


Toolholder dimensions

Description	Availability	Dimension (mm)						Standard corner-R(RE)	Spare parts		Applicable inserts ➔ B112
		R	H	B	HF	LF	WF		Screw	Wrench	
		SABWR	●	10	10	10			10.2	0.15	
	●	12	12	12	120	12.2					
	●	16	16	16		16.2					
	●	20	20	20	125	20.2					

Applicable inserts

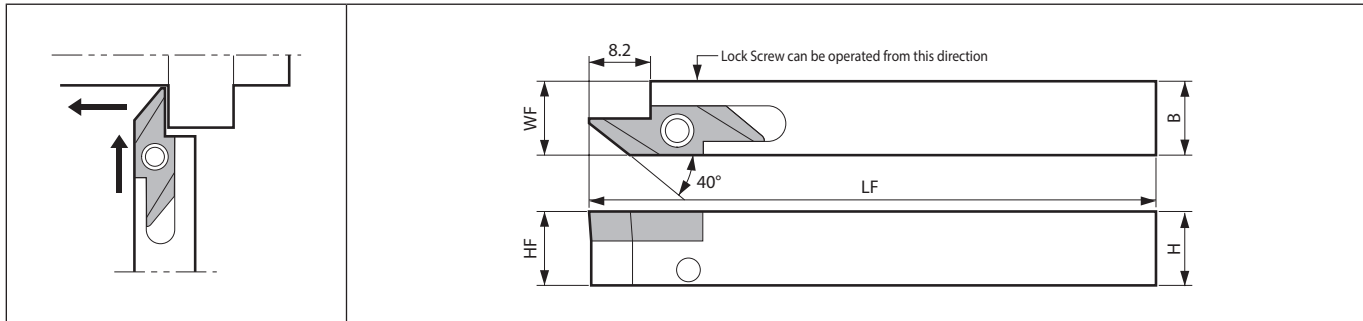
Applications	Back turning
Insert	
Type	ABW15
Page	B112



Recommended cutting conditions ➔ E67

● : Standard item

AABW-50F (Back turning / Edge width : 4.7mm, Max. depth : 5mm)



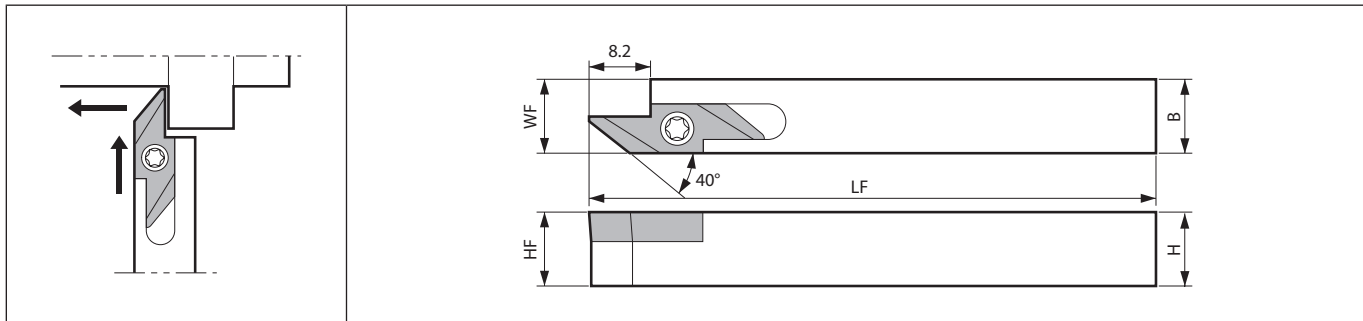
E

Small tools

Toolholder dimensions

Description	Availability		Dimension (mm)					Standard corner-R(RE)	Spare parts			Applicable inserts ➔ B112
	R	H	B	HF	LF	WF	Anchor pin		Lock screw	Wrench		
	AABWR 1010JX-50F	●	10	10	10		10.2		0.15	LPA-11	HSB4X8R	
1212JX-50F	●	12	12	12	120	12.2	LPA-13					
1616JX-50F	●	16	16	16		16.2	LPA-17					

SABW-50F (Back turning / Edge width : 4.7mm, Max. depth : 5mm)

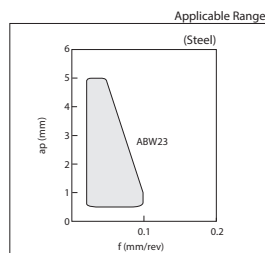


Toolholder dimensions

Description	Availability		Dimension (mm)					Standard corner-R(RE)	Spare parts		Applicable inserts ➔ B112
	R	H	B	HF	LF	WF	Screw		Wrench		
	SABWR 1010JX-50F	●	10	10	10		10.2		0.15	SB-3080TR	
1212JX-50F	●	12	12	12	120	12.2					
1616JX-50F	●	16	16	16		16.2					
2020K-50F	●	20	20	20	125	20.2					

Applicable inserts

Applications	Back turning
Insert	
Type	ABW23
Page	B112

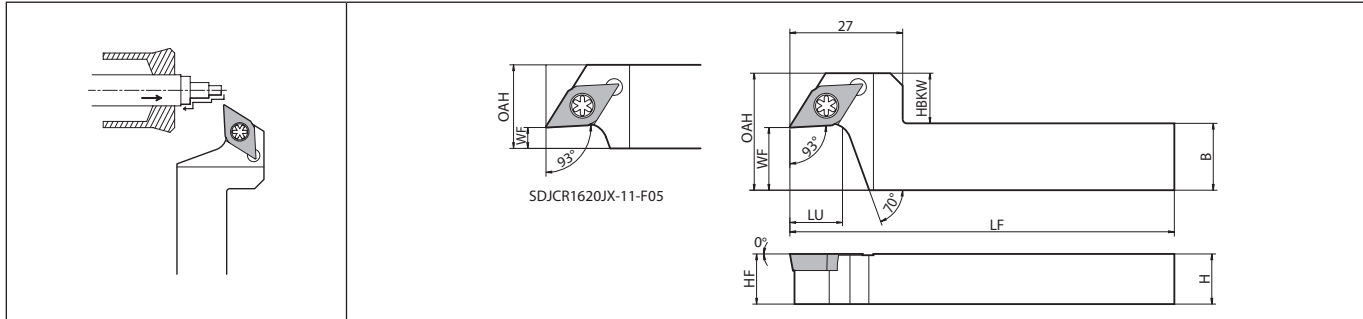


Recommended cutting conditions ➔ E67

● : Standard item

E22

SDJC (External turning / External copying)



Right-hand shown

Toolholder dimensions

Description	Availability		Dimension (mm)								Standard corner-R(RE)	Spare parts		Applicable inserts
	R	H	B	OAH	HF	HBKW	LF	LU	WF	Screw		Wrench		
SDJCR 1216JX-11-F05	●	12	16	18	12	2			5	0.2	SB-408STR	FT-15	DC□T11T3... DC□W11T3... DC□X11T3...	
1216JX-11-F15	●			28	12			15						
1620JX-11-F05	●	16	20	20	16	-		5						
1620JX-11-F15	●			28	16	8		15						

For WP chipbreaker, cutting edge offsets or program corrections are required on R36 and R37.

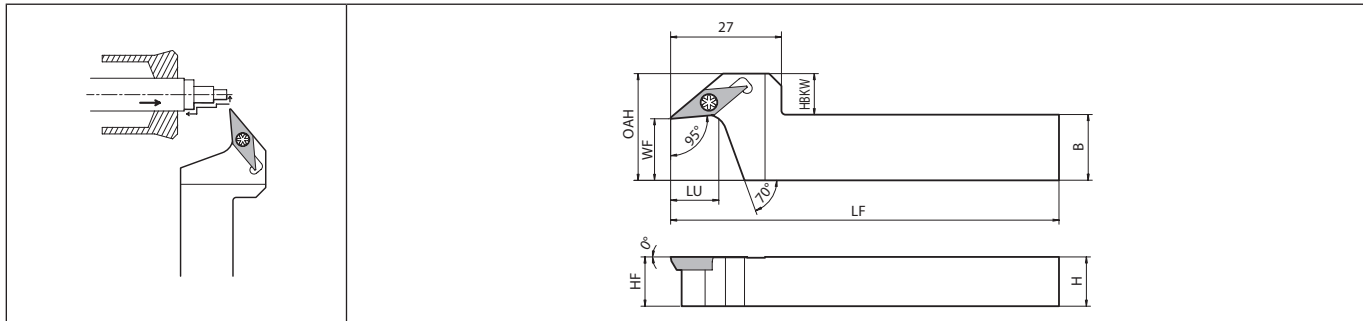
Applicable inserts

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing
Insert								
Chipbreaker type	CF	GF	SKS	SK	CK	GQ	WP	P/L-WP
Page	B68	B68	B68	B68	B68	B69	B69	B69
Applications	Finishing	Finishing	Finishing - Medium	Finishing - Medium	Medium	Medium	Finishing	Finishing
Insert								
Chipbreaker type	PP	GP	GK	HQ	STD	MF	P/L-F	P/L-FSF
Page	B69	B69	B70	B70	B70	B70	B72, B73	B72
Applications	Low feed	Low feed	Low feed	Low feed	Low carbon steel	Low carbon steel	Stainless steel / Heat-resistant alloys	Cast iron
Insert								
Chipbreaker type	P/L-U	P/L-USF	P/L-J	P/L-JSF	XP	XQ	MQ	No CB
Page	B74~B76	B74	B77	B76	B71	B71	B71	B78
Applications	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Hard materials		
Insert								
Chipbreaker type	AP	P/L-A3	AH	PCD	APD	CBN		
Page	B78	B78	B78	C42	C42	C22		

Recommended cutting conditions E65, E66

● : Standard item

SVLP (External turning / External copying)



Right-hand shown



Small tools

Toolholder dimensions

Description	Availability	Dimension (mm)									Standard corner-R(RE)	Spare parts		Applicable inserts
		R	H	B	OAH	HF	HBKW	LF	LU	WF		Screw	Wrench	
SVLPR 1216JX-11-F15 1620JX-11-F15	● ●	12 16	16 20	26	12 16	10 6	120	12	15	0.2	SB-2570TR	FT-8	VP□T1103...	

Applicable inserts

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing	Low feed	Low feed
Insert								
Chipbreaker type	CF	GF	SKS	CK	°/-F	°/-FSF	°/-U	°/-USF
Page	B102	B102	B102	B102	B103	B103	B104	B104
Applications	Low feed							
Insert								
Chipbreaker type	°/-J							
Page	B104							

Recommended cutting conditions E65, E66

● : Standard item

E24

Goose-neck holder is available for multiple passes at roughing and finishing

<Solution 1>
The workpiece burr does not contact the guide bush and no breakage will be caused!

<Solution 2>
Longitudinal dimension will be stable. External diameter will be stable owing to multiple pass machining (roughing and finishing).

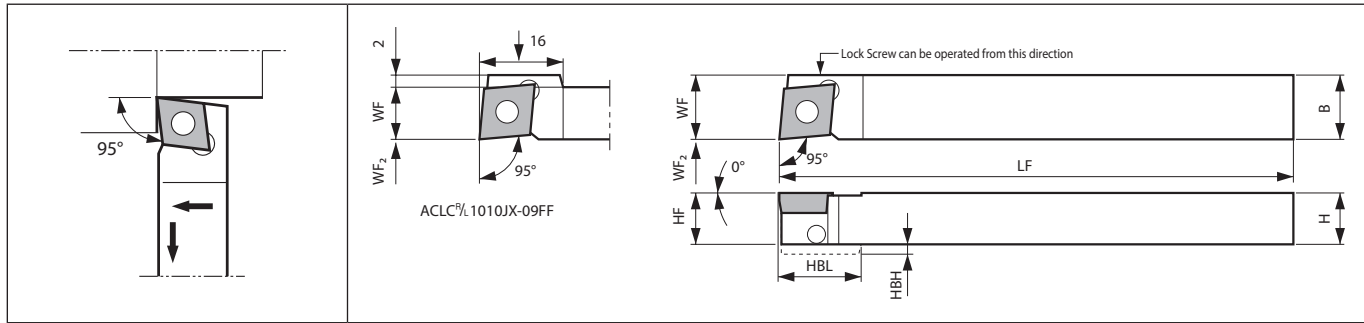
<Solution 3>
Large space for chip evacuation!
Better and smooth chip control.

One toolholder for complex shape workpiece

Complex shape workpiece can be processed with one toolholder. It can be used for undercutting and external / face finishing.

E
Small tools

ACLC-FF (External turning / External facing , Back clamp, Without offset)



Right-hand shown



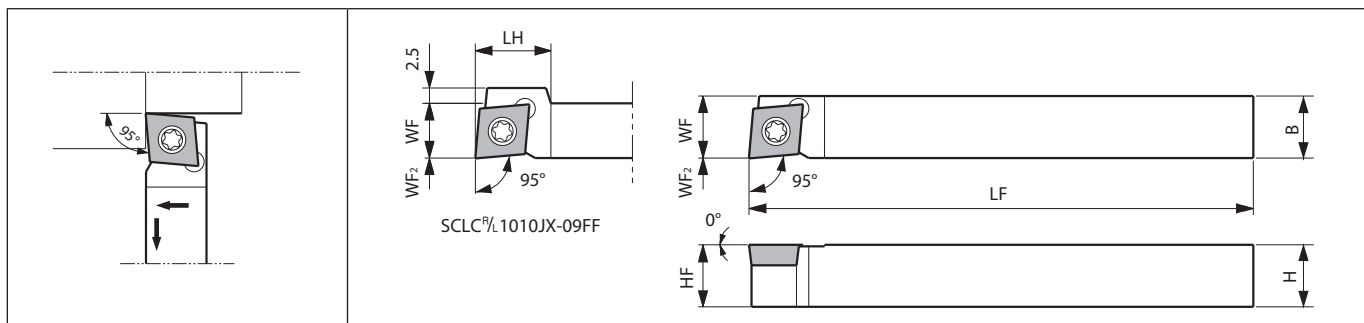
Small tools

Toolholder dimensions

Description	Availability		Dimension (mm)									Standard corner-R(RE)	Spare parts			Applicable inserts
													Anchor pin	Lock screw	Wrench	
	R	L	H	B	HF	HBH	HBL	LF	WF	WF2						
ACLC% 1010JX-06FF	●	●	10	10	10	-	-	120	10	0	0.2	LPF-11	HSB4X8%	FH-2	CC□T0602... CC□W0602...	
ACLC% 1010JX-09FF	●	●	10	10	10	2	16		10		0.2	LPF-13	HSB4X8%	FH-2	CC□T09T3... CC□W09T3...	
1212JX-09FF	●	●	12	12	12	-	-	120	12			LPF-17				
1616JX-09FF	●	●	16	16	16	-	-		16							

Lock Screw : HSB4X8R for Right-hand Toolholder, HSB4X8L for Left-hand Toolholder.

SCLC-FF (External turning / External facing , Screw clamp, Without offset)



Right-hand shown

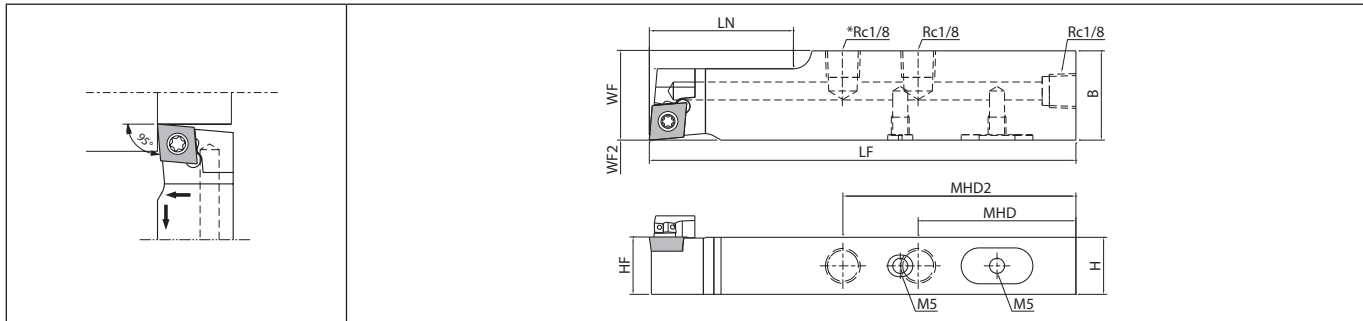
Toolholder dimensions

Description	Availability		Dimension (mm)									Standard corner-R(RE)	Spare parts			Applicable inserts
													Screw	Wrench	Wrench	
	R	L	H	B	LH	HF	LF	WF	WF2							
SCLC% 0808F-06FF	●	●	8	8		8	85	8			0.2	SB-2570TR	-	FT-8	CC□T0602... CC□W0602...	
1010JX-06FF	●	●	10	10		10	120	10								
SCLC% 1010JX-09FF	●	●	10	10	15	10	120	10			0.2	SB-4085TR	FT-15	-	CC□T09T3... CC□W09T3...	
1212F-09FF	●	●					85	12								
1212JX-09FF	●	●	12	12		12										
1616JX-09FF	●	●	16	16		16	120	16								
2020JX-09FF	●	●	20	20		20		20								

● : Standard item

E26

SCLC-FFJCTM (External turning / External facing , Screw clamp, Without offset, Coolant-through holder)



Right-hand shown | SCLCR12...: 2-Rc1/8

Toolholder dimensions

Description	Availability	Dimension (mm)										Standard corner-R(RE)	Coolant hole	Spare parts				Applicable inserts
		R	H	B	MHD	MHD2	HF	LF	LN	WF	WF2			Plug	Plug	Screw	Wrench	
														GP-1	HSSX4LP	SB-4085TR	FT-15	
SCLCR 1218JX-09FFJCTM	●	12	18	54	-	12	28	18	0	0.2	Yes	GP-1	HSSX4LP	SB-4085TR	FT-15	CC-T09T3... CC-W09T3...		
1625JX-09FFJCTM	●	16	25	44	65	16	120	40	25	0	0.2	Yes	GP-1	HSSX4LP	SB-4085TR	FT-15	CC-T09T3... CC-W09T3...	
2025JX-09FFJCTM	●	20	25	44	65	20	120	40	25	0	0.2	Yes	GP-1	HSSX4LP	SB-4085TR	FT-15	CC-T09T3... CC-W09T3...	

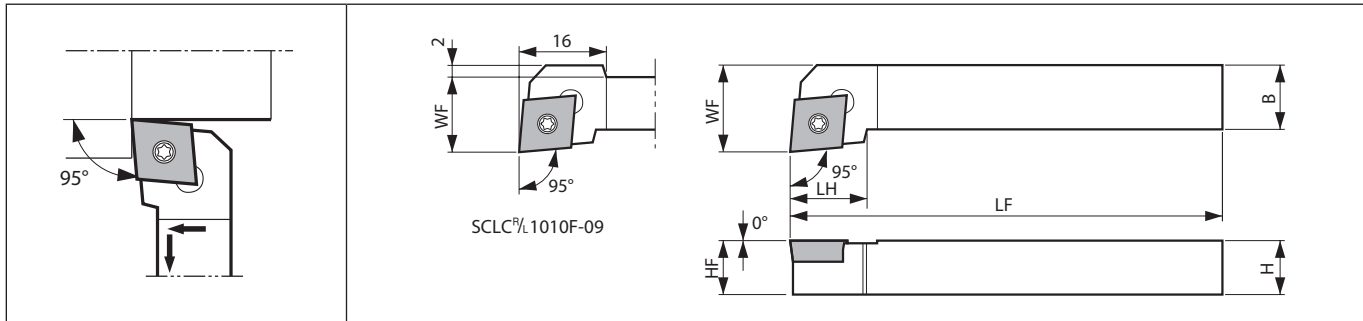
Please see page H16 and H17 for piping parts of coolant-through holders.



Small tools

● : Standard item

SCLC (External turning / External facing , Screw clamp)



Right-hand shown



Small tools

Toolholder dimensions

Description	Availability		Dimension (mm)							Standard corner-R(RE)	Spare parts				Applicable inserts
											Screw	Wrench	Wrench	Wrench	
	R	L	H	B	LH	HF	LF	WF							
SCLC% 1010F-06	●	●	10	10	9	10	80	12	0.2	SB-2570TR	-	FT-8	-	CC%T0602... CC%W0602...	
SCLC% 1010F-09	●	●	10	10	14	10	80	14	0.2	SB-4085TR	FT-15	-	-	CC%T09T3... CC%W09T3...	
1212H-09	●	●	12	12		12	100	16							
1616H-09	●	●	16	16	15	16	20								
2020K-09	●	●	20	20	20	20	125	25							
2525M-09	●	●	25	25	22	25	150	32							
SCLC% 1616H-12	●	●	16	16	20	16	100	20	0.4	SB-5090TR	-	-	LTW-20	CC%T1204...	
2020K-12	●	●	20	20	22	20	125	25							
2525M-12	●	●	25	25	22	25	150	32							

Applicable inserts (ACLC-FF / SCLC-FF / SCLC-FFJCTM / SCLC)

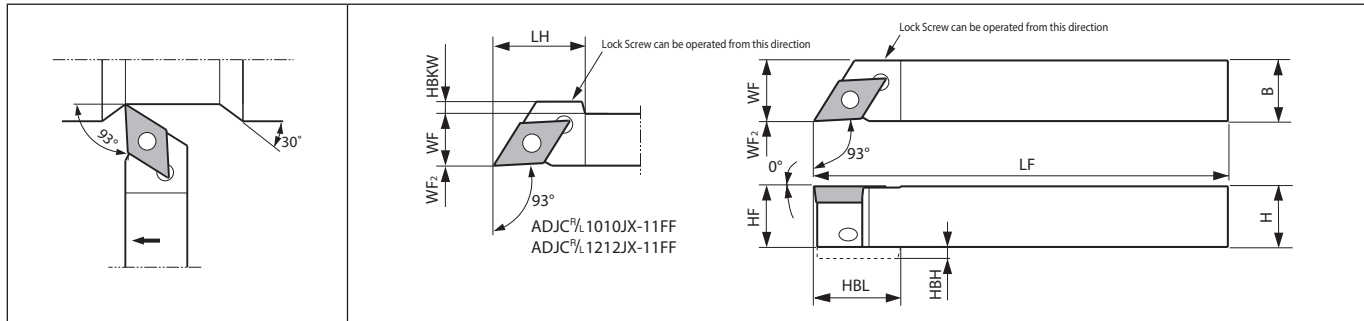
Applications	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing
Insert								
Chipbreaker type	PF	GF	SKS	SK	CK	GQ	WP	PP
Page	B58	B58	B59	B59	B59	B59	B60	B60
Applications	Finishing - Medium	Finishing - Medium	Medium	Medium	Low feed	Low feed	Stainless steel / Heat-resistant alloys	Cast iron
Insert								
Chipbreaker type	GK	HQ	STD	MF	%-U	%-J	MQ	No CB
Page	B60	B60	B60	B61	B63-B65	B65	B61	B66
Applications	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Hard materials		
Insert								
Chipbreaker type	AP	%-A3	AH	PCD	APD	CBN		
Page	B66	B66	B66	C39	C40	C20		

Recommended cutting conditions E65, E66

● : Standard item

E28

ADJC-FF (External turning / External copying , Back clamp, Without offset)



Right-hand shown

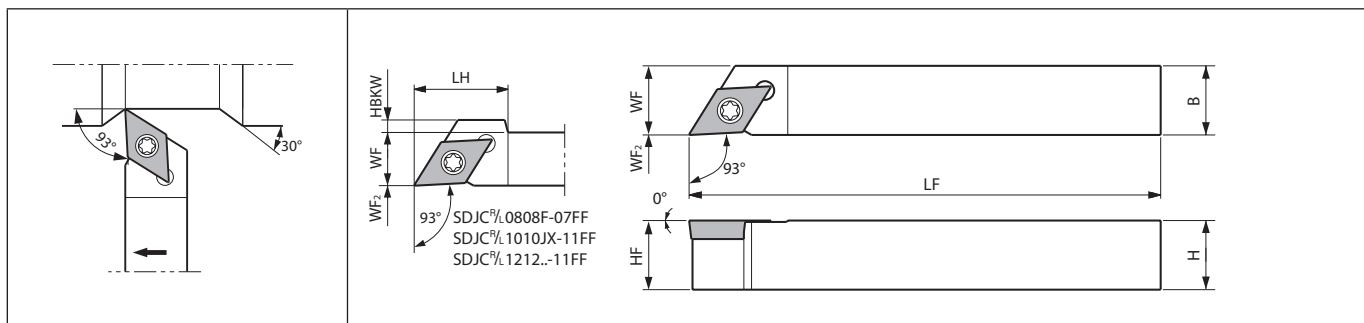
Toolholder dimensions

Description	Availability		Dimension (mm)										Standard corner-R(RE)	Spare parts			Applicable inserts
														Anchor pin	Lock screw	Wrench	
	R	L	H	B	LH	HF	HBH	HBKW	HBL	LF	WF	WF2					
ADJC% 1010JX-07FF	●	●	10	10	-	10	-	-	-	120	10	0	0.2	LPF-11	HSB4X8%	FH-2	DC□T0702... DC□W0702... DC□X0702...
ADJC% 1010JX-11FF 1212JX-11FF 1616JX-11FF	●	●	10	10	20	10	2	3	20	120	10	0	0.2	LPF-13	HSB4X8%	FH-2	DC□T11T3... DC□W11T3... DC□X11T3...
	●	●	12	12		12	-	1	-		12						
	●	●	16	16	-	16	-	-	-	16							

Lock Screw : HSB4X8R for Right-hand Toolholder, HSB4X8L for Left-hand Toolholder.
For WP chipbreaker, cutting edge offsets or program corrections are required on R36 and R37.



SDJC-FF (External turning / External copying, Screw clamp, Without offset)



Right-hand shown

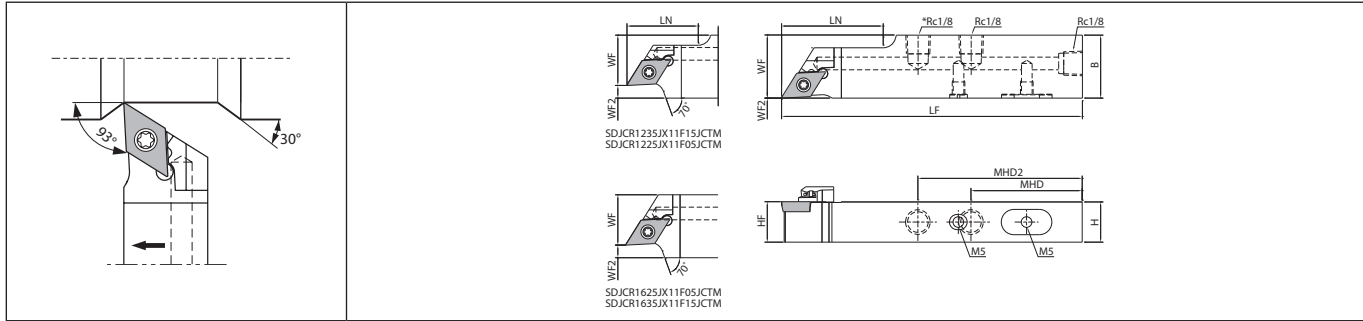
Toolholder dimensions

Description	Availability		Dimension (mm)										Standard corner-R(RE)	Spare parts			Applicable inserts
														Screw	Wrench	Wrench	
	R	L	H	B	LH	HF	HBKW	LF	WF	WF2							
SDJC% 0808F-07FF 1010JX-07FF	●	●	8	8	14	8	0.5	85	8	0	0.2	SB-2570TR	-	FT-8	DC□T0702... DC□W0702... DC□X0702...		
SDJC% 1010JX-11FF 1212F-11FF 1212JX-11FF 1616JX-11FF 2020JX-11FF	●	●	10	10	20	10	3	120	10							0	0.2
●	●	12	12	12		1	85	12									
●	●	16	16	-	16	-	120	16									
●	●	20	20	-	20	-	20	20									

For WP chipbreaker, cutting edge offsets or program corrections are required on R36 and R37.

● : Standard item

SDJC-FFJCTM (External turning / External copying, Screw clamp, Without offset, Coolant-through holder)



Right-hand shown | SDJCR12...:2-Rc1/8



Small tools

Toolholder dimensions

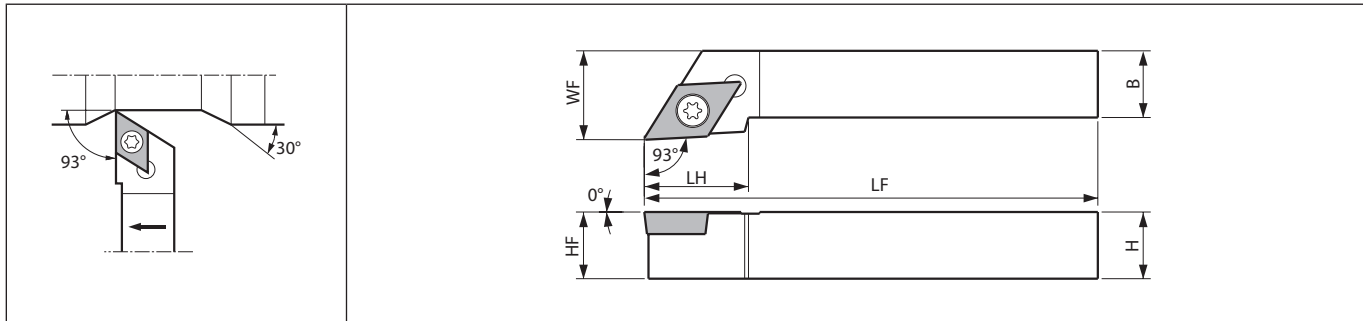
Description	Availability	Dimension (mm)										Standard corner-R(RE)	Coolant hole	Spare parts				Applicable inserts
		R	H	B	MHD	MHD2	HF	LF	LN	WF	WF2			Plug	Plug	Screw	Wrench	
SDJCR 1218JX-11FFJCTM	●	12	18	54	-	12	28	18	0	0.2	Yes	GP-1	HSSX4LP	SB-4085TR	FT-15	DC□T11T3... DC□W11T3... DC□X11T3...		
1625JX-11FFJCTM	●	16	25	44	65	16	120	40	25	0	0.2	Yes	GP-1	HSSX4LP	SB-4085TR	FT-15	DC□T11T3... DC□W11T3... DC□X11T3...	
2025JX-11FFJCTM	●	20	25	44	65	20	120	40	25	0	0.2	Yes	GP-1	HSSX4LP	SB-4085TR	FT-15	DC□T11T3... DC□W11T3... DC□X11T3...	
SDJCR 1225JX11F05JCTM	●	12	25	54	-	12	28	18	5	0.2	Yes	GP-1	HSSX4LP	SB-4085TR	FT-15	DC□T11T3... DC□W11T3... DC□X11T3...		
1235JX11F15JCTM	●	12	35	54	-	12	28	18	15	0.2	Yes	GP-1	HSSX4LP	SB-4085TR	FT-15	DC□T11T3... DC□W11T3... DC□X11T3...		
1625JX11F05JCTM	●	16	25	44	65	16	120	40	25	0	0.2	Yes	GP-1	HSSX4LP	SB-4085TR	FT-15	DC□T11T3... DC□W11T3... DC□X11T3...	
1635JX11F15JCTM	●	16	35	44	65	16	120	40	25	0	0.2	Yes	GP-1	HSSX4LP	SB-4085TR	FT-15	DC□T11T3... DC□W11T3... DC□X11T3...	

Please see page H16 and H17 for piping parts of coolant-through holders.
For WP chipbreaker, cutting edge offsets or program corrections are required on R36 and R37.

● : Standard item

E30




SDJC (External turning / External copying , Screw clamp)



Right-hand shown



Toolholder dimensions

Description	Availability		Dimension (mm)							Standard corner-R(RE)	Spare parts			Applicable inserts
											Screw	Wrench	Wrench	
	R	L	H	B	LH	HF	LF	WF						
SDJC%L 1010F-07	●	●	10	10	12	10	80	12	0.2	SB-2570TR	-	FT-8	DC□T0702... DC□W0702... DC□X0702...	
SDJC%L 1010F-11	●	●	10	10	18	10	80	12	0.2	SB-4085TR	FT-15	-	DC□T11T3... DC□W11T3... DC□X11T3...	
1212H-11	●	●	12	12		12	100	16						
1616H-11	●	●	16	16		16	125	20						
2020K-11	●	●	20	20		20	150	25						
2525M-11	●	●	25	25	23	25	150	32						

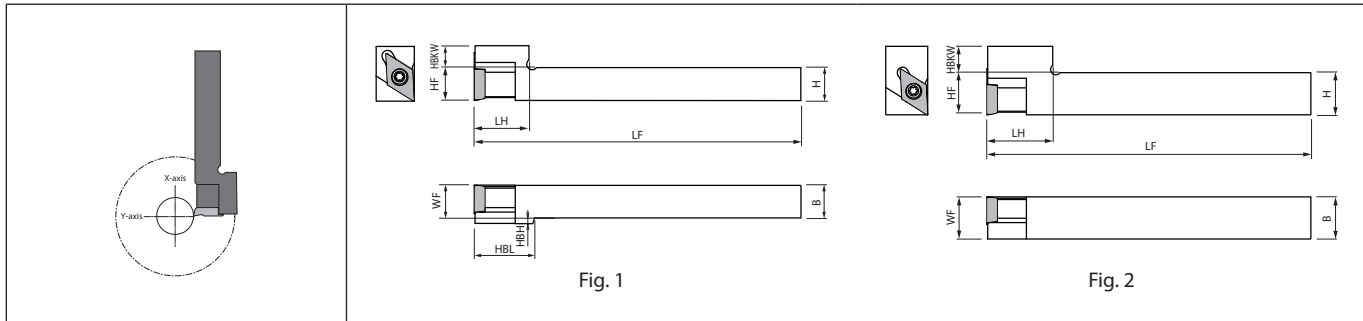
For WP chipbreaker, cutting edge offsets or program corrections are required on R36 and R37.



Small tools

● : Standard item

SDJC-FF-Y (External turning / External copying, Y-axis toolholder)



Right-hand shown | Right-hand Insert for Right-hand Toolholder.



Small tools

Toolholder dimensions

Description	Availability	Dimension (mm)										Fig.	Coolant hole	Spare parts		Applicable inserts
		R	H	B	LH	HF	HBH	HBKW	HBL	LF	WF			Screw	Wrench	
														No	SB-4085TR	
SDJCR 1212JX-11FF-Y	●	12	12	20	12	2	8	22	120	12	1	No	SB-4085TR	FT-15	DC□T11T3... DC□W11T3... DC□X11T3...	
1616JX-11FF-Y	●	16	16	25	16	-	10	-	120	16	2	No	SB-4085TR	FT-15	DC□T11T3... DC□W11T3... DC□X11T3...	

For WP chipbreaker, cutting edge offsets or program corrections are required on R36 and R37.

Applicable inserts (ADJC-FF / SDJC-FF / SDJC-FFJCTM / SDJC / SDJC-FF-Y)

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing
Insert								
Chipbreaker type	CF	GF	SKS	SK	CK	GQ	WP	1/2-WP
Page	B68	B68	B68	B68	B68	B69	B69	B69
Applications	Finishing	Finishing	Finishing - Medium	Finishing - Medium	Medium	Medium	Finishing	Finishing
Insert								
Chipbreaker type	PP	GP	GK	HQ	STD	MF	1/2-F	1/2-FSF
Page	B69	B69	B70	B70	B70	B70	B72, B73	B72
Applications	Low feed	Low feed	Low feed	Low feed	Low carbon steel	Low carbon steel	Stainless steel / Heat-resistant alloys	Cast iron
Insert								
Chipbreaker type	1/2-U	1/2-USF	1/2-J	1/2-JSF	XP	XQ	MQ	No CB
Page	B74~B76	B74	B77	B76	B71	B71	B71	B78
Applications	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Hard materials		
Insert								
Chipbreaker type	AP	1/2-A3	AH	PCD	APD	CBN		
Page	B78	B78	B78	C42	C42	C22		

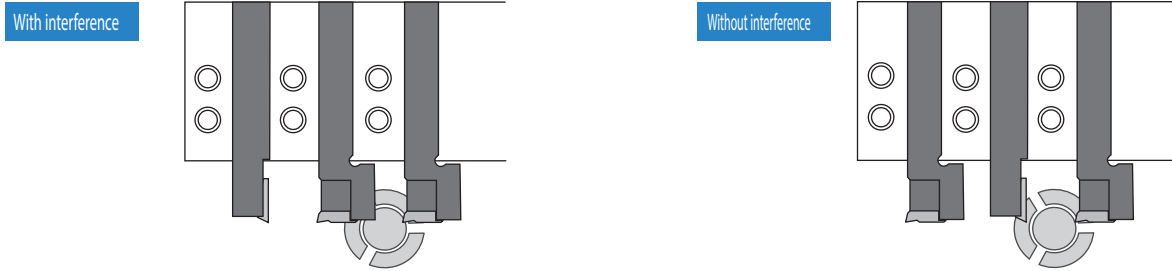
Recommended cutting conditions E65, E66

● : Standard item

E32

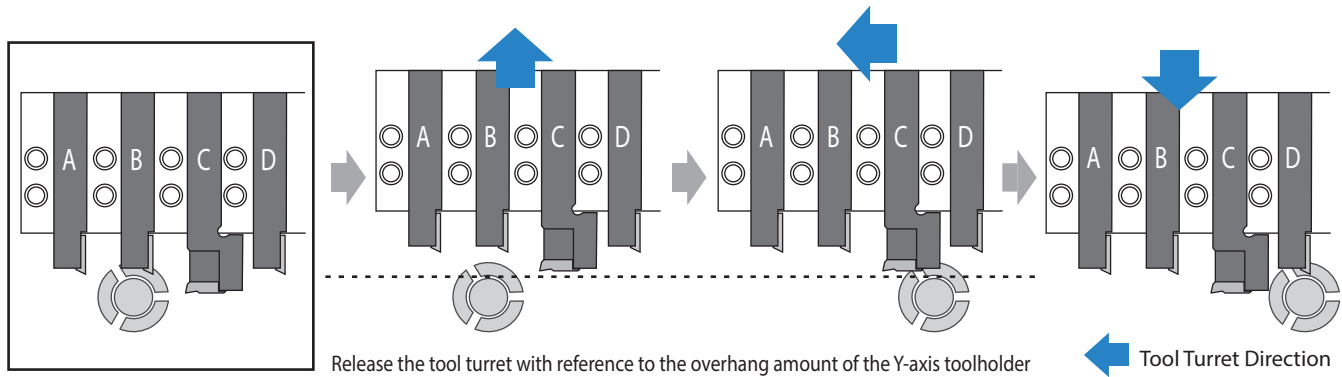
Precautions for using Y-axis toolholder

Do not use Y-axis toolholders side by side to prevent interference. (Only two Y-axis holder can be used at the same time)



Standard toolholders may be mounted between two Y-axis toolholders

When changing the tool, set the retracted position with reference to the cutting edge of the Y-axis holder. (When exchanging from tool B to D)



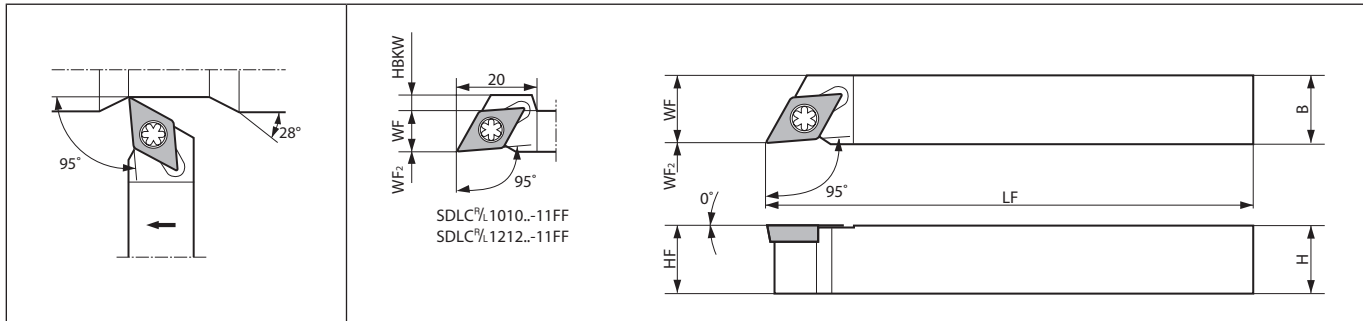
E
Small tools

Note that using other toolholders together will result in different outside diameters

(Unit : mm)

Y-axis Toolholder Overhang	Examples	Overhang Amount L			
		Available Outside Cutting Diameter (d)	20	22	25
20		A	Without Restriction	Without Restriction	Without Restriction
		B	13.0	13.0	13.0
		C	Without Restriction	Without Restriction	Without Restriction
25		A	38.0	58.0	Without Restriction
		B	14.9	13.6	13.0
		C	45.0	60.0	Without Restriction

SDLC-FF (External turning / External copying, Screw clamp, Without offset)



Right-hand shown

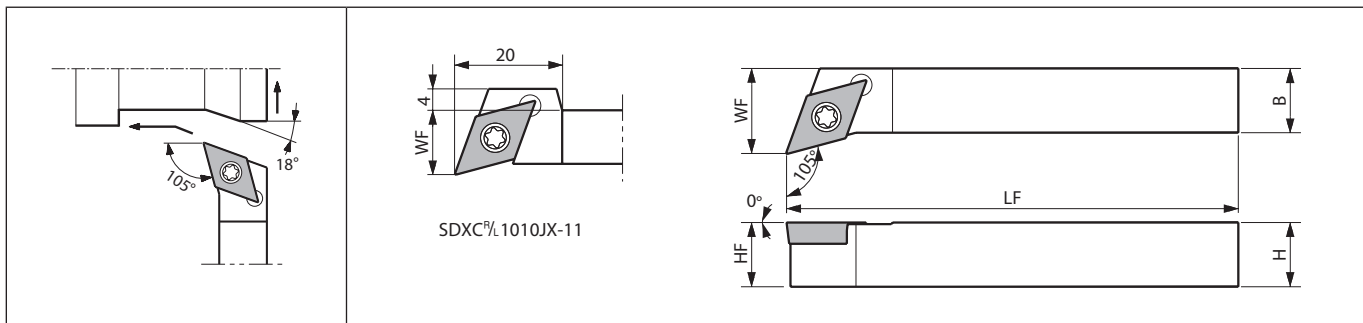


Small tools

Toolholder dimensions

Description	Availability		Dimension (mm)							Standard corner-R(RE)	Spare parts			Applicable inserts
											Screw	Wrench	Wrench	
	R	L	H	B	HF	HBKW	LF	WF	WF2					
SDLC% 1010JX-07FF	●	●	10	10	10		120	10	0	0.2	SB-2570TR	-	FT-8	DC□T0702... DC□W0702...
1212F-07FF	●	●	12	12	12	-	85	12						
1212JX-07FF	●	●	12	12	12		120	12						
1616JX-07FF	●	●	16	16	16		120	16						
SDLC% 1010F-11FF	●		10	10	10	4	80	10	0	0.2	SB-4085TR	FT-15	-	DC□T11T3... DC□W11T3...
1010JX-11FF	●	●	10	10	10		120	10						
1212F-11FF	●		12	12	12	2	85	12						
1212JX-11FF	●	●	12	12	12		120	12						
1616H-11FF	●		16	16	16		100	16						
1616JX-11FF	●	●	16	16	16		120	16						

SDXC (External turning / External facing / External copying)



Right-hand shown

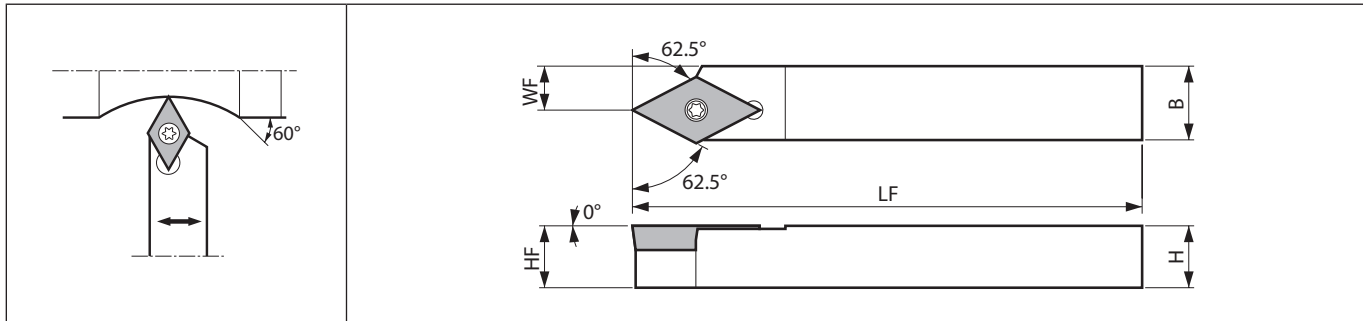
Toolholder dimensions

Description	Availability		Dimension (mm)							Standard corner-R(RE)	Spare parts			Applicable inserts
											Screw	Wrench	Wrench	
	R	L	H	B	HF	LF	WF	WF2						
SDXC% 1010JX-07	●	●	10	10	10	120	12	0.2	SB-2570TR	-	FT-8	DC□T0702... DC□W0702...		
SDXC% 1010JX-11	●	●	10	10	10	12	16	0.2	SB-4085TR	FT-15	-	DC□T11T3... DC□W11T3...		
1212JX-11	●	●	12	12	12	120	16							
1616JX-11	●	●	16	16	16	20	20							

● : Standard item



E34

SDNC-F (External turning / External copying)



Right-hand shown

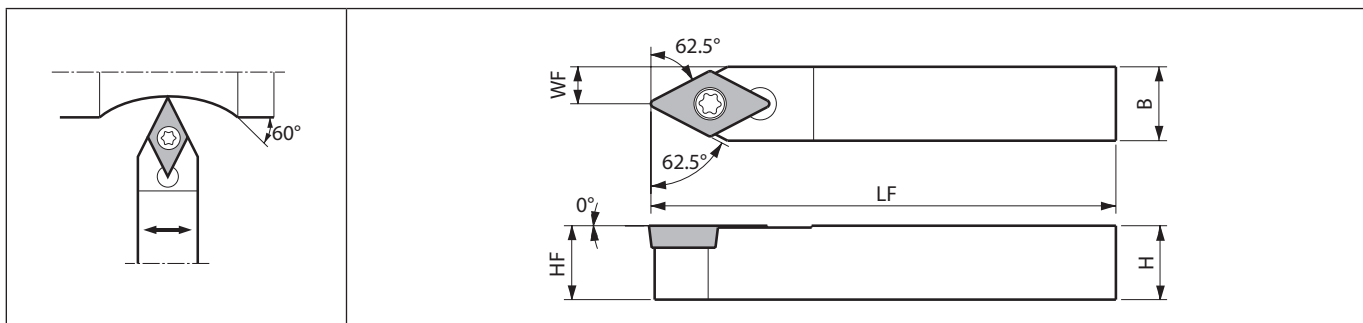
Toolholder dimensions

Description	Availability		Dimension (mm)					Standard corner-R(RE)	Spare parts			Applicable inserts
	R	L	H	B	HF	LF	WF		Screw	Wrench		
												
SDNC%L 1010JX-07F	●	●	10	10	10	120	7	0.2	SB-2570TR	FT-8		DC□T0702... DC□W0702...






Small tools

SDNC (External turning / External copying)


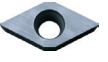


Toolholder dimensions

Description	Availability	Dimension (mm)					Standard corner-R(RE)	Spare parts			Applicable inserts	
		N	H	B	HF	LF		WF	Screw	Wrench		Wrench
												
SDNCN 0808F-07	●	8	8	8	85	4	0.2	SB-2570TR	-	FT-8	DC□T0702... DC□W0702...	
1010JX-07	●	10	10	10	120	5						
1212JX-07	●	12	12	12	120	6						
SDNCN 1010F-11	●	10	10	10	80	5	0.2	SB-4085TR	FT-15	-	DC□T11T3... DC□W11T3...	
1010JX-11	●				120							
1212F-11	●	12	12	12	85							
1212JX-11	●				120							
1616H-11	●	16	16	16	100	8						
1616JX-11	●				120							


● : Standard item

Applicable inserts (SDLC-FF / SDXC / SDNC-F / SDNC)

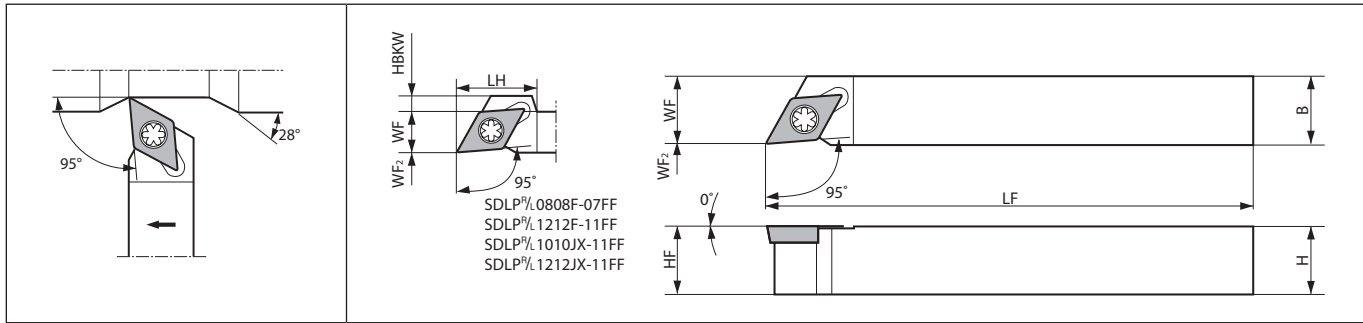
Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing
Insert								
Chipbreaker type	CF	GF	SKS	SK	CK	GQ	PP	GP
Page	B68	B68	B68	B68	B68	B69	B69	B69
Applications	Finishing - Medium	Finishing - Medium	Medium	Medium	Finishing	Finishing	Low feed	Low feed
Insert								
Chipbreaker type	GK	HQ	STD	MF	P/L-F	P/L-FSF	P/L-U	P/L-USF
Page	B70	B70	B70	B70	B72, B73	B72	B74~B76	B74
Applications	Low feed	Low feed	Low carbon steel	Low carbon steel	Stainless steel / Heat-resistant alloys	Cast iron	Non-Ferrous Metals	Non-Ferrous Metals
Insert								
Chipbreaker type	P/L-J	P/L-JSF	XP	XQ	MQ	No CB	AP	P/L-A3
Page	B77	B76	B71	B71	B71	B78	B78	B78
Applications	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Hard materials				
Insert								
Chipbreaker type	AH	PCD	APD	CBN				
Page	B78	C42	C42	C22				



Small tools

Recommended cutting conditions  E65, E66

SDLP-FF (External turning / External copying, Screw clamp, Without offset)



Right-hand shown



Toolholder dimensions

Description	Availability		Dimension (mm)									Standard corner-R(RE)	Spare parts			Applicable inserts
													Screw	Wrench	Wrench	
	R	L	H	B	LH	HF	HBKW	LF	WF	WF2						
SDLP% 0808F-07FF 1010JX-07FF	●	●	8	8	14	8	0.5	85	8	0	0.2	SB-2570TR	-	FT-8	DPET0702...	
SDLP% 1010JX-11FF 1212JX-11FF 1616JX-11FF	●	●	10	10	20	10	4	10	10	0	0.2	SB-4085TR	FT-15	-	DPET11T3...	



Small tools

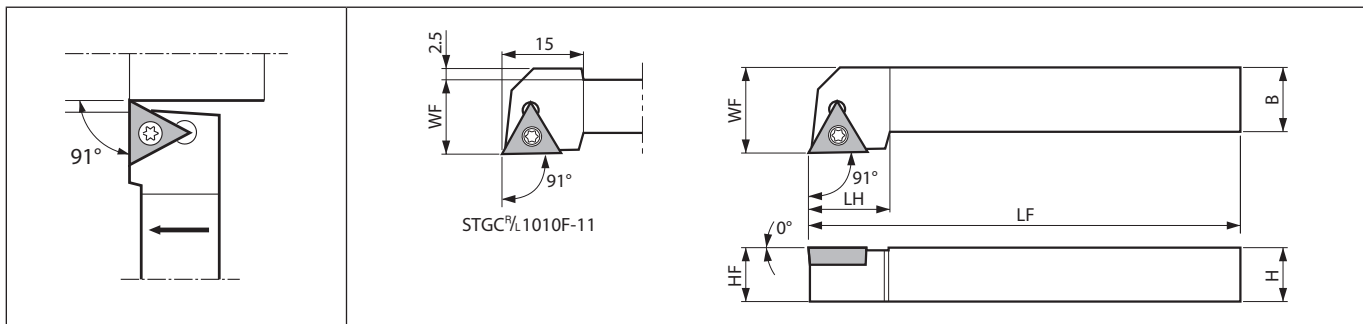
Applicable inserts

Applications	Finishing	Low feed
Insert		
Chipbreaker type	%L-FSF	%L-USF
Page	B79	B79

Recommended cutting conditions E65, E66

● : Standard item

STGC (External turning)



Right-hand shown



Small tools

Toolholder dimensions

Description	Availability		Dimension (mm)							Standard corner-R(RE)	Spare parts		Applicable inserts
											Screw	Wrench	
	R	L	H	B	LH	HF	LF	WF					
STGC%L 0808E-08	●		8	8	12	8	70	10	0.2	SB-2050TR	FT-6	TC□T0802... TC□W0802...	
1010F-08	●	●	10	10		10	80	12					
STGC%L 1010F-11	●	●	10	10	15	10	80	14	0.4	SB-2570TR	FT-8	TC□T1103... TC□W1103...	
1212H-11	●	●	12	12		12	100	16					
1616H-11	●	●	16	16		16	20	20					
2020K-11	●	●	20	20		20	125	25					
2525M-11	●	●	25	25		20	150	32					

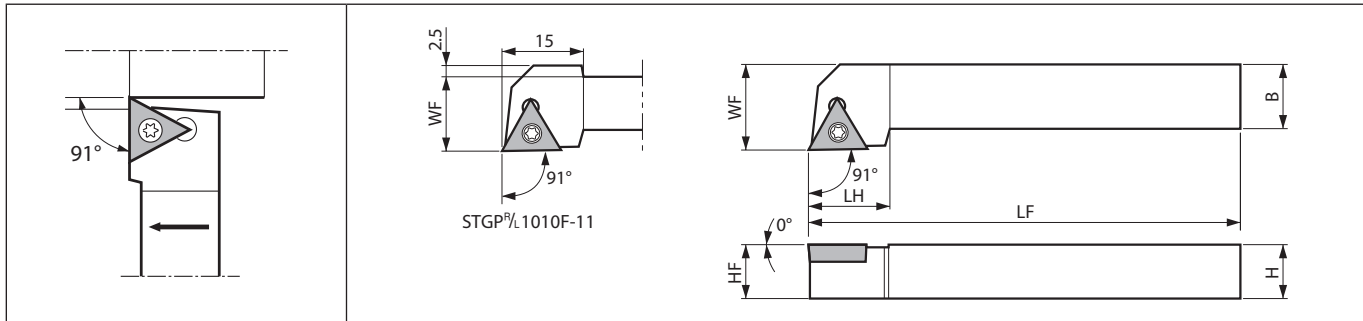
Applicable inserts

Applications	Low feed	Low feed	Cast iron	Non-Ferrous Metals	Non-Ferrous Metals
Insert					
Chipbreaker type	$\frac{R}{L}$ -U	$\frac{R}{L}$ -USF	No CB	$\frac{R}{L}$ -A3	PCD
Page	B86	B85	B87	B87	C45

Recommended cutting conditions E65, E66

● : Standard item

STGP (External turning)



Right-hand shown

Toolholder dimensions

Description	Availability		Dimension (mm)							Standard corner-R(RE)	Spare parts		Applicable inserts
											Screw	Wrench	
	R	L	H	B	LH	HF	LF	WF					
STGPR 0808E-08	●		8	8	12	8	70	10	0.2	SB-2050TR	FT-6	TP□B0802..., TP□H0802... TP□T0802...	
STGP%L 1010F-11	●	●	10	10		10	80	14	0.2	SB-3080TR	FT-10	TP□B1103... TP□H1103... TP□T1103...	
1212H-11	●	●	12	12	15	12	100	16					
1616H-11	●	●	16	16		16	20	20					



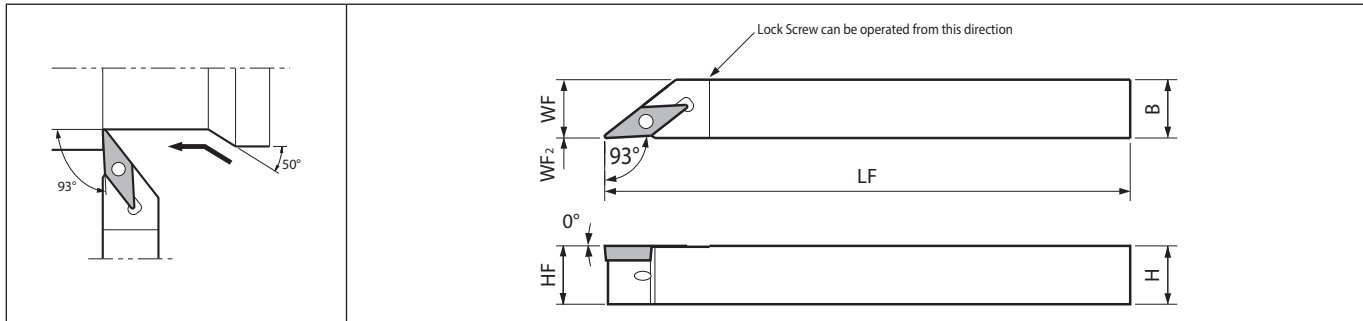
Applicable inserts

Applications	Minute ap	Finishing	Finishing	Finishing - Medium	Finishing	Finishing	Low feed	Medium
Insert								
Chipbreaker type	CF	PP	GP	HQ	R/L	%L-FSF	%L-USF	%L-H
Page	B88	B88	B89	B89	B90, B91	B92	B94	B93
Applications	Low carbon steel	Low carbon steel	Cast iron	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Hard materials	
Insert								
Chipbreaker type	XP	XQ	No CB	AP	PCD	APD	CBN	
Page	B89	B89	B94	B94	C46, C47	C47	C23	

Recommended cutting conditions E65, E66

● : Standard item

AVJB-FF (External turning / External copying , Back clamp, Without offset)



Right-hand shown



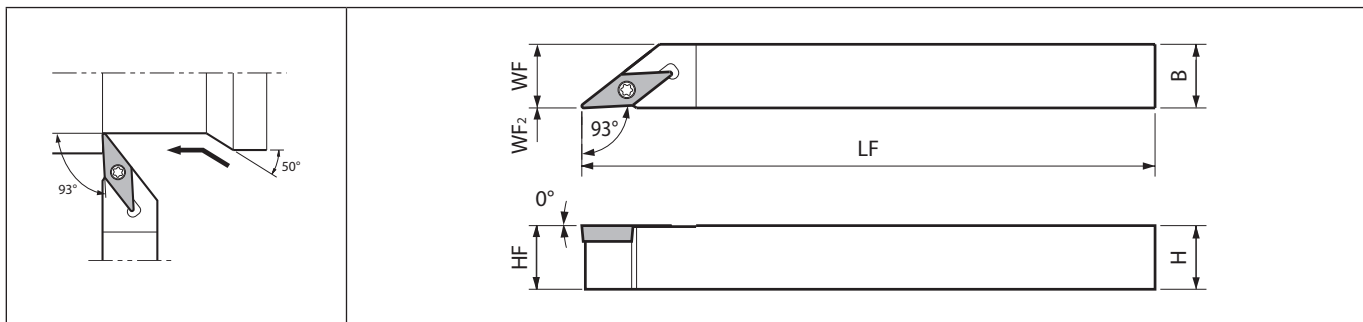
Small tools

Toolholder dimensions

Description	Availability		Dimension (mm)							Standard corner-R(RE)	Spare parts			Applicable inserts
	R	L	H	B	HF	LF	WF	WF2	Anchor pin		Lock screw	Wrench		
	AVJB%L 1010JX-11FF 1212JX-11FF 1616JX-11FF	●	●	10	10	10		10			0.4	LPF-11 LPF-1113 LPF-1117	HSB4X8%L	

Lock Screw : HSB4X8R for Right-hand Toolholder, HSB4X8L for Left-hand Toolholder.

SVJB-FF (External turning / External copying, Screw clamp, Without offset)



Right-hand shown

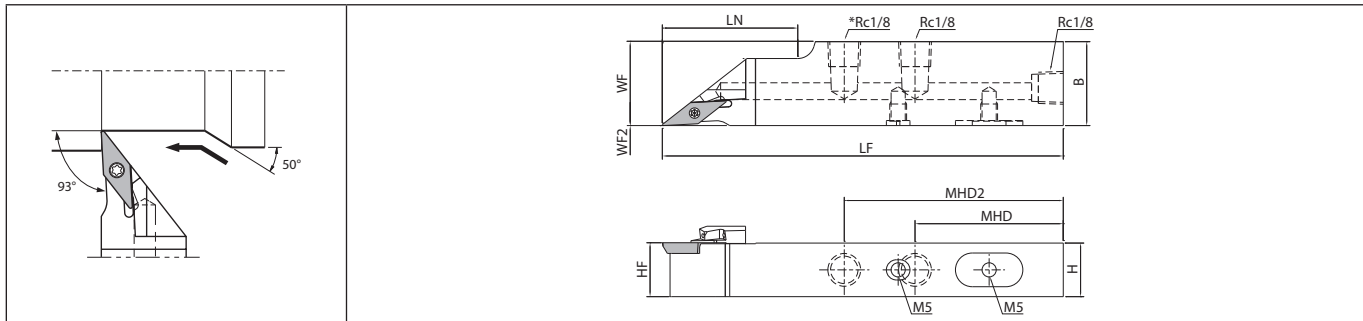
Toolholder dimensions

Description	Availability		Dimension (mm)							Standard corner-R(RE)	Spare parts		Applicable inserts
	R	L	H	B	HF	LF	WF	WF2	Screw		Wrench		
	SVJB%L 1010JX-11FF 1212JX-11FF 1616JX-11FF 2020JX-11FF	●	●	10	10	10		10			0.4	SB-2570TR	

● : Standard item

E40

SVJB-FFJCTM (External turning / External copying, Screw clamp, Without offset, Coolant-through holder)



Right-hand shown | SVJBR12...: 2-Rc1/8



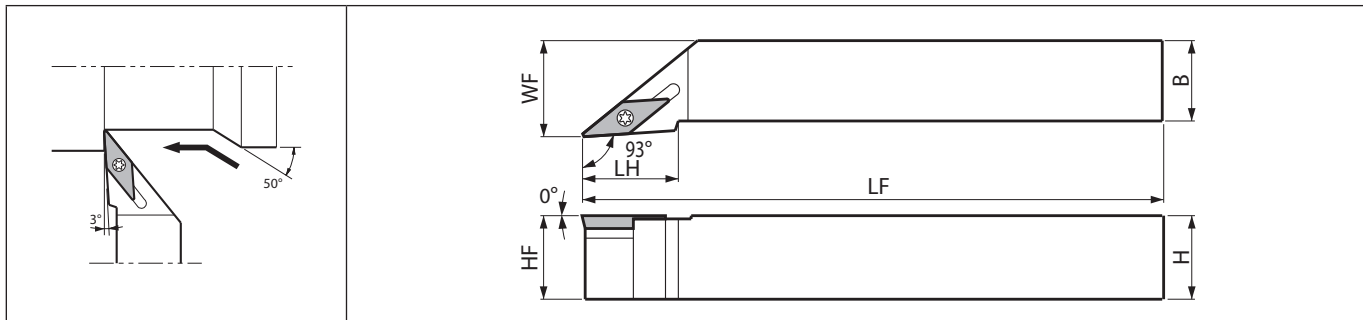
Small tools

Toolholder dimensions

Description	Availability		Dimension (mm)									Standard corner-R(RE)	Coolant hole	Spare parts				Applicable inserts
	R	H	B	MHD	MHD2	HF	LF	LN	WF	WF2	Plug			Plug	Screw	Wrench		
SVJBR 1218JX-11FFJCTM	●	12	18	54	-	12		28	18		0.4	Yes	GP-1	HS5X4LP	SB-2570TR	FT-8	VB□T1103... VB□W1103...	
1625JX-11FFJCTM	●	16	25	44	65	16	120	40	25									
2025JX-11FFJCTM	●	20				20												

Please see page H16 and H17 for piping parts of coolant-through holders.

SVJB (External turning / External copying, Screw clamp)



Right-hand shown

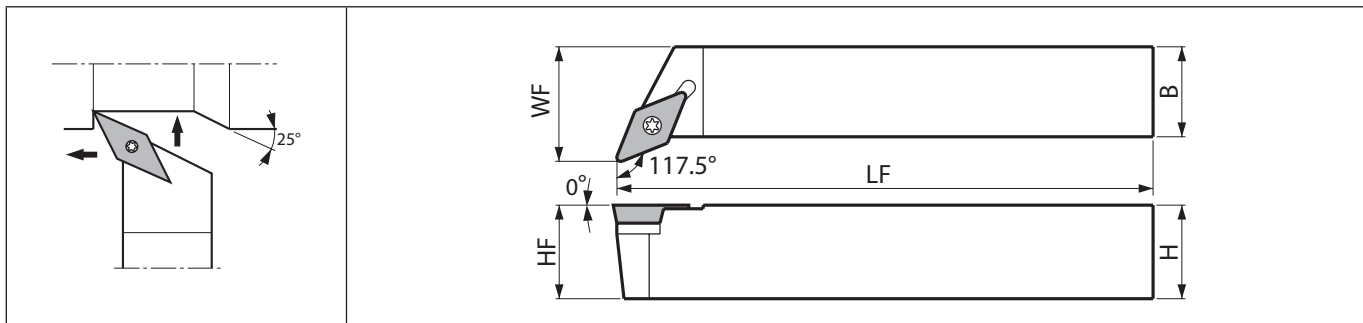
Toolholder dimensions

Description	Availability		Dimension (mm)							Standard corner-R(RE)	Spare parts						Applicable inserts
	R	L	H	B	LH	HF	LF	WF	Screw		Wrench	Wrench	Shim screw	Shim	Wrench		
SVJB% 2020K-11	●	●	20	20	30	20	125	25	0.4	SB-2570TR	-	FT-8	-	-	-	VB□T1103... VB□W1103...	
2525M-11	●	●	25	25	35	25	150	32									
SVJB% 2020K-16N	●	●	20	20	30	20	125	25	0.8	SB-4012STRN	FT-15	-	SS-4N	SVN-32N (SVN-32S*)	LW-4	VB□T1604... VB□W1604... VC□T1604...	
2525M-16N	●	●	25	25		25	150	32									

When using inserts whose corner-R(RE) is 0.2 or 0.4mm, shim (SVN-32S) is recommended (sold separately).

● : Standard item

SVPB (External turning / External facing / External copying / Undercutting, Screw clamp)



Right-hand shown

E



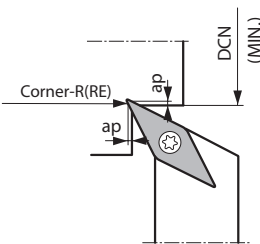
Small tools

Toolholder dimensions

Description	Availability		Dimension (mm)						Standard corner-R(RE)	Spare parts						Applicable inserts
										Screw	Wrench	Wrench	Shim screw	Shim	Wrench	
	R	L	H	B	HF	LF	WF									
SVPB%L 1010JX-11	●	●	10	10	10		14.5	0.4	SB-2570TR	-	FT-8	-	-	-	VB□T1103... VB□W1103...	
1212JX-11	●	●	12	12	12	120	16.5									
1616JX-11	●	●	16	16	16		20.5									
2020K-11	●	●	20	20	20	125	25									
2525M-11	●	●	25	25	25	150	32									
SVPB%L 2020K-16N	●	●	20	20	20	125	25	0.8	SB-40125TRN	FT-15	-	SS-4N	SVN-32N (SVN-32S*)	LW-4	VB□T1604...; VB□W1604... VC□T1604...	
2525M-16N	●	●	25	25	25	150	32									

When using inserts whose corner-R(RE) is 0.2 or 0.4mm, shim (SVN-32S) is recommended (sold separately).

Undercutting diameter of SVPB

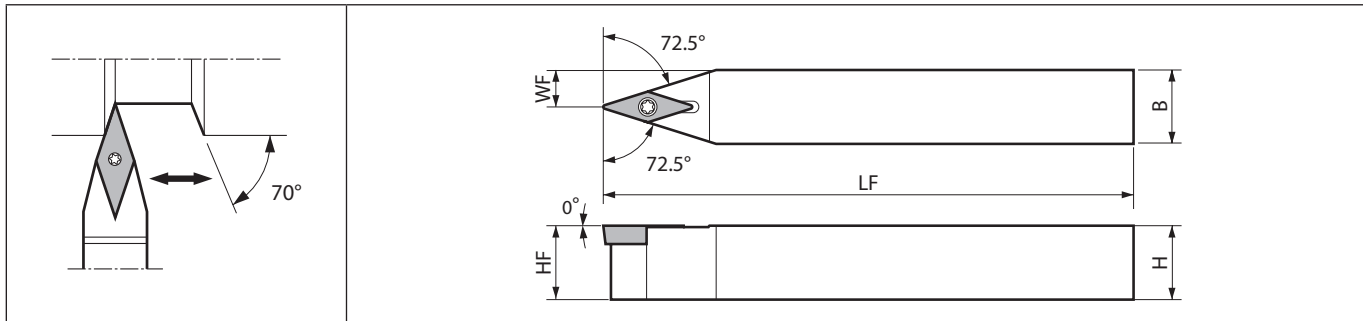


Corner-R (RE)	ap (mm)	DCN (Min.)
0.4	0.5	ø25
	1	ø30
0.8	0.5	ø45
	1	ø55

● : Standard item

E42

SVVB (External turning / External copying)



Small tools

Toolholder dimensions

Description	Availability	Dimension (mm)						Standard corner-R(RE)	Spare parts						Applicable inserts
		N	H	B	HF	LF	WF		Screw	Wrench	Wrench	Shim screw	Shim	Wrench	
SVVBN 1010F-11 1010JX-11 1212F-11 1212JX-11 1616H-11 1616JX-11 2020K-11 2525M-11	● ● ● ● ● ● ● ●	10 12 16 20 25	10 12 16 20 25	10 12 16 20 25	80 85 100 120	5 6 8 10 12.5	0.4	SB-2570TR	-	FT-8	-	-	-	-	VB-T1103... VB-W1103...
SVVBN 2020K-16N 2525M-16N	● ●	20 25	20 25	20 25	125 150	10 12.5	0.8	SB-40125TRN	FT-15	-	SS-4N	SVN-32N (SVN-325*)	LW-4	VB-T1604..., VB-W1604... VC-T1604...	

When using inserts whose corner-R(RE) is 0.2 or 0.4mm, shim (SVN-325) is recommended (sold separately).

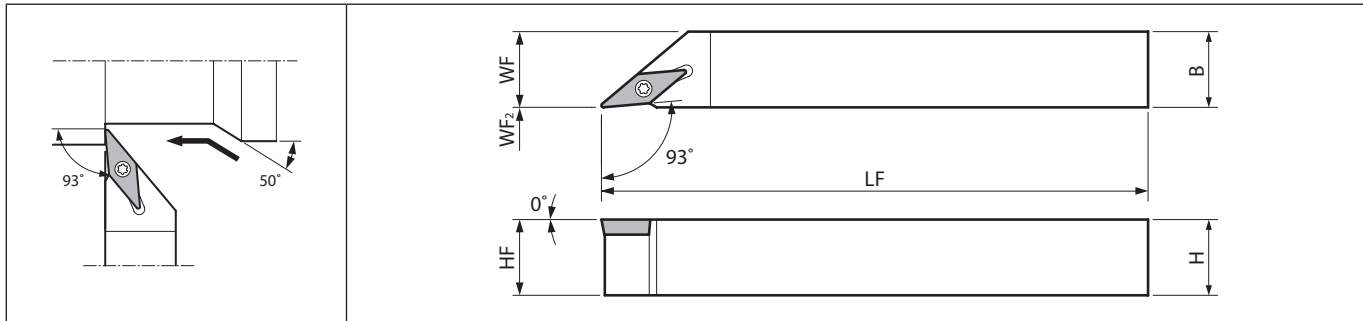
Applicable inserts (AVJB-FF / SVJB-FF / SVJB-FFJCTM / SVJB / SVPB / SVVB)

Applications	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing	Finishing - Medium	Non-Ferrous Metals
Insert								
Chipbreaker type	PP	GP	VF	HQ	F/LSF	F/LSF	Y	PCD
Page	B97	B97	B97	B97	B98	B98	B99	C49
Applications	Hard materials							
Insert								
Chipbreaker type	CBN							
Page	C26							

Recommended cutting conditions E65, E66

● : Standard item

SVJC-FF (External turning / External copying, Screw clamp, Without offset)



Right-hand shown

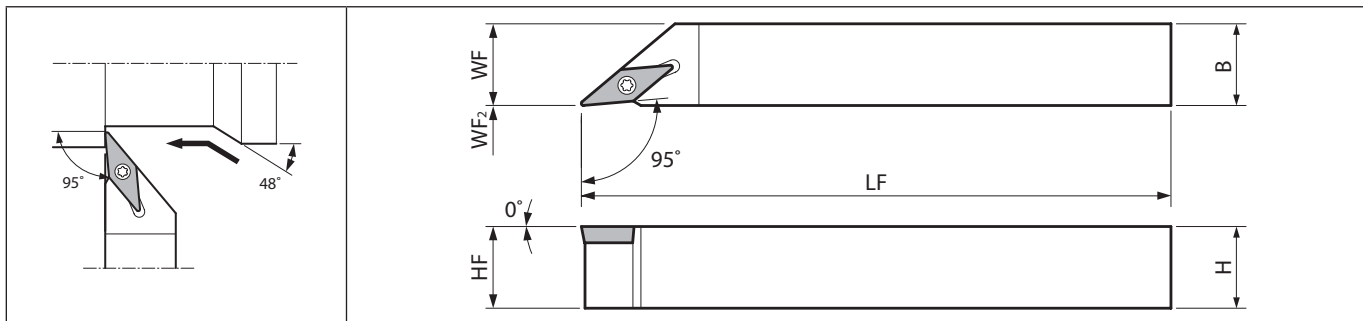


Small tools

Toolholder dimensions

Description	Availability		Dimension (mm)							Standard corner-R(RE)	Spare parts		Applicable inserts
	R	L	H	B	HF	LF	WF	WF2	Screw		Wrench		
												Screw	
SVJC%L 1010JX-11FF	●	●	10	10	10	120	10	0	0.2	SB-2570TR	FT-8	VC□T1103...	
1212F-11FF	●	●	12	12	12	85	12						
1212JX-11FF	●	●	12	12	12	120	12						
1616JX-11FF	●	●	16	16	16	120	16						
2020JX-11FF	●	●	20	20	20	120	20						

SVLC-FF (External turning / External copying, Screw clamp, Without offset)



Right-hand shown

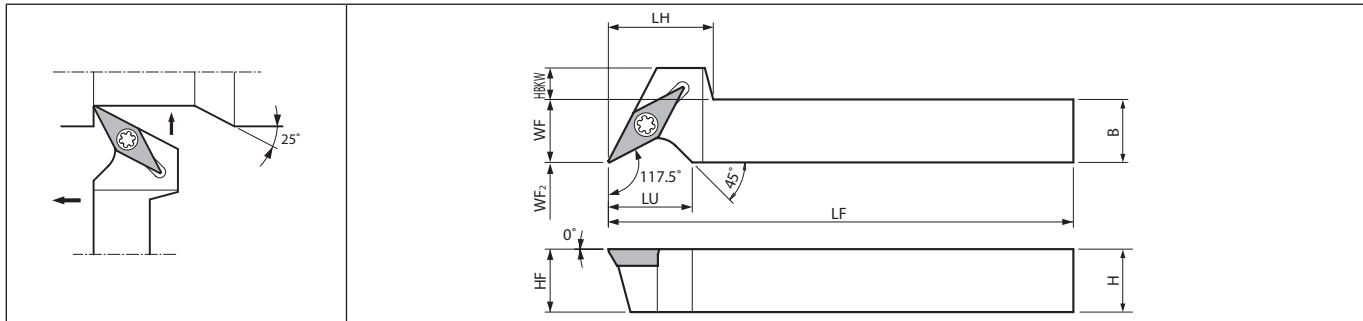
Toolholder dimensions

Description	Availability		Dimension (mm)							Standard corner-R(RE)	Spare parts		Applicable inserts
	R	L	H	B	HF	LF	WF	WF2	Screw		Wrench		
												Screw	
SVLC%L 1212F-11FF	●	●	12	12	12	85	12	0	0.2	SB-2570TR	FT-8	VC□T1103...	
1212JX-11FF	●	●	12	12	12	120	12						
1616JX-11FF	●	●	16	16	16	120	16						

● : Standard item

E44

SVPC-FF (External turning / External facing / External copying / Undercutting, Screw clamp, Without offset)



Right-hand shown



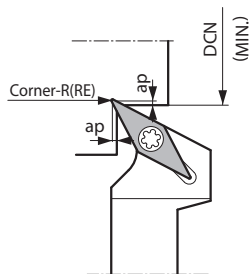
Toolholder dimensions

Description	Availability	Dimension (mm)										Standard corner-R(RE)	Spare parts		Applicable inserts	
		R	H	B	LH	HF	HBKW	LF	LU	WF	WF2		Screw	Wrench		
		SVPCR	1010JX-11FF	●	10	10		10	8	120			10			
	1212F-11FF	●	12	12	20	12	6	85	16	12	0					
	1212JX-11FF	●						120								
	1616JX-11FF	●	16	16		16	2			20	16					



Small tools

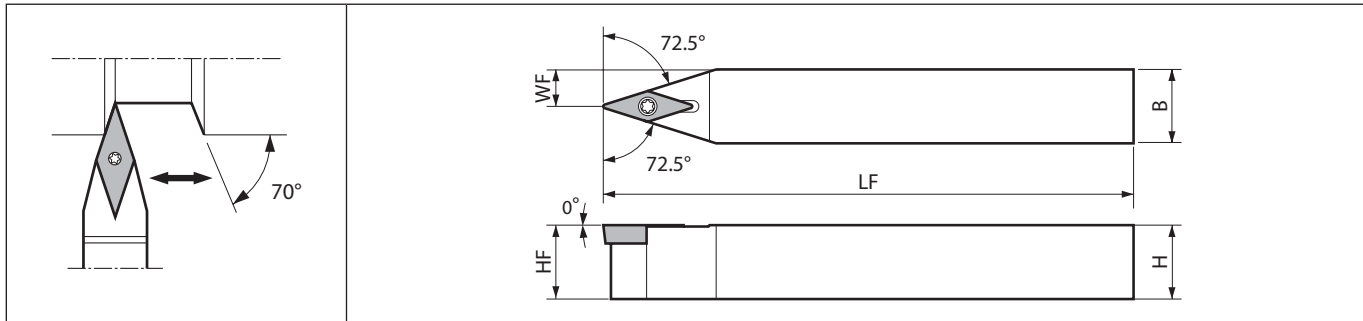
Undercutting diameter of SVPC-FF



Corner-R (RE)	ap (mm)	DCN (Min.)
0.2	0.5	ø20
	0.7	ø25

● : Standard item

SVVC (External turning / External copying)



Small tools

Toolholder dimensions

Description	Availability	Dimension (mm)						Standard corner-R(RE)	Spare parts		Applicable inserts		
		N	H	B	HF	LF	WF		Screw	Wrench			
SVVCN 1010JX-11	●	10	10	10			5	0.2		SB-2570TR		FT-8	VC...T1103...
1212JX-11	●	12	12	12	120	6							
1616JX-11	●	16	16	16		8							

Applicable inserts (SVJC-FF / SVLC-FF / SVPC-FF / SVVC)

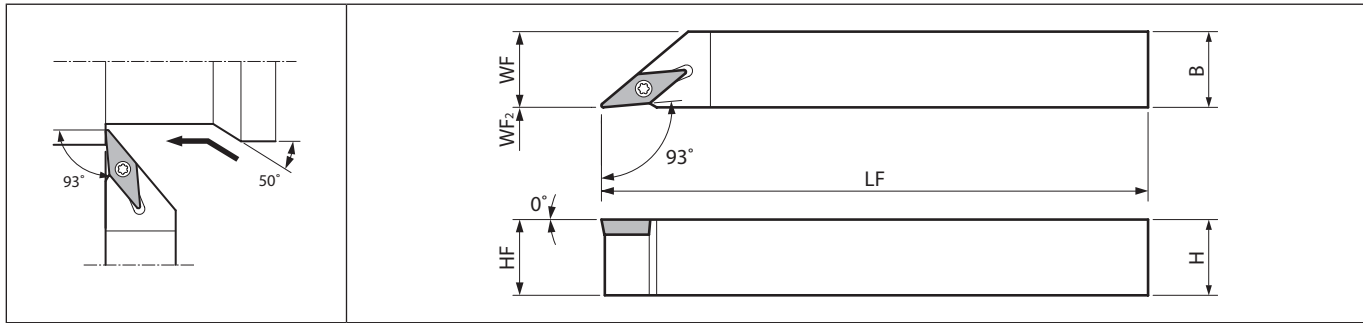
Applications	Minute ap	Finishing	Finishing	Finishing	Finishing - Medium
Insert					
Chipbreaker type	CF	GF	SKS	$\frac{P}{L}$ -F	$\frac{P}{L}$ -Y
Page	B100	B100	B100	B101	B101

Recommended cutting conditions E65, E66

● : Standard item

E46

SVJP-FF (External turning / External copying, Screw clamp, Without offset)



Right-hand shown

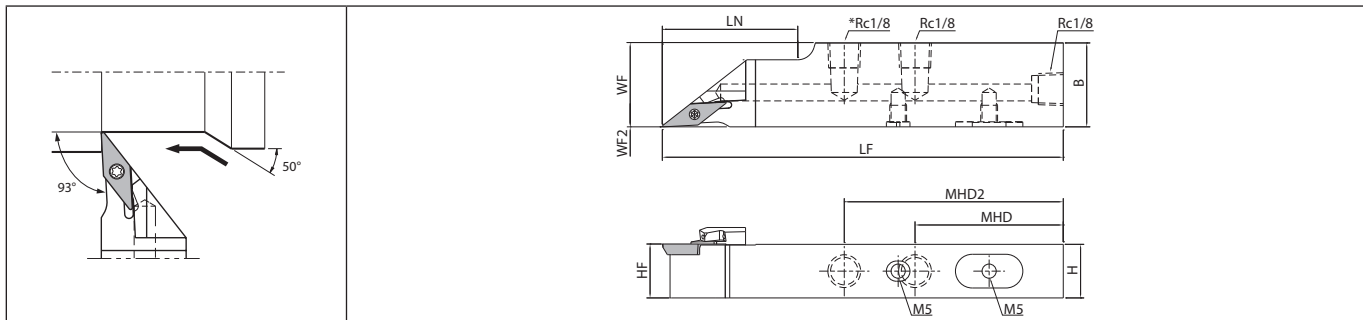


Small tools

Toolholder dimensions

Description	Availability		Dimension (mm)							Standard corner-R(RE)	Spare parts		Applicable inserts
	R	L	H	B	HF	LF	WF	WF2	Screw		Wrench		
												Screw	
SVJP%L 1212F-11FF 1212JX-11FF 1616JX-11FF 2020JX-11FF	●	●	12	12	12	85	12	0	0.2	SB-2570TR	FT-8	VP□T1103...	

SVJP-FFJCTM (External turning / External copying, Screw clamp, Without offset, Coolant-through holder)



Right-hand shown | SVJPR12...: 2-Rc1/8

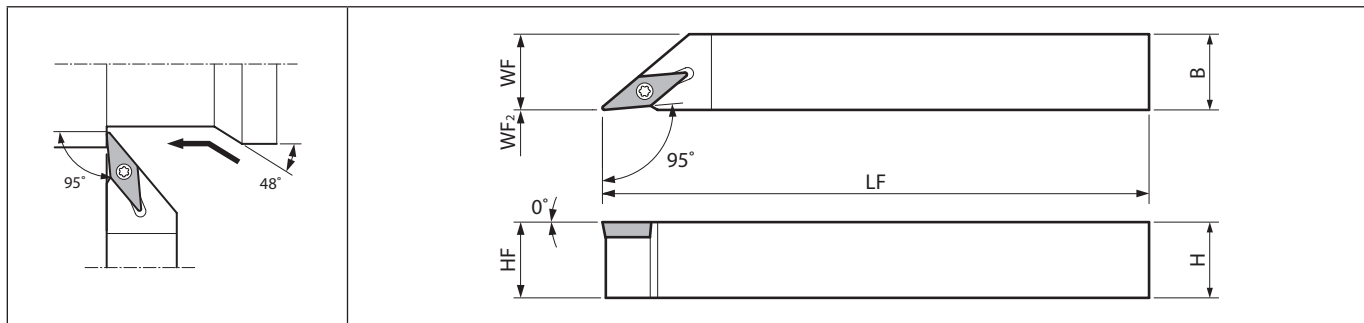
Toolholder dimensions

Description	Availability		Dimension (mm)									Standard corner-R(RE)	Coolant hole	Spare parts				Applicable inserts
	R	H	B	MHD	MHD2	HF	LF	LN	WF	WF2	Plug			Plug	Screw	Wrench		
																	Plug	
SVJPR 1218JX-11FFJCTM 1625JX-11FFJCTM 2025JX-11FFJCTM	●	12	18	54	-	12	28	18	0	0.2	Yes	GP-1	HS5X4LP	SB-2570TR	FT-8	VP□T1103...		

Please see page H16 and H17 for piping parts of coolant-through holders.

● : Standard item

SVLP-FF (External turning / External copying, Screw clamp, Without offset)





Right-hand shown



Small tools

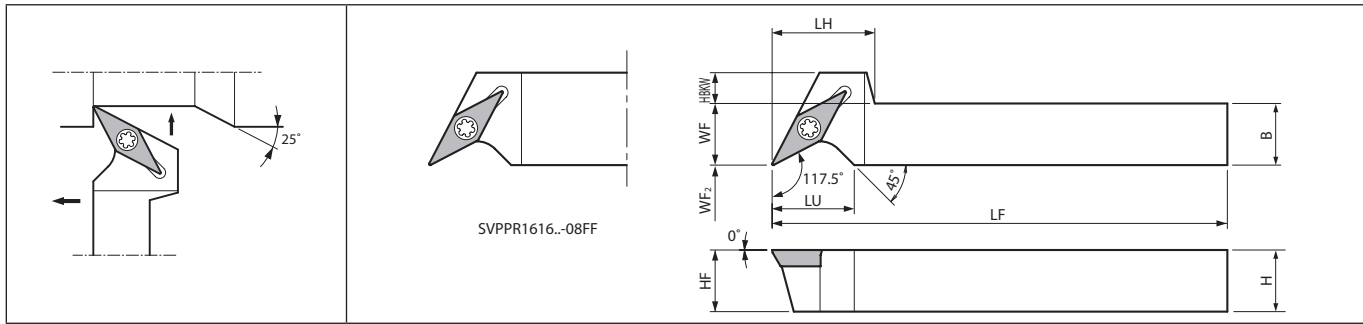
Toolholder dimensions

Description	Availability		Dimension (mm)							Standard corner-R(RE)	Spare parts		Applicable inserts
											Screw	Wrench	
	R	L	H	B	HF	LF	WF	WF2					
SVLP%L 1010JX-08FF 1212F-08FF 1212JX-08FF 1616JX-08FF	●	●	10	10	10	120	10	0	0.1	SB-2050TR	FT-6	VP□T0802...	
	●	●	12	12	12	85	12						
	●	●	12	12	12	120	12						
	●	●	16	16	16	16	16						
SVLP%L 1212F-11FF 1212JX-11FF 1616JX-11FF	●	●	12	12	12	85	12	0	0.2	SB-2570TR	FT-8	VP□T1103...	
	●	●				120							
	●	●				16							16

● : Standard item

E48

SVPP-FF (External turning / External facing / External copying / Undercutting, Screw clamp, Without offset)



Right-hand shown

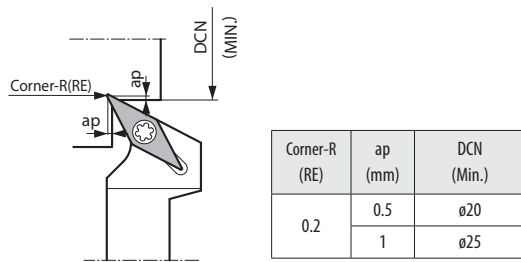


Small tools

Toolholder dimensions

Description	Availability	Dimension (mm)										Standard corner-R(RE)	Spare parts		Applicable inserts
		R	H	B	LH	HF	HBKW	LF	LU	WF	WF2		Screw	Wrench	
SVPPR 1010JX-08FF 1212F-08FF 1212JX-08FF 1616JX-08FF	●	10	10		10	4	120		10			0.1	SB-2050TR	FT-6	VP□T0802...
	●	12	12	16	12	2	85	12	12	0					
	●	16	16	-	16	-	120		16						
	●	16	16	-	16	-	120		16						
SVPPR 1010JX-11FF 1212F-11FF 1212JX-11FF 1616JX-11FF	●	10	10		10	8	120		10			0.2	SB-2570TR	FT-8	VP□T1103...
	●	12	12	20	12	6	85	16	12	0					
	●	16	16		16	2	120		16						
	●	16	16		16	2	120		16						

Undercutting diameter of SVPP-FF



Applicable inserts (SVJP-FF / SVJP-FFJCTM / SVLP-FF / SVPP-FF)

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing	Low feed	Low feed
Insert								
Chipbreaker type	CF	SKS	CK	GF	¾-F	¾-FSF	¾-U	¾-USF
Page	B102	B102	B102	B102	B103	B103	B104	B104
Applications	Low feed							
Insert								
Chipbreaker type	¾-J							
Page	B104							

Recommended cutting conditions E65, E66

● : Standard item

25° Insert Profiling Tools

ZBMT Series

Unique clamping structure and a wide lineup of external toolholders and boring bars. High precision and stable machining in a wide range of applications including copying, undercutting, tapering, V-slotting, spherical machining, and more.

1 Newly Developed Unique-Clamping Mechanism Achieves a Higher Rigidity

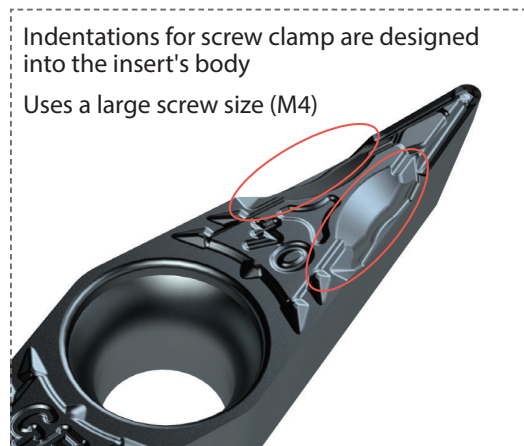
E



Small tools

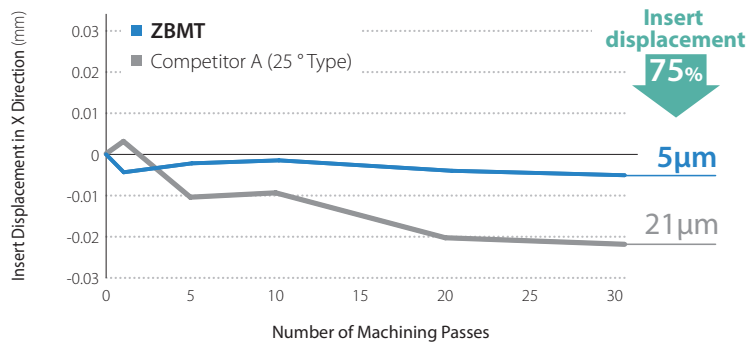
Side Lock Mechanism

Unique design holds insert at 2 points
Safe even for insert with small tip angle that is difficult to mount



Indentations for screw clamp are designed into the insert's body
Uses a large screw size (M4)

Insert Displacement During Facing Comparison (Internal evaluation)



Cutting Conditions : Vc = 230 m/min, ap = 0.3 mm, f = 0.15 mm/rev, Wet Workpiece material SCM435

*The above figures are not guaranteed. It depends on cutting conditions.

Check

- By controlling insert displacement,
- Machining precision is stabilized and long tool life is enable
 - Reduces defect rate due to sudden dimensional deviation

Provides High Quality and Stable Machining in Various Machining Applications

Excellent Performance in Various Machining Applications including Copying, Undercutting, Tapering, V-Slotting, Spherical Machining, etc.



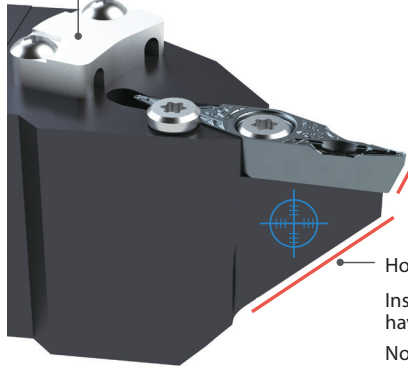
CG images

E50

2 Unique Holder Design to Meet Customers' Needs

Both boring bars and external toolholders are compatible with internal coolant.

Uses a clamp with a small thickness that does not prevent chip flow

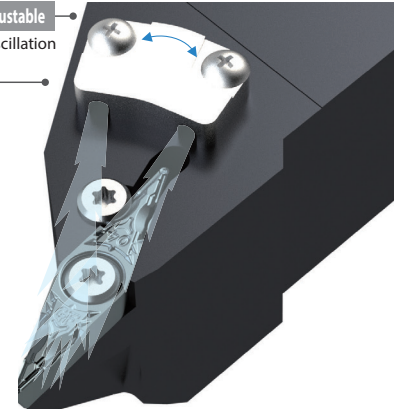


Unique Double Coolant Hole Design

Supplies coolant directly to the cutting edge and provides improved chip evacuation and long tool life (Coolant discharge direction: Fine adjustment possible)

*Though coolant stream hits side clamp screw, machining performance is not affected
*Pressure resistance: ~ 3 MPa

Fine Tuned and Adjustable
± 4 ° Adjustable Oscillation



Easy to use for Facing

Insert corner:
2-Step Positive Type (20°)

Holder: Tapered shape
Inserts and toolholders have a unique end shape

No additional machining is required when trying to avoid interference with workpiece.

Effective for facing applications



E



Small tools

3 New GF Chipbreaker for ZBMT Reduces Chip Control Issues at minute D.O.C.

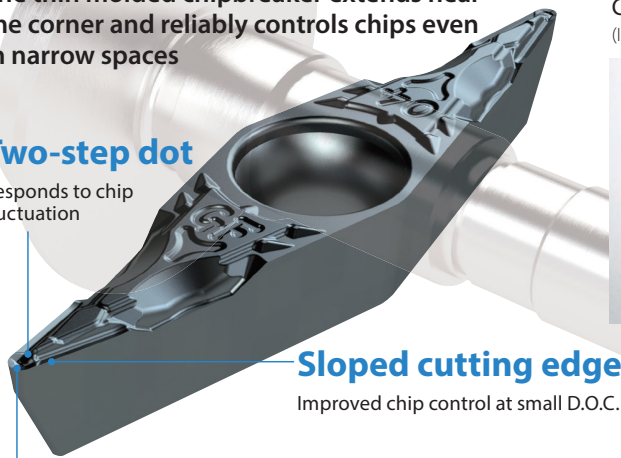
GF Chipbreaker

Solving chip control issues leads to high-quality surface finishes

The thin molded chipbreaker extends near the corner and reliably controls chips even in narrow spaces

Two-step dot

Responds to chip fluctuation



Sloped cutting edge

Improved chip control at small D.O.C.

Mortar-shaped chipbreaker

Low resistance and excellent chip control even in ductile workpieces

Chip control comparison
(Internal evaluation)



GF Chipbreaker

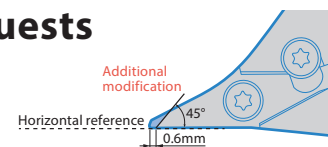


Competitor A (25° Type)

Cutting Conditions: Vc = 230 m/min, f = 0.15 mm/rev, ap = 0.2 - 0.5 mm, Wet Workpiece material SCM435 Facing

15° Inserts are also available upon customer requests

To avoid holder interference, additional modifications is required as shown in the figure on the right. Also, as shown in the figure below, special order for holders may be required depending on machining application.



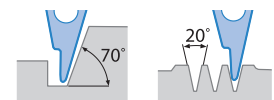
Examples

When using the toolholder in reverse mounting position



When using the toolholder in normal mounting position

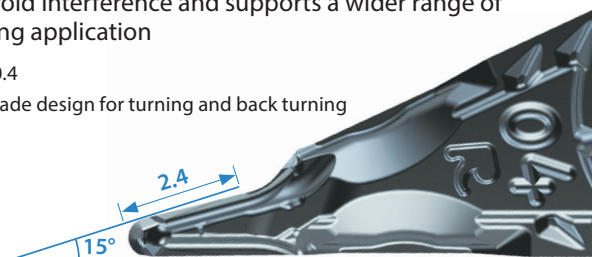
* Holder: Special order specification



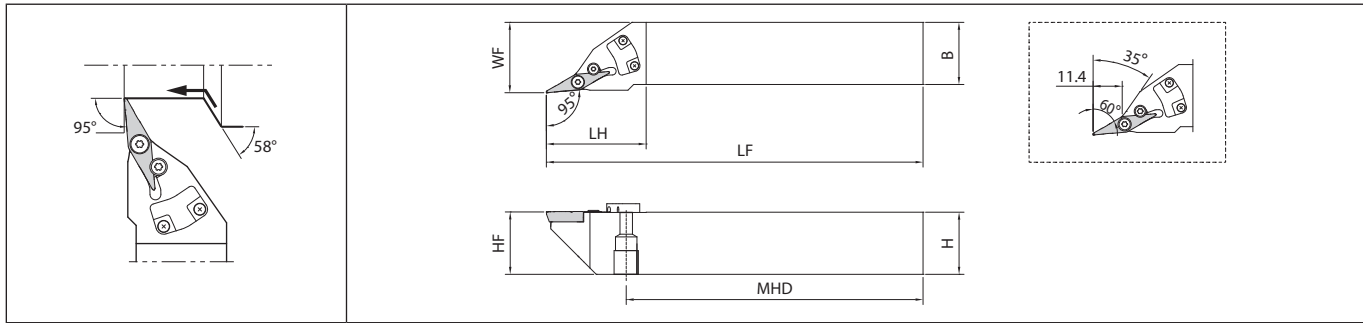
15° inserts are developed relative to 25° inserts
Helps avoid interference and supports a wider range of machining application

Corner-R 0.4

Double-blade design for turning and back turning



SZLB (External turning / External copying, Screw clamp, Coolant-through holder)



Right-hand shown | ZBMT13T304R-GF-15D is applicable to Right-hand Toolholder. | Applicable Pressure : ~3MPa



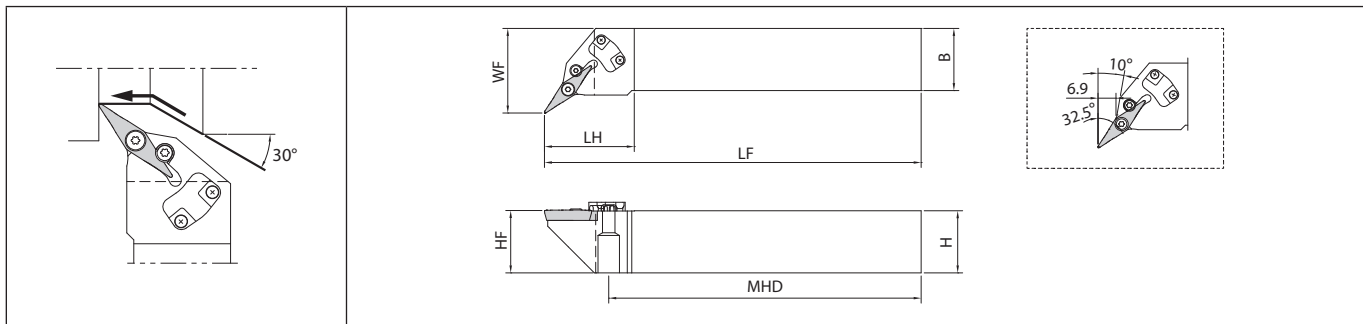
Small tools

Toolholder dimensions

Description	Availability		Dimension (mm)								Standard corner-R(RE)	Coolant hole	Spare parts				Applicable inserts
	R	L	H	B	LH	MHD	HF	LF	WF	Clamper screw			Clamper	Screw	Wrench		
	SZLB%L 2020K-13C 2525M-13C	●	●	20	20	40	92.6	20	125	23			0.4	Yes			

Please see page D12 for piping parts of coolant-through holders.

SZPB (External turning / External facing / External copying / Undercutting, Screw clamp, Coolant-through holder)



Right-hand shown | Applicable Pressure : ~3MPa

Toolholder dimensions

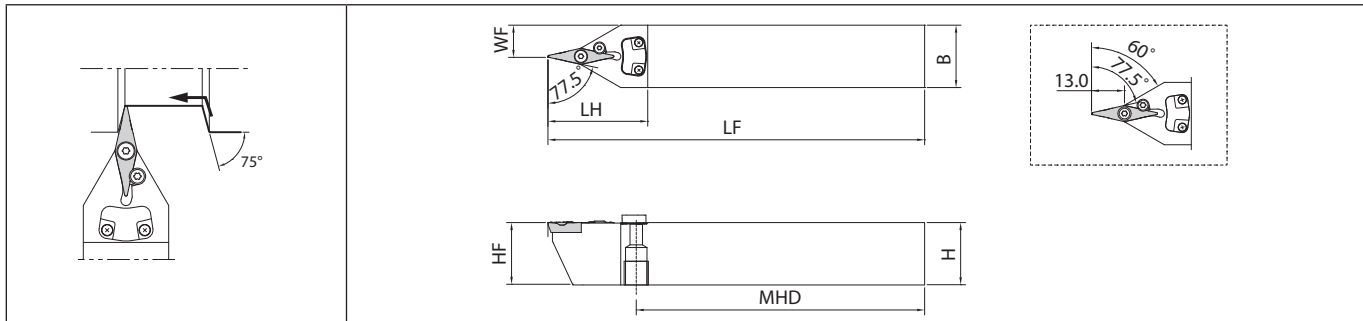
Description	Availability		Dimension (mm)								Standard corner-R(RE)	Coolant hole	Spare parts				Applicable inserts
	R	L	H	B	LH	MHD	HF	LF	WF	Clamper screw			Clamper	Screw	Wrench		
	SZPB%L 2020K-13C 2525M-13C	●	●	20	20	37	95	20	125	27.2			0.4	Yes			

Please see page D12 for piping parts of coolant-through holders.

● : Standard item

E52

SZVB (External turning / External copying, Screw clamp, Coolant-through holder)



Applicable Pressure : ~3MPa

Toolholder dimensions

Description	Availability	Dimension (mm)								Standard corner-R(RE)	Coolant hole	Spare parts				Applicable inserts
		N	H	B	LH	MHD	HF	LF	WF			Clamper screw	Clamper	Screw	Wrench	
		● 20	20	20	40	89.6	20	125	10			0.4	Yes	BH2X6	ZCP-13	
● 25	25	25	40	114.6	25	150	12.5									

Please see page D12 for piping parts of coolant-through holders.

Applicable inserts

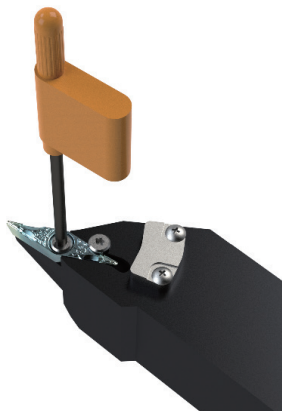
Applications	Finishing	Finishing
Insert		
Chipbreaker type	GF	R-GF-15D
Page	B108	B108

R-GF-15D inserts are only for the right-hand toolholders of SZLB.

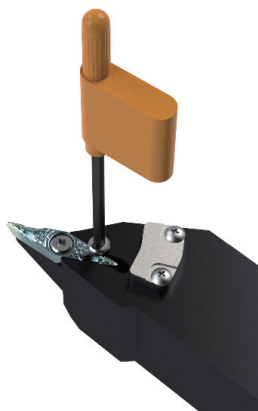
Recommended cutting conditions → E68

Instructions

When mounting the insert (Tightening torque: 1.2 N · m)



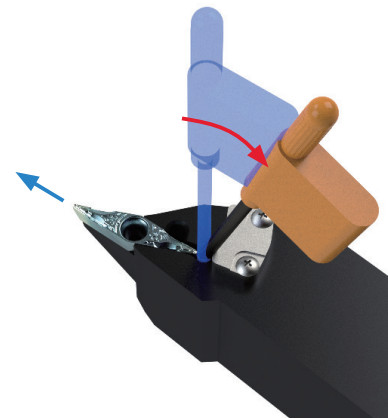
1. Tighten the main screw with the insert pressed against the contact surface with fingertips.



2. Tighten the side screw to complete the installation.

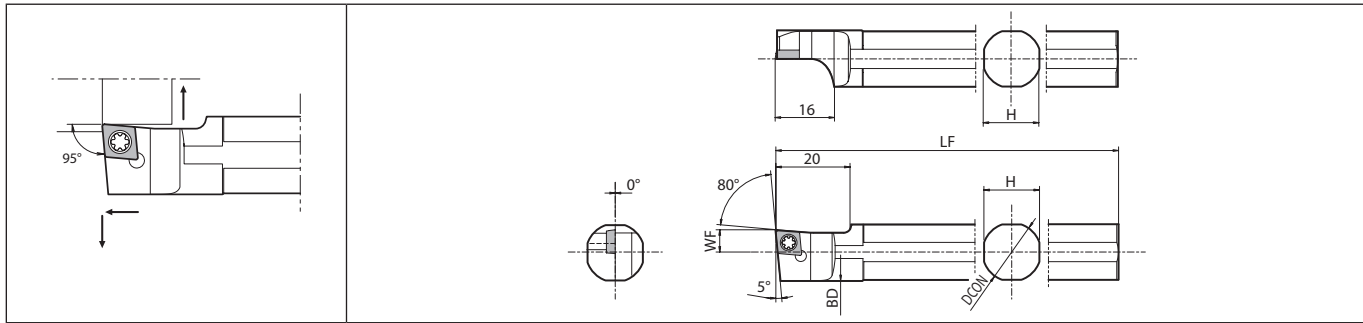
● : Standard item

When removing the insert



Remove the two screws and put the wrench into the gap at the back end of the insert. It can be easily removed by pushing out the insert as shown above.

S-SCLC (External turning / External facing)



Left-hand shown | Right-hand Insert for Left-hand Toolholder.



Small tools

Toolholder dimensions

Description	Availability	Dimension (mm)						Standard corner-R(NE)	Spare parts			Applicable inserts
		L	DCON	H	BD	LF	WF		Screw	Wrench	Wrench	
S12F- SCLCL06	●	12	11	13.4	80	6	0.4	SB-2560TR	-	FT-8	CC-T0602... CC-W0602...	
S14H- SCLCL06	●	14	13	100								
S15F- SCLCL06	●	15.875	15	15.4	85							
S16F- SCLCL06	●	16			90							
S19G- SCLCL06	●	19.05	17	18.4	120							
S19K- SCLCL06	●				120							
S20G- SCLCL06	●	20	18	19.4	90							
S20K- SCLCL06	●				120							
S19G- SCLCL09	●	19.05	17	18.4	90	10	0.4	SB-4065TR	FT-15	-	CC-T09T3... CC-W09T3...	
S19K- SCLCL09	●				120							
S20G- SCLCL09	●	20	18	19.4	90							
S20K- SCLCL09	●				120							
S25.0H- SCLCL09	●	25	23	24.4	100							
S25K- SCLCL09	●	25.4			120							

Applicable inserts

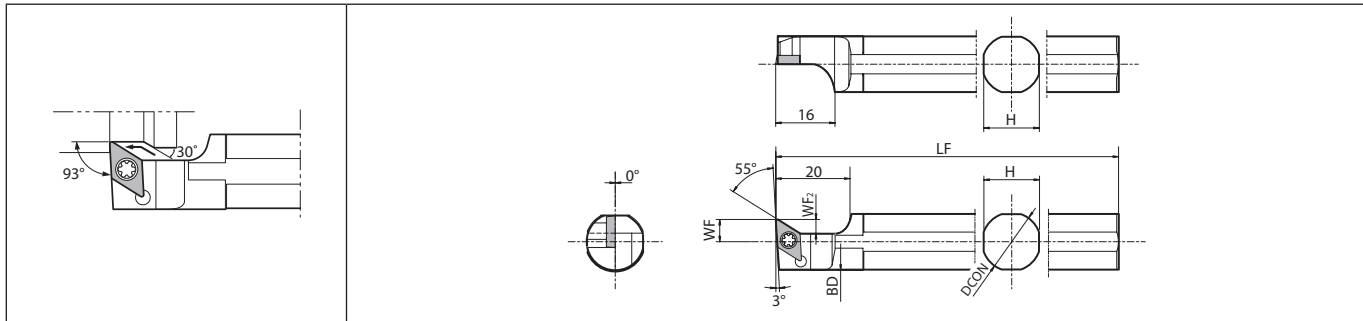
Applications	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing
Insert								
Chipbreaker type	PF	GF	SKS	SK	CK	GQ	WP	PP
Page	B58	B58	B59	B59	B59	B59	B60	B60
Applications	Finishing - Medium	Finishing - Medium	Medium	Medium	Low feed	Low feed	Stainless steel / Heat-resistant alloys	Cast iron
Insert								
Chipbreaker type	GK	HQ	STD	MF	R-U	R-J	MQ	No CB
Page	B60	B60	B60	B61	B63-B65	B65	B61	B66
Applications	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Hard materials		
Insert								
Chipbreaker type	AP	R-A3	AH	PCD	APD	CBN		
Page	B66	B66	B66	C39	C40	C20		

Recommended cutting conditions E65, E66

● : Standard item

E54

S-SDUC (External turning / External copying)



Left-hand shown | Right-hand Insert for Left-hand Toolholder.



Small tools

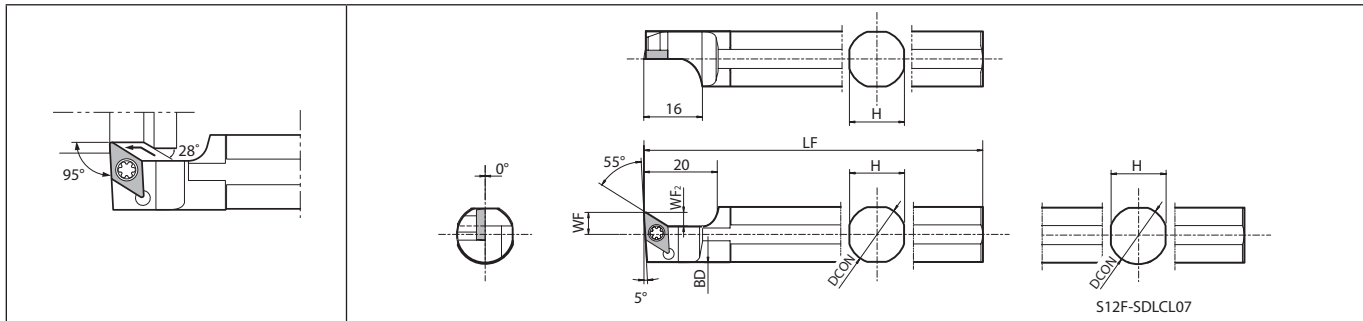
Toolholder dimensions

Description	Availability	Dimension (mm)							Standard corner-R(RE)	Spare parts			Applicable inserts
		L	DCON	H	BD	LF	WF	WF2		Screw	Wrench	Wrench	
S14H- SDUCL07	●	14	13	13.4	100	6	3.8	0.4	SB-2560TR	-	FT-8	DC□T0702... DC□W0702... DC□X0702...	
S15F- SDUCL07	●	15.875	15	15.4	85								
S19G- SDUCL07	●	19.05	17	18.4	90								
S19K- SDUCL07	●				120								
S20G- SDUCL07	●				120								
S20K- SDUCL07	●	20	18	19.4	120								
S19G- SDUCL11	●	19.05	17	18.4	90	10	5.8	0.4	SB-4085TR	FT-15	-	DC□T11T3... DC□W11T3... DC□X11T3...	
S19K- SDUCL11	●				120								
S20G- SDUCL11	●				120								
S20K- SDUCL11	●	20	18	19.4	120								
S22K- SDUCL11	●	22	20	21.4	120								
S25.0H- SDUCL11	●	25	23	24.4	100								
S25K- SDUCL11	●	25.4		24.8	120								

For WP chipbreaker, cutting edge offsets or program corrections are required on R36 and R37.

● : Standard item

S-SDLC (External turning / External copying)



Left-hand shown | Right-hand Insert for Left-hand Toolholder.



Small tools

Toolholder dimensions

Description	Availability	Dimension (mm)							Standard corner-R(RE)	Spare parts			Applicable inserts
		L	DCON	H	BD	LF	WF	WF2		Screw	Wrench	Wrench	
S12F- SDLCL07	●	12	11	13.4	80	6	3.8	0.4	SB-2560TR	-	FT-8	DC□T0702... DC□W0702...	
S14H- SDLCL07	●	14	13	100									
S15F- SDLCL07	●	15.875	15	15.4	85								
S16F- SDLCL07	●	16											
S19G- SDLCL07	●	19.05	17	18.4	90								
S19K- SDLCL07	●				120								
S20G- SDLCL07	●	20	18	19.4	90	10	5.8	0.4	SB-4085TR	FT-15	-	DC□T11T3... DC□W11T3...	
S20K- SDLCL07	●				120								
S19G- SDLCL11	●	19.05	17	18.4	90								
S19K- SDLCL11	●				120								
S20G- SDLCL11	●	20	18	19.4	90								
S20K- SDLCL11	●				120								
S22K- SDLCL11	●	22	20	21.4		23	24.8	120					
S25.0H- SDLCL11	●	25			100								
S25K- SDLCL11	●	25.4			120								


● : Standard item

E56

Applicable inserts (S-SDUC / S-SDLC)

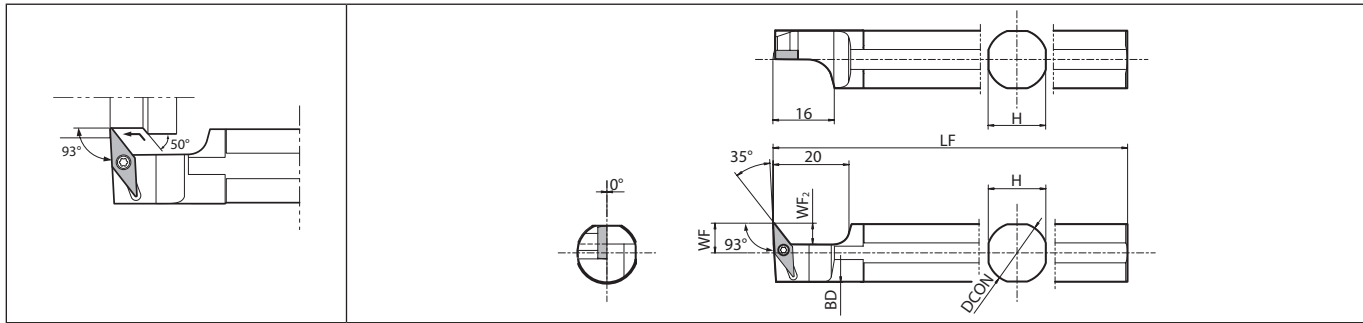
Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing
Insert								
Chipbreaker type	CF	GF	SKS	SK	CK	GQ	WP*	R-WP*
Page	B68	B68	B68	B68	B68	B69	B69	B69
Applications	Finishing	Finishing	Finishing - Medium	Finishing - Medium	Medium	Medium	Finishing	Finishing
Insert								
Chipbreaker type	PP	GP	GK	HQ	STD	MF	R-F	R-FSF
Page	B69	B69	B70	B70	B70	B70	B72, B73	B72
Applications	Low feed	Low feed	Low feed	Low feed	Low carbon steel	Low carbon steel	Stainless steel / Heat-resistant alloys	Cast iron
Insert								
Chipbreaker type	R-U	R-USF	R-J	R-JSF	XP	XQ	MQ	No CB
Page	B74~B76	B74	B77	B76	B71	B71	B71	B78
Applications	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Hard materials		
Insert								
Chipbreaker type	AP	R-A3	AH	PCD	APD	CBN		
Page	B78	B78	B78	C42	C42	C22		

For WP chipbreaker, cutting edge offsets or program corrections are required on R36 and R37. (S-SDLC cannot be used)

Recommended cutting conditions  E65, E66



S-SVUB (External turning / External copying)





Left-hand shown | Right-hand Insert for Left-hand Toolholder.


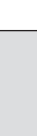










Small tools

Toolholder dimensions

Description	Availability	Dimension (mm)						Standard corner-R(RE)	Coolant hole	Spare parts		Applicable inserts	
		L	DCON	H	BD	LF	WF			WF2	Screw		Wrench
													
S19G- SVUBL11	●	19.05	17	18.4	90	10.5	8	0.4	No	SB-2570TR	FT-8	VB...T1103... VB...W1103...	
S19K- SVUBL11	●												120
S20G- SVUBL11	●	20	18	19.4	90	10.5	8	0.4	No	SB-2570TR	FT-8		
S20K- SVUBL11	●												120
S25.0H- SVUBL11	●	25	23	24.4	100	10.5	8	0.4	No	SB-2570TR	FT-8		
S25K- SVUBL11	●												25.4

Applicable inserts

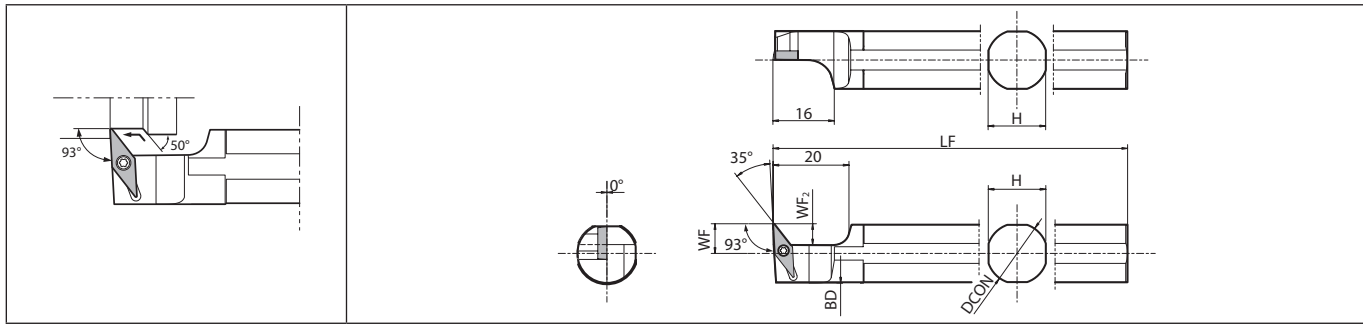
Applications	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing	Finishing - Medium	Non-Ferrous Metals
Insert								
Chipbreaker type	PP	GP	VF	HQ	R-F	R-FSF	R-Y	PCD
Page	B97	B97	B97	B97	B98	B98	B99	C49
Applications	Hard materials							
Insert								
Chipbreaker type	CBN							
Page	C26							

Recommended cutting conditions  E65, E66

● : Standard item



E58

S-SVUC (External turning / External copying)



Left-hand shown | Right-hand Insert for Left-hand Toolholder.











Toolholder dimensions

Description	Availability	Dimension (mm)							Standard corner-R(RE)	Coolant hole	Spare parts		Applicable inserts
		L	DCON	H	BD	LF	WF	WF2			Screw	Wrench	
													
S12F- SVUCL08	●	12	11	13.4	80	7.5	5.5	0.4	No	SB-2050TR	FT-6	VC□T0802... VC□W0802...	
S14H- SVUCL08	●	14	13	100	15	85							
S15F- SVUCL08	●	15.875	15.4	8									
S16F- SVUCL08	●	16											
S19G- SVUCL11	●	19.05	17	18.4	90	10.5	8	0.2	No	SB-2570TR	FT-8	VC□T1103...	
S19K- SVUCL11	●			120									
S20G- SVUCL11	●	20	18	19.4	90								
S20K- SVUCL11	●	20	18	19.4	120								
S25.0H- SVUCL11	●	25	23	24.4	100								
S25K- SVUCL11	●			25.4	24.8	120							



Small tools

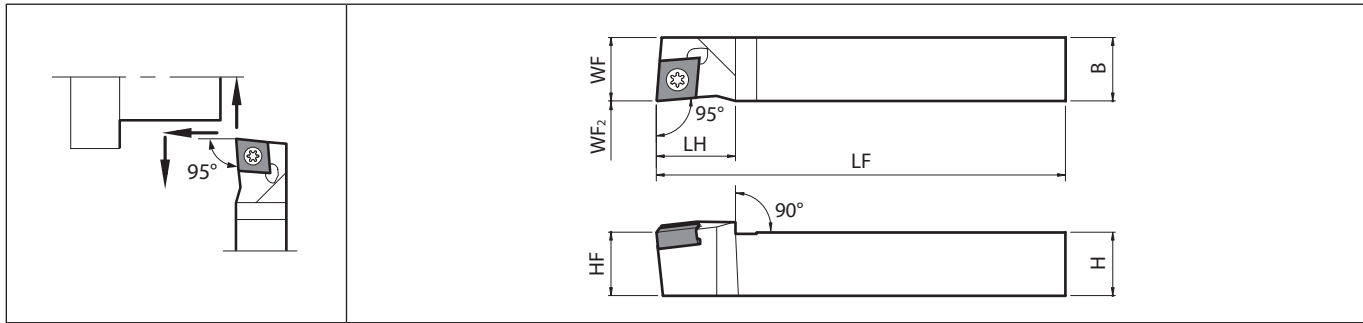
Applicable inserts

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing - Medium
Insert								
Chipbreaker type	CF	GF	SKS	PP	VF	HQ	R-F	R-Y
Page	B100	B100	B100	B100	B100	B100	B101	B101
Applications	Non-Ferrous Metals	Hard materials						
Insert								
Chipbreaker type	PCD	CBN						
Page	C50	C27						

Recommended cutting conditions  E65, E66

● : Standard item

SCLN-FF (External turning / External facing, Screw clamp, Without offset)



Right-hand shown



Small tools

Toolholder dimensions

Description	Availability	Dimension (mm)								Standard corner-R(RE)	Side rake angle (°)	Inclination angle (°)	Spare parts		Applicable inserts
		R	H	B	LH	HF	LF	WF	WF2				Screw	Wrench	
SCLNR 1010K-07FF	●	10	10		10	120	10		0	0.2	-6	-6	SB-3080TR	LTW-10SS	CN□U0703...
1212F-07FF	●	12	12	15	12	85	12								
1212K-07FF	●					120									
1616K-07FF	●	16	16		16		16								

Applicable inserts

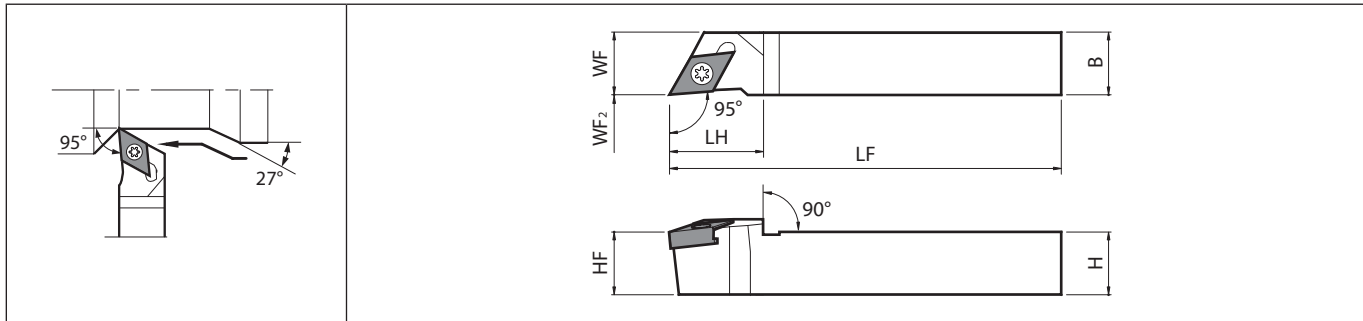
Applications	Finishing - Medium	Medium - Roughing	Finishing	Low feed
Insert				
Chipbreaker type	SK	GK	R-F	R-U
Page	B55	B55	B55	B55

Recommended cutting conditions → E62

● : Standard item

E60

SDLN-FF (External turning / External copying, Screw clamp, Without offset)



Right-hand shown



Toolholder dimensions

Description	Availability	Dimension (mm)								Standard corner-R(RE)	Side rake angle (°)	Inclination angle (°)	Spare parts		Applicable inserts
		R	H	B	LH	HF	LF	WF	WF2				Screw	Wrench	
		● 10 ● 12 ● 16	10 12 16	10 12 16	18 18 18	10 12 16	120 85 120	10 12 16	0 0 0				0.2 0.2 0.2	-6 -6 -6	



Small tools

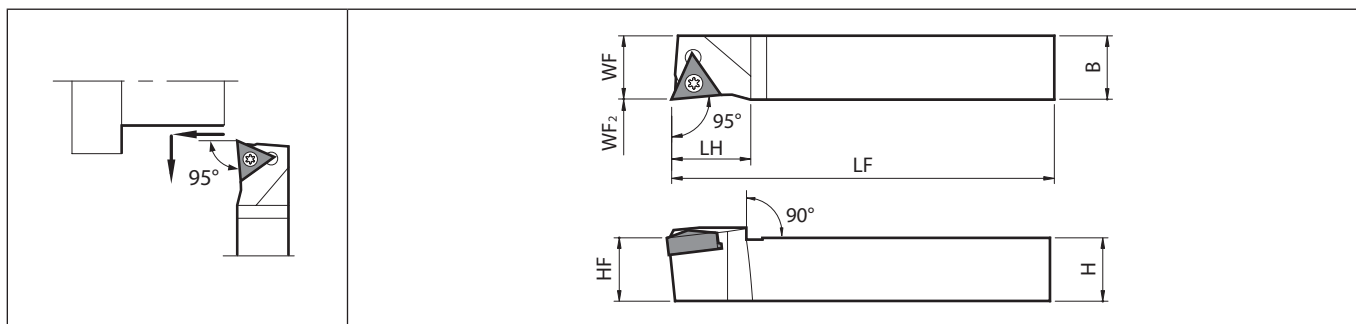
Applicable inserts

Applications	Finishing - Medium	Medium - Roughing	Finishing	Low feed
Insert				
Chipbreaker type	SK	GK	R-F	R-U
Page	B56	B56	B56	B56

Recommended cutting conditions E62

● : Standard item

STLN-FF (External turning, Screw clamp, Without offset)



Right-hand shown



Small tools

Toolholder dimensions

Description	Availability	Dimension (mm)								Standard corner-R(RE)	Side rake angle (°)	Inclination angle (°)	Spare parts		Applicable inserts
		R	H	B	LH	HF	LF	WF	WF2				Screw	Wrench	
STLNR 1010K-09FF	●	10	10		10	120	10			0.2	-6	-7	SB-2570TR	LTW-8SS	TNGU0903...
1212F-09FF	●	12	12	15	12	85	12								
1212K-09FF	●					120									
1616K-09FF	●	16	16		16		16								

Applicable inserts

Applications	Finishing	Low feed
Insert		
Chipbreaker type	R-F	R-U
Page	B57	B57

Recommended cutting conditions

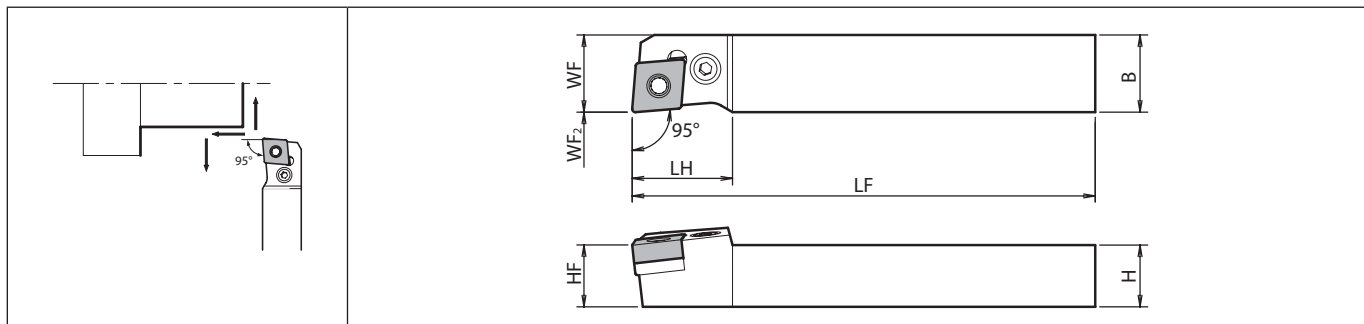
Workpiece material	PR1225	PR1535	PR1705	PR1725
Free-cutting steel	-	-	● Vc = 100 m/min 60 ~ 150	☺ Vc = 100 m/min 60 ~ 150
Carbon steel / Alloy steel	☺ Vc = 100 m/min 60 ~ 150	☺ Vc = 100 m/min 60 ~ 150	☺ Vc = 130 m/min 60 ~ 220	● Vc = 130 m/min 60 ~ 200
Stainless steel	☺ Vc = 80 m/min 50 ~ 150	● Vc = 100 m/min 60 ~ 180	-	☺ Vc = 100 m/min 80 ~ 150

● : Continuous to light interruption: 1st recommendation
 ☺ : Continuous to light interruption: 2nd recommendation

● : Standard item

E62

PCLN-FF (External turning / External facing, Without offset)



Right-hand shown



Toolholder dimensions

Description	Availability	Dimension (mm)								Standard corner-R(RE)	Side rake angle (°)	Inclination angle (°)	Spare parts						Applicable inserts
		R	H	B	LH	HF	LF	WF	WF2				Lever	Lock screw	Punch	Shim pin	Shim	Wrench	
PCLNR 1620JX-12FF 2020JX-12FF	● ●	16 20	20	20	26 20	120	20	0	0.8	-6	-6	LL-2N	LS-2N	PC-2	LSP-2	LC-42N	LW-3	CN□G1204...	



Small tools

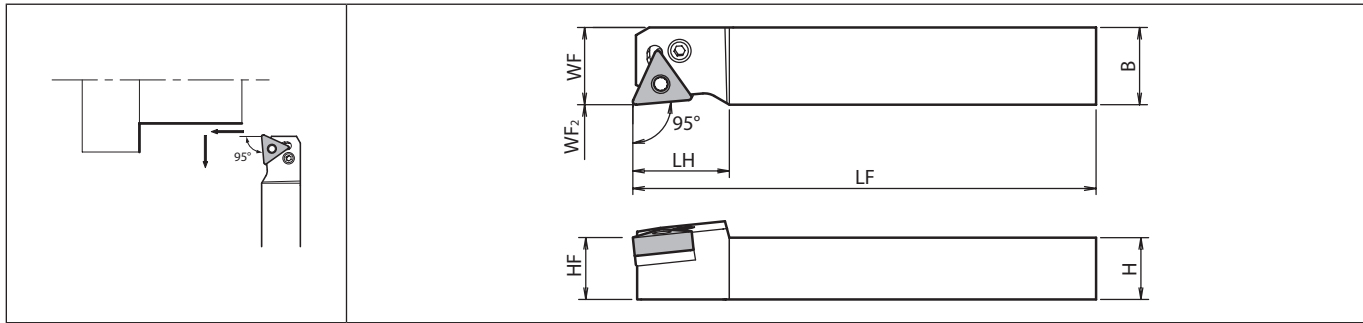
Applicable inserts

Applications	Finishing - Medium	Medium - Roughing
Insert		
Chipbreaker type	SK	FP-TK
Page	B19	B19

Recommended cutting conditions E62

● : Standard item

PTLN-FF (External turning, Without offset)



Right-hand shown



Small tools

Toolholder dimensions

Description	Availability	Dimension (mm)								Standard corner-R(RE)	Side rake angle (°)	Inclination angle (°)	Spare parts						Applicable inserts
		R	H	B	LH	HF	LF	WF	WF2				Lever	Lock screw	Punch	Shim pin	Shim	Wrench	
		PTLNR 1620JX-16FF 2020JX-16FF	● ●	16 20	20	24	16 20	120	20				0	0.8	-6	-6	LL-1N	LS-1N	

When using inserts whose corner-R(RE) is greater than 1.6 mm, please purchase a shim* and use it in order to prevent workpiece and shim from interfering each other.

Applicable inserts

Applications	Finishing - Medium	Medium - Roughing	Large ap
Insert			
Chipbreaker type	SK	FP-TK	R-LD
Page	B42	B42	B42

Recommended cutting conditions E62

● : Standard item

Recommended cutting conditions

External turning (positive insert) - cutting diameter under $\phi 16\text{mm}$

ISO classification	Workpiece material	Hardness	Cutting range	Applications	Chipbreaker	Insert grade	Corner-R (RE)	Lower limit - Recommendation - Upper limit		
								Vc (m/min)	ap (mm)	f (mm/rev)
P*	Low carbon steel Low carbon alloy	HB \leq 300	Precision finishing	Continuous	F	PR1725	0.05	100 - 150 - 200	0.05 - 0.07 - 0.15	0.03 - 0.05 - 0.1
				Interruption		PR1725	0.2	80 - 120 - 160	0.05 - 0.1 - 0.2	0.03 - 0.1 - 0.15
			Precision finishing Molded chipbreaker	Continuous	CF	PR1725	0.2	100 - 150 - 200	0.02 - 0.05 - 0.1	0.02 - 0.05 - 0.12
				Interruption						
			Finishing	Continuous	SKS	PR1725	0.2	100 - 140 - 180	0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2
	Interruption			PR1725	0.4	80 - 120 - 160	0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2		
	Medium carbon steel Medium carbon alloy	HB \leq 330	Precision finishing	Continuous	F	PR1725	0.05	100 - 150 - 200	0.05 - 0.07 - 0.15	0.03 - 0.05 - 0.1
				Interruption		PR1725	0.2	80 - 120 - 160	0.05 - 0.1 - 0.2	0.03 - 0.1 - 0.15
			Precision finishing Molded chipbreaker	Continuous	CF	PR1725	0.2	100 - 150 - 200	0.02 - 0.05 - 0.1	0.02 - 0.05 - 0.12
				Interruption						
			Finishing	Continuous	SKS	PR1725	0.2	100 - 140 - 180	0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2
	Interruption			PR1725	0.4	80 - 120 - 160	0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2		
	High carbon alloy	HB \leq 280	Precision finishing	Continuous	F	PR1725	0.05	100 - 150 - 200	0.05 - 0.07 - 0.15	0.03 - 0.05 - 0.1
				Interruption		PR1725	0.2	80 - 120 - 160	0.05 - 0.1 - 0.2	0.03 - 0.1 - 0.15
			Precision finishing Molded chipbreaker	Continuous	CF	PR1725	0.2	100 - 150 - 200	0.02 - 0.05 - 0.1	0.02 - 0.05 - 0.12
Interruption										
Finishing			Continuous	SKS	PR1725	0.2	100 - 140 - 180	0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2	
	Interruption		PR1725	0.4	80 - 120 - 160	0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2			
M	Stainless steel (Austenitic related)	HB \leq 220	Finishing	Continuous	SKS	PR1725	0.2	80 - 100 - 120	0.1 - 0.3 - 0.5	0.03 - 0.05 - 0.1
				Interruption		PR1535	0.4	60 - 80 - 100	0.3 - 0.5 - 1.0	0.05 - 0.1 - 0.15
	Medium	Continuous	SK	PR1725	0.2	80 - 100 - 120	0.5 - 1.5 - 3.0	0.03 - 0.08 - 0.12		
		Interruption		PR1535	0.4	60 - 80 - 100	0.5 - 1.0 - 2.0	0.05 - 0.1 - 0.15		
		Interruption								
Stainless steel (Precipitation Hardening)	HB \leq 300	Finishing	Continuous	SKS	PR1725	0.2	40 - 60 - 80	0.1 - 0.3 - 0.5	0.03 - 0.05 - 0.1	
			Interruption		PR1535	0.4	30 - 50 - 70	0.3 - 0.5 - 1.0	0.05 - 0.1 - 0.15	
Medium	Continuous	SK	PR1725	0.2	40 - 60 - 80	0.5 - 1.0 - 2.0	0.03 - 0.08 - 0.12			
	Interruption		PR1535	0.4	30 - 50 - 70	0.5 - 1.0 - 1.5	0.05 - 0.1 - 0.15			

* For machining free-cutting steels, such as SUM, etc. use PR1705 at Vc = 200 m/min or less.
For ap and f, refer to specs for low carbon steels.



Recommended cutting conditions

External turning (positive insert) - cutting diameter under $\phi 16\text{mm}$

ISO classification	Workpiece material	Hardness	Cutting range	Applications	Chipbreaker	Insert grade	Corner-R (RE)	Lower limit - Recommendation - Upper limit		
								Vc (m/min)	ap (mm)	f (mm/rev)
K	Gray cast iron	$\text{HB} \leq 250$	Finishing	Continuous	Standard	CA310	0.4	100 - 120 - 150	0.2 - 0.5 - 1.0	0.1 - 0.15 - 0.2
				Interruption		CA315	0.4	80 - 100 - 120	0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.15
			Medium	Continuous	Standard	CA310	0.4	100 - 120 - 150	0.5 - 1.0 - 2.0	0.1 - 0.15 - 0.2
				Interruption		CA315	0.8	80 - 100 - 120	0.5 - 1.0 - 2.0	0.05 - 0.1 - 0.15
	Nodular cast iron	$\text{HB} \leq 270$	Finishing	Continuous	Standard	CA310	0.4	80 - 100 - 120	0.2 - 0.5 - 1.0	0.1 - 0.15 - 0.2
				Interruption		CA315	0.4	60 - 80 - 100	0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.15
Medium	Continuous	Standard	CA310	0.4	80 - 100 - 120	0.5 - 1.0 - 2.0	0.1 - 0.15 - 0.2			
			CA315	0.8	60 - 80 - 100	0.5 - 1.0 - 2.0	0.05 - 0.1 - 0.15			
N	Non-ferrous metals Copper alloy Aluminum Aluminum alloys (Si10% or less) etc.	$\text{HB} \leq 100$	High speed machining (Rainbow surface gloss)	Continuous	Without chipbreaker	KPD001	0.2	150 - 250 - 350	0.05 - 0.1 - 0.3	0.05 - 0.1 - 0.15
			Finishing (Long tool life)	Continuous	F	PDL025	0.2	100 - 150 - 200	0.05 - 0.3 - 0.5	0.02 - 0.07 - 0.1
				Interruption		PDL025	0.4	100 - 150 - 200	0.05 - 0.3 - 0.5	0.02 - 0.07 - 0.1
			Finishing	Continuous	F	KW10	0.2	100 - 150 - 200	0.05 - 0.3 - 0.5	0.02 - 0.07 - 0.1
				Interruption		KW10	0.4	100 - 150 - 200	0.05 - 0.3 - 0.5	0.02 - 0.07 - 0.1
			Medium	Continuous	U	KW10	0.2	100 - 150 - 200	0.2 - 0.5 - 1.5	0.03 - 0.1 - 0.2
Interruption	KW10	0.4		100 - 150 - 200		0.2 - 0.5 - 1.5	0.03 - 0.1 - 0.2			
S	Titanium alloys	$\text{HB} \leq 400$	Precision finishing (Rainbow surface gloss)	Continuous	Without chipbreaker	KPD001	0.2	100 - 120 - 150	0.05 - 0.1 - 0.3	0.03 - 0.07 - 0.1
				Interruption		KPD001	0.4	70 - 100 - 120	0.05 - 0.1 - 0.3	0.03 - 0.07 - 0.1
			Medium	Continuous	F, U	KW10	0.4	30 - 50 - 70	0.1 - 0.5 - 1.0	0.03 - 0.1 - 0.2
	Interruption	KW10	0.4	30 - 50 - 70		0.1 - 0.5 - 1.0	0.03 - 0.1 - 0.2			
	Heat-resistant alloys	$\text{HB} \leq 350$	Finishing	Continuous	F, U without chipbreaker	KW10	0.4	10 - 30 - 50	0.1 - 0.3 - 0.5	0.03 - 0.05 - 0.1
				Interruption		KW10	0.8	10 - 30 - 50	0.2 - 0.5 - 0.7	0.03 - 0.05 - 0.1
Finishing			Continuous	MQ	PR1535	0.4	40 - 60 - 80	0.1 - 0.3 - 0.5	0.03 - 0.05 - 0.1	
Interruption	PR1535	0.8	40 - 60 - 80		0.1 - 0.3 - 0.5	0.03 - 0.05 - 0.1				
H	Hardened steel Hard materials	40 ~ 50 HRC	Finishing	Continuous	GK	PR1725	0.2	40 - 60 - 80	0.1 - 0.3 - 0.5	0.02 - 0.07 - 0.1
						PR1725	0.4	40 - 60 - 80	0.1 - 0.3 - 0.5	0.02 - 0.07 - 0.1
		50 ~ 68 HRC	Finishing	Continuous	ME	KBN05M	0.2	80 - 120 - 150	0.1 - 0.3 - 0.5	0.02 - 0.07 - 0.1
Interruption	MET					0.4	60 - 100 - 120	0.1 - 0.3 - 0.5	0.02 - 0.07 - 0.1	

E
Small tools

Recommended cutting conditions

Back Turning - cutting diameter under $\phi 16\text{mm}$

KTKF

Workpiece material		MEGACOAT NANO PLUS		MEGACOAT NANO		MEGACOAT		Remarks
		PR1725		PR1535		PR1225		
		Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon steel / Alloy steel	Vc (m/min)	★ 60 ~ 200		☆ 60 ~ 150		☆ 60 ~ 150		Coolant
	f (mm/rev)	0.01 ~ 0.03	0.02 ~ 0.15	0.01 ~ 0.03	0.02 ~ 0.15	0.01 ~ 0.03	0.02 ~ 0.15	
Stainless steel	Vc (m/min)	☆ 60 ~ 150		★ 60 ~ 130		☆ 60 ~ 130		
	f (mm/rev)	0.01 ~ 0.02	0.02 ~ 0.1	0.01 ~ 0.02	0.02 ~ 0.1	0.01 ~ 0.02	0.02 ~ 0.1	

Workpiece material		Carbide		PCD		Remarks
		KW10		KPD001		
		Grooving	Turning	Grooving	Turning	
Cast iron	Vc (m/min)	50 ~ 100		-		Coolant
	f (mm/rev)	0.01 ~ 0.02	0.02 ~ 0.15	-		
Aluminum	Vc (m/min)	200 ~ 450		200 ~ 500		
	f (mm/rev)	0.01 ~ 0.03	0.02 ~ 0.15	0.01 ~ 0.03	0.02 ~ 0.12	
Brass	Vc (m/min)	100 ~ 200		100 ~ 350		
	f (mm/rev)	0.01 ~ 0.05	0.02 ~ 0.2	0.01 ~ 0.05	0.02 ~ 0.15	

GTP

Workpiece material		MEGACOAT NANO PLUS		MEGACOAT NANO		Remarks
		PR1725		PR1535		
		Grooving	Turning	Grooving	Turning	
Carbon Steel / Alloy Steel	Vc (m/min)	★ 60 ~ 200		☆ 60 ~ 150		Coolant
	f (mm/rev)	0.03 ~ 0.07	0.05 ~ 0.15	0.03 ~ 0.07	0.05 ~ 0.15	
Stainless Steel	Vc (m/min)	☆ 60 ~ 150		★ 60 ~ 130		
	f (mm/rev)	0.02 ~ 0.05	0.03 ~ 0.10	0.02 ~ 0.05	0.03 ~ 0.10	

KTKF (GQ chipbreaker)

Workpiece material		MEGACOAT NANO PLUS		MEGACOAT NANO		MEGACOAT		Remarks
		PR1725		PR1535		PR1225		
		Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon steel / Alloy steel	Vc (m/min)	★ 60 ~ 200		☆ 60 ~ 150		☆ 60 ~ 150		Coolant
	f (mm/rev)	0.01 ~ 0.04	0.02 ~ 0.15	0.01 ~ 0.04	0.02 ~ 0.15	0.01 ~ 0.04	0.02 ~ 0.15	
Stainless steel	Vc (m/min)	☆ 60 ~ 150		★ 60 ~ 130		☆ 60 ~ 130		
	f (mm/rev)	0.01 ~ 0.03	0.02 ~ 0.1	0.01 ~ 0.03	0.02 ~ 0.1	0.01 ~ 0.03	0.02 ~ 0.1	

AGT

Workpiece material		PCD		Remarks
		KPD001		
		Grooving	Turning	
Aluminum Alloy	Vc (m/min)	200 ~ 500		Coolant
	f (mm/rev)	0.03 ~ 0.15	0.03 ~ 0.20	
Brass	Vc (m/min)	100 ~ 350		
	f (mm/rev)	0.03 ~ 0.15	0.03 ~ 0.20	

ABS15, ABW15, ABW23

Workpiece material		MEGACOAT NANO PLUS				MEGACOAT		PVD coated carbide		Remarks
		PR1725		PR1705		PR1225		PR930		
		Grooving	Turning	Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon steel / Alloy steel	Vc (m/min)	★ 60 ~ 180		☆ 80 ~ 200		☆ 60 ~ 150		☆ 80 ~ 100		Coolant
	f (mm/rev)	0.02	0.02 ~ 0.07	0.02	0.02 ~ 0.07	0.02	0.02 ~ 0.07	0.02	0.02 ~ 0.07	
Stainless steel	Vc (m/min)	☆ 30 ~ 130		☆ 40 ~ 150		★ 40 ~ 120		☆ 30 ~ 50		
	f (mm/rev)	0.02	0.02 ~ 0.05	0.02	0.02 ~ 0.05	0.02	0.02 ~ 0.05	0.02	0.02 ~ 0.05	

Workpiece material		Carbide		Remarks
		KW10		
		Grooving	Turning	
Aluminum	Vc (m/min)	150 ~ 200		Coolant
	f (mm/rev)	0.02	0.02 ~ 0.10	
Brass	Vc (m/min)	100 ~ 160		
	f (mm/rev)	0.03	0.02 ~ 0.15	

★: 1st recommendation

☆: 2nd recommendation



Small tools

Recommended cutting conditions

ZBMT

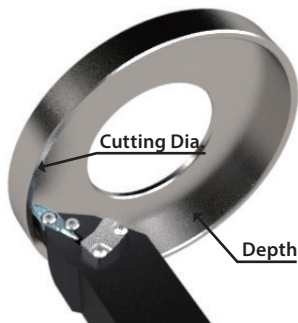
Workpiece material	Insert tip angle	Corner-R (RE)	Insert Grade	Vc (m/min)	ap (mm)	f (mm/rev)
Carbon Steel / Alloy Steel	25°	0.2	PR1725	60 - 150 - 200	0.2 - 0.3 - 1.5	0.05 - 0.10 - 0.15
			PR1535	60 - 120 - 180	0.2 - 0.3 - 1.5	0.05 - 0.10 - 0.15
		0.4 / 0.8	PR1725	60 - 150 - 200	0.2 - 0.3 - 2.0	0.05 - 0.15 - 0.25
			PR1535	60 - 120 - 180	0.2 - 0.3 - 2.0	0.05 - 0.15 - 0.25
	15°	0.4	PR1725	60 - 150 - 200	0.2 - 0.3 - 1.0	0.05 - 0.10 - 0.15
			PR1535	60 - 120 - 180	0.2 - 0.3 - 1.0	0.05 - 0.10 - 0.15
Stainless Steel	25°	0.2	PR1725	60 - 150 - 180	0.2 - 0.3 - 1.0	0.05 - 0.10 - 0.15
			PR1535	60 - 120 - 150	0.2 - 0.3 - 1.0	0.05 - 0.10 - 0.15
		0.4 / 0.8	PR1725	60 - 150 - 180	0.2 - 0.3 - 1.0	0.05 - 0.15 - 0.25
			PR1535	60 - 120 - 150	0.2 - 0.3 - 1.0	0.05 - 0.15 - 0.25
	15°	0.4	PR1725	60 - 150 - 180	0.2 - 0.3 - 1.0	0.05 - 0.10 - 0.15
			PR1535	60 - 120 - 150	0.2 - 0.3 - 1.0	0.05 - 0.10 - 0.15
Cast Iron	25°	0.2	PR1725	60 - 150 - 180	0.2 - 0.3 - 1.5	0.05 - 0.10 - 0.15
		0.4 / 0.8	PR1725	60 - 150 - 180	0.2 - 0.3 - 2.0	0.05 - 0.15 - 0.25
	15°	0.4	PR1725	60 - 150 - 180	0.2 - 0.3 - 1.0	0.05 - 0.10 - 0.15

When using machining at ap 1.5 mm or more, reduce the feed by about 50%.



Small tools

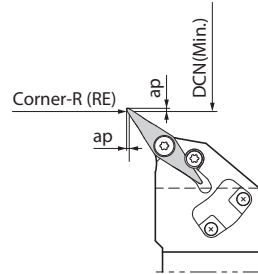
Boring/Facing Available Cutting Diameter and Maximum D.O.C.



Standard Corner-R(RE) 0.4

Cutting Dia.	Depth (mm)
ø30	0.5
ø50	1.5
ø65	3.0
ø80	6.0
ø100	10.0
ø150	14.0

SZPB Type Cutting Diameter for Undercutting



Corner-R (RE)	ap (mm)	DCN (Min.)
0.2	0.5	ø30
	1	ø35
0.4	0.5	ø30
	1	ø35
0.8	0.5	ø110
	1	ø150

How to Modify Toolholder when Using 15° Insert

When using 15° insert, additional modification is required for the holder to avoid interference.

Recommended Additional Modification

- Set the edge of insert bearing surface at the end of the holder at horizontal reference shown below.
- Modify the holder to 0.6 mm from the tip at an angle of not less than 45 degrees from the horizontal.

